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EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

- 1.) CONTRACTOR SHALL INSTALL SOIL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO ANY GRADING FOLLOWING INITIAL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES GREATER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1) AND SEVEN (7) DAYS

 A. The required pre-construction meeting. AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- 2.) ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE PROVIDED AS INDICATED ON THIS PLAN. WITH LOCATION ADJUSTMENTS TO BE MADE IN THE FIELD AS NECESSARY, AND TO BE MAINTAINED AT THE END OF EACH WORKING DAY UNTIL PROJECT COMPLETION. THE MINIMUM AREA PRACTICAL SHALL BE DISTURBED FOR THE MINIMAL AMOUNT OF TIME POSSIBLE.
- 3.) CLEARING AND GRUBBING SHALL INCLUDE ALL TREES, BRUSH, DEBRIS, ROOT MAT AND ORGANIC MATERIALS TO BE
- 4.) TEMPORARY SEEDING SHALL BE ACCOMPLISHED BETWEEN FEBRUARY 15TH THROUGH APRIL 30TH, OR AUGUST 15TH THROUGH NOVEMBER 30TH. DURING OTHER TIMES, TEMPORARY MULCHING SHALL BE PROVIDED.
- 5.) TEMPORARY SEEDING SHALL CONFORM TO THE FOLLOWING APPLICATIONS: 436 LBS. PER ACRE OF 10-20-25 4,000 LBS. PER ACRE OF GROUND LIMESTONE, TO BE INCORPORATED INTO THE SOIL BY DISKING OR OTHER SUITABLE MEANS, ANNUAL RYEGRASS SHALL BE APPLIED AT A RATE OF 50 LBS. PER ACRE USING SUITABLE EQUIPMENT. MULCHING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER SEEDING.

		re (For Hazard rom Table 26)			Fertilizer
No.	Species	Appl. Rate (lbs./ac.)	Seeding Dates	Seeding Depths	Rate (10-10-10)
	ANNUAL RYE GRASS	50 lbs.	2/1-4/30 8/15-11/1	1/4" to 1/2"	600 lb/ss
	MILLET	50 lbs.	5/1-8/14	1/2"	600 lb/ac 15 lb/ 1000 sf

- MULCHING SHALL BE UNCHOPPED, UNROTTED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2-2½ TONS PER ACRE. ANCHOR MULCH WITH A MULCH ANCHORING TOOL ON THE CONTOUR, WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW AT A RATE OF 750 LBS. PER ACRE MIXED WITH WATER AT A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALS, OF WATER, OR WITH A SYNTHETIC LIQUID BINDER ACCORDING TO MANUFACTURER RECOMMENDATIONS, WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. MIX WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALS. OF WATER.
- 7.) PERMANENT SEEDING SHALL BE ACCOMPLISHED BETWEEN MARCH 1ST THROUGH MAY 15TH, OR AUGUST 15TH THROUGH OCTOBER 15TH, PERMANENT SEEDING AT OTHER THAN SPECIFIED TIMES WILL BE ALLOWED ONLY UPON WRITTEN APPROVAL. PERMANENT SEEDING SHALL CONFORM TO THE FOLLOWING APPLICATIONS: PERMANENT SEEDING FOR SITES HAVING DISTURBED OVER FIVE (5) ACRES SHALL USE FERTILIZER RATES RECOMMENDED BY A SOIL TESTING AGENCY AND THE RECOMMENDATIONS PROVIDED IN THE PERMANENT SEEDING SUMMARY TABLE. PERMANENT SEEDING FOR CONDITIONS OTHER THAN LISTED ABOVE SHALL BE PERFORMED AT THE RATES AND DATES AS PROVIDED IN THE PERMANENT SEEDING SUMMARY TABLE BELOW. FERTILIZER AND LIME AMENIMENTS SHALL BE INCORPORATED INTO THE TOP 3"-5" OF THE SOIL BY DISKING OR OTHER SUITABLE MEANS. MULCHING SHALL BE ACCOMPLISHED AS DISCUSSED IN ITEM #6 OF THESE SPECIFICATIONS.

		ure (For Ha From Table	zard Zone 7a e 25)	a)		Fertilizer Rate (10-20-20)	
No.	Species	Appl. Rate (lbs./ac.)	Seeding Dates	Seeding Depths	N	P205	K20
10	80% TALL FESCUE 20% HARD FESCUE	120 lbs 30 lbs.	3/1-5/15 8/15-11/15	1/4" to 1"	to	175 lb/ac 4 lb/ 1000 sf	175 lb/ac 4 lb/ 1000 sf

- 8.) ANY SPOIL OR BORROW WILL BE PLACED AT A SITE APPROVED BY THE SOIL CONSERVATION DISTRICT.
- 9.) ALL AREAS REMAINING OR INTENDED TO REMAIN DISTURBED FOR LONGER THAN SEVEN (7) DAYS SHALL BE STABILIZED IN ACCORDANCE WITH THE USDA, NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS FOR CRITICAL AREA
- 10.) IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN. ANY CHANGE MADE IN THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL PLACE RESPONSIBILITY OF SAID CHANGE ON THE CONTRACTOR OR SUBCONTRACTOR.

Standard Erosion And Sediment Control Notes

The Water Management Administration requires that these notes, in their entirety, be included on the erosion and sediment control plan. It is recognized that every note may not apply to all projects. The requirement of any individual note not applicable to the subject project is not binding upon the applicant or the applicant's contractor. 1. The contractor shall notify the Administration (WMA) at (410) 537-3510 seven (7) days before commencing

any land disturbing activity and, unless waived by the Administration, shall be required to hold a pre-construction meeting between project representatives and a representative of WMA2. The contractor must notify WMA in writing and by telephone at the following points:

B. Following installation of sediment control measures. C. During the installation of sediment basins (to be converted into permanent stormwater management structures) at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing

construction of each step is mandatory D. Prior to removal or modification of any sediment control structure(s).

E. Prior to removal of all sediment control devices. F. Prior to final acceptance.

3. The contractor shall construct all erosion and sediment control measures per the approved plan and construction sequence and shall have them inspected and approved by the agency inspector or WMA Inspector prior to beginning any other land disturbances. Minor sediment control device location adjustments may be made in the field with the approval of the WMA Inspector. The contractor shall ensure that all runoff from disturbed areas is directed to the sediment control devices and shall not remove any erosion or sediment control measure without prior permission from MA Inspector and agency inspector. The contractor must obtain prior agency and WMA approval for changes to the Sediment Control Plan and / or Sequence of Construction.

4. The contractor shall protect all points of construction ingress and egress to prevent the deposition of materials onto public roads. All materials deposited onto public roads shall be removed immediately.

5. The contractor shall inspect daily and maintain continuously in an effective operating condition all erosion and sediment control measures until such times as they are removed with prior permission from WMA Inspector

6. All sediment basins, trap embankments and slopes, perimeter dikes, swales and all disturbed slopes steeper or equal to 3:1 shall be stabilized with sod or seed and anchored straw mulch, or other approved stabilization measures, as soon as possible but no later than seven (7) calendar days after establishment. All areas disturbed outside of the perimeter sediment control system must be minimized. Maintenance must be performed as necessary to ensure continued stabilization. (Requirement for stabilization may be reduced to three (3) days for sensitive areas.)

7. The contractor shall apply sod or seed and anchored straw mulch, or other approved stabilization measures to all disturbed areas and stockpiles within fourteen (14) calendar days after stripping and grading activities have ceased in the area. Maintenance shall be performed as necessary to ensure continued stabilization. (Requirement may be reduced to seven (7) days for sensitive areas.)

8. Prior to removal of sediment control measures, the contractor shall stabilize and have established permanent stabilization for all contributory disturbed areas using sod or an approved permanent seed mixture with required soil amendments and an approved anchored mulch. Wood fiber mulch may only be used in seeding season where the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized as soon as possible, but not later than fourteen (14) calendar days after establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, temporary seed and anchored straw mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be applied by March 15 or earlier if ground and weather conditions allow.

9. The site's approval letter, approved Erosion and Sediment Control Plans, daily log books, and test reports shall be available at the site for inspection by duly authorized officials of WMA and the agency responsible for

10. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing protective devices to lower the water downslope without causing erosion. Dikes shall be installed and maintained at the top of a cut or fill slope until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Protective methods must be provided at points of concentrated flow where erosion is likely to occur.

11. Permanent swales or other points of concentrated water flow shall be stabilized with sod or seed with an approved erosion control matting, rip-rap, or by other approved stabilization measures.

12. Temporary sediment control devices may be removed, with permission of WMA Inspector and agency inspectors, within thirty (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well

13. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in nonmaintenance areas provided that those areas are indicated on the erosion and sediment control plan with a low-maintenanc ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.

14. For finished grading, the contractor shall provide adequate gradients to prevent water from ponding for more than twenty four (24) hours after the end of a rainfall event. Drainage courses and swale flow areas may take as long as forty-eight (48) hours after the end of a rainfall event to drain. Areas designed to have standing water shall not be required to meet this requirement.

15. Sediment traps or basins are not permitted within 20 feet of a foundation that exists or is under construction. No structure may be constructed within 20 feet of an active sediment trap or basin.

16. The WMA Inspector has the option of requiring additional safety or sediment control measures, if deemed necessary.

17. All trap depth dimensions are relative to the outlet elevation. All traps must have a stable outfall. All traps and basins shall have stable inflow points.

STANDARD SYMBOL

18. Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control. Refer to appropriate specifications for temporary seeding, permanent seeding, mulching, sodding, and ground covers.

19. Sediment shall be removed and the trap or basin restored to its original dimensions when the sediment has accumulated to one quarter of the total depth of the trap or basin. Total depth shall be measured from the trap or basin bottom to the crest of the outlet.

20. Sediment removed from traps (and basins) shall be placed and stabilized in approved areas, but not within a floodplain, wetland or tree-save area. When pumping sediment laden water, the discharge must be directed to a sediment trapping device prior to release from the site. A sump pit may be used if sediment traps themselves are being pumped out.

21. All water removed from excavated areas shall be passed through a WMA approved dewatering practice or pumped to a sediment trap or basin prior to discharge to a functional storm drain system or to stable ground

22. Sediment control for utility construction for areas outside of designed controls or as directed by engineer or WMA Inspector:

A. Call "Miss Utility" at 1-800-257-7777 48 hours prior to the start of work. B. Excavated trench material shall be placed on the high side of the trench.

C. Trenches for utility installation shall be backfilled, compacted, and stabilized at the end of each working day. No more trench shall be opened than can be completed the same day D. Temporary silt fence shall be placed immediately downstream of any disturbed area intended to remain disturbed for more than one day.

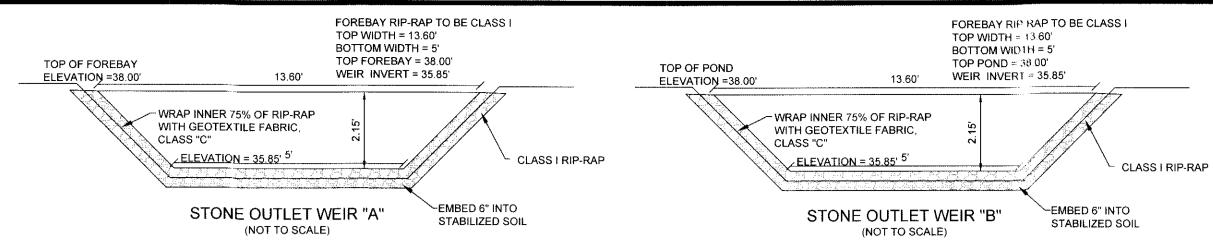
23. Where deemed appropriate by the engineer or inspector, sediment basins and traps may need to be surrounded with an approved safety fence. The fence must conform to local ordinances and regulations. The

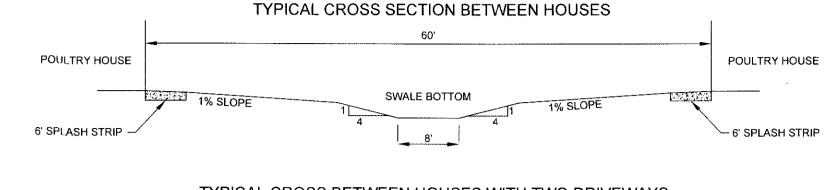
developer or owner shall check with local building officials on applicable safety requirements. Where safety fence is deemed appropriate and local ordinances do not specify fencing sizes and types, the following shall be used as a minimum standard. The safety fence must be made of welded wire and at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than 2 inches in width and 4 inches in height with a minimum of 14 gauge wire. Safety fence must be maintained and in good condition at all times.

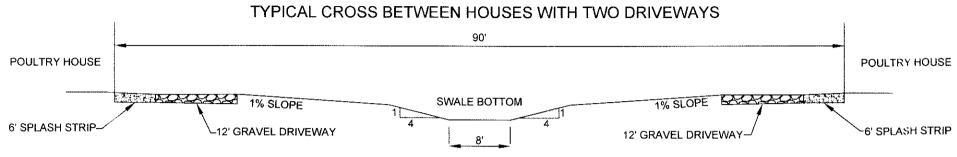
24. Off-site spoil or borrow areas on State or federal property must have prior approval by WMA and other applicable State, federal, and local agencies; otherwise approval must be granted by the local authorities. All waste

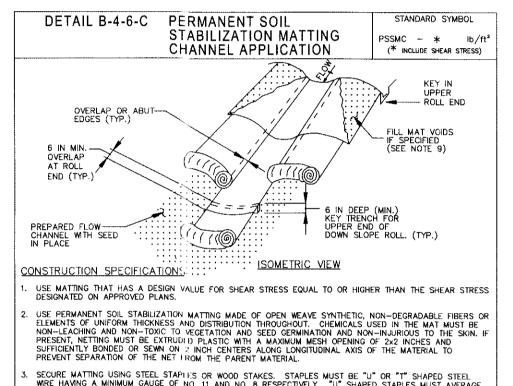
25. Sites where infiltration devices are used for the control of stormwater, extreme care must be taken to prevent runoff from unstabilized areas from entering the structure during construction. Sediment control devices placed in infiltration areas must have bottom elevations at least two (2) feet higher than the finish grade bottom elevation of the infiltration practice. When converting a sediment trap to an infiltration device, all accumulated sediment must be removed and disposed of prior to final grading of infiltration device.

26. When a storm drain system outfall is directed to a sediment trap or sediment basin and the system is to be used for temporarily conveying sediment laden water, all storm drain inlets in non-sump areas shall have temporary asphalt berms constructed at the time of base paving to direct gutter flow into the inlets to avoid surcharging and overflow of inlets in sump areas.

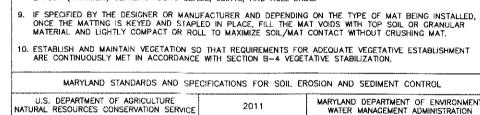


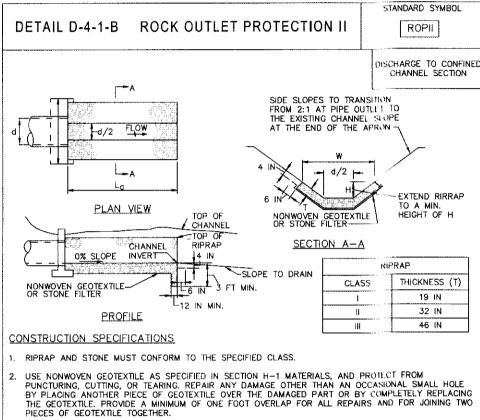






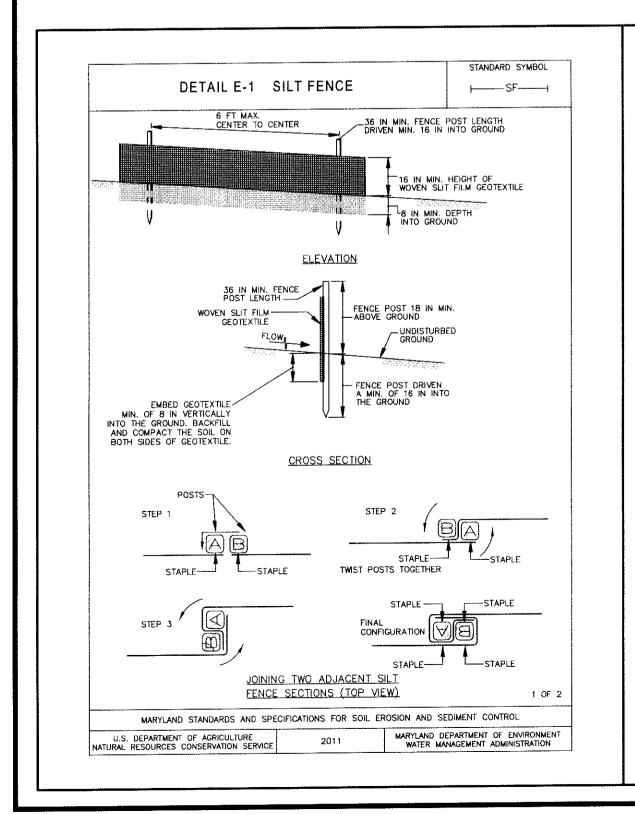
- SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY, "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG, "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH—SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LIN
- THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS, OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- 8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

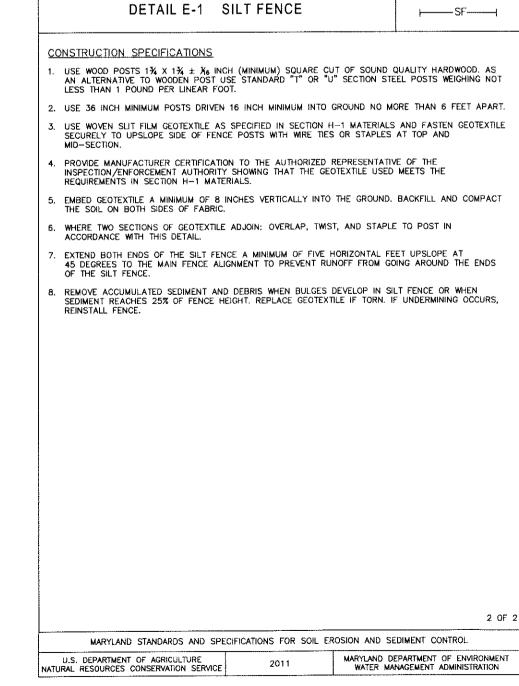


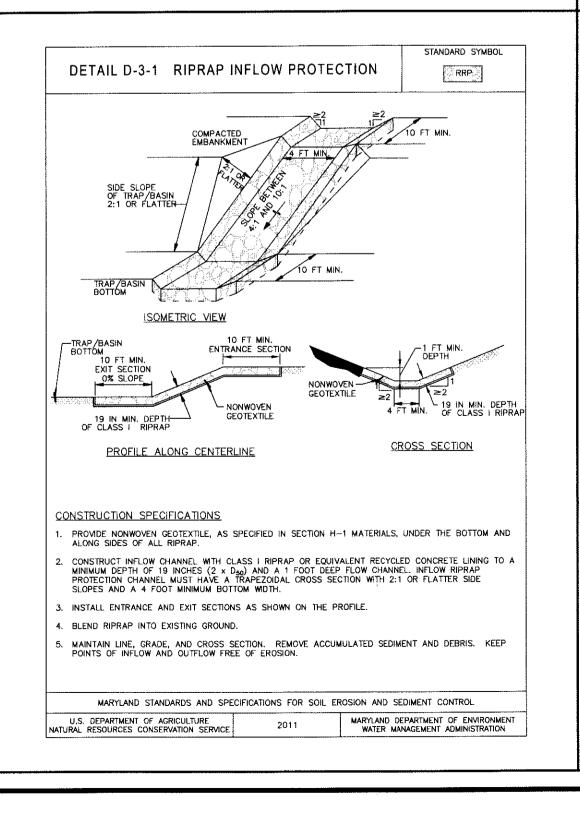


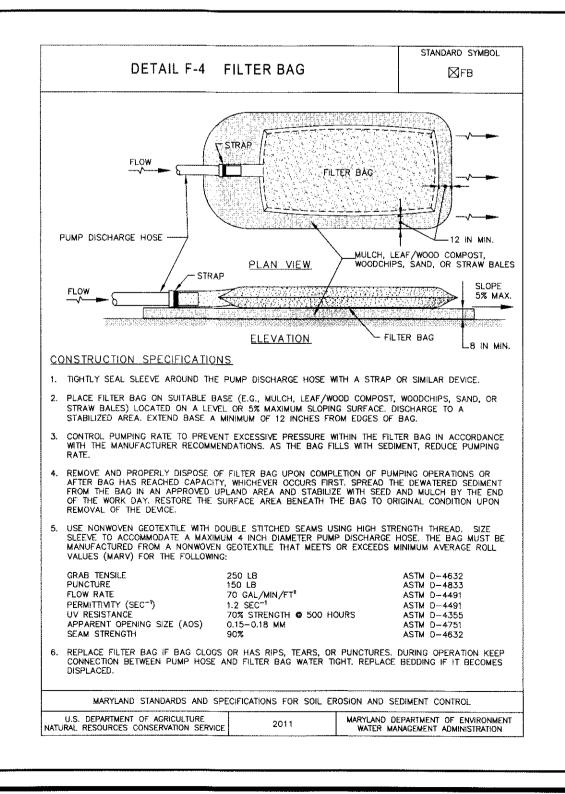
- PREPARE THE SUBGRADE FOR GEOTEXTHE OR STONE FILTER (% TO 1% INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES
- CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND LLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT O THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
- CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND. B. MAINTAIN LINE, GRADE, AND CROSS SECTION, KEEP OUTLET FREE OF EROSION, REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE

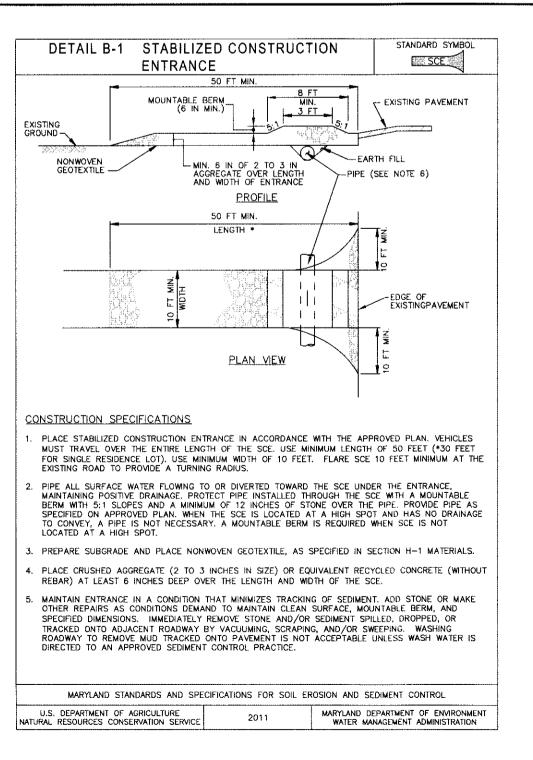
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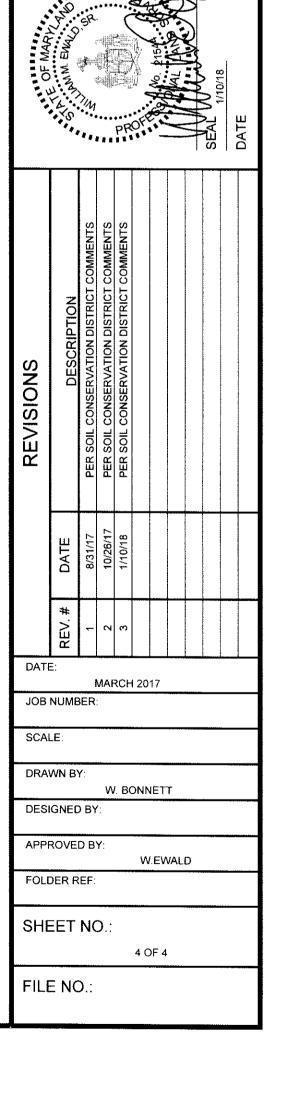












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