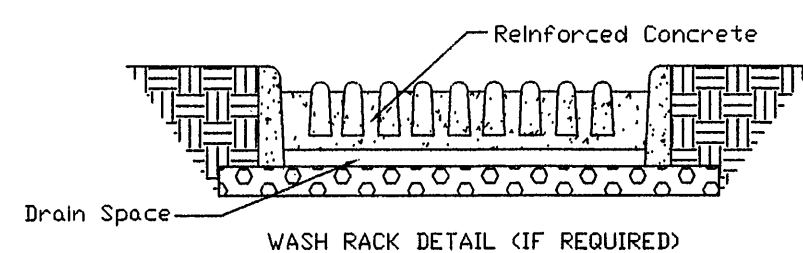
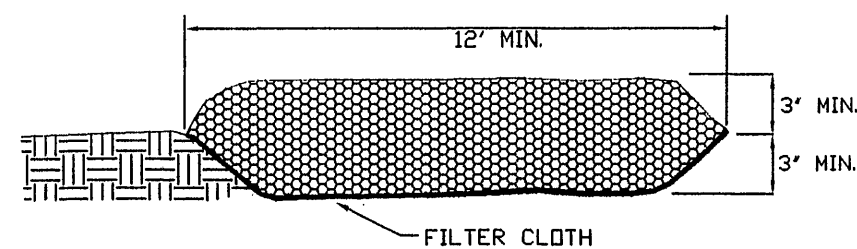
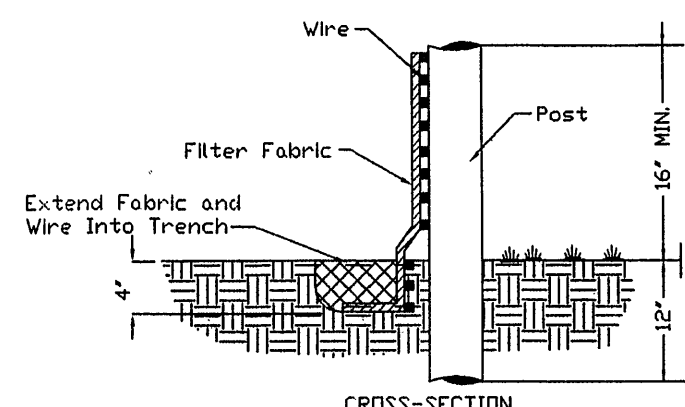


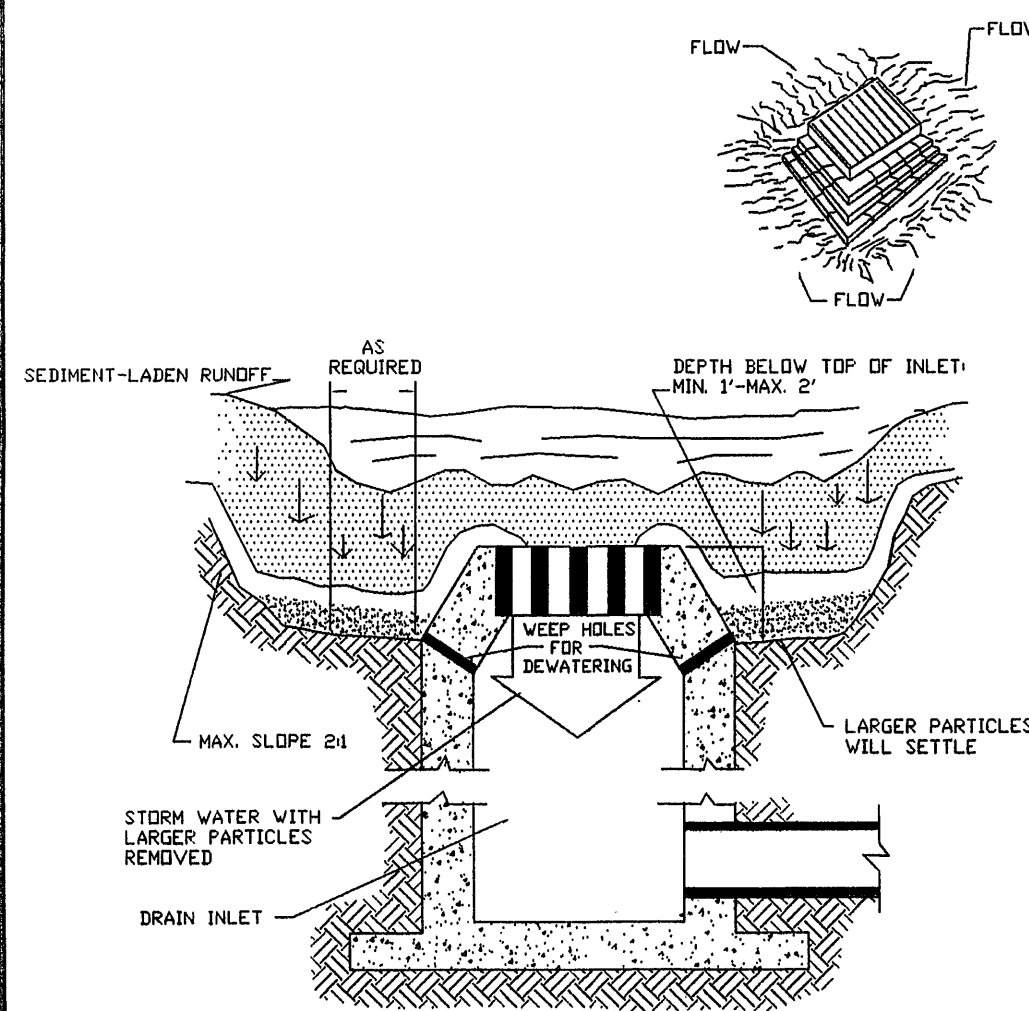
* MUST EXTEND FULL WIDTH OF INGRESS & EGRESS OPERATION.



CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



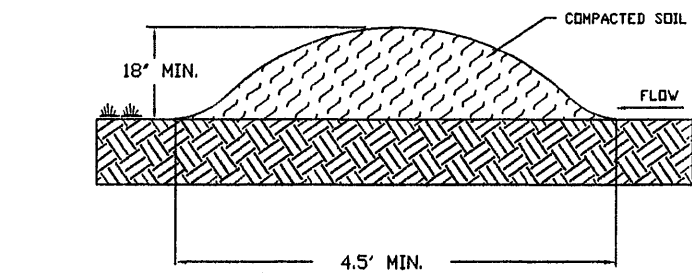
SF CONSTRUCTION OF A SILT FENCE



IP EXCAVATED DROP INLET SEDIMENT TRAP

SPECIFIC APPLICATION

This method of inlet protection is applicable where heavy flows are expected and where an overflow capability and ease of maintenance are desirable.

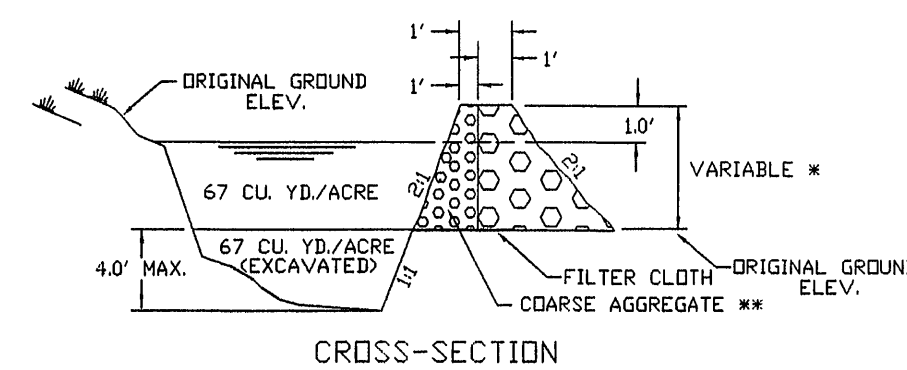


DD TEMPORARY DIVERSION DIKE

FD TEMPORARY FILL DIVERSION

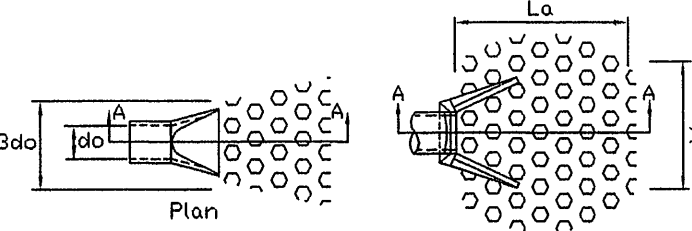
RWD TEMPORARY RIGHT-OF-WAY DIVERSION

DV DIVERSION



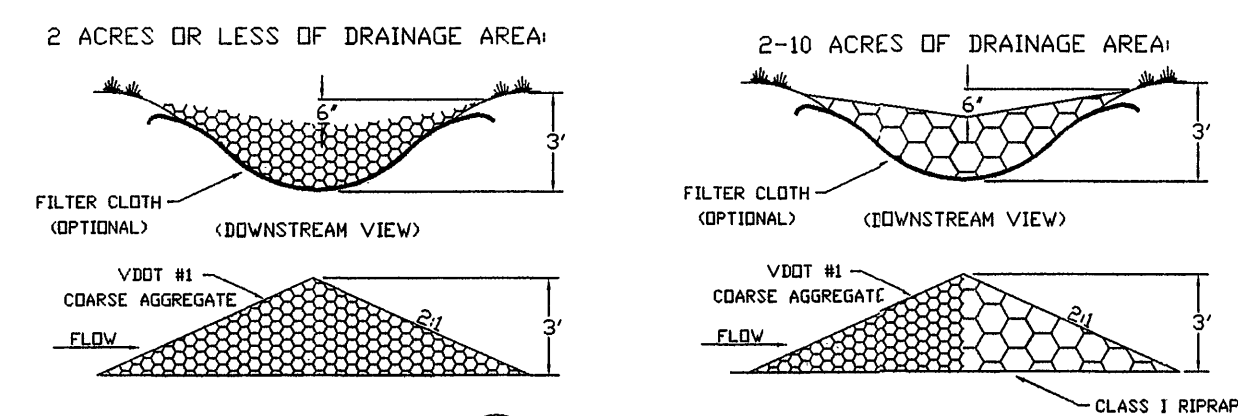
ST SEDIMENT TRAP

NOTE: FOR AREAS LESS THAN 3.0 ACRES, FOR AREAS LARGER THAN 3.0 ACRES A SEDIMENT BASIN IS REQUIRED. SEE DETAIL THIS SHEET.

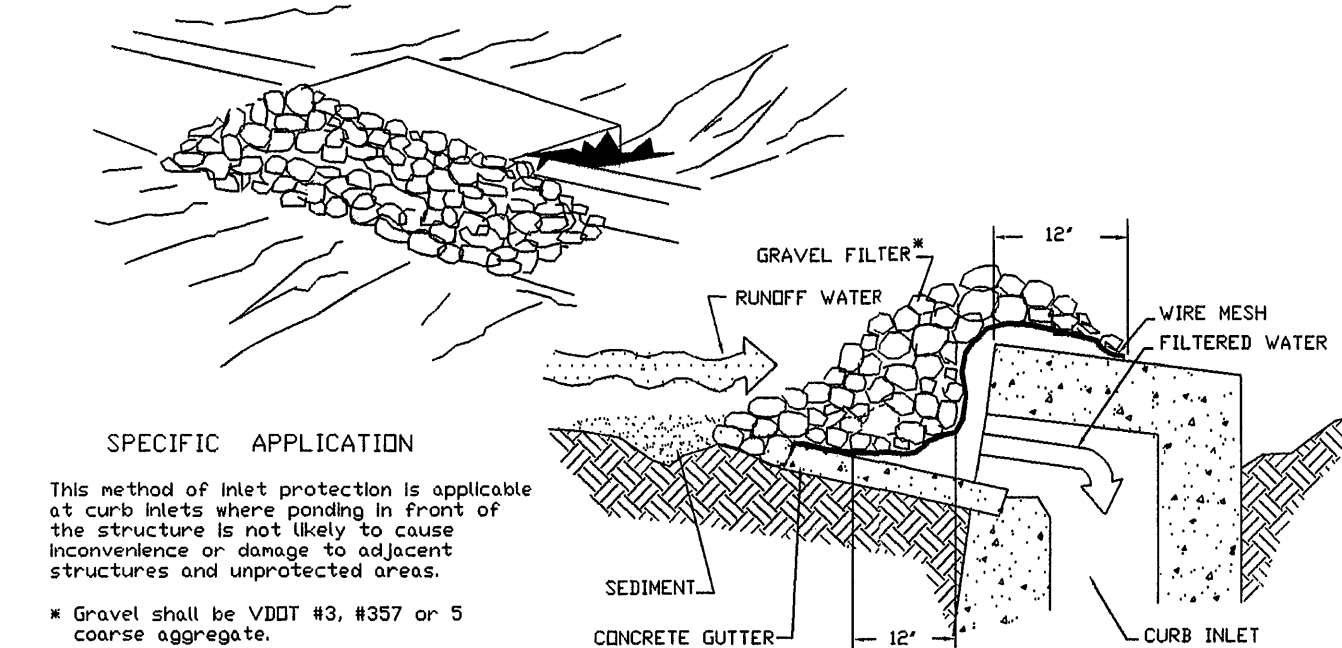


OP OUTLET PROTECTION

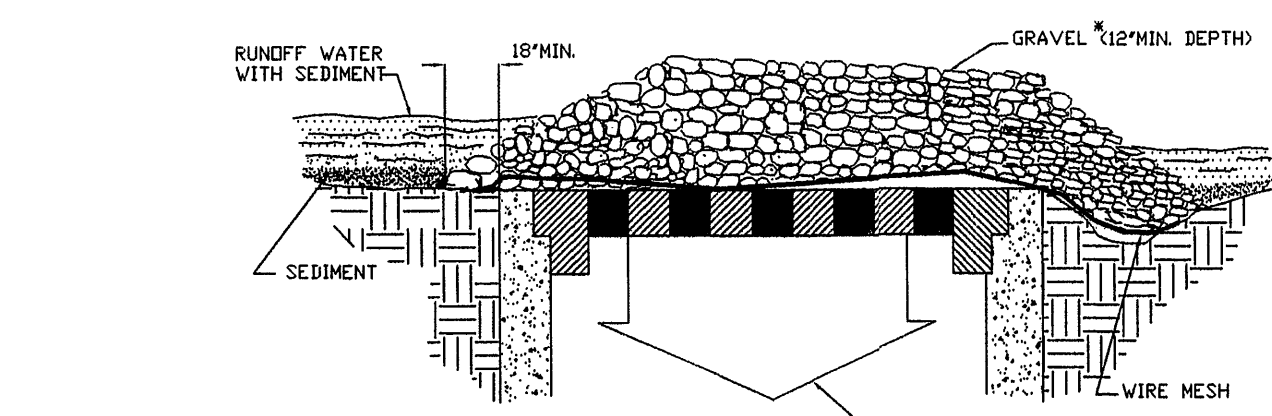
NOTES:
1. Apron lining may be rip-rap, grouted rip-rap, or concrete.
2. L_a is the length of the rip-rap apron as calculated using plates 1.36d and 1.36e.
3. d = 1.5 times the maximum stone diameter, but not less than 6".



CD ROCK CHECK DAM



IP GRAVEL CURB INLET SEDIMENT FILTER



IP GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

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.

TEMPORARY SEDIMENT TRAP DATA						
STRUCTURE	DRAINAGE AREA (ACRES)	STORAGE (CY.)		WEIR LENGTH (FT.)	WEIR HEIGHT (FT.)	BERM HEIGHT (FT.)
		REQ'D	DESIGN			
ST1	1.9	259	259	11.6'	1.8'	2.8'
			BOTTOM OF WET: 40' X 20'			
			TOP OF WET: 52' X 32'			
			TOP OF DRY: 59.2' X 39.2'			
ST2	0.8	111	111	5.0'	1.3'	2.3'
			BOTTOM OF WET: 36' X 15'			
			TOP OF WET: 44' X 23'			
			TOP OF DRY: 49.2' X 28.2'			

NO.	TITLE	KEY	SYMBOL	NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF	[Symbol]	3.20	ROCK CHECK DAMS	CD	[Symbol]
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	[Symbol]	3.21	LEVEL SPREADER	LS	[Symbol]
3.03	CONSTRUCTION ROAD STABILIZATION	CRS	[Symbol]	3.22	VEGETATIVE STREAM BANK STABILIZATION	VSB	[Symbol]
3.04	STRAW BALE BARRIER	STB	[Symbol]	3.23	STRUCTURAL STREAM BANK STABILIZATION	SSS	[Symbol]
3.05	SILT FENCE	SF	[Symbol]	3.24	TEMPORARY VEHICULAR STREAM CROSSING	VSC	[Symbol]
3.06	BRUSH BARRIER	BB	[Symbol]	3.25	UTILITY STREAM CROSSING	USC	[Symbol]
3.07	STORM DRAIN INLET PROTECTION	IP	[Symbol]	3.26	DEWATERING STRUCTURE	DS	[Symbol]
3.08	CULVERT INLET PROTECTION	CIP	[Symbol]	3.27	TURBIDITY CURTAIN	TC	[Symbol]
3.09	TEMPORARY DIVERSION DIKE	DD	[Symbol]	3.28	SUBSURFACE DRAIN	SD	[Symbol]
3.10	TEMPORARY FILL DIVERSION	FD	[Symbol]	3.29	SURFACE ROUGHENING	SR	[Symbol]
3.11	TEMPORARY RIGHT-OF-WAY DIVERSION	RWD	[Symbol]	3.30	TOPSOILING	TD	[Symbol]
3.12	DIVERSION	DV	[Symbol]	3.31	TEMPORARY SEEDING	TS	[Symbol]
3.13	TEMPORARY SEDIMENT TRAP	ST	[Symbol]	3.32	PERMANENT SEEDING	PS	[Symbol]
3.14	TEMPORARY SEDIMENT BASIN	SB	[Symbol]	3.33	SODDING	SD	[Symbol]
3.15	TEMPORARY SLOPE DRAIN	TSB	[Symbol]	3.34	BERMUDA GRASS AND ZOYSIAURASS ESTABLISHMENT	BZ	[Symbol]
3.16	PAVED FLUME	PF	[Symbol]	3.35	MULCHING	MU	[Symbol]
3.17	STORMWATER CONVEYANCE CHANNEL	SCC	[Symbol]	3.36	SOIL STABILIZATION BLANKETS AND MATTING TREES, SHRUBS, VINES AND GROUND COVERS	SM	[Symbol]
3.18	OUTLET PROTECTION	OP	[Symbol]	3.37	TREE PRESERVATION AND PROTECTION	TP	[Symbol]
3.19	RIPRAP	RR	[Symbol]	3.38			
				3.39	DUST CONTROL	DC	[Symbol]

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.
- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED, AS FAR AS PRACTICAL.
- IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.
- FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED.
- 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.
- DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. 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.
- SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
- STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 15 SINGLE FAMILY DWELLINGS WITH THE REQUIRED ROAD AND UTILITY WORK.

EXISTING SITE CONDITIONS
THE CURRENT SITE IS MODERATELY WOODED AND MODERATE TO STEEPLY SLOPED. THE SITE CURRENTLY DRAINS TO THE NORTH TO AN EXISTING DETENTION FACILITY.

ADJACENT AREAS
THE SITE IS BORDERED TO THE NORTHWEST BY ROUTE 220, TO THE SOUTHWEST BY PREVIOUS PHASES OF THE SOUTHWOOD DEVELOPMENT, TO THE SOUTHEAST BY FRIENDSHIP MANOR RETIREMENT COMMUNITY PROPERTY, AND TO THE NORTHEAST BY UNDEVELOPED PROPERTY.

OFFSITE AREAS
NO OFFSITE FILL OR BORROW SITES ARE COVERED BY THIS EROSION AND SEDIMENT CONTROL PLAN.

SOIL INFORMATION
MOST OF THE SITE CONSIST OF SOIL GROUPS 15D AND 15E OF USDA SOIL GROUPS. THESE GROUPS GENERALLY CONSIST OF SAND LOAM WITH STEEP SLOPES.
SOILS INCLUDED IN THIS GROUP ARE SHALLOW, WELL DRAINED CHISWELL SOILS AND THE MODERATELY DEEP, WELL DRAINED LITZ SOILS. PLEASE NOTE THAT SOIL INFO HAS BEEN TAKEN DIRECTLY FROM USDA SOIL MAPS AND NO FIELD INVESTIGATION WAS PROVIDED.

EROSION AND SEDIMENT CONTROL MEASURES
CONSTRUCTION ENTRANCE (3.02) - A STONE CONSTRUCTION ENTRANCE WILL BE INSTALLED TO MINIMIZE THE AMOUNT OF MUD TRANSPORTED INTO EXISTING ROADS.

CONSTRUCTION ROAD STABILIZATION (3.03) - CONSTRUCTION ROAD STABILIZATION WILL BE INSTALLED ON NEW ROADS AS SOON AS THEY ARE BROUGHT TO SUBGRADE TO MINIMIZE EROSION OF THE ROAD BED.

SILT FENCE (3.05) - SILT FENCE WILL BE INSTALLED AT THE LOWER ENDS OF THE PROJECT SITE TO INTERCEPT SEDIMENT LADEN RUN-OFF PRIOR TO EXITING THE SITE.

INLET PROTECTION (3.07) - INLET PROTECTION WILL BE INSTALLED AT ALL INLETS TO MINIMIZE SEDIMENT BUILDUP WITHIN THE PIPE.

DIVERSION DIKE (3.09) - DIVERSION DIKES WILL BE INSTALLED TO DIVERT CLEAN WATER AROUND THE CONSTRUCTION SITE AND SEDIMENT LADEN RUNOFF INTO THE SEDIMENT BASIN.

TEMPORARY SEDIMENT TRAP (3.13) - TEMPORARY SEDIMENT TRAPS WILL BE INSTALLED TO ALLOW SEDIMENT TO SETTLE OUT OF THE RUNOFF PRIOR TO EXITING THE SITE.

OUTLET PROTECTION (3.18) - OUTLET PROTECTION WILL BE INSTALLED AT THE OUTLET ENDS OF ALL STORM DRAIN CULVERTS TO MINIMIZE SCOUR AND DOWNSTREAM EROSION.

SOIL STABILIZATION BLANKET (3.36) - SOIL STABILIZATION BLANKETS WILL BE APPLIED TO ALL CUT AND FILL AREAS WITH SLOPES GREATER THAN 3:1.

PERMANENT STABILIZATION
ALL AREAS ONSITE WHICH WILL NOT RECEIVE BUILDINGS OR PAVEMENT MUST RECEIVE PERMANENT SEEDING AS SOON AS THOSE AREAS REACH FINAL GRADE. FOR PERMANENT SEEDING SPECIFICATIONS PLEASE SEE THIS SHEET.

STORMWATER MANAGEMENT

THE DEVELOPMENT OF SPOUTWOOD SECTION 5 WAS PLANNED AND ACCOUNTED FOR DESIGN AND CONSTRUCTION OF A STORMWATER MANAGEMENT FACILITY SHOWN ON PLANS ENTITLED "SOUTHWOOD, SECTION NO. 1" BY LUMSDEN ASSOCIATES, P.C., DATED 30 SEPTEMBER 1996.

MAINTENANCE
ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. IN PARTICULAR:

- THE SEDIMENT TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP. CLEAN OUT AS NECESSARY TO MAINTAIN DESIGN VOLUMES.
- OUTLET PROTECTION WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF STONE IS CLOGGED BY SEDIMENT, IT WILL BE REMOVED AND CLEANED OR REPLACED.
- THE SILT FENCE WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT BUILDUP REACHES THE MIDWAY POINT OF THE SILT FENCE.
- ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS REQUIRED TO ACHIEVE A GOOD STAND OF GRASS.

PS PERMANENT SEEDING MIXTURE

ACCOMPANY THE INSPECTOR (S).
Permanent Seeding:

Minimum Core Lawn: Total Lb.
Per Acre

Commercial or Residential: 200-250 Lb./Acre
Kentucky 31 or turf type tall fescue: 90-100%
Improved perennial rye grass*: 0-10%
Kentucky Bluegrass: 0-10%

High Maintenance Lawn:
Minimum of three (3) up to five (5) varieties
of blue grass from approved list for use in VA: 125 Lb./Ac.

General Slope (3:1 or Less):
Kentucky 31 Fescue: 128 Lb./Ac.
Red Top Grass: 2 Lb./Ac.
Seasonal Nurse Crop**: 20 Lb./Ac.
150 Lb./Ac.

Low Maintenance Slope (Steeper than 3:1):
Kentucky 31 Fescue: 108 Lb./Ac.
Red Top Grass: 2 Lb./Ac.
Seasonal Nurse Crop**: 20 Lb./Ac.
Crownvetch***: 20 Lb./Ac.
150 Lb./Ac.

*Perennial rye grass will germinate faster and at a lower soil temperature than fescue, thereby providing cover and erosion resistance for seedbed.

**Use seasonal nurse crop in accordance with seeding dates as stated below:
March, April thru May 15: Annual Rye
May 16th thru August 15th: Fescue/Millet
August 16 thru Sept, Oct: Annual Rye
Nov. Thru Feb.: Winter Rye

***If Flatpea is used, increase to 30 Lb./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 Lb./acre in mixes.

Lime shall be applied at a rate of 2 tons/acre pulverized agricultural grade limestone (90 lbs/1000 ft²)

Fertilizer shall be applied at a rate of 1000 lbs/acre 10-20-10 or equivalent nutrients (23 lbs/ 1000ft²)

Straw mulch shall be applied to all permanently seeded areas at a rate of ninety (90) pounds per one thousand square feet over the seeded area. Straw mulch shall be anchored or tacked down with string or other approved materials.

The contractor shall inspect seeded areas 2 weeks after seeding, at which time sparse areas shall be prepared and reseeded to establish permanent cover on all disturbed areas.

Any areas not achieving adequate stabilization within one year will be restabilized.

Permanent seeding shall be in accordance with specification 3.32 of the 1992 Virginia Erosion & Sediment Control Handbook.

TS TEMPORARY SEEDING MIXTURE

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50 - 100
FEB. 16 - APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 - 100
MAY. 1 - AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

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COMMONWEALTH OF VIRGINIA
THOMAS C. DALE
No. 033002
4/22/05
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL DETAILS

SECTION NO. 5 THE COACH HOMES OF SOUTHWOOD PREPARED FOR BOONE HOMES, INC. SITUATED IN THE CITY OF ROANOKE, VIRGINIA

REVISIONS	DESCRIPTION	DATE	BY	CHKD	APP'D
1					
2					
3					
4					
5					

DATE: April 22, 2005
SCALE:
COMMISSION NO.: 04-282
SHEET 11 OF 11