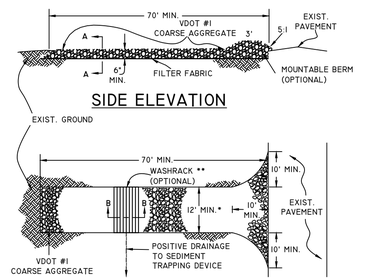
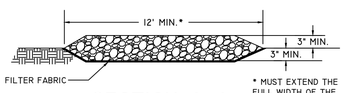
STONE CONSTRUCTION ENTRANCE

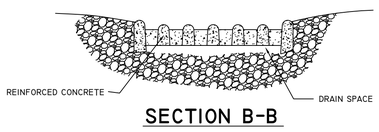
C-SCM-03 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)



** MUST EXSTEND THE FULL WIDTH OF THE INGRESS AND EGRESS OPERATION

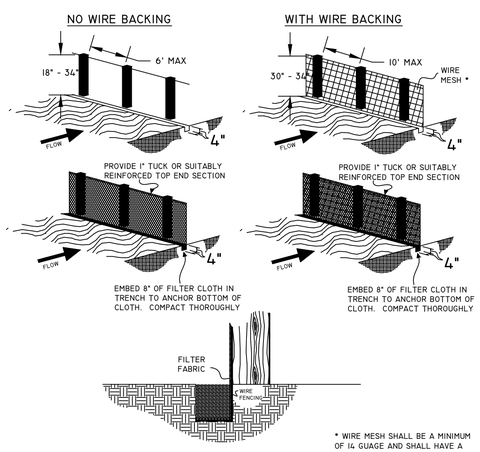


* MUST EXTEND THE FULL WIDTH OF THE INGRESS AND EGRESS OPERATION



SILT FENCE

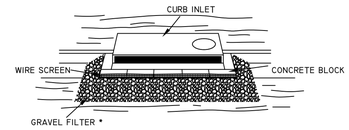
C-PCM-04 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)



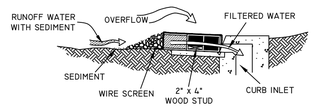
* WIRE MESH SHALL BE A MINIMUM OF 16 GUAGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6".

BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER

C-SCM-04 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)



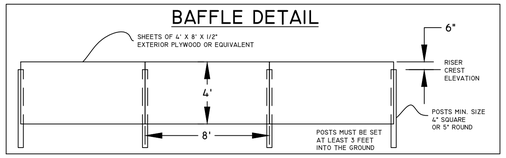
* GRAVEL SHALL BE VDOT #3, #357 #5 COARSE AGGREGATE



SPECIFIC APPLICATION

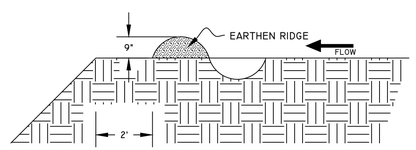
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

BAFFLE DETAIL



TEMPORARY FILL DIVERSION

C-ECM-06 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)

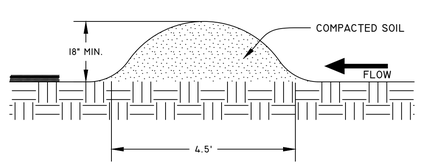


THE DIVERSION SHALL BE AT LEAST 2' INSIDE OF THE TOP EDGE OF FILL

THE SUPPORTING RIDGE SHALL BE CONSTRUCTED WITH A UNIFORM HEIGHT ALONG ITS ENTIRE LENGTH TO PREVENT BREACHING.

TEMPORARY DIVERSION DIKE

C-ECM-04 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)

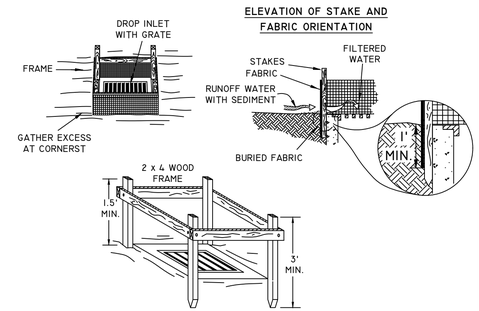


SIDE SLOPES MUST BE 2:1 OR FLATTER

TEMPORARY OR PERMANENT SEEDING AND MULCH MUST BE APPLIED IMMEDIATELY UPON CONSTRUCTION

SILT FENCE DROP INLET PROTECTION

C-SCM-04 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)

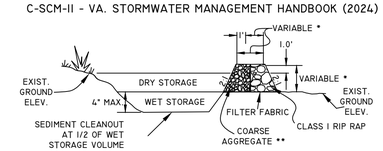


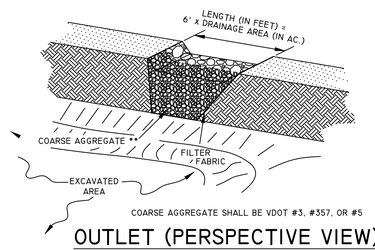
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5%) WHERE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 CFS ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

TEMPORARY SEDIMENT TRAP

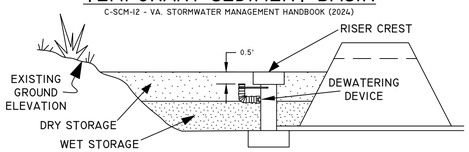
C-SCM-11 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)





TEMPORARY SEDIMENT BASIN

C-SCM-12 - VA. STORMWATER MANAGEMENT HANDBOOK (2024)



CHANNEL PROTECTION COMPLIANCE SUMMARY TABLE

Discharge Point	Conditions within Limits of Analysis	Applicable Channel Protection Criteria											
		Criteria A				Criteria B	Criteria C						
		Q_2	Q_{cap}	V_2	$V_{allowable}$	Project consistent with design of restored system	$Q_{developed}$	$RV_{developed}$	IF	$Q_{pre\text{-}developed}$	$RV_{pre\text{-}developed}$	$Q_{developed} \times RV_{developed}$	≤	IF × $Q_{pre\text{-}developed} \times RV_{pre\text{-}developed}$
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	
	☐ Manmade ☐ Restored ☐ Natural					☐ YES							≤	

Channel Protection Criteria

A. The stormwater conveyance system conveys the post-development peak flow rate from the two-year 24-hour storm event without causing erosion of the system (V_2 must be shown to be non-erosive)

B. The development project, in combination with other stormwater runoff, is consistent with the design parameters of the restored stormwater conveyance and the restored stormwater conveyance system is functioning as designed

C. The discharge from the development satisfies the Energy Balance requirement

$$(Q_{developed} \times RV_{developed}) \leq IF \times (Q_{pre\text{-}developed} \times RV_{pre\text{-}developed})$$

where:

$Q_{developed}$ = the peak flow rate of runoff from the developed site
$RV_{developed}$ = the volume of runoff from the site based on developed conditions
IF = an improvement factor (0.8 for sites > 1 acre, 0.9 for sites ≤ 1 acre)
$Q_{pre\text{-}developed}$ = the peak flow rate of runoff from the pre-developed site
$RV_{pre\text{-}developed}$ = the volume of runoff from the site based on pre-developed conditions

FLOOD PROTECTION COMPLIANCE SUMMARY TABLE

Discharge Point	Conditions within Limits of Analysis	APPLICABLE FLOOD PROTECTION CRITERIA				
		Criteria A		Criteria B		
		$Q_{10\text{-}post}$	$Q_{capacity}$	$Q_{10\text{-}post}$ (Required for Criteria B.1 and B.2)	$Q_{capacity}$ (Required for Criteria B.1)	$Q_{10\ pre\text{-}developed}$ (Required for Criteria B.2)
	☐ No Localized Flooding ☐ Existing Localized Flooding					
	☐ No Localized Flooding ☐ Existing Localized Flooding					
	☐ No Localized Flooding ☐ Existing Localized Flooding					
	☐ No Localized Flooding ☐ Existing Localized Flooding					
	☐ No Localized Flooding ☐ Existing Localized Flooding					
	☐ No Localized Flooding ☐ Existing Localized Flooding					
	☐ No Localized Flooding ☐ Existing Localized Flooding					

Flood Protection Criteria

A. Where localized flooding does not currently exist, the 10-year 24-hour storm event must be confined to the most restrictive stormwater conveyance system within the limits of analysis.

B. Where localized flooding exists within the limits of analysis, the 10-year 24-hour storm event must:
   a. be confined within the most restrictive stormwater conveyance system within the limits of analysis (detention or downstream improvements may be provided to meet this criterion), or
   b. be released at a rate that is less than the pre-development peak flow rate from the 10-year 24-storm event.

SEDIMENT TRAPS

Trap #	Drainage Area (Acres)	Wet Storage			Dry Storage			Outlet Length (Feet)	Bottom Elevation	Top of Berm Elevation	Top of Berm Width	Dimensions (L x W)
		Volume Required (Cu. Yd.)	Volume Provided (Cu. Yd.)	Elevation	Volume Required (Cu. Yd.)	Volume Provided (Cu. Yd.)	Elevation					

SEDIMENT BASINS

Basin #	Drainage Area (Acres)	Wet Storage		Dry Storage		Bottom Elevation	Riser Crest Elevation	Riser Diameter	Dewatering Device Elevation	Dewatering Device Diameter	25- Yr. Storm Elevation	Emergency Spillway Elevation	Anti-Vortex Device Diameter	Top of Dam Elevation	Top of Dam Width	Baffle			Barrel			
		Volume Required (Cu. Yd.)	Volume Provided (Cu. Yd.)	Volume Required (Cu. Yd.)	Volume Provided (Cu. Yd.)											Flowlength to Width Ratio	Baffle Length	Top of Baffle	Pipe Length	Pipe Diameter	Invert In	Invert Out

Version: 7-8-2015

Erosion and Sediment Control Standard Details / Calculations - Part II B - Compliance

Department of Environment & Land Development