DINWIDDIE COUNTY

PLANNING, ZONING, CODE COMPLIANCE AND ENVIRONMENTAL

SHEET FLOW TO VEGETATED FILTER STRIP OR CONSERVED OPEN SPACE

Plan Name: _____ Date Submitted: _____

The following checklist only identifies the information and details that must be included in the SWM plan

Type of Sheet Flow: ☐ Vegetated Filter Strip ☐ Conserved Open Space

MINIMUM DESIGN CRITERIA

CONSERVED OPEN SPACE:

	SELECT
The groundcover must be undisturbed soils with native vegetation.	◯
The slope for the first 10 feet of filter cannot exceed 2%, and	◯
If the slope is 0.5% - 3%, the width must be at least 35 feet; or	◯
If the slope is 3% - 6%, the width must be at least 50 feet.	◯
Must be located outside of the site's limits of disturbance and protected by ESC controls.	◯
Adjacent to stream or wetland buffer or forest conservation area	◯
Length of Engineered Level Spreader lip = 13 l.f. per each 1 cfs of inflow if area has 90% cover.	◯
Length of Engineered Level Spreader lip = 40 l.f. per 1 cfs for forested or re-forested areas.	◯
Gravel Diaphragm located at top of filter.	◯

VEGETATED FILTER STRIP:

	SELECT
Amended soils and dense turf cover or landscaped with herbaceous cover, shrubs, and trees.	◯
The slope for the first 10 feet of filter cannot exceed 2%, and	◯
If the slope is 1% - 4%, the width must be at least 35 feet; or	◯
If the slope is 4% - 6%, the width must be at least 50 feet; or	◯
If the slope is 6% - 8%, the width must be at least 65 feet.	◯
Prevent soil compaction by heavy equipment	◯
Treat small areas of impervious cover (5,000 sf.) and/or turf-intensive land uses (sports fields, golf courses) close to source.	◯
Composite Soil amendments for hydrologic soil groups B, C, and D. (See VA DEQ Stormwater Design Specification No. 2 Section 6.1 of the BMP Clearinghouse.)	◯
Gravel Diaphragm located at top of filter.	◯
Permeable Berm located at toe of filter.	◯
Must be planted to achieve 90% grass/herbaceous cover after second growing season.	◯

LEVEL SPREADER:

	SELECT
Lip should be concrete, wood, pre-fabricated metal, with a well anchored footer, or other accepted rigid, non-erodible material. The lip must be level.	◯
The sides and bottom of the plunge pool excavation shall be lined with filter fabric underlining and Class AI rip rap in accordance with the Virginia Erosion and Sediment Control Handbook. State Minimum Standards and Specifications Number 3.19.	◯
The width of the level spreader channel on the up-stream side of the level lip should be 3 times the diameter of the inflow pipe, and the depth should be 9 inches or one-half the culvert diameter, whichever is greater.	◯
Level spreader placed 3 to 6 inches above the downstream natural grade elevation to avoid turf buildup.	◯
3 foot long section of VDOT #3 stone, underlain by filter fabric, is installed just below the spreader to transition from level spreader to natural grade.	◯
May be necessary to stabilize areas down-gradient from level spreader with temporary (VDOT EC-2) or permanent (VDOT EC-3) materials in accordance with the calculated velocity and material specifications, along with seeding and stabilization in conformance with the Virginia Erosion and Sediment Control Handbook.	◯

GRAVEL DIAPHRAGM:

	SELECT
Pea Gravel (#8 or ASTM equivalent) or if contributing drainage area is steep (6% slope or greater), then use clean bank-run VDOT #57 or ASTM equivalent (1 inch max.).	◯
Pea gravel diaphragms is created by 2 foot wide and 1 foot deep trench that runs on the same contour at the top of the filter strip.	◯
Sheet flow travels over impervious area then drops 3 inches onto the gravel diaphragm.	◯
Filter fabric is placed between pea gravel and the underlying soil trench.	◯

PERMEABLE BERM:

	SELECT
Wide and shallow trench, 6 to 12 inches deep, to be excavated at the upstream toe of the berm, parallel with the contours.	◯
Media for the berm consist of 40% excavated sand, and 20% pea gravel.	◯
The berm should be 6 to 12 inches in height and is to be located down-gradient of the excavated depression and have gentle side slopes to promote easy mowing.	◯

PLAN REQUIREMENTS

	YES
Provide the following formation regarding Sheet Flow to Conserved Open Space / Vegetated Filter Strip:	◯
- Contributing drainage area boundaries, acreage, and land cover; - Topography of site including the SWM facility and any pre-treatment practices; - A soil map for the site and area of the facility; - The areas of the site compensated for in the water quality calculations.	◯
Provide profiles and section views that show the following:	◯
- Inflow pipe/channel inverts; - Side slopes; - Weir elevation; - Elevation of dissipater storage section bottom; - Elevation of conserved open space below weir.	◯

	YES
Provide a plan view showing:	◯
- Dimensions; - Length of weir; - Flow length through facility.	◯
SWM facilities cannot be located within the public right-of-way limits.	◯
Provide summary of the long term maintenance requirements for the SWM facility on the SWM plan.	◯
The sequence of construction must address the SWM facility installation and appropriate inspections, including: initial site preparation, excavation/grading, and installation of the weir. We recommend that County staff be involved in these inspections.	◯
The sequence of construction must clearly state that a construction record drawing and certification that the stormwater management facility has been constructed in accordance with the approved plan must be submitted to the County and approved prior to Erosion Control Bond (ECB) release.	◯
Access requirements:	◯
- An access 20 feet min. in width must be provided to the SWM facility from a public road; - An access area 20 feet in width must be provided around the SWM facility that encompasses the highest continuous contour within the SWM facility; - Shall not exceed a grade or cross-slope of 12:1; - Maintenance easement must encompass facility at highest continuous contour; - No obstacles or vegetation that would hinder access of maintenance equipment; - Constructed of load bearing materials; - Must provide sufficient turn-around area.	◯

COMPUTATIONS

	YES
Hydrologic analysis must be based on a 24-hour storm event using site specific rainfall precipitation frequency data recommended by the U.S. National Oceanic and Atmospheric Administration (NOAA) Atlas 14.	◯
Provide the post-development hydrologic for the 10-year peak discharge for all discharge points entering the facility	◯

Engineer Signature:_____ Date:_____