



County Stormwater Pollution Prevention Plan (SWPPP) Design Plan Checklists

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GENERAL INFORMATION

Project Name: _____

Address/County Parcel/GPIN: _____

County Plan No. (if known): _____

Owner/Applicant/Permittee: _____

Plan Preparer: _____

Phone No.: _____ Email: _____

Owner/Applicant/Permittee: _____

Other information submitted with the application in addition to this checklist (Check all that apply):

- Design or Construction Drawings (Plans, Profiles, Details, etc.)
- Erosion & Sediment Control Plan (Plans, Details, etc.)
- Erosion & Sediment Control Plan Design Report
- Stormwater Management Design Plan (Plans, Profiles, Details, etc.)
- Stormwater Management Design Report
- Pollution Prevention Plan
- Other, please list: _____



Stormwater Pollution Prevention Plan (SWPPP) Erosion and Sediment Control Design Plan Checklist Page 1

I. GENERAL:

Yes No N/A

- FAMILIARITY* with current versions of Chapter 8 and Chapter 23 of the County Code, Virginia Erosion and Sediment Control law and regulations, and the Virginia Erosion and Sediment Control Handbook (VESCH).

- LAND DISTURBING/STORMWATER CONSTRUCTION PERMIT AND SILTATION AGREEMENT* with surety is required for the project.

- REGISTRATION STATEMENT* is included in the permit application, consistent with the requirements for a General VPDES Permit for Discharge of Stormwater from Construction Activities (VAR10) and the Virginia Stormwater Management Program (VSMP) Regulations.

- VARIANCE* if necessary, requested in writing, for the plan approving authority to waive or modify any of the minimum standards and specifications of the VESCH or VESCP/VSMP deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

- RESPONSIBLE LAND DISTURBER (RLD)* is identified for the project and will be disclosed prior to issuance of a local VESCP and/or VSMP authority permit for the project.

II. NARRATIVE:

Yes No N/A

- PROJECT DESCRIPTION* briefly describing the nature and purpose of the land disturbing activity (LDA) and the acreage to be disturbed.

- EXISTING SITE CONDITIONS* description of existing topography, land use, cover and drainage patterns at the site.

- ADJACENT AREA* descriptions of neighboring onsite or offsite areas such as streams, lakes, property, roads, etc. and the potential for impacts due to concentrated flow or runoff from the land disturbing/stormwater construction activity.

- OFFSITE DISTURBED AREA* descriptions of proposed borrow sites, waste or surplus areas, utility extensions, and erosion and sediment control measures to be implemented.

- SOILS DESCRIPTION* briefly summarizing site, disturbed area, and drainage basin soils including name, unit, hydrologic soil group (HSG) classification, surface runoff potential, erodibility, permeability, depth, texture, structure, erosion hazards, shrink-swell potential, limitations for use, and anticipated depths to bedrock and the seasonal water table, as applicable.

- CRITICAL AREAS* on the site which many have potentially serious erosion and sediment control problems and special considerations required (ie. steep slopes, hydric soils, channels, springs, sinkholes, water supply reservoirs, groundwater recharge areas, etc.).

Yes No N/A

- PROPOSED EROSION & SEDIMENT CONTROL MEASURES* inclusive to the specific erosion and sediment control plan as proposed for the land disturbing activity. Measures should be consistent with those proposed on the site drawings. Address general use, installation, limitations, sequencing, and maintenance requirements for each control measure.
- STABILIZATION MEASURES* required for the site, either temporary or permanent, and during and following construction including temporary and permanent seeding and mulching, paving, stone, soil stabilization blankets and matting, sodding, soil amendment or restoration, landscaping or special stabilization techniques to be utilized.
- TOPSOIL STOCKPILE OPERATION* plan in accordance with Section 24-46 of the County Zoning ordinance.
- STORMWATER MANAGEMENT CONSIDERATIONS* for the site, either of temporary or permanent nature, and strategies, sequences and measures required for control. May reference the stormwater management plan for the site, if prepared, for permanent stormwater management facilities and control of drainage once the site is stabilized.

III. SITE PLAN:

Yes No N/A

- VICINITY MAP* locating the site in relation to the surrounding area. Include any major landmarks which might assist in physically locating the site.
- INDICATE NORTH* direction in relation to the site.
- LIMITS OF WORK (DISTURBANCE/CLEARING AND GRADING)* for the site including that required for access, implementation of erosion and sediment control measures, laydown and stockpile areas, and utilities or utility connections.
- DISTURBED AREA ESTIMATES* in acres or square feet for the project.
- HUC CODE* identification of the county watershed or subwatershed and hydrologic unit code (HUC) code based on Virginia’s 6th order National Watershed Boundary Dataset (NWBD) hydrologic units (VAHU6) for which the project is situated in.
- EXISTING TOPOGRAPHY* or *CONTOURS* for the site at no more than five foot contour interval.
- FINAL TOPOGRAPHY* or *CONTOURS* of proposed site grading in accordance with the design plan which indicates changes to existing topography and drainage patterns at no more than two foot contour interval (or one foot contours where required).
- EXISTING AND PROPOSED SPOT ELEVATIONS* to supplement existing and proposed contours, topography or site grading information. Spot elevations may replace final contours in some instances, especially if terrain is in a low lying area or relatively flat.

Yes No N/A

- EXISTING VEGETATION* including existing tree lines, grassed or unique vegetation areas.
- EXISTING SITE FEATURES* including roads, buildings, homes, utilities, streams, fences, structures and other important surface features of the site.
- SOILS MAP* with soil symbols, boundaries and legend in accordance with the current Soil Survey of James City and York Counties and the City of Williamsburg, Virginia. The NRCS Web Soil Survey (WSS) can be used for this item.
- ENVIRONMENTAL INVENTORY* in accordance with Section 23-10(2) of the County Code. Inventory generally includes tidal shores and wetlands, non-tidal wetlands, resource protection area, hydric soils, and slopes steeper than 25 percent. For wetlands, provide a copy of issued permits or satisfactory evidence that appropriate permits are being pursued for the entire project.
- 100-YEAR FLOODPLAIN* or any special flood hazard areas or flood zones based on appropriate Federal Management Agency Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBM)s of James City County, Virginia.
- DRAINAGE AREAS* for offsite and onsite areas, existing or proposed as applicable. Include drainage divides and directional labels for all subareas at points of interest and size (in acres), weighted runoff coefficient or curve number, and times of concentration for each subarea.
- CRITICAL EROSION OR HIGHLY ERODIBLE SOIL AREAS* which require special consideration or unique erosion and sediment control measures. Refer to the VESCH, Chapter 6 for criteria.
- DEVELOPMENT PLAN* for the site showing all improvements and impervious cover such as buildings, structures, parking areas, access roadways, above and below ground utilities, stormwater management and drainage facilities, trails or sidewalks, amenities and proposed vegetation and landscaping.
- LOCATION OF PRACTICES* proposed for erosion and sediment control, tree protection, and temporary stormwater management due to land disturbance activities at the site. Use standard abbreviations, labels and symbols consistent for plan views using standard keys and symbols based on minimum standards and specifications found in Chapter 3 of the VESCH.
- TEMPORARY STOCKPILE AREAS* or staging and equipment storage areas as required for onsite or offsite construction activities or indicate that none are anticipated for this project.
- OFFSITE LAND DISTURBING AREAS* including borrow sites, waste areas, utility extensions, etc. and required erosion and sediment controls. If none are anticipated for the project, then indicate on the plans by general or erosion and sediment control notes.
- DETAILS* or alternately, appropriate reference to current minimum standards and specifications of the VESCH for each measure proposed for the project. Non-modified, standard duplicated details (silt fence, diversion dikes, etc.) may be referenced to the current version of the VESCH. Specific dimensional or modified standards (basins, traps, outlet protections, check dams, etc.) require detail sheet. Schedules or tables may be used for multiple site measures such as sediment traps, basins, channels, slope drains, etc. Any modification to standard details should be clearly defined, explained and illustrated.

Yes No N/A

- MAINTENANCE PLAN* or alternately, appropriate reference to current minimum standards and specifications of the VESCH, outlining the inspection frequency and maintenance requirements for all erosion and sediment control measures proposed for the project.
- TRENCH DEWATERING* methods and erosion and sediment (filtering) methods if dewatering is anticipated for the project.
- SEQUENCE OF CONSTRUCTION* outlining the anticipated sequence for clearing and grubbing, installation of erosion and sediment controls and site, grading and utility work to be performed for the project by the site contractor.
- PHASING PLAN* if required for larger project sites that are to be developed in stages or phases.
- SOIL STOCKPILE AND OPERATION PLAN* if required in accordance with Section 24-46 of the Zoning Ordinance.
- STANDARD COUNTY STORMWATER POLLUTION PREVENTION PLAN NOTES* latest version, are required to be placed on the erosion and sediment control plan sheets or the plan set.
- PROFESSIONAL SEAL AND SIGNATURE* required on final and complete approved plans, drawings, technical reports and specifications.

IV. CALCULATIONS:

Yes No N/A

- CALCULATIONS AND COMPUTATIONS* associated with hydrology, hydraulics, and design of proposed temporary and permanent erosion and sediment control measures including sediment traps and basins, diversions, stormwater conveyance channels, culverts, slope drains, outlet protections, etc. Computations are not required on the construction plan sheets or plan set and may be attached in a supplemental erosion and sediment control plan design report, if presented in a clear and organized format.
- TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET* submitted for each temporary sediment basin along with schematic or sketch cross-section showing applicable design and construction data, storage volumes (wet-dry), dimensions, and elevations. Peak design runoff to be based on the 2- or 25-year design storm event based on maximum disturbed site conditions (existing, interim or proposed conditions) in accordance with Minimum Standard 3.14 of the VESCH.

(Reserved)



Stormwater Pollution Prevention Plan (SWPPP) Stormwater Management Design Plan Checklist

I. GENERAL:

Yes No N/A

- FAMILIARITY* with current versions of the Chapter 8 and Chapter 23 of the County Code, the Virginia Stormwater Management Act, the Virginia Stormwater Management Program Regulations and the Virginia construction general permit program, including but not limited to the Virginia Erosion and Sediment Control Handbook (VESCH); the Virginia BMP clearinghouse website; the Virginia Runoff Reduction Method (VRRM), the Virginia DEQ Stormwater Design Specification (15 nonproprietary BMPs); Virginia DEQ guidelines for use of Manufactured Treatment Devices (MTDs); and the Virginia Stormwater Management Handbook (VSMH).

- FAMILIARITY* with Section 8-25, Stormwater Management Plan Contents of Plan requirements which outlines required elements of complete stormwater management plans.

- FAMILIARITY* with Part IIB and Part IIC technical criteria of the Virginia Stormwater Management Program (VSMP) regulations and any DEQ issued guidance documents related to grandfathering provisions for stormwater management.

- REGISTRATION STATEMENT* is included in the permit application, consistent with the requirements for a General VPDES Permit for Discharge of Stormwater from Construction Activities (VAR10) and the Virginia Stormwater Management Program (VSMP) Regulations.

- FAMILIARITY* with Section 8-25, Stormwater Management Plan Contents of Plan requirements which outlines required elements of complete stormwater management plans.

- WAIVER OR EXCEPTION* if necessary, requested in writing, for the plan approving authority to waive or except the requirements of Chapter 23, Chesapeake Bay Preservation ordinance in accordance with procedure established in Sections 23-14 through 23-17 of the ordinance. Applies to this review case only.

- VARIANCE REQUEST* if necessary, requested in writing for the plan approving authority to waive or modify any of the minimum standards and specifications of the VESCH; or applicable provisions of Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program, deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

- PROFESSIONAL SEAL AND SIGNATURE* required on final and complete approved stormwater management plans, drawings, technical reports and specifications.

- ADMINISTRATIVE COMPLETENESS CHECKLIST* provided in accordance with Section 8-25 and 8-27 of County Code and the Virginia Stormwater Management Program regulations. This checklist is available online. *ordinance reference section 8-27(A)*

Yes No N/A

- VRRM WORKSHEET* to ensure the stormwater management plan for the project complies with the Virginia Runoff Reduction Method (VRRM) for new development or redevelopment. The summary worksheets as provided to meet this requirement must be of a size and scale and are readable and able to be easily reproduced (ie. 11 x 17, etc.). *ordinance reference section 8-25(B)(8)*

- LETTER OF AVAILABILITY* if the owner or operator intends to use offsite compliance options consistent with section 8-28 of the County Code and 9VAC25-870-63, 9VAC25-870-66 and 9VAC25-870-69 of the Virginia Stormwater Management regulations and §62.1-44.15:35 of the Code of Virginia; *ordinance reference section 8-25(B)(10)*.

- DECLARATION OF COVENANTS/INSPECTION - MAINTENANCE AGREEMENT* is required to be prepared and executed with the County for the project; *ordinance reference section 8-29(A)*.

- FEMA FIRM PANEL* reference with designated special flood hazard areas or zone designations associated with the site, as applicable, and in accordance with the overlay district requirements from the Zoning ordinance.

- IDENTIFIED AREAS OF LOCALIZED FLOODING* exist on the plan in accordance with definitions in the Chapter 8 of the County Code. Please list: _____

- CONTACT INFORMATION* including the name, address, email and telephone number of the owner and the tax map reference number and parcel number of the property or properties affected; *ordinance reference section 8-25(B)(3)*.

- HUC CODE* identification of the county watershed or subwatershed and hydrologic unit code (HUC) code based on Virginia’s 6th order National Watershed Boundary Dataset (NWBD) hydrologic units (VAHU6) for which the project is situated in; *ordinance reference section 8-25(B)(2)*.

- DRAINAGE AREA MAP* at a maximum scale of 1"=200' scale showing drainage area boundaries for pre- and post- development conditions and associated time of concentration flow paths. Labels to include drainage area size, runoff coefficient or curve number, and time of concentration for each subarea shown on the map; *ordinance reference section 8-25(B)(1)*.

- SOILS MAP* with soil symbols, boundaries and legend in accordance with the current Soil Survey of James City and York Counties and the City of Williamsburg, Virginia with approximate locations of the project site, BMPs and applicable drainage basins. The NRCS Web Soil Survey (WSS) can be used for this item.

- STORMWATER MANAGEMENT NARRATIVE* that includes a description of current site conditions and final conditions, including the amount of disturbed area, the amount of proposed impervious cover, and the percent of impervious of the site. The narrative shall be in in a brief and simple format and provides general descriptions about the project, location; site and drainage basin and soil characteristics; receiving water or drainage facility; existing site and drainage basin conditions (topography, land use, cover, slopes, etc.); proposed site development; proposed stormwater management and drainage plan including BMP type(s) selected; summary of hydrology and hydraulics; maintenance program; and any special assumptions utilized for development of the stormwater management and drainage design plan or computations; *ordinance reference section 8-25(B)(4)* .

Yes No N/A

- GENERAL DESCRIPTION* of proposed stormwater management facilities and the mechanism through which the facilities will be operated and maintained after construction is complete; *ordinance reference section 8-25(B)(5)*.
- PROPOSED STORMWATER MANAGEMENT FACILITIES* including the type of facilities; location by geographic coordinates, latitude and longitude; drainage area and impervious cover treated by facilities (in acres); and surface waters into which the facility will discharge; *ordinance reference section 8-25(B)(6)*.
- TEMPORARY STORMWATER MANAGEMENT* (if applicable) for control of stormwater runoff encountered during construction activities in addition to measures provided in the erosion and sediment control plan or stormwater management/drainage plan for the site. Adequate protection measures or sequencing provided.
- BMP MODIFICATION PLAN* clearly defined for temporary sediment control structures which will be converted to permanent SWM/BMP structures. May include appropriate hydrologic and hydraulic computations, conversion sequences, and cleanout information or details. Normally related to primary control structures associated with dry detention or wet retention ponds and normally not permitted for filtering or infiltration type facilities, unless adequately protected during the land disturbing phase of construction with structural erosion and sediment control measures.
- HYDROLOGIC AND HYDRAULIC COMPUTATIONS* or sometimes referred to as a stormwater management and drainage design report, including runoff characteristics and compliance with environmental site design (ESD), runoff reduction and pollutant removal, water quality and quantity (flood and stream channel protection) requirements, presented in a clear and organized format. Normally presented in a bound 8-1/2 x 11 inch size report format that includes a title sheet with date, project identification, owner and preparer information, table of contents, narrative, summaries and computations as required. Computations may include backwater, closed conduit, headwater, hydraulic, hydraulic grade line, hydrology, inlet, open channel, storm sewer, water quality, extended detention or stream channel protection and multi-stage storm routing calculations, as applicable, for the project. Computation data may include hand or computer generated computations, maps or schematics. All information should be presented in a clear, easy to follow format and all information presented and contained within the report should closely match construction plan information; *ordinance reference section 8-25(B)(7)*.
- PLAN VIEW* at 1 inch = 50 ft. scale or less (1" = 40', 1" = 30', etc.)

Yes No N/A

- North arrow and plan legend.
- Property lines.
- Adjacent property information.
- Existing site features and existing impervious cover areas.
- Impervious cover tabulations.
- All contributing drainage areas; *ordinance reference section 8-25(B)(9)*.
- Current land use including existing structures, roads, and locations of known utilities and easements; *ordinance reference section 8-25(B)(9)*.
- Existing drainage facilities (natural or manmade).

Yes No N/A

- Existing site features including streams, ponds, culverts, storm drainage systems, channels, ditches, wetlands, other water bodies such as lakes, RPAs, conservation easements, floodplains, steep slopes, highly erodible soils, etc; *ordinance reference section 8-25(B)(9).*
- Existing topography and drainage patterns; *ordinance reference section 8-25(B)(9).*
- Existing and proposed contours (1' or 2' contour interval) and spot elevations as necessary to define high and low topography.
- Soil types, geologic formations if karst features are present in the area, forest cover and other vegetative areas; *ordinance reference section 8-25(B)(9).*
- Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these/those parcels; *ordinance reference section 8-25(B)(9).*
- Existing and proposed easement locations.
- Proposed site improvements and proposed impervious cover areas.
- Limits of disturbance (clearing and grading) for the project including proposed access and all onsite and offsite work activities; *ordinance reference section 8-25(B)(9).*
- Proposed grading, contours, and drainage patterns on the site or parcel; *ordinance reference section 8-25(B)(9).*
- Proposed buildings, roads, parking areas, utilities, and stormwater drainage and management Facilities with appropriately labeled construction data and information; *ordinance reference section 8-25(B)(9).*
- Proposed land use with tabulations of the percentage of surface area to be adapted to various land uses including but not limited to planned locations of impervious cover, turfgrass, utilities, roads, open spaces, and easements including conserved open spaces; *ordinance reference section 8-25(B)(9).*
- Proposed percent impervious cover of the site or project; *ordinance reference section 8-25(B)(9).*
- Proposed landscaping and stabilization/seeding plans (disturbed, pond interior areas).
- Proposed slope stabilization areas (riprap, blankets, mattings, walls, etc.).
- Delineation of permanent pools and the 1-, 2-, 10- and 100-year BMP design water surface elevations.
- Delineation of ponding, headwater, surcharge or backwater areas which may affect adjacent existing or proposed buildings, structures or upstream adjacent properties.
- Geotechnical test boring locations with reference surface elevations (if known).
- Risers, barrels, underdrains, overflows, and outlet protections.
- Emergency spillway level section and outlet channel.
- Existing and proposed site utilities and protection measures.
- Erosion and sediment control measures (for site or BMP).
- Maintenance or access corridors to permanent stormwater management, BMP or drainage facilities.

II. STORMWATER CONVEYANCE SYSTEMS:

Yes No N/A

FAMILIARITY with the County’s Drainage Standards, the County’s Stormwater Facility Inspection Program, and requirements outlined in Chapter 8, Article II of the County Code, including record drawing and construction certification requirements.

PLAN VIEWS – DRAINAGE PLANS

Yes No N/A

Storm drain lengths, sizes, material types, classes and slopes for all segments. Label directly on plan or use structure/pipe schedule.

Access structure (inlets, manholes, junctions, etc.) rim elevations, inverts, type and required grate or top unit and lengths labeled.

All structure numbers labeled.

Adequate horizontal clearance from other site utilities or structures.

PROFILES – DRAINAGE PLANS

Not required for surface stormwater conveyance open channels. Generally are not required for storm drainage piping systems, but are strongly encouraged to be provided to expedite review. If not provided, ensure all storm drainage pipe segments have adequate minimum cover for construction and postdevelopment conditions (dead, live and surcharge loads), do not exceed maximum depths of cover for the type/class of pipe specified (manufacturer recommendations and industry standards) and do not conflict with other site utilities or excavation areas.

DETAILS – DRAINAGE PLANS

Yes No N/A

Typical storm drain bedding details or references to industry or association standards (AASHTO, ASTM, etc.).

Standard details or reference note for all proposed access structure types (inlets, manholes, etc.).

Inlet shaping detail or applicable reference note.

Step detail or applicable reference note (if depth 4 ft. or more).

Typical open channel details with designation, location, shape, type, bottom width, top width, lining, slope, length, side slope, design flow depth, and installation depth required for construction. Other channel design data as necessary may also be included.

Outlet protections at all pipe outfalls.

COMPUTATIONS – DRAINAGE PLANS

Yes No N/A

Storm sewer design computations based on 10-year design event.

Hydraulic Grade Line (HGL) computations based on 10-year design event.

Inlet computations based on current VDOT procedure for spread, ponding depth and grate size required.

Culvert Headwater computations. Design based on 10-year design storm event and check only for 100-year storm event.

Yes No N/A

- Open channel computations based on 2-year design event for velocity and erosion resistance and 10-year design event for capacity (per VESCP Minimum Standard #19)
- Standard outlet protection or special energy dissipators.
- Pipe thickness design computations, as required, for selected pipe type (live load, minimum cover, maximum height of cover, etc.).
- Adequate channel computations for receiving channels (based on field measured channel data).

III. STORMWATER MANAGEMENT / BMP FACILITIES

Yes No N/A

- FAMILIARITY* with current versions of the Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program, the Virginia BMP clearinghouse website; the Virginia Runoff Reduction Method (VRRM), the Virginia DEQ Stormwater Design Specification (15 nonproprietary BMPs) and Appendices; Virginia DEQ guidelines for use of Manufactured Treatment Devices (MTDs); and the Virginia Stormwater Management Handbook (VSMH).
- HYDROLOGY* - An SCS based methodology is required for the design of stormwater management/BMP facilities with watersheds exceeding 20 acres. Under 20 acres, other generally accepted methodologies such as the modified rational, critical storm are allowable. Refer to Chapter 5 of the VESCH or Chapter 11 of the VSMH.
- Runoff Curve Number or Coefficient determinations: pre-developed and ultimate development land use scenarios.
- Time of concentration: pre-developed and ultimate development indicating overland, shallow concentrated, and channel flow components (200 ft. maximum length for overland flow).
- Hydrograph generation (tabular or graphical): pre- and post- development conditions for the 1-, 2-, 10-, and 100-year design storm events.
- FACILITY CONFIGURATION and MINIMUM SEPARATIONS - SWMF*

Yes No N/A

- Screening and layout consistent with Chapter 24 Zoning ordinance (landscaping, screening, visibility, etc.).
- Basic considerations for safety and unauthorized entry.
- Proper length to width ratio.
- Facilities with deep pools provided with two benches. Safety bench outward from normal pool and aquatic bench inward from normal shoreline below normal pool. Narrower widths may be considered on a case-by-case basis. Refer to specific Virginia Stormwater Design Specifications.
- Pond buffer minimum 25 feet outward from maximum design WSEL. Additional setbacks may be required to permanent structures.
- No trees, shrubs or woody plants within 15 feet of embankment toe or 25 feet from principal spillway structure.
- Infiltration and filtering system facilities generally located (separated) at least 100 feet horizontally from any water supply well; 100 feet from any downslope building; and 25 feet from any upslope buildings, unless site specific investigation allows for reduced separation.

Yes No N/A

HYDRAULIC COMPUTATIONS & ROUTINGS - SWMF

Yes No N/A

- Elevation- or stage-storage curve and/or tabular data.
- Weir/Orifice Control - Extended Detention.
- Weir/Orifice Control - riser 1-year control for channel protection.
- Weir/Orifice Control - riser 2-year control for quantity (if required).
- Weir/Orifice Control - riser 10-year control for quantity (if required).
- Inlet/Outlet (barrel) control - (All Storms).
- Check for barrel control prior to riser orifice flow to prevent slug flow-water hammer conditions.
- Emergency spillway capacity and depth of flow.
- Elevation - Discharge (Outlet Rating) curve and/or table. Provide all supporting calculations and/or design assumptions.
- Adequate channel computations for receiving channel. May be waived if facility is designed based on current quantity control (flooding or stream channel protection criteria).

POND or RESERVOIR ROUTING - SWMF

Yes No N/A

- Storage-Indication Routing of post-developed inflow hydrographs for the 1-, 2-, 10-, and 100-year design storms. Preference is for structure to discharge up to the 10-year storm through the principal spillway and pass the 100-year storm with a minimum 1 foot of freeboard through a combination principal and emergency spillways. If no emergency spillway is provided, riser must be large enough to pass the design high water flow and trash without overtopping the facility, have 3 square feet or more of cross-sectional area, contain a hood type inlet and have a minimum freeboard of 2 feet. Token spillways with minimum 8 ft. width are also recommended at or above the design 100-year storm elevation.
- Downstream hydrographs at established study points, if conditions warrant (ie. facility discharge combined with uncontrolled bypass).

COMPUTATIONS FOR WATER QUALITY, QUANTITY CONTROL & MISC. - SWMF

Yes No N/A

- Water quality volume for permanent pool based on required level of design BMP treatment volume
- Water quality volume for extended detention based on required level of design BMP treatment volume (WQv) with drawdown computations.
- Energy balance computations for water quantity, flood or stream channel protection.
- Drawdown computations for the 1-year, 24 hour detention for stream channel protection criteria.
- Pond drain computations (within 24 hours).
- Anti-seep collar design (concrete preferred) or match material type.
- Filter diaphragm design (or alternative method of controlling seepage).
- Riser / base structure flotation analyses. FS = 1.25 minimum.
- Downstream danger reach study and/or emergency action plan (if conditions warrant).
- Upstream backwater analyses onto offsite adjacent property (if conditions warrant).
- 100 year floodplain impacts (if conditions warrant).

Yes No N/A

GEOTECHNICAL REQUIREMENTS - SWMF

Yes No N/A *Note: Refer to Appendices A & B of Virginia DEQ Stormwater Design Specifications*

- Geotechnical report with recommendations specific to BMP facility type selected. Report prepared by a registered professional engineer. Requires submission, review and approval prior to issuance of land disturbance permit.
- Initial feasibility testing requirements satisfied per state BMP clearinghouse specifications.
- Concept design testing requirements satisfied per state BMP clearinghouse specifications.
- Removal of unsuitable material under proposed facility (per Geotechnical Report requirements).
- Minimum boring locations: borrow area, pool area, principal control structure, top of facility near one abutment and emergency spillway if provided.
- Boring logs with Unified Soil Classification (ASTM D2487), soils descriptions and depths to bedrock and the seasonal water table indicated.
- Standard County Record Drawing/Construction Certification and requirements for CCTV post-installation inspection note(s) provided on plan. Note: It is understood that preparation of record drawings and construction certifications as required for project facilities may not necessarily be performed by the plan preparer and may be performed by others.

SEEPAGE CONTROL, CORE TRENCH & EMBANKMENT - SWMF

Yes No N/A

- Note: Refer to Appendices A & B of Virginia DEQ Stormwater Design Specifications*
Phreatic line shown (4:1 slope measured from the intersection of the embankment and the principal spillway design high water)
- Material (per plan or Geotechnical Report).
- Bottom width (4' minimum or greater as dictated by Geotechnical Report recommendations).
- Side slopes (1:1 maximum steepness)
- Depth (4' minimum or greater as dictated by Geotechnical Report).

PRINCIPAL FLOW CONTROL STRUCTURE - RISER OR SIMILAR STRUCTURE - SWMF

Yes No N/A

- Note: Refer to Appendices A & B of Virginia DEQ Stormwater Design Specifications*
Durable, watertight, resistant material (concrete preferred).
- Riser diameter is at least 1.25 times larger than barrel diameter.
- All pertinent dimensions and elevations shown.
- Control orifice or weir dimensions and elevations shown.
- Trash rack - removable - for each release.
- Anti-vortex device, baffle or plate.
- Riser base structure with dimensions and embedment specifications (concrete preferred).
- Interior access (steps, ladders, etc.) for maintenance for structures over 4 feet in height. Excessively high risers may need some form of exterior access on top portion.
- Low flow orifice with trash rack device.

Yes No N/A

PRINCIPAL CONTROL STRUCTURE OUTLET BARREL - SWMF

Yes No N/A

Note: Refer to Appendices A & B of Virginia DEQ Stormwater Design Specifications Material (ASTM C-361 reinforced concrete pipe) with watertight joints. Prior approval required for all other pipe material (HDPE, CMP, PVC, etc.).

Support and bedding requirements for barrel - concrete cradles, etc. or as recommended by the Geotechnical Report.

Pipe inverts, length, size, class and slope shown.

Seepage controls along barrel.

Filter diaphragms. Design based on latest NRCS or USACOE design methods and specifications (or equal) and certified by a professional engineer.

Flared end section or endwall provided at barrel outlet.

PRINCIPAL SPILLWAY PROFILE AND ASSOCIATED DETAILS - SWMF

Yes No N/A

Existing ground and proposed grade shown.

Embankment or excavation side slopes labeled (3H:1V maximum).

Minimum top width labeled (per VESCH or VSMH requirements).

ELEVATION AND DIMENSIONAL DESIGN DATA - SWMF

Yes No N/A

Note: Refer to Appendices A & B of Virginia DEQ Stormwater Design Specifications

Top of facility - construction height and settled height (10 percent settlement).

Crest of principal control structure spillway at least one (1) foot below crest of emergency spillway, if provided.

Minimum freeboard of one (1) foot above the 100-year design high water elevation for facilities with an emergency spillway.

Minimum freeboard of two (2) feet above the 100-year design high water elevation for facilities without an emergency spillway or in accordance with the NRCS National Engineering Handbook (prior approval required).

Basin sediment clean-out elevation (permanent mode). Typically 10 to 25 percent of water quality Volume or per state BMP clearinghouse design standards.

CROSS SECTION – EMBANKMENT - SWMF

Yes No N/A

Existing Ground.

Proposed grade.

Top of facility - constructed and settled.

Location of emergency spillway with side slopes labeled (emergency spillway in cut).

Bottom of core trench (4' minimum).

Location of each soil boring.

Pipe barrel location.

Existing and proposed utility location/protection.

Yes No N/A

MAINTENANCE PROVISIONS - SWMF

Yes No N/A

- Entity responsible for maintenance identified.
- Maintenance Plan which outlines the long-term schedule for inspection/maintenance of the facility and forebays (included in plan set).
- Maintenance access from public right-of-way or publicly traveled road.
- Maintenance easement provided encompassing high water pool and buffer, principal and emergency spillways, outlet structures, forebays, embankment area and possible sediment-removal stockpile areas.
- Minimum six foot wide public safety shelf (landing) or alternative fencing.

IV. OUTLET PROTECTIONS:

Yes No N/A

- Sized for maximum design release (generally 10-year storm).
- Flared end section or endwall.
- Dimensions.
- Rock or riprap size, quantity and placement thickness.
- Slope at 0 percent (Level Grade).
- Geotextiles (nonwoven).
- Special energy dissipators are required for design discharge velocities that exceed eighteen (18) feet per second; or if use of standard outlet protection would result in velocities exceeding permissible channel velocities; or if space restricts or limits their use.

(Reserved)



Stormwater Pollution Prevention Plan (SWPPP) Pollution Prevention Plan Checklist

I. GENERAL:

Note: A stormwater pollution prevention plan, in accordance with Virginia Stormwater Management (VSMP) and the VPDES construction general permit programs, is a plan which includes the following components: a site erosion and sediment control (E&SC) plan; a site stormwater management (SWM) plan or in some cases an agreement in lieu of a stormwater management plan; and a pollution prevention (P2) plan. This checklist section deals with the Pollution Prevention (P2) Plan component.

Yes No N/A

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <i>FAMILIARITY</i> with current versions of Chapter 8 of the County Code, the Virginia Stormwater Management Act and Virginia Stormwater Management Program Regulations, and the provisions of Chapter 880, General Permit VAR10, General VPDES Permit for the Discharges of Stormwater from Construction Activities (VAR10). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <i>FAMILIARITY</i> with EPA Stormwater Pollution Prevention Plan and Pollution Prevention plan guidelines and pollution prevention plan requirements of 9VAC25-870-56 of the VSMP regulations and Section 8-26 of the County's VSMP ordinance. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <i>REGISTRATION STATEMENT</i> is included in the permit application, consistent with the requirements for a General VPDES Permit for Discharge of Stormwater from Construction Activities and the Virginia Stormwater Management Program (VSMP) Regulations. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <i>VARIANCE</i> if necessary, requested in writing, for the plan approving authority to waive or modify any of pollution prevention plan requirements. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A pollution prevention (P2) plan required by state VSMP and VPDES construction general permit programs, shall be developed, implemented, and updated as necessary and must detail the design, installation, implementation, and maintenance of effective pollution prevention measures to minimize the discharge of pollutants. <i>Note that in James City County, in accordance with Section 8-26(d) of the County Code, the P2 Plan is required to be submitted to the VSMP authority for review and approval prior to it's site implementation, modification or update.</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated prior to discharge into a sediment basin or alternative control that provides equivalent or better treatment prior to discharge. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Minimize the exposure of all materials onsite to precipitation and stormwater. This may include, but is not limited to minimizing the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and stormwater. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater. |

Yes No N/A

- Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
- The pollution prevention (P2) plan shall include effective best management practices to prohibit the discharge of wastewater from the washout of concrete, unless managed by an appropriate control.
- The pollution prevention (P2) plan shall include effective best management practices to prohibit the discharge of wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials, unless managed by an appropriate control.
- The pollution prevention (P2) plan shall include effective best management practices to prohibit the discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance, unless managed by an appropriate control.
- The pollution prevention (P2) plan shall include effective best management practices to prohibit the discharge of soaps, solvents, or detergents used in vehicle and equipment washing, unless managed by an appropriate control.
- Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

EFFLUENT LIMITATION GUIDELINES (ELGs) CONSISTENCY

Plan preparer to ensure this *STORMWATER POLLUTION PREVENTION PLAN (SWPPP) and POLLUTION PREVENTION (P2) PLAN, in general and overall*, is consistent with federal Clean Water Act and NPDES program requirements under the EPA’s 2012 Construction General Permit and the Effluent Limitations Guidelines (ELG) rule known as the “Construction and Development” or “C&D ELG” rule and the PLAN addresses the following nine standards and specifications to the maximum extent practicable:

EPA website: <https://www.epa.gov/npdes>

Yes No N/A

- 1. Controls the volume and velocity of stormwater runoff within the site to minimize soil erosion;
- 2. Controls stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
- 3. Minimizes the amount of soil exposed during the construction activity;
- 4. Minimizes the disturbance of steep slopes;
- 5. Minimizes sediment discharges from the site in a manner that addresses the amount, frequency, intensity, and duration of precipitation; the nature of resulting stormwater runoff; and soil characteristics, including the range of soil particle sizes present on the site;

