



Annual Standards and Specifications
for
Erosion and Sediment Control
and
Stormwater Management

Revision 6

16 February 2021

INTRODUCTION

The Radford University (RU) Annual Standards and Specifications (AS&S) for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) are integral components of RU's design, construction, maintenance, and management of the campus facilities and land. The RU Annual Standards and Specifications for ESC and SWM have been developed to provide information regarding RU's implementation in accordance with the Virginia Stormwater Management Act (§62.1-44.15:24. to :50), the Virginia Stormwater Management Program (VSMP) Regulations (9VAC25-870), the Virginia Erosion and Sediment Control Law (§62.1-44.15:51 to :66), the Virginia Erosion and Sediment Control Regulations (9VAC25-840), and the Virginia Erosion and Sediment Control Certification Regulations (9VAC25-850).

The RU Annual Standards and Specifications for ESC and SWM shall apply to all design, construction, and maintenance activities undertaken by RU, either by its internal workforce or contracted to external entities, where such activities are regulated by the Virginia ESC Law and Regulations or the Virginia SWM Act and VSMP Permit Regulations. During any inspections of RU's land disturbing activities by DEQ, EPA and other such environmental agencies, compliance with the RU Annual Standards and Specifications for ESC and SWM, the Virginia ESC Law and Regulations, and the Virginia SWM Act will be expected.

The RU Annual Standards and Specifications for ESC and SWM are submitted to the Virginia Department of Environmental Quality (DEQ) for review and approval. RU shall ensure that project specific plans are developed and implemented in accordance with these Annual Standards and Specifications. This submittal constitutes RU's commitment to execute all provisions contained herein on our regulated land disturbing activities and land development projects. As such, this submittal will be made available and utilized as an operational guidance by all appropriate RU and DEQ personnel. The RU Annual Standards and Specifications for ESC and SWM are available for download as PDF files at: <https://www.radford.edu/content/facilities-planning/home.html>.

CERTIFICATION

I certify under penalty of law that all documents and all attachments related to the submission and updating of Radford University's (RU)'s Annual Standards and Specifications for Erosion and Sediment Control have been prepared under my direction or supervision in a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of a fine and imprisonment for knowing violations.



Mike Biscotte, PE RU ESC/SWM Administrator
16 February, 2021

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1.0 ANNUAL STANDARDS AND SPECIFICATIONS ADMINISTRATION

- 1.1 All projects involving land-disturbing activity subject to the Virginia Erosion and Sediment Control Law (§62.1-44.15:51 to :66), and the Virginia Erosion and Sediment Control Regulations (9VAC25-840) shall be bound by the RU Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management as approved by DEQ. All projects involving land-disturbing activity subject to the Virginia Stormwater Management Act (§62.1-44.15:24. to :50) and the VSMP Regulations (9VAC25-870) shall be bound by the RU Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management as approved by DEQ.
- 1.2 The RU Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) are composed of general specifications for ESC and SWM. The general specifications for ESC and SWM that apply to the land-disturbing activities listed in Section 1.1 above include by reference the following regulations as amended:
 - 1.2.1 Virginia Stormwater Management Act (§62.1-44.15:24. To :50);
 - 1.2.2 Virginia Erosion and Sediment Control Law (§62.1-44.15:51. to :66);
 - 1.2.3 Virginia Erosion and Sediment Control Regulations (9VAC25-840);
 - 1.2.4 Virginia Erosion and Sediment Control Certification Regulations (9VAC25-850);
 - 1.2.5 Virginia Stormwater Management Program Regulation (9VAC25-870);
 - 1.2.6 Reports and Recordkeeping (9VAC25-870-126)
 - 1.2.7 General Permit for Discharges of Construction Stormwater from Construction Activities (9VAC25-880)
 - 1.2.8 Virginia Erosion and Sediment Control Handbook, 1992, as amended;
 - 1.2.9 Virginia Stormwater Management Handbook, 1999, as amended;
 - 1.2.10 Technical Bulletins, as amended, on the Virginia DEQ website at <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/Publications.aspx>.
 - 1.2.11 Stormwater, and, Erosion and Sediment Control Guidance Memos, as amended, on the Virginia DEQ website at: <http://www.deq.virginia.gov/Programs/Water/Laws.Regulations.Guidance/Guidance/StormwaterManagementGuidance.aspx>.
 - 1.2.12 Virginia Stormwater BMP Clearinghouse at: <http://www.vwrrc.vt.edu/swc/>.
- 1.3 Any land-disturbing activity carried out in a locality with a local ESC program with more stringent regulations than those of the state program shall be consistent with the requirements of the local program. SWM projects shall, to the maximum extent practicable, meet the technical requirements of the local stormwater management program, in addition to the technical requirements noted above. RU will coordinate with the local jurisdiction to ensure required local requirements are met, and document this as applicable in the project SWPPP.
- 1.4 Site-Specific ESC plans shall be prepared for all projects involving a regulated land-disturbing activity as defined in §62.1-44. Site-specific ESC plans shall be submitted to the RU Facilities Planning and Construction Office for review. Prior to starting a land-

disturbing project, as defined in §62.1-44, the project must have approval issued by the RU Facilities Planning and Construction Office.

- 1.5 Site-Specific SWM plans shall be prepared for all projects involving a regulated land-disturbing activity as defined in §62.1-44 that requires a Virginia Stormwater Management General Permit for Discharges from Construction Activities (VSMP) or land-disturbing activity contained within a watershed of a regional water quality stormwater management facility. Projects larger than one acre, or projects that are less than one acre but part of a common plan of development or sale that is greater than or equal to one acre, are subject to these requirements. Site-specific SWM plans shall be submitted to the RU Facilities Planning and Construction Office for review and approval. Prior to starting a land-disturbing project as defined in §62.1-44 requiring a SWM Plan, the project must have an approval issued by the RU Facilities Planning and Construction Office.
- 1.6 The RU Facilities Planning and Construction Office may request DEQ to grant a project-specific variance or exception, in terms of ESC and SWM respectively, to the RU Annual Standards and Specifications for ESC and SWM. All requested variances and exceptions are to be considered unapproved until written approval from DEQ is received. Variance requests will be considered freestanding of this RU Annual Standard and Specifications on an individual project-specific basis. Refer to Section 7.0 for more information on variances and exceptions.
- 1.7 Any land-disturbing activity at off-site locations in support of RU shall meet ESC and SWM requirements as included herein. Whenever a land-disturbing activity involves activity at a separate location (including but not limited to borrow and disposal areas) RU Facilities Planning and Construction Office may either:
 - 1.7.1 Consider the off-site activity as being part of the proposed land-disturbing activity; or
 - 1.7.2 If the off-site activity is already covered by an approved erosion and sediment control plan, the RU Facilities Planning and Construction Office may require the applicant to provide proof of the approval and to certify the plan will be implemented in accordance with the Act and Regulations.

For off-site land-disturbing activities that are not within RU's jurisdiction and have not received plan approval, the applicant shall describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.); identify the Owner of the off-site area and the entity responsible for plan review; include a statement that any off-site land-disturbing activity associated with the project must have an approved ESC Plan and Stormwater Pollution Prevention Plan (SWPPP) as appropriate; and submit documentation of the approved ESC Plan and SWPPP as appropriate for each of these sites.

- 1.8 Modifications to an approved erosion and sediment control plan and/or stormwater management plan shall be allowed only after review and written approval by the RU Facilities Planning and Construction Office.

The RU Facilities Planning and Construction Office may require that an approved plan be amended, within a time prescribed by the RU Facilities Planning and Construction Office, to address any deficiencies noted during inspection.

Modifications that require updates to the general permit (i.e. land disturbance increase, change in permit holder, permit fee changes, etc.) shall be coordinated by the RU Facilities Planning and Construction Office with DEQ, upon approval of the modifications. The applicant shall be responsible for amending the SWPPP to reflect changes to the approved erosion and sediment control plan and/or stormwater management plan.

2.0 DEFINITIONS

“*Administrator*” means the Radford University staff person or department responsible for administering the AS&S program.

“*Applicant*” means any person submitting an application for a permit or requesting issuance of a permit.

“*Best management practice*” or “*BMP*” means schedules of activities, prohibitions of practices, including both structural and nonstructural practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities.

“*Control measure*” means any best management practice or stormwater facility, or other method used to minimize the discharge of pollutants to state waters.

“*Clean Water Act*” or “*CWA*” means the federal Clean Water Act (33 U.S.C. Sec. 1251 et seq.) formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and public Law 97-117, or any subsequent revisions thereto.

“*Department*” means the Department of Conservation and Recreation.

“*Development*” means land disturbance and the resulting landform associated with the construction of facilities or structures or the clearing of land for non-agricultural purposes.

“*General permit*” means the state permit titled GENERAL PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES found in Appendix 2-C, 9VAC25-880 of the Regulations authorizing a category of discharges under the CWA and the Act within a geographical area of the Commonwealth of Virginia.

“*Land Disturbance*” or “*land-disturbing activity*” (Erosion and Sediment Control) means any man-made change to the land surface that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the Commonwealth, including but not limited to clearing, grading, excavating, transporting, and filling of land, except that the term shall not include those exemptions specified in Art. 62.1-44.15:51.

“*Land disturbance*” or “*land-disturbing activity*” (Stormwater Management) means a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except the term shall not include those exemptions specified in Art. 62.1 – 44.15:34.

“*Layout*” means a conceptual drawing sufficient to provide for the specified stormwater management facilities required at the time of approval.

“*Minor modification*” means an amendment to an existing general permit before its expiration not requiring extensive review and evaluation including, but not limited to, changes in EPA promulgated test protocols, increasing monitoring frequency requirements, changes in sampling locations, and changes to compliance dates within the overall compliance schedules. A minor general permit modification or amendment does not substantially alter general permit conditions, substantially increase or decrease the amount of surface water impacts, increase the size of the operation, or reduce the capacity of the facility to protect human health or the environment.

“*Operator*” means the owner or operator of any facility or activity subject to regulation.

“*Permit*” or “*Construction General Permit*” means an approval to conduct a land-disturbing activity as defined by Art. 62.1-44.15:24, issued by the DEQ, for the initiation of a land-disturbing activity, and which may only be issued after evidence of general permit coverage had been provided.

“*Permittee*” means the person to whom the Permit is issued.

“*Person*” means any individual; corporation; partnership; association; state; municipality; commission; political subdivision of a state governmental body including federal, state, or local entity as applicable; any interstate body; or any other legal entity.

“*Regulations*” means the Virginia Stormwater Management Program (VSMP) Permit Regulations, 9VAC25-870, as amended.

“*Site*” means the land or water area where any facility or land-disturbing activity is physically located or conducted, including adjacent land used or preserved in connection with the facility or land-disturbing activity.

“*State*” means the Commonwealth of Virginia.

“*State Board*” means the Virginia Soil and Water Conversation Board.

“*State permit*” means an approval to conduct a land-disturbing activity issued by the State Board in the form of a state stormwater individual permit or coverage issued under a state general permit or an approval issued by the State Board for stormwater discharges from an MS4. Under these state permits, the Commonwealth imposes and enforces requirements pursuant to the federal Clean Water Act and regulations, the Virginia Stormwater Management Act, and the Regulations.

“*State Water Control Law*” means Chapter 3.1 (Sec. 62.1-44.2 et seq.) of Title 62.1 of the code of Virginia.

“*State waters*” means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

“*Stormwater*” means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

“*Stormwater management plan*” means a document(s) containing material describing methods for complying with the requirements of the AS&S.

“*Stormwater Pollution Prevention Plan*” or “*SWPPP*” means a document that is prepared in accordance with good engineering practices and that identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site, and otherwise meets the requirements of the AS&S. In addition, the document shall identify and require the implementation of control measures, and shall include, but not be limited to, the inclusion of or the incorporation by reference of, an approved erosion and sediment control plan, an approved Stormwater management plan, and a pollution prevention plan.

“*Total maximum daily load*” or “*TMDL*” means the sum of the individual waste load allocations for point sources, load allocations for nonpoint sources, natural background loading, and a margin of safety. TMDL’s can be expressed in terms of either mass per time, toxicity, or other appropriate measure. The TMDL process provides for point versus nonpoint source trade-offs.

“*Virginia Stormwater Management Act*” or “*Act*” means Article 2.3, Sec. 62.1-44.15:24 to:50, of Chapter 3.1 of Title 62.1 of the Code of Virginia.

“*Virginia Stormwater BMP Clearinghouse website*” means a website that contains detailed design standards and specifications for control measures that may be used in Virginia to comply with the requirements of the Virginia Stormwater Management Act and associated regulations.

“*Virginia Stormwater Management Program*” or “*VSMP*” means a program approved by the State Board after September 13, 2011, that has been established by a locality to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement, and evaluation consistent with the requirements of this article and associated regulations.

“*Virginia Stormwater Management Program authority*” or “*VSMP authority*” means an authority approved by the State Board after September 13, 2011, to operate a Virginia Stormwater Management Program.

3.0 ANNUAL STANDARDS AND SPECIFICATIONS PERSONNEL

The RU Facilities Planning and Construction Office shall be the plan approving administrator for RU Projects and the DEQ certified administrator of the RU Annual Standards and Specifications for ESC and SWM. The following is a breakdown in responsibilities and titles in terms of the RU

Annual Standards and Specifications for ESC and SWM. The following personnel are assigned and/or delegated authority related to ensuring compliance with the RU Annual Standards and Specifications for ESC and SWM. Responsibilities may be combined in terms of staffing resources only if the person responsible for the task(s) is qualified per Section 1.2.4.

- 3.1 DEQ Certified ESC and SWM Administrator shall have overall management and coordination responsibilities for the RU Annual Standards and Specifications for ESC and SWM.
- 3.2 DEQ Certified ESC Plan Reviewer shall be an employee or agent of RU responsible for reviewing plans for compliance with the RU Annual Standards and Specifications for ESC and applicable laws and regulations with an emphasis on ESC components.
- 3.3 DEQ Certified SWM Plan Reviewer shall be an employee or agent of RU responsible for reviewing plans for compliance with the RU Annual Standards and Specifications for SWM and applicable laws and regulations with an emphasis on stormwater management components.
- 3.4 DEQ ESC and SWM Inspector shall be an employee or agent of RU responsible for inspecting erosion and sediment control, stormwater management, VSMP permits, SWPPP, and MS4 practices to ensure compliance with all applicable laws, regulations, and the RU Annual Standards and Specifications for ESC and SWM.
- 3.5 DEQ Responsible Land Disturber (RLD) shall hold a valid Responsible Land Disturber Certificate as issued by DEQ.
- 3.6 DEQ Certifications shall be in accordance with the Virginia Erosion and Sediment Control and Stormwater Management Certification Regulations (9VAC25-850).

4.0 ANNUAL STANDARDS AND SPECIFICATIONS IMPLEMENTATION

ESC and SWM plans shall comply with the RU Annual Standards and Specifications for ESC and SWM, the Virginia Erosion and Sediment Control Law (§62.1-44.15:51. to :66), the Virginia Erosion and Sediment Control Regulations (9VAC25-840), the Virginia Stormwater Management Act (§62.1-44.15:24. to :50), and the Virginia Stormwater Management Program (VSMP) Regulations (9VAC25-870). Refer to Section 1.2 for more information on general specifications. Prior to commencement of a land-disturbing project, the project must have received approval for the plan from the RU Facilities Planning and Construction Office. The RU Facilities Planning and Construction Office will have 30 days to review the plan and provide written comments.

4.1 Submittals

- 4.1.1 ESC and SWM plans and narratives (ESC and SWM plans), reports, certifications, and record documents shall be submitted to the RU Facilities Planning and Construction Office for review and approval. All submittals shall be in accordance with the RU Annual Standards and Specifications for ESC and SWM. The submittal must include the appropriate information and data necessary to support the licensed professional's work.
- 4.1.2 Two sets of plans (1 full size and 1 half size) may be submitted initially. Five full size sets are required for approval. All submittals should be delivered to:

Radford University
Facilities Planning and Construction Office
501 Stockton Street
Radford, VA 24142

4.1.3 The RU Facilities Planning and Construction Office will retain one set of the approved plans.

4.1.4 Design Submittal and Plan Review Checklists

4.1.4.1 ESC and SWM plans, to include narrative, calculations, design standard and specifications, plan sheets (drawings) and other supporting information, shall be submitted to the RU Facilities Planning and Construction Office for review and approval prior to any land-disturbing activities. The submittal shall include a design that is in accordance with the RU Annual Standards and Specifications for ESC and SWM. The submittal must include the appropriate information, all calculations relevant to the Plan, ESW/SWM Plan Preparer/Reviewer Checklist, and other appropriate information and documentation necessary to support the designer's work.

4.1.4.2 An ESW/SWM Plan Preparer/Reviewer Checklist is provided in Appendix A of this document. Many items listed on the checklists may not apply to any given design and it is therefore up to the designer to indicate items as "not applicable" or "NA" as appropriate.

4.2 **Re-submittals**

4.2.1 For all second and subsequent submittals, the submitting professional shall include a cover letter with explanations as to how each review comment is addressed and references the relevant drawing sheet or narrative location. In addition, significant changes in the plan shall be listed as part of the cover letter. The cover letter may warrant additional comments/discussion depending upon the previous review comments or changes in the plan.

4.3 **Final Report**

4.3.1 A final report shall be submitted to the RU Facilities Planning and Construction Office for review and approval prior to close-out of the project for any and all permanent Best Management Practices (BMPs) associated with the project. Construction inspections and surveys, performed by a licensed professional, shall be required at each stage of installation during construction as necessary for a licensed professional(s) to certify that the stormwater management facility and associated conveyance systems have been built in accordance with the approved plan and design specifications. The final report shall include incremental surveys/drawings, final survey/drawings, photographs, construction logs, inspection reports, geotechnical testing reports, soil reports, certification of materials, and all other applicable documentation to demonstrate the facilities were constructed in accordance with the approved plans and specifications. The final report shall include the appropriate checklists provided in the Stormwater Management Handbook. The final report shall include a signed statement by a licensed professional(s) that the stormwater management facilities have been built in accordance with the approved plans and specifications.

4.3.2 If the facility system or conveyance system or both have not been constructed and installed in accordance with the approved plan, then the licensed professional(s) responsible for certifying the as-built condition shall immediately notify the RU Project Manager and the Director of the RU Facilities Planning and Construction Office. Generally, there are two potential options when the system(s) are not constructed in accordance with the approved plan.

4.3.2.1 Option 1: Re-construct the system(s) in accordance with the approved plan. It will be necessary to repeat the inspections, surveys, and documentation process such that the licensed professional shall certify the system(s) are constructed in accordance with the approved plan. It shall be the licensed professional's responsibility to certify as-built condition of the system(s) meets the quantitative and qualitative controls of the approved plan.

4.3.2.2 Option 2: Perform calculations and analysis, based on the licensed professional's surveys, data, inspections, and other applicable documentation necessary to verify the as-built conditions meet the RU Annual Standards and Specifications for ESC and SWM. The licensed professional(s) shall certify the as-built condition of the system meets the quantitative and qualitative controls, as prescribed by the approved RU Annual Standards and Specifications for ESC and SWM, and submit the final report as required in Section 4.3.

4.4 **Plan Reviews**

4.4.1 Plan reviews shall be conducted by personnel certified in accordance with the Virginia Erosion and Sediment Control and Stormwater Management Certification Regulations (9VAC25-850 et seq. as amended). Plan reviews shall ensure compliance with the RU Annual Standards and Specifications for ESC and SWM.

4.4.2 Plans approval shall be documented on the ESC/SWM Plans Approval Form in Appendix E.

4.5 **Inspections**

4.5.1 ESC and SWM Inspector(s) is responsible for ensuring the implementation of the project is in accordance with the project ESC and SWM plan and other environmental commitments. Refer to Section 6.0 for more information on inspections.

4.5.2 The Responsible Land Disturber (RLD) shall be in charge of and responsible for carrying out a regulated "land-disturbing activity." The RLD shall attend the pre-construction meeting and sign the approved ESC and SWM plan.

4.5.3 The licensed professional(s) is responsible for collecting, surveying, and documenting that stormwater management and conveyance systems are in accordance with the approved plan.

4.6 **Changes and Amendments to Approved Plans**

4.6.1 An approved plan may be changed by the RU Facilities Planning and Construction Office in the following cases:

4.6.1.1 Where inspection has revealed the plan is inadequate to satisfy applicable regulations; or

4.6.1.2 Where the person responsible for carrying out the approved plan finds that because of changed circumstances or for other reasons the approved plan cannot be effectively carried out, and proposed amendments to the plan, consistent with the requirements of this article, are agreed to by the plan-approving authority and the person responsible for carrying out the plan.

4.6.2 Revisions to an approved ESC and SWM Plan must be submitted in writing to the RU Facilities Planning and Construction Office. Revisions shall not be considered approved until written notice is provided. Revisions must comply with the RU Annual Standards and Specifications for ESC and SWM.

5.0 CONSTRUCTION PLANS (DRAWINGS) REQUIREMENTS

- 5.1 Construction plans must be compliant with the stormwater technical criteria for water quantity and water quality (9VAC25-870).
- 5.2 Please note that Erosion and Sediment Control Technical Bulletin No. 4 Nutrient Management for Development Sites updates the vegetative cover standards and specifications 3.31 Temporary Seeding, 3.32 Permanent Seeding, 3.33 Sodding, and 3.34 Bermuda grass and Zoysia grass of the 1992 Virginia Erosion and Sediment Control Handbook, in accordance with the 1995 Virginia Nutrient Management Standards and Criteria. Specifically, the vegetation standards and specifications have been updated to reflect that no more than one (1) pound of water soluble nitrogen per 1,000 square feet is to be applied on construction sites in a 30 day period.
- 5.3 Only VESCH control measures will be utilized.
 - 5.3.1 Non-VESCH control measures, best management practices (BMP), and specifications may be included in the Annual Standards and Specifications submission but their use may be further reviewed and approved by the applicable DEQ Regional Office on a project-specific basis.
 - 5.3.2 For all non-VESCH and proprietary control measures, please include all applicable practical information including definition, purpose, conditions where practice applies, planning considerations, design criteria, construction specifications, design tables and plates, and maintenance and inspections. Non-VESCH and proprietary control measures shall be installed per the manufacturer's instructions and with the intent of the VESCH specifications.
 - 5.3.3 Should non-VESCH control measures fail to effectively control soil erosion, sediment deposition, and non-agricultural runoff, then VESCH control measures shall be utilized.
- 5.4 Complete ESC and SWM Plan drawings and standard details shall be provided in the construction plans and are referenced below as ESC/SWM construction drawings.
- 5.5 Minimum standards 1 through 19 (9VAC25-840-40) shall be listed in the construction drawings.
- 5.6 Construction sequence of operations shall be provided on the construction plans with staged implementation of erosion and sediment control measures for each phase. The area which may be disturbed in each phase shall be set forth in the construction plans.
- 5.7 ESC/SWM construction drawings shall provide information on the maintenance of BMP's or reference the narrative section that contains the information.
- 5.8 ESC/SWM construction drawings shall provide information on the post-construction maintenance of BMPs or reference the narrative section that contains the information.

- 5.9 ESC/SWM construction drawings shall include manufacturer's recommendation on maintenance and inspection of manufactured BMP's so long as the manufacturer's recommendation is in compliance with the requirements listed in Section 1.2
- 5.10 ESC/SWM construction drawings shall provide information on the post-construction inspections required for each BMP or reference the narrative section that contains the information. SWM BMP's shall have unique identifications and the identifications shall be referenced/used in all documentation, such as, but not limited to, SWPPP narrative, ESC and SWM plans, and calculations.
- 5.11 Profiles shall be included for storm sewer systems and conveyance channels. The profile shall include the final surface, channel/pipe, and hydraulic grade line. Surcharges shall be clearly indicated on the profile.
- 5.12 The amount of disturbed area listed per phase and proposed net increase in impervious area shall be listed on the ESC/SWM construction drawings.

6.0 INSPECTIONS

- 6.1 RU as the AS&S holder shall perform periodic inspections, at a minimum, every two weeks and within 48 hours of a rainfall event producing runoff. In addition, inspections shall be made during or immediately following initial installation of erosion and sediment controls and at the completion of the project, and prior to the release of any performance bonds. RU is responsible for and shall ensure compliance with the approved plan and the RU Annual Standards and Specifications for ESC and SWM. RU shall perform post-construction inspections for stormwater management facilities as indicated in the approved Plan.
- 6.2 Licensed professional(s) shall perform inspections and surveys as necessary to support certification that each permanent stormwater management facility and conveyance system are constructed in accordance with the approved plan.
- 6.3 DEQ shall perform random site inspections to assure compliance with the Virginia Erosion and Sediment Control Law (§62.1-44.15:51 to :66), the Virginia Erosion and Sediment Control Regulations (9VAC25-840), the Virginia Stormwater Management Act (§62.1-44.15:24. to :50), and the Virginia Stormwater Management Program (VSMP) Regulations (9VAC25-870).
- 6.4 **Erosion and Sediment Control Inspections**
 - 6.4.1 RU, as the Annual Standards and Specifications holder, is required to conduct inspections at the "periodic" frequency as defined in 9VAC25-840-60B. The ESC/SWM Inspection Report provided in Appendix B shall be completed by RU, or an agent of RU, on each site inspection visit. A DEQ-certified ESC inspector shall conduct all inspections. All measures shown on the plan shall be inspected. All problems and violations shall be documented on the inspection report. Inspection reports shall specify a required corrective action for each problem or violation noted and a date the corrective action must be completed. Repeat violations not corrected within the time frames noted on the inspection report will be forwarded to DEQ for enforcement action.
 - 6.4.2 The Responsible Land Disturber (RLD) is in charge of carrying out the land-disturbing activity. For projects larger than one acre, or projects that are less than

one acre but part of a common plan of development or sale that is greater than or equal to one acre, the RLD is required to conduct inspections per 9VAC25-840-60.A, and in accordance with the specific maintenance requirements of each control measure as laid out in the Virginia Erosion and Sediment Control Handbook. The inspection reports shall be maintained on-site and shall be available for review by RU, DEQ, and other regulatory agencies. The RLD Inspection Report provided in Appendix B shall be completed by the RLD.

6.5 **Stormwater Management Inspections**

- 6.5.1 RU, as the Annual Standards and Specifications holder, is required to conduct inspections as stated in section §62.1-44.15:37A. The Responsible Land Disturber (RLD) is in charge of carrying out the land-disturbing activity. The RLD is required to conduct inspections per 9VAC25-880 Part II F with their qualified personnel. A DEQ-certified SWM inspector shall conduct all inspections. The inspection report provided in Appendix B is designed to be customized according to the BMP's and conditions at each site and shall be completed on each site inspection visit. A number shall be assigned to all stormwater BMP's on the site plan and these numbers shall correspond to the BMP numbers listed on the inspection sheet. Specific areas that will require continuous inspections shall be numbered on the site plan and these numbers shall correspond to the numbers listed on the inspection sheet. A brief description of the BMP or area shall then be listed in the site-specific section of the inspection report. Specific structural BMP's such as construction site entrances, sediment ponds, or specific areas with silt fence must be numbered and listed. Non-structural BMPs or areas that will be inspected (such as trash areas, material storage areas, temporary sanitary waste areas, etc.) must also be numbered and listed.
- 6.5.2 RU shall inspect the land-disturbing activity in accordance with 9VAC25-870-114A during construction for:
- 6.5.2.1 Compliance with the approved erosion and sediment control plan;
 - 6.5.2.2 Compliance with the approved stormwater management plan;
 - 6.5.2.3 Development, updating, and implementation of a pollution prevention plan; and
 - 6.5.2.4 Development and implementation of any additional control measures necessary to address a TMDL.
- 6.5.3 SWPPPs should be inspected at the start of construction and periodically throughout.
- 6.5.4 The Inspector shall walk the site by following the site map and numbered BMP's/areas for inspection and note whether the overall site issues have been addressed. Any required corrective actions and the completion date and responsible person for the correction shall be noted in the Corrective Action Log.
- 6.5.5 If there are no non-compliance issues/problems, then the inspector shall certify that the site is in compliance with the SWPPP, permit, regulations, and laws.

6.6 **Permanent BMP Inspections**

6.6.1 Permanent BMP's (stormwater management facilities) shall be inspected, photographed, and surveyed throughout the construction process and at the completion of the project such that a licensed professional(s) shall lawfully certify the BMP's are constructed in accordance with the approved Plan. The licensed professional(s) shall assume full responsibility for the certification and the information on which the certification is based. A licensed professional shall prepare and submit a final report to the RU Facilities Planning and Construction Office for approval (refer to Section 4.0).

6.7 Post-construction Inspections

6.7.1 Post-construction (long-term) inspections shall be made in accordance with the RU Annual Standards and Specifications for ESC and SWM, and manufacturer's recommendation, when applicable. These inspections shall be performed by a DEQ certified inspector.

7.0 VARIANCES and EXCEPTIONS

7.1 Variances and Exceptions to regulations must ensure protection of off-site properties and resources from damage. Economic hardship is not sufficient reason to request a variance or an exception. The following information needs to be included in variance requests:

7.1.1 Introduction

7.1.2 Project Description

7.1.3 Minimum Standards Variance Requests

7.1.4 Existing Conditions and Adjacent Areas

7.1.5 Soil Characterization

7.1.6 Critical and Sensitive Areas (Karst, wetland, etc...)

7.1.7 Mitigation

7.1.7.1 ESC Measures

7.1.7.2 Permanent Stabilization

7.1.7.3 Vegetative Restoration

7.1.7.4 Maintenance

7.1.7.5 Critical and Sensitive Areas

7.1.7.6 Self-Inspection, Reporting and DEQ-Certified Personnel

7.2 For a variance to become part of project specific ESC plans, a written variance request must be submitted by the RU Facilities Planning and Construction Office for review and approval by DEQ. This request must include an explanation of the reasons for requesting the variance and describe the specific site conditions necessitating the request. The request must also include a detailed description of the alternative ESC practice and justification that the practice meets the intent of the Minimum Standard for which the variance is sought (Ref. 9VAC25-840-50).

7.3 For an exception to become part of specific SWM plans, a written exception request must be submitted by the RU Facilities Planning and Construction Office for review and approval by DEQ. This request must include an explanation of the reasons for requesting the exception and describe the specific site conditions necessitating the request. The request must also include a detailed description of the alternative SWM practice and

justification that the practice meets the intent of the minimum standard or technical criteria or both for which the exception is sought (Ref. 9VAC25-840-50).

7.4 ESC/SWM Variance and Exception Request Policy and Procedures

- 7.4.1 The RU Facilities Planning and Construction Office shall coordinate the review and approval of all requested exceptions and variances with DEQ's ESC/SWM Program representative(s).
- 7.4.2 All requests for project specific exceptions and variances to the RU Annual Standards and Specifications for ESC and SWM shall be sent by the design professional to the RU Facilities Planning and Construction Office and shall be accompanied by complete details and documentation, including justification for the requested variance and impacts associated with the variance request. The design professional shall complete the form included in Appendix C.
- 7.4.3 The RU ESC/SWM Administrator (or representative) will review the request and determine if the request should be sent to DEQ for further consideration. If the Administrator determines the request should not be sent to DEQ, then the request shall be considered denied.
- 7.4.4 Exception and variance requests will be sent by the RU Facilities Planning and Construction Office to the DEQ Central Office for review and approval, if determined to be appropriate.
- 7.4.5 All requested variances shall be considered unapproved until written approval from DEQ is received.
- 7.4.6 All approved variances shall be listed in the General Notes section of the ESC & SWM plans for land disturbing activities and included in the Narrative.

8.0 LAND-DISTURBING ACTIVITIES

8.1 Proposed Land-Disturbing Activities

- 8.1.1 RU shall track regulated land-disturbing activities. A list of regulated land-disturbing activities currently underway will be submitted to DEQ not less than annually.
- 8.1.2 RU will provide the following information on any regulated land-disturbing activity to DEQ at StandardsandSpecs@deq.virginia.gov no less than two weeks prior to the start of the activity.
 - 8.1.2.1 Project name or project number (any associated CGP permit number)
 - 8.1.2.2 Project location (including nearest intersection, latitude and longitude, access point)
 - 8.1.2.3 On-site project manager and contact information
 - 8.1.2.4 Responsible Land Disturber (RLD) name and contact information
 - 8.1.2.5 Project description
 - 8.1.2.6 Acreage of disturbance for the project
 - 8.1.2.7 Estimated disturbed acreage for individual projects must be reported in the following manner:
 - 8.1.2.7.1 Linear Projects – beginning and ending coordinates, or
 - 8.1.2.7.2 Site Development – central to polygon or point coordinates.

Note: Coordinates may be reported by UTM (x, y, zone, and datum) or state plane (x, y, zone, and datum).

- 8.1.2.8 Project start and finish date.
- 8.1.2.9 Any variances/exemptions/waivers associated with this project.

9.0 LONG-TERM MAINTENANCE:

- 9.1 Project-specific plans (plan sheets and narrative) shall contain information on long-term maintenance of BMP's. The following information shall be printed on the approved stormwater management plans:
 - 9.1.1 A description of requirements for maintenance and maintenance inspection of the stormwater management facilities and a recommended schedule of maintenance inspection and maintenance.
 - 9.1.2 The identification of a person or persons who will be responsible for maintenance inspection and maintenance.
 - 9.1.3 The maintenance inspection schedule and maintenance requirements should be in accordance with the Virginia BMP Clearinghouse, the Virginia SWM Handbook, the MS4 permit (if applicable) and/or the manufacturer's specifications.
 - 9.1.4 Clearly depict the types of land cover on the site (i.e. different type of hatching for each land cover), including the acreage for each cover type. The acreage should be labeled in all the subareas. Provide a table that adds the land cover up by type on the sheet.
 - 9.1.5 Draw metes and bounds all the way around any conserved open space.
 - 9.1.6 Label any conserved open space as "Runoff Reduction Compliance Forest / Open Space."
 - 9.1.7 Include the following note on the sheet: "The Runoff Reduction Compliance Forest / Open Space area shown here shall be maintained in a forest / open space manner until such time an amended storm water management plan is approved by the VSMP Authority."
- 9.2 RU shall track stormwater management facilities and associated watersheds.
- 9.3 The RU BMP will be updated quarterly with information as related to the BMP.
- 9.4 Stormwater Pollution Prevent Plans (SWPPP's) shall be made available on-line.
- 9.5 RU shall inspect BMP's per the schedules included in the narratives or on the plans or both; at a minimum, inspections shall occur annually and after any storm event which causes the capacity of the facility to be exceeded. Inspection reports shall be maintained as part of the BMP files.
- 9.6 RU shall perform maintenance of BMP's per the schedules included in the narratives or on the plans or both and as necessary to maintain the BMP's necessary function.
- 9.7 Responsibility for the operation and maintenance of BMP's shall pass to any successor or owner, and legally binding arrangements shall be made to pass the responsibility to successors in title. Arrangements shall designate successor to be permanently responsible for BMP operation and maintenance.

10.0 REPORTS AND RECORD-KEEPING

- 10.1 ESC record retention – RU shall maintain, on-site and in AS&S files, a copy of the approved ESC plan and a record of inspections for each active land-disturbing activity.
- 10.2 SWM record retention:
 - i. Project records, including approved stormwater management plans, shall be kept for three years after state permit termination or project completion.
 - ii. Stormwater management facility inspection records shall be documented and retained for at least five years from the date of inspection.
 - iii. Construction record drawings shall be maintained in perpetuity or until a stormwater management facility is removed.
 - iv. All registration statements submitted in accordance with 9VAC25-870-59 shall be documented and retained for at least three years from the date of project completion or state permit termination.

11.0 DEQ OVERSIGHT INFORMATION

- 11.1 Enforcement
 - 11.1.1 SWM – § 62.1-44.15:27.F. Enforcement shall be administered by the Department and the Board where applicable in accordance with the provisions of this article.
 - 11.1.2 ESC – § 62.1-44.15:54.E and § 62.1-44.15:56.G. The Department and the Board, where applicable, shall provide project oversight and enforcement as necessary and comprehensive program compliance review and evaluation. The Department may take enforcement actions in accordance with this article and related regulations.
- 11.2 Complaints and Inspections
 - 11.2.1 SWM – § 62.1-44.15:31.C. The Department shall perform random site inspections or inspections in response to a complaint to assure compliance with this article, the Erosion and Sediment Control Law, and regulations adopted thereunder.
- 11.3 Fees
 - 11.3.1 SWM – § 62.1-44.15:31.D. The Department shall assess an administrative charge to cover the costs of services rendered associated with its responsibilities pursuant to this section.
 - 11.3.2 ESC – § 62.1-44.15:55.D. The Board shall have the authority to enforce approved specifications and charge fees equal to the lower of (i) \$1,000 or (ii) an amount sufficient to cover the costs associated with standard and specification review and approval, project inspections, and compliance.
- 11.4 Please note that DEQ is the VSMP Authority and issuance and termination of Construction General Permits shall go through the Department.
 - 11.4.1 Registration Statement – 9VAC25-880-50
 - 11.4.2 Notice of Termination – CGP Part I.F.
 - 11.4.3 AS&S Entity Information Form – see Appendix D.
- 11.5 Discretionary Requirements:

- 11.5.1 Inspection reports conducted by RU as well as complaint logs and complaint responses may be required to be submitted to DEQ.
- 11.5.2 RU may be required to provide weekly e-reporting to the Department's applicable regional office:
 - 11.5.2.1 Inspection reports;
 - 11.5.2.2 Pictures;
 - 11.5.2.3 Complaint logs and complaint responses; and
 - 11.5.2.4 Other compliance documents



APPENDIX A

PART 1 – ESC/SWM PLAN PREPARER/REVIEWER CHECKLIST

ESC/SWM PLAN PREPARER/REVIEWER CHECKLIST

The Erosion and Sediment Control (ESC) and Storm Water Management (SWM) Plan consists of the narrative (including any supporting calculations) and the plan sheets, as noted below.

GENERAL

_____ Complete set of plans - Include all sheets pertaining to the site grading and stormwater and any activities impacting erosion and sediment control and drainage:

- Existing conditions
- Demolition
- Site grading
- Erosion and sediment control
- Storm sewer systems
- Stormwater management facilities
- Utility layout
- Landscaping
- On-site and off-site borrow and disposal areas that do not have separate approved ESC Plans
- Calculations

(Note – For water quality please include the Virginia Runoff Reduction Method Spreadsheet and the associated calculations.)

_____ Professional's seal - The designer's original seal, signature, and date are required on the cover sheet of each narrative and each set of plan sheets. A facsimile is acceptable for subsequent plan sheets.

_____ Number of plan sets - Two sets of ESC and/or SWM Plans may be submitted initially. Five sets are required for approval. Distribution of the approved plans will be as follows:

- 1 – RU Facilities Planning and Construction Office
- 1 – RU Project Manager
- 1 – Design Engineer
- 1 – Contractor
- 1 – Plan Reviewer / Inspector

_____ Variations - Variations requested at the time of plan submission are governed by Section 9VAC25-840-50 of the Virginia Erosion and Sediment Control Regulations and the RU Annual Standards and Specifications for ESC and SWM.

_____ Completed Plan Preparer / Reviewer Checklist - Include a completed and signed ESC/SWM Plan Preparer/Reviewer Checklist.

EROSION AND SEDIMENT CONTROL MINIMUM STANDARDS

All Minimum Standards must be addressed.

Yes No NA

- All Minimum Standards have been listed on a construction sheet?
- MS-1 Have temporary and permanent stabilization been addressed in the narrative?
 Are practices shown on the plan?
 Temporary and permanent seed specifications?
 Lime and fertilizer?
 Mulching?
 Blankets/Matting?
 Pavement/Construction Road Stabilization?
- MS-2 Has stabilization of soil stockpiles, borrow areas, and disposal areas been addressed in the narrative and on the plan?
 Have sediment trapping measures been provided?
- MS-3 Has the establishment and maintenance of permanent vegetative stabilization been addressed?
- MS-4 Does the plan specifically state that sediment-trapping facilities shall be constructed as a first step in land-disturbing activities?
- MS-5 Does the plan specifically state that stabilization of earthen structures is required immediately after installation? Is this noted for each measure on the plan?
- MS-6 Are sediment traps and sediment basins specified where needed and designed to the Annual Standards and Specifications?
- MS-7 Have the design and temporary/permanent stabilization of cut and fill slopes been adequately addressed? Is Surface Roughening provided for slopes steeper than 3:1?
- MS-8 Have adequate temporary or permanent conveyances (paved flumes, channels, slope drains) been provided for concentrated stormwater runoff on cut and fill slopes?
- MS-9 Has water seeping from a slope face been addressed (e.g., subsurface drains)?
- MS-10 Is adequate inlet protection provided for all operational storm drain and culvert inlets?

Yes No NA

- MS-11 Are adequate outlet protection and/or channel linings provided for all stormwater conveyance channels and receiving channels? Is there a schedule indicating:
 Dimensions of the outlet protection? Lining? Size of riprap?
 Cross section and slope of the channels? Type of lining? Size of riprap, if used?
- MS-12 Are in-stream protection measures required so that channel impacts are minimized?
- MS-13 Are temporary stream crossings of non-erodible material required where applicable?
- MS-14 Are all applicable federal, state and local regulations pertaining to working in or crossing live watercourses being followed?
- MS-15 Has immediate re-stabilization of areas subject to in-stream construction (bed and banks) been adequately addressed?
- MS-16 Have disturbances from underground utility line installations been addressed?
 No more than 500 linear feet of trench open at one time?
 Effluent from dewatering filtered or passed through a sediment-trapping device?
 Proper backfill, compaction, and re-stabilization?
- MS-17 Is the transport of soil and mud onto public roadways properly controlled? (i.e., construction entrances, wash racks, transport of sediment to a trapping facility, cleaning of roadways at the end of each day, no washing before sweeping and shoveling)
- MS-18 Has the removal of temporary practices been addressed?
 Have the removal of accumulated sediment and the final stabilization of the resulting disturbed areas been addressed?
- MS-19 Are properties and waterways downstream from development adequately protected from sediment deposition, erosion, and damage due to increases in volume, velocity and peak flow rate of stormwater runoff? Have adequate channels been provided on-site?
- Is concentrated stormwater runoff leaving the development site discharged to an adequate natural or man-made receiving channel, pipe or storm sewer system?
- Are calculations provided to verify the adequacy of all channels and pipes?
- If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, have provisions been made to prevent downstream erosion?
- Have increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property been diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility?
- Variances requested at the time of plan submission are governed by Section 9VAC25-840-50 of the Virginia Erosion and Sediment Control Regulations.
- All Minimum Standards have been listed on a plan set.

NARRATIVE

_____ Project description - Briefly describe the nature and purpose of the land-disturbing activity.

- Provide the area (acres) to be disturbed. This disturbed area shall include laydown, access and any other area that may be disturbed during the course of the project.
- Provide the existing impervious area and the increase, or decrease, in impervious area (acres).
- Estimated schedule for the project (duration from start to finish).
- Ultimate developed condition of the site.

_____ Existing site conditions - A description of the existing topography (% slopes), ground cover, and drainage (on-site and receiving channels).

- Provide the size of drainage areas in pre-development and post-development conditions.
- Discuss any existing drainage or erosion problems and how they are to be corrected.

_____ Adjacent areas - A description of all neighboring areas such as residential developments, agricultural areas, streams, lakes, roads, etc., that might be affected by the land disturbance. Discuss any environmentally sensitive areas and any possible problems during and after construction (traffic issues, dust control, increases in runoff, etc.).

_____ Off-site areas - Describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.). Identify the owner of the off-site area and the locality responsible for plan review. Include a statement that any off-site land-disturbing activity associated with the project must have an approved ESC plan. Submit documentation of the approved ESC plan for each of these sites.

_____ Soils - Provide a description of the soils on the site, giving such information as soil name, mapping unit, erodibility, permeability, surface runoff, and a brief description of depth, texture and soil structure.

- Indicate references for soil information.
- Provide a copy of the soil survey map.

_____ Critical areas - A description of areas on the site that have potentially serious erosion problems or that are sensitive to sediment impacts (e.g., steep slopes, watercourses, wet weather / underground springs, etc.). Discuss any area(s) of the project which may become critical during the project.

_____ Erosion and sediment control measures - A description of the structural and vegetative methods that will be used to control erosion and sedimentation on the site. Controls should satisfy applicable minimum standards and specifications in Chapter 3 of the 1992 Virginia Erosion and Sediment Control Handbook (VESCH).

_____ Management strategies / Sequence of construction - Address management strategies, the sequence of construction, and any phasing of installation of ESC measures.

_____ Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed. List any soil testing requirements.

_____ Maintenance of ESC measures - A schedule of regular inspections, maintenance, and repair of erosion and sediment control structures should be set forth. List who will be responsible for ESC maintenance during the course of the project.

_____ Calculations for temporary erosion and sediment control measures - For each temporary ESC measure, provide the calculations required by the standards and specifications. All calculations

showing pre-development and post-development runoff should be provided including any worksheets, assumptions and engineering decisions.

Stormwater management considerations - Will the development of the site cause an increase in peak runoff rates? Will the increase in runoff cause flooding or channel degradation downstream? Describe the strategy to control stormwater runoff:

- Provide exhibits showing the drainage divides, the direction of flow, and the size (acreage) of each of the site drainage areas that discharge runoff off-site, both existing and proposed.
- Provide calculations for pre- and post-development runoff from these drainage areas.
- Ensure that Minimum Standard 19 is satisfied for each off-site receiving channel, including those that receive runoff from stormwater management facilities.
- Provide calculations for the design of each permanent stormwater management facility.
- Ensure that increased volumes of sheet flows are diverted to a stable outlet, to an adequate channel, pipe or pipe system, or to a stormwater management facility.
- Provide adequacy calculations (capacity and erosion resistance) for all on-site stormwater conveyances in accordance with the next checklist item.
- Provide a table with the following information for each stormwater management BMP: BMP Type, Geographic Location (Northing/Easting), Total Acres Treated by Facility, Impervious Acres Treated, and Pervious Acres Treated.

Calculations for permanent stormwater conveyances - For each permanent stormwater conveyance or structure, provide the following design calculations, as applicable:

- Drainage area map with time of concentration (T_C) path shown and points of analysis with worksheets.
- T_C calculation/nomograph
- Locality IDF curve
- Composite runoff coefficient or RCN calculation
- Peak runoff calculations
- TR-55 worksheets
- Stormwater conveyance channel design calculations
- Storm drain and storm sewer system design calculations
- Hydraulic Grade Line if any pipe in the system is more than 90% full for a 10-year storm
- Culvert design calculations
- Drop inlet backwater calculations
- Curb inlet length calculations
- Water quality calculations for BMPs including worksheets
- Energy balance method documentation
- VRRM compliance spreadsheet

Maintenance of SWM Facilities – Provide the following for each permanent stormwater management facility:

- A description of the requirements for maintenance of the facility and a recommended schedule of maintenance inspection and maintenance.
- The identification of the person or persons who will be responsible for maintenance inspection and maintenance.
- The maintenance inspection schedule and maintenance requirements should be in accordance with the Virginia BMP Clearinghouse, the Virginia SWM Handbook, the MS4 permit (if applicable) and/or the manufacturer's specifications.
- Clearly depict the types of land cover on the site (i.e. different type of hatching for each land cover) including the acreage for each cover type. The acreage should be labeled in all of the

subareas. Provide a table that adds the land cover up by type on the sheet.

- Draw metes and bounds all the way around any conserved open space.
- Label any conserved open space as “The Runoff Reduction Compliance Forest / Open Space.”
- Include the following note on the sheet: “The Runoff reduction Compliance Forest / Open Space area shown here shall be maintained in a forest / open space manner until such time an amended storm water management plan is approved by the VSMP Authority.”

_____ Water Quality – Is the plan in compliance with the water quality criteria, or, other current best management practices found at the Virginia Stormwater BMP Clearinghouse (<http://www.vwrrc.vt.edu/swc/>)? Provide supporting calculations. For each best management practice with a checklist, include a completed Design and Plan Review Checklist from Appendix 3 of the Virginia Stormwater Management Handbook.

_____ Specifications for erosion and sediment control measures - For each erosion and sediment control measure employed in the plan, include in the Narrative at a minimum the following sections from the standard and specification in the VESCH: Construction Specifications, Installation, and Maintenance. Include any approved variances or revisions to the standards and specifications.

_____ Specifications for stormwater and stormwater management structures - Provide specifications for stormwater and stormwater management structures, i.e., pipe materials, pipe bedding, stormwater structures.

_____ Page numbers – Number the pages of the narrative and the calculations.

_____ General Information – Narrative contains project specific information, and where appropriate general information has been modified to represent the project specific information and situation.

SITE PLAN

_____ Vicinity map - A small map locating the site in relation to the surrounding area. Include any landmarks that might assist in locating the site.

_____ Indicate north - The direction of north in relation to the site.

_____ Limits of disturbance – Areas that are to be cleared and graded and areas to be protected during construction. This disturbed area shall include laydown, access and any other areas that may be disturbed during the course of the project. Provide notes on how areas will be marked and for areas NOT to be disturbed.

_____ Existing contours - The existing contours of the site shall be shown as dashed light lines and elevation labeled adequately.

_____ Final contours and elevations - Changes to the existing contours, including final drainage patterns. Note the finished floor elevation (FFE) of all buildings on site, including basements. Proposed contour lines shall be solid and bolder than existing contour lines.

_____ Profile of storm drainage system – Proposed storm drainage components shall be provided in a profile. Pipe diameter, material, inverts, stationing, percent slope, proposed and existing grade, etc. shall be included as part of the profile.

_____ Existing vegetation - The existing tree lines, grassed areas, or unique vegetation.

- _____ Soils Map – The boundaries of different soil types, K-factor and soil survey classifications.

- _____ Existing drainage patterns – The dividing lines and the direction of flow for the different drainage areas. Include the size (acres) of each drainage area.

- _____ Proposed drainage patterns – The dividing lines and the direction of flow for the different drainage areas. Include the size (acres) of each drainage area.

- _____ Critical areas – Note on the plan all critical areas with potentially serious erosion problems.

- _____ Site development – Show all improvements such as buildings, parking lots, access roads, utility construction, etc. Show all physical items that could affect or be affected by erosion, sediment, and drainage.

- _____ Landscape plan - Include a plan showing location and plant selection for landscaped areas.

- _____ Location of practices – Show the locations of erosion and sediment control and stormwater management practices used on the site. Use standard symbols and abbreviations from the ESC and SWM handbooks. A legend denoting symbols, line uses and other special characters shall be provided.

- _____ Off-site areas - Include any off-site land-disturbing activities (e.g., borrow sites, disposal areas, etc.) not covered by a separate approved ESC Plan. Discuss who has final authority for off-site areas and who will be responsible for stabilization.

- _____ Detail drawings – Show detail drawings of all SWM and ESC practices implemented. Any structural practices used that are not found in the ESC handbook or local handbooks should be explained and illustrated with detail drawings. Details should be provided which are clearly dimensioned and reflect the ability to be “built” in the field according to proper design criteria.

- _____ Erosion and sediment control notes - At a minimum, include the erosion and sediment control notes found in Table 6-1 on page VI-15 of the 1992 *Virginia Erosion and Sediment Control Handbook*. Note that the Virginia Erosion and Sediment Control Regulations are found in section "9VAC25-840" of the Code of Virginia. Ensure that all applicable Minimum Standards not covered elsewhere in the plan have been addressed. Include a note that any off-site land-disturbing activity associated with the project must have an approved ESC Plan.

- _____ Minimum Standards – Minimum Standard 1 through Minimum Standard 19 shall be included in the plan set.

- _____ Legend - Provide a complete listing of all ESC measures used, including the VESCH uniform code symbol and the standard and specification number. Include any other items necessary to identify pertinent features in the plan.

- _____ Property lines and easements - Show all property and easement lines. For each adjacent property, list the deed book and page number and the property owner's name and address.

Print Professional’s Name

Professional’s Signature

Date



APPENDIX B

ESC/SWM AND RLD INSPECTION REPORTS

INSPECTION REPORT

Project Name: _____ Project Authority: _____
 RLD Name: _____ RLD No.: _____
 Project Location: _____ Project No: _____
 Inspector Name ⁽³⁾: _____ Inspection Date: _____ Time: _____
 Date of Most Recent Precipitation Event: _____ Equivalent rainfall _____

STAGE OF CONSTRUCTION

Pre-Construction Conference Building Construction Construction of SWM Facilities
 Clearing & Grubbing Finish Grading Maintenance of SWM Facilities
 Rough Grading Final Stabilization Other _____

Item#	State/Local Regulation ⁽¹⁾	Violation		Description and Location of Problem/Violation ⁽²⁾ , Required or Recommended Corrective Actions, and Other Comments/Notes
		Initial	Repeat	

1. Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (9VAC25-840), *Virginia Stormwater Management Permit Regulations* (9VAC25-870), or Annual Standards and Specifications for ESC & SWM.
2. Note whether off-site damage resulting from the problem/violation was evident during the inspection.
3. Inspections must be performed by DEQ-certified ESC/SWM inspectors.

REQUIRED CORRECTIVE ACTION DEADLINE DATE: _____ **Re-inspection Date:** _____
(DD/MM/YY) (DD/MM/YY)

The required corrective action deadline date applies to all violations noted on this report. If listed violation(s) currently constitute non-compliance and/or required corrective actions are not completed by the deadline, a **NOTICE TO COMPLY**, **STOP WORK ORDER**, and/or other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector: _____
Signature Date

Acknowledgement of on-site report receipt: _____
Print Name Signature Date

This report will be provided to the following parties via mail, fax, or e-mail within 24 hours of inspection:



APPENDIX C

VARIANCE/EXCEPTION REQUEST FORM

VARIANCE/EXCEPTION REQUEST

Requested by: _____ Date: _____

Street Address: _____

City/Town/Zip: _____

Telephone #: _____ Fax #: _____ E-mail address: _____

Introduction: _____

Project Description: _____

Minimum Standards Variance Requests: _____

Exiting Conditions and Adjacent Areas: _____

Soil Characterization: _____

Critical and Sensitive Areas (Karst, wetland, etc.): _____

Mitigation (EPC Measures; Permanent Stabilization; Vegetative Restoration, Maintenance;
Critical and Sensitive Areas; Self Inspection, Reporting and DEQ Certified Personnel): _____

Designers Signature: _____ Date: _____

Signature of applicant: _____ Date: _____

*Providing supporting documentation (sketches, calculations, etc...) as necessary to support request
(NOTE: All approved Variance Requests will be considered part of the Erosion and Sediment Control Plan.)*



APPENDIX D

Annual Standards and Specifications Entity Information Form

Annual Standards & Specification (AS&S) Entity Information Sheet

1. Annual Standards & Specifications Entity:	
2. AS&S Coverage Verification	
a. Operator:	
b. Project name:	
c. Estimated Area to be Disturbed (acres):	
3. Plan Approval Verification	
a. Erosion & Sediment Control (ESC) Plan	
i. ESC Plan Reviewer Name and Certification Number:	
ii. ESC Plan Date:	
iii. ESC Plan Approval Date:	
b. Stormwater Management (SWM) Plan:	
i. Technical Criteria Used:	
ii. SWM Plan Reviewer Name and Certification Number:	
iii. SWM Plan Date:	
iv. SWM Plan Approval Date:	
4. Comments:	

Printed Name:	Title:
Signature:	Date:

(Please sign in ink. This must be signed by an employee of the AS&S entity who has oversight of this project and is aware of its coverage under their AS&S.)

(Retain a copy of this form onsite and within project specific AS&S files.)

Instructions for completion:

1. AS&S Entity/Holder Name as it appears on the AS&S Approval Letter
2.a. Operator = Owner, operator, developer, person or general contractor that the AS&S holder is allowing to operate under their DEQ approved AS&S.
2.b. Project Name = Name of the construction activity as it appears on the Registration Statement.
2.c. Estimated Area to Be Disturbed = Provide the estimated area (to the nearest one-hundredth acre) to be disturbed by the construction activity. Include the estimated area of land disturbance that will occur at any off-site support activity to be covered under this general permit.
3.a. Erosion & Sediment Control (ESC) Plans i. = AS&S ESC plans are required to be reviewed and approved by DEQ-Certified ESC Plan Reviewers. Provide the name and certification number of the qualified individual. ii. = Provide the date of the ESC plan. iii. = Provide the date the ESC plan was approved.
3.b. Stormwater Management (SWM) Plans i. = The technical criteria used for this project will be either IIB or IIC per the SWM Regulations; 9VAC25-870. ii. = AS&S SWM plans are required to be reviewed and approved by DEQ-Certified SWM Plan Reviewers. Provide the name and certification number of the qualified individual. iii. = Provide the date of the SWM plan. iv. = Provide the date the SWM plan was approved.
4. Comments = Indicate whether the project package contains any requests (e.g. SWM plan waiver, Decline to Permit, Variance, Exception, Deviation...) DEQ is the VESCP and VSMP Authority for AS&S Entities. Approval for such requests must be issued by DEQ.

(Further questions can be directed to StandardsandSpecs@deq.virginia.gov)



APPENDIX E

ESC/SWM Plan Approval Form

ESC/SWM PLAN APPROVAL FORM

Project Description: _____

ESC/SWM Plans Description: _____

ESC/SWM Plans prepared by: _____

Date of Final Documents: _____

Engineer of Record: _____

ESC/SWM Plans reviewed by: _____

Review Engineer of Record: _____

Comments: _____

RU ESC/SWM Administrator Approval: _____ **Date:** _____