



**STANDARDS AND SPECIFICATIONS
FOR
EROSION AND SEDIMENT CONTROL
AND
STORMWATER MANAGEMENT**

2025 Edition

Contents

1 Standards and Specifications Entity	1
2 Standards and Specifications Entity Type	1
3 Standards and Specifications Agreement Information	1
4 Certification	1
5 Administration	3
6 Regulated Land-Disturbing Activities.....	3
7 Certified Personnel	4
8 Review and Approval of Plans	4
9 Erosion and Sediment Control Plan – Contents of Plans.....	4
10 Erosion and Sediment Control Variances and Exceptions.....	5
11 Stormwater Pollution Prevention Plan Contents	5
12 Stormwater Management Plan Contents.....	6
13 Pollution Prevention Plan Contents	6
14 Technical Criteria for Regulated Land-Disturbing Activities	7
15 Long-Term Maintenance of Permanent Stormwater Facilities	7
16 Project Tracking and Reporting.....	8
17 Monitoring, Inspections, and Enforcement	8
18 Mason Specific Procedures and Processes	9

Appendix A: Mason Specific Procedures and Processes

- Appendix A.1: Land Disturbance Permit Application Form
- Appendix A.2: Land Disturbance Permit
- Appendix A.3: Plan Review Checklist
- Appendix A.4: Environmental Compliance Report
- Appendix A.5: Notice of Termination
- Appendix A.6: Variance Request Form
- Appendix A.7: Pre-Construction Statement

Appendix B: Erosion and Sediment Control Structures

Appendix C: As-built Specifications

Appendix D: DCR Frequently Asked Questions-Native vs Invasive Species for Erosion & Sediment Control

Virginia Department of Environmental Quality

Standards and Specifications # _____ (Note: to be entered by the Department)

Standards and Specifications Agreement

For

George Mason University

1 Standards and Specifications Entity

Entity Name:	George Mason University
Entity Address:	4400 University Drive, 1E4
City, State, and Zip Code:	Fairfax, VA 22030
Contact Name:	Zhongyan Xu
Contact Phone:	703-993-4051
Contact Email:	Zxu8@gmu.edu
Alt. Contact Name:	Frank Strike
Alt. Contact Phone:	703-993-2513
Alt. Contact Email:	fstrike@gmu.edu

2 Standards and Specifications Entity Type

- ☒ State
☐ Federal
☐ Linear Utility
☐ Public Service Authority
☐ Wetland/Stream

3 Standards and Specifications Agreement Information

Agreement Date: 12/20/2024

Date of previously approved agreement: 03/16/2022

Have there been any updates to your previously approved agreement?

☐ Yes ☒ No

4 Certification

"I certify under penalty of law that this agreement and all attachments were prepared under my direction or supervision in accordance with 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 fine and imprisonment for knowing violations."

Printed Name: Frank Strike

Title: Vice President, Facilities & Campus Operations

Signature: 

Date: 03/18/2025

5 Administration

Per § 62.1-44.15:31 of the Code of Virginia, the Virginia Department of Transportation shall; any other state agency or federal entity may; and electric, natural gas, and telephone utility companies; interstate and intrastate natural gas pipeline companies; railroad companies; and authorities created pursuant to § 15.2-5102 of the Code of Virginia may submit standards and specifications, for approval by the Virginia Department of Environmental Quality (Department), who serves as the Virginia Erosion and Stormwater Management Program (VESMP) authority for all land-disturbing activities subject to approved standards and specifications. The Standards and Specifications Program is designed to provide a single set of standards and specifications, the Virginia Stormwater Management Handbook, Version 1.0, that describes how entities with approved standards and specifications conduct land-disturbing activities in a manner that will be consistent with the requirements of the Virginia Erosion and Stormwater Management Act (VESMA), Virginia Erosion and Stormwater Management Regulation, and the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activities (Construction General Permit).

George Mason University, hereinafter the “S&S Entity,” is responsible for administering, implementing, and complying with the standards and specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) set out in this agreement by following the design criteria in the Virginia Stormwater Management Handbook, Version 1.0, for regulated land disturbing activities.

6 Regulated Land-Disturbing Activities

- A. Land-disturbing activities that meet one of the criteria below are regulated as follows:
1. Land-disturbing activity that disturbs 10,000 square feet or more, is less than one acre, not in an area of a locality designated as a Chesapeake Bay Preservation Area, and not part of a common plan of development or sale, is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) of Part V of the Virginia Erosion and Stormwater Management Regulation (Regulation).
 2. Land-disturbing activity that disturbs 2,500 square feet or more, is less than one acre, and in an area of a locality designated as a Chesapeake Bay Preservation Area is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) and Article 3 (9VAC25-875-570 et seq.) of Part V of the Regulation unless Article 4 (9VAC25-875-670 et seq) of Part V is applicable, as determined in accordance with 9VAC25-875-480 and 9VAC25-875-490.
 3. Land-disturbing activity that disturbs less than one acre, but is part of a larger common plan of development or sale that disturbs one acre or more, is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) and Article 3 (9VAC25-875-570 et seq.) of Part V of the Regulation unless Article 4 (9VAC25-875-670 et seq) of Part V is applicable, as determined in accordance with 9VAC25-875-480 and 9VAC25-875-490.
 4. Land-disturbing activity that disturbs one acre or more is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) and Article 3 (9VAC25-875-570 et seq.) of Part V of the Regulation unless Article 4 (9VAC25-875-670 et seq.) of Part V is applicable, as determined in accordance with 9VAC25- 875-480 and 9VAC25-875-490.
- B. Land-disturbing activities exempt per 9VAC25-875-90 are not required to comply with the requirements of the VESMA unless otherwise required by federal law.

7 Certified Personnel

- A. The S&S Entity's administrator shall be responsible for the management and coordination of this standards and specifications agreement and shall be certified as a Dual Combined Administrator as outlined in 9VAC25- 875-400.
- B. Plan Reviewers shall review all ESC and SWM plans for compliance with this standards and specifications agreement and all applicable laws and regulations. Plan reviewers shall be certified as a Plan Reviewer for ESC and a Plan Reviewer for SWM or as a Dual Plan Reviewer, as outlined in 9VAC25-875-400.
- C. Compliance inspectors shall be responsible for the inspection and compliance of ESC, SWM, and stormwater pollution prevention plan practices. They shall be certified as an Inspector for ESC and an Inspector for SWM or as a Dual Inspector, as outlined in 9VAC25-875-400.

8 Review and Approval of Plans

- A. The S&S Entity has the authority to approve soil erosion control and stormwater management (ESM) plans, except for activities not required to comply with the requirements of the Virginia Erosion and Stormwater Management Act (VESMA), under § 62.1-44.15:34 of the Code of Virginia. The ESM plan is a document describing methods for controlling soil erosion and managing stormwater in accordance with the requirements adopted pursuant to the VESMA. The ESM plan may consist of aspects of the erosion and sediment control plan and the stormwater management plan as each is described in the Virginia Erosion and Stormwater Management Regulation. (9VAC25-875-20)
- B. ESM plans must be approved in writing. If a third party is used to fulfill the certification of the plan reviewer, the third-party reviewer may recommend approval to the S&S Entity; however, the S&S Entity formally approves the plan in writing. The date of the approvable plan should be noted in the approval letter signed by the S&S Entity's certified plan reviewer.
- C. Plans must be reviewed and approved by Department-certified personnel, as outlined in 9VAC25-875-400, to ensure compliance with these Standards and Specifications for ESC and SWM and reviewed by the S&S Entity for consistency with the Virginia Stormwater Management Handbook, Version 1.0, and applicable permit and regulatory requirements.
- D. The Department may require changes to an approved ESM plan in the following cases:
 - 1. Where inspection has revealed that the plan is inadequate to satisfy applicable regulations or ordinances; or
 - 2. Where the S&S Entity finds that because of changed circumstances, or for other reasons, the plan cannot be effectively carried out and proposed amendments to the plan, consistent with the requirements of the VESMA, are agreed to by the department, as the VESMP authority, and the S&S Entity.

9 Erosion and Sediment Control Plan – Contents of Plans

- A. The S&S Entity shall prepare an erosion and sediment control plan for its land-disturbing activities. The erosion and sediment control plan shall contain all major conservation decisions to ensure that the entire unit or units of land will be treated to achieve the conservation objectives in 9VAC25-875-560. The erosion and sediment control plan shall be prepared in accordance with 9 VAC25-875-550 and be consistent with design criteria in the Virginia Stormwater Management Handbook, Version 1.0.
- B. The person responsible for carrying out the plan shall provide the name of an individual holding a certificate who will be in charge of and responsible for carrying out the land-disturbing activity to the Department.

10 Erosion and Sediment Control Variances and Exceptions

- A. The Department may waive or modify any of the standards that are deemed to be inappropriate or too restrictive for site conditions, by granting a variance. A variance may be granted under these conditions:
 - 1. Prior to construction, the S&S Entity may request a variance to become part of the approved erosion and sediment control plan. The S&S Entity shall explain the reasons for requesting variances in writing. Specific variances which are allowed by the department shall be documented in the plan.
 - 2. During construction, the person responsible for implementing the approved plan may request a variance in writing from the Department. The Department shall respond in writing either approving or disapproving such a request. If the department does not approve a variance within 10 days of receipt of the request, the request shall be considered disapproved. Following disapproval, the applicant may resubmit a variance request with additional documentation.

11 Stormwater Pollution Prevention Plan Contents

- A. A stormwater pollution prevention plan shall include, but not be limited to, an approved erosion and sediment control plan, an approved stormwater management plan, a pollution prevention plan for regulated land-disturbing activities, and a description of any additional control measures necessary to address a total maximum daily load (TMDL) pursuant to 9VAC25-875-500 E.
- B. An erosion and sediment control plan consistent with the requirements of 9VAC25-875-550 must be designed and implemented during construction activities. Prior to land disturbance, this plan must be approved by a Plan Reviewer for ESC or a Dual Plan Reviewer.
- C. A stormwater management plan consistent with the requirements of 9VAC25-875-510 and the design criteria in the Virginia Stormwater Management Handbook, Version 1.0, must be designed and implemented during construction activities. Prior to land disturbance, this plan must be approved by a Plan Reviewer for SWM or a Dual Plan Reviewer.
- D. A pollution prevention plan that complies with 9VAC25-875-520 and identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site and describes control measures that will be used to minimize pollutants in stormwater discharges from the construction site must be developed before land disturbance commences.
- E. In addition to the requirements of subsections A through D of this section, if a specific wasteload allocation for a pollutant has been established in an approved TMDL and is assigned to stormwater discharges from a construction activity, additional control measures that are consistent with the Virginia Stormwater Management Handbook, Version 1.0, must be identified and implemented by the operator so that discharges are consistent with the assumptions and requirements of the wasteload allocation.
- F. The stormwater pollution prevention plan must address the requirements specified in 40 CFR 450.21, to the extent otherwise required by state law or regulations and any applicable provisions of a state permit:
 - 1. Control stormwater volume and velocity within the site to minimize soil erosion;
 - 2. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;
 - 3. Minimize the amount of soil exposed during construction activity;
 - 4. Minimize the disturbance of steep slopes;
 - 5. Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity, and

duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

6. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible;
 7. Minimize soil compaction and, unless infeasible, preserve topsoil;
 8. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a reasonable period of time or as otherwise determined by the department. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the Department; and
 9. Utilize outlet structures that withdraw water from the surface, unless infeasible, when discharging from basins and impoundments.
- G. The stormwater pollution prevention plan shall be amended whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to state waters and that has not been previously addressed in the plan. The stormwater pollution prevention plan must be maintained at a central onsite location. If an onsite location is unavailable, notice of the stormwater pollution prevention plan's location must be posted near the main entrance at the construction site.

12 Stormwater Management Plan Contents

- A. A stormwater management plan shall be developed and implemented as approved or modified by the Department-certified plan reviewer and shall be developed in accordance with the following:
1. A stormwater management plan for a land-disturbing activity shall apply the stormwater management technical criteria outlined in Article 3 (9VAC25-875-570 et seq.) of Part V of the Regulation to the entire land-disturbing activity.
 2. A stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff; and
 3. Best management practices in the stormwater management plan are consistent with design criteria in the Virginia Stormwater Management Handbook, Version 1.0.
- B. A complete stormwater management plan shall address all requirements of 9VAC25-875-510.
- C. All final plan elements, specifications, or calculations of the stormwater management plans whose preparation requires a license under Chapter 4 (§ 54.1-400 et seq.) or 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia shall be appropriately signed and sealed by a professional who is licensed to engage in practice in the Commonwealth of Virginia. Nothing in this subsection shall authorize any person to engage in practice outside his area of professional competence.

13 Pollution Prevention Plan Contents

- A. A plan for implementing pollution prevention measures during construction activities shall be developed, implemented, and updated as necessary. The pollution prevention plan shall detail the design, installation, implementation, and maintenance of effective pollution prevention measures as specified in 40 CFR 450.21(d) to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:
1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

2. 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; and
 3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
- B. The pollution prevention plan shall include effective best management practices to prohibit the following discharges in accordance with 40 CFR 450.21(e):
1. Wastewater from washout of concrete, unless managed by an appropriate control;
 2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
 3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
 4. Soaps or solvents used in vehicle and equipment washing.
- C. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls in accordance with 40 CFR 450.21(c).

14 Technical Criteria for Regulated Land-Disturbing Activities

- A. To protect the quality and quantity of state water from the potential harm of unmanaged stormwater runoff resulting from land-disturbing activities, the S&S Entity shall adhere to the technical criteria for regulated land-disturbing activities set forth in Part V of the Regulation expressly to include 9VAC25-875-580 [water quality design criteria requirements]; 9VAC25-875-590 [water quality compliance]; 9VAC25-875-600 [water quantity]; 9VAC25-875-610 [offsite compliance options]; 9VAC25-875-620 [design storms and hydrologic methods]; 9VAC25-875-630 [stormwater harvesting]; 9VAC25-875-640 [linear development project]; and, 9VAC25-875-650 [stormwater management impoundment structures or facilities], which shall apply to all land-disturbing activities, except as expressly set forth in 9VAC25-875-490.
- B. The S&S Entity shall submit documentation that offsite options, approved by the Department or applicable state board, that are required to achieve the necessary phosphorous water quality reductions have been obtained prior to the commencement of the land-disturbing activity (i.e., prior to issuance of the permit). In the case of a phased project, the land disturber may acquire or achieve the offsite nutrient reductions prior to the commencement of each phase of the land-disturbing activity in an amount sufficient for each such phase.

15 Long-Term Maintenance of Permanent Stormwater Facilities

- A. The S&S Entity shall submit a construction record drawing for permanent stormwater management facilities to the VESMP authority based on the locality where the land-disturbing activity will occur. The record drawing shall contain a statement signed by a professional registered in the Commonwealth of Virginia pursuant to Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia, stating that to the best of the professional's knowledge, the construction record drawing shows all adjustments and revisions to the stormwater management plan made during construction and serve as a permanent record of the actual location of all constructed elements.

- B. The provision of long-term responsibility for and maintenance of stormwater management facilities and other techniques specified to manage the quality or quantity of runoff is required. Such requirements shall be set forth in a maintenance agreement which is recorded in the local land records prior to permit termination or earlier and shall at a minimum:
1. Be submitted to the VESMP authority for review and approval prior to the approval of the stormwater management plan;
 2. Be stated to run with the land;
 3. Provide for all necessary access to the property for purposes of maintenance and regulatory inspections;
 4. Provide for inspections and maintenance and the submission of inspection and maintenance reports to the VESCP, or VESMP authority; and
 5. Be enforceable by all appropriate governmental parties.

(Note: the Department has approved a model stormwater management facility maintenance agreement for use on projects where it is the permitting authority. The model agreement is in Section 10.2.1.1 of the Handbook.)

16 Project Tracking and Reporting

- A. The S&S Entity is responsible for providing project tracking and electronic notifications to the Department of all regulated land-disturbing activities subject to this standards and specifications agreement to comply with the applicable ESC and SWM requirements pursuant to 9VAC25-875-830 D 6.
- B. The S&S Entity must electronically notify the Department of any land- disturbing activities subject to approved standards and specifications that the S&S Entity intends to construct in Virginia prior to initiating land disturbance. The following information is required to be included in the electronic notification two weeks prior to initiating the regulated land-disturbing activity:
1. Project name and any associated Construction General Permit number;
 2. Project location (including nearest intersection, latitude and longitude, or access point);
 3. On-site project manager name and contact information;
 4. Responsible Land Disturber (RLD) name and contact information;
 5. Project description;
 6. Acreage of disturbance for the project;
 7. Anticipated project start and finish date; and
 8. Any deviations/variances/exemptions/waivers associated with the project.
- C. In addition to the prior land disturbance notification described above, the S&S Entity shall submit to the Department bi-annual linear project tracking of all active projects covered under this standards and specifications agreement from the last six months (including those previously reported). This bi-annual linear project tracking must include the acreage for all listed projects and shall be submitted by January 15th and July 15th of each year to the Department.

17 Monitoring, Inspections, and Enforcement

- A. The S&S Entity or its designated inspector shall perform periodic inspections of the land-disturbing activity during construction for:
1. Compliance with the approved erosion and sediment control plan;
 2. Compliance with the approved stormwater management plan;

3. Development, updating, and implementation of a pollution prevention plan;
 4. Compliance with these Standards and Specifications.;
 5. Compliance with the permit, if applicable; and
 6. Development and implementation of additional control measures necessary to address a TMDL.
- B. Periodic inspections are the responsibility of the S&S Entity and shall be conducted by an Inspector for ESC and Inspector for SWM or a Dual Inspector, as outlined in 9VAC25-875-400.
- C. The Department will conduct periodic inspections on all projects during construction, including random inspections and inspections in response to complaints. Where inspections by Department personnel reveal deficiencies in carrying out an approved plan, the Department may take enforcement actions in accordance with the VESMA and related regulations.

18 Mason Specific Procedures and Processes

- A. Mason Land Development (Mason LD) division is responsible for administering, implementing, and complying with Mason's standards and specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) approved by DEQ. Mason LD reserves the right to contract with a 3rd party to review and permit plans and inspect the ESC/SWM measures in accordance with Mason's Standards and Specifications for ESC and SWM.
- B. Mason utilizes e-Builder to manage various processes, including plan review and permit issuance, environmental compliance inspection, and permit termination. Mason Specific Procedures and Processes can be found in Appendix A.

APPENDIX A

Mason Specific Procedures and Processes

1. STANDARDS AND SPECIFICATIONS ADMINISTRATION

- 1.1. All plan design, construction, and maintenance activities on Mason owned state properties, undertaken by Mason, either by its internal workforce or contracted to external entities, shall comply with *George Mason University Standards and Specifications for ESC and SWM*.
- 1.2. Land-disturbing activity that disturbs 2,500 square feet or more on Mason owned state properties is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) and Article 3 (9VAC25-875-570 et seq.) of Part V of the Regulation unless Article 4 (9VAC25-875-670 et seq.) of Part V is applicable, as determined in accordance with 9VAC25-875-480 and 9VAC25-875-490.

Land-disturbing activities exempt per 9VAC25-875-90 are not required to comply with the requirements of the VESMA unless otherwise required by federal law.

- 1.3. All land disturbing activities, as defined in Section above, shall be vetted through Mason Land Development (Mason LD). A Land Disturbance Permit Application (Appendix A.1) shall be completed and submitted to Mason LD through e-Builder with a construction schematic and locations of the proposed work. Prior to starting a land-disturbing project, the project must have a Mason Land Disturbance Permit issued by Mason LD if disturbing activities more than 2,500 square feet (Appendix A.2) , and [Construction General Permit](#) issued by DEQ if disturbing activities more than one acre.
- 1.4. Site-Specific ESC, SWM, and Stormwater Pollution Prevention Plan (SWPPP) shall be prepared for all projects involving a regulated land-disturbing activity as defined in Section above, or when deemed necessary by Mason LD. Site-specific ESC, SWM and SWPPP plans shall be submitted to Mason LD for review and approval.
- 1.5. A responsible Land Disturber (RLD) shall be designated prior to initiating any land-disturbing activity. RLD is responsible to obtain proper permits for offsite/borrow areas, if necessary.

2. STANDARDS AND SPECIFICATIONS IMPLEMENTATION

2.1. Submittals

ESC, SWM, and SWPPP plans, narratives, and necessary attachments shall be submitted to the Mason LD for review and approval prior to any land-disturbing activities. Submittal packages shall be delivered to Mason LD office or following the Permit Application-Land Disturbance (PALD) process in e-Builder. The required elements for various submittal phases can be found in Appendix A.3: *Plan Review Checklist*. Final submittals for land-

disturbing projects including infrastructure/utility work shall include hardcopy, electronic copy (PDF), and CAD drawings. CAD drawings shall conform to National CAD Standard regarding layers, plot styles, line types, etc.

As-built drawings shall be submitted in order to close out the Mason Land Disturbance permits. See Appendix C for additional information.

2.2. Plan Review

Plan review shall be conducted by qualified personnel. Plan review shall ensure compliance with the *George Mason University Standards and Specifications for ESC and SWM*.

After receiving the submittals, the Mason LD shall have 15 calendar days to determine completeness of the plan(s) and notify in writing. The Mason LD shall have additional 60 calendar days from the time of notification to review the plan(s) and provide written comments.

If re-submission to review, the Mason LD shall have 45 calendar days to review and respond in writing to previously disapproved plan(s). Re-submission should include one (1) red-lined plan set of the previous submission showing all to-date revisions, responses to comments, and at least one (1) clean, updated plan set.

After confirming the submittals compliance with the *George Mason University Standards and Specifications for ESC and SWM*, an approval notification will be sent to responsible parties by electronic delivery. When approved, at least three (3) unmarked, updated plan sets, stamped by a licensed professional engineer, architect, certified landscape architect, or land surveyor in Virginia, must be submitted to Mason LD. Mason LD will stamp the plans with Mason Land Disturbance Permit approval and distribute them to (1) Records, (1) Project Inspector and (1) Contractor. Contractor is required to have the approved plans available on site. Additional copies may be requested as needed. Electronic copy (PDF) and CAD drawings are also required to be submitted to Mason LD.

Prior to commencement of a land-disturbing project, the project must have received approval for the plan(s) from Mason LD. Mason LD shall have 60 calendar days to review and provide written comments to modifications to approved plan(s).

Plan Reviews are not to be used to evaluate design concepts. Pre-design concept meetings are strongly encouraged. Pre-construction statement can be found in Appendix A.7

2.3. Inspections

The certified compliance inspector(s) is responsible for ensuring that the construction and installation of all structural and non-structural controls are in accordance with the project's ESC, SWM, and SWPPP plans and intention. In addition, if circumstances arise where the current plan is proven inadequate to provide necessary protection and needs additional

engineering evaluation, the inspector is responsible to notify Mason LD, who shall take the necessary steps to coordinate with the Contractor and Engineer to address and resolve the issue. Inspectors are responsible to complete and submit Environmental Compliance Report (Appendix A.4).

2.4. Changes and Amendments to Approved Plans

An approved plan may be changed by Mason LD in the following cases:

- (i) Where inspection has revealed the plan is inadequate to satisfy applicable laws and regulations; or
- (ii) Where the person responsible for carrying out the approved plan finds that such plan is no longer effective due to field conditions and/or changes to the overall project scope. In such case, an amended plan, consistent with the requirements of this document, must be promptly proposed.

Revisions to an approved ESC, SWM and/or SWPPP plan must be submitted in writing to the Mason LD through e-Builder. Formal plan revisions are only necessary when the changes involve activities such as changing disturbance areas, engineered controls (e.g., a sediment trap or basin), or a revision in the level/quantity of ESC and/or SWM measures. The requested plan revisions will be reviewed by Mason LD for compliance. Revisions shall not be considered approved until written notification by Mason LD is provided through e-Builder. Approved revisions must be clouded in red as part of the approved plan on site. Revisions must comply with the *George Mason University Standards and Specifications for ESC and SWM*. Approved revisions with all supplemental documentation must be saved in the project folder. Exceptions may be allowed in the event of an emergency.

The Contractor is responsible for the performance of the ESC/SWM measures. If the designated ESC/SWM proves to be inadequate, the Contractor is responsible to reassess, design, and submit a plan amendment at no cost to Mason.

3. ESC, SWM AND SWPPP PLAN REQUIREMENTS

Detailed requirements of specific items to be included in the ESC, SWM and SWPPP plans can be found in the Plan Reviewer Checklist (Appendix A.3).

Individual plans should be consistent with the requirement of Virginia Erosion and Stormwater Management Act laws and regulations, and the design criteria in the Virginia Stormwater Management Handbook, Version 1.0.

As-built drawings, including permanent SWM facilities, shall be provided to Mason LD at the completion of a project. The as-built drawings should bear the seal and signature of a Virginia registered professional Engineer or Land Surveyor, certifying that the site, including SWM facilities, has been constructed in accordance with the approved plan. As-built drawings shall be provided in both PDF and CAD format. The licensed professional shall provide surveys, photographs, construction logs, inspection reports, geotechnical testing reports, soil reports, certification of materials, and all other applicable information

documentation. Please refer to Appendix C for additional information.

4. INSPECTIONS

In lieu of an approved alternative inspection program, inspections shall be conducted, at a minimum, every two weeks and within 48 hours of a significant rainfall event producing runoff. Mason's Compliance Inspectors shall be notified 24 hours prior to installation of BMPs and shall be present for installation of BMPs. In addition, inspections shall be made during or immediately following initial installation of erosion and sediment controls and at the completion of the project. Completion of the project is defined as the achievement of final stabilization, not completion of construction. SWPPP inspection will continue until final stabilization is achieved and/or LD permit is terminated.

4.1. SWPPP Inspections

The Environmental Compliance Report (Appendix A.4) shall be used on each site inspection visit during construction for compliance with approved ESC, SWM and SWPPP plans. All construction SWPPP measures, including ESC, SWM facilities, and Pollution Prevention, shown on the approved SWPPP plan shall be inspected.

All issues and violations shall be photographed and documented in the *Environmental Compliance Report*, where required corrective action for each issue or violation shall be specified and a date by which all corrective actions must be completed.

Copies of material delivery tickets, certifications from the suppliers, and other relevant documents on SWM facilities should be provided to Mason LD office.

Critical areas that require continuous inspections shall also be identified on the site plan. A copy of the *Environmental Compliance Report* shall be sent through e-Builder to the Contractor, Project Managers, Mason LD and other responsible parties.

4.2. Violations and Documentation

Violations shall be documented in the *Environmental Compliance Report*, including photographs, descriptions, and necessary corrective actions. If a violation continues to be repeated, a formal Notice of Comply will be issued, and DEQ Woodbridge Office will be notified. At the discretion of Mason LD, the Land Disturbance Permit may be suspended and/or revoked; at which time all land disturbing activities must cease until the violation(s) of the plan or permit has ceased, corrective action completed, and any related environmental or property damages abated. Mason LD reserves the right to contract with a 3rd party to install and maintain the ESC/SWM measures in accordance with the approved plan, complete any necessary corrective actions, and abate any related damages. Once the site is stabilized to the satisfaction of the Mason LD, site work may resume. All associated costs will be back-charged to the Contractor.

4.3. Project Close-Out Inspection

Project completion is defined as the achievement of final stabilization, verification of final product according to approved plans, completion of TV inspection (Refer to Appendix C) of the installed storm sewer system, if deemed necessary by Mason LD, and submittal of as-built drawings.

The inspector will determine that final stabilization has been achieved. Once Mason LD concurs, final project as-built, including licensed professional's certification confirming that the stormwater sewer and BMP facilities are constructed in accordance with the approved plans and specifications, and Mason Land Disturbance Permit Notice of Termination (Appendix A.5) are submitted to Mason LD by the Contractor, the Land Disturbance Permit will be closed-out and the Construction GP terminated by DEQ. The contractor is responsible to submit the VPDES General Permit Notice of Termination Form to DEQ before Mason Land Disturbance Permit be closed out. After which, Mason LD may recommend that full retainage be released. If deemed appropriate, retainage may be withheld as a performance guarantee for up to 60 calendar days after achievement of final stabilization unless otherwise directed by the Contract. Full retainage may not be released without recommendation by the Mason LD.

4.4.

Post-construction Inspections

Post-construction (long-term) inspections shall be made in accordance with the manufactures' and/or engineer's recommendation, the provisions of these standards and specifications, and the general specifications provided by Virginia Stormwater BMP clearinghouse and Virginia Stormwater Management Handbook Version 1.0. Inspections shall be conducted annually and/or after any storm which causes the capacity of the facility's principle spillway to be exceeded.

5. VARIANCES AND EXCEPTIONS

Variances and exceptions to regulations must ensure protection of off-site properties and resources from damage. Economic hardship is not a sufficient reason to request a variance or an exception from VESMP or *George Mason University Standards and Specifications for ESC and SWM*. Variances and exceptions are considered to be project specific.

5.1. Variance or Exception Request Policy and Procedures:

- The design professional shall submit a written request to Mason LD to request project specific variances to *George Mason University Annual Standards and Specifications for ESC and SWM* and shall be accompanied by complete details and documentation, including justification and impacts associated with the request (Appendix A.6). The request shall include an explanation and description of the specific condition necessitating the request. The request shall include a detailed description of the alternative practice and justification that the practice meets the intent of the regulation

- for which the variance is sought.
- If determined to be appropriate by Mason LD, the Program Administrator will send the variance/exception request to DEQ Central Office for review and approval.
- All requests shall be considered unapproved until written approval from DEQ is received (A period of thirty days shall be scheduled for this request).
- All approved variances or exceptions shall be listed in the General Notes section of the ESC & SWM plans for land disturbing activities and included in the Narrative.

6. REPORTING AND RECORDKEEPING

6.1. Project Tracking and Notification

- Mason LD uses the [website](#) to notify Mason community current and future land-disturbing activities.
- Mason LD will update the website periodically with project information as related to ESC and SWM.

6.2. Recordkeeping

Mason LD shall maintain the following records as required by the ESC and SWM laws and regulations:

- Mason LD will maintain a record of approved ESC and SWM plan and inspections for each regulated land-disturbing activity
- Project records, including approved SWM plan, shall be kept for three years after the state permit termination or project completion.
- SWM facility inspection records shall be documented and retained for at least five years from the date of inspection.
- Construction record drawings shall be maintained in perpetuity or until a stormwater management facility is removed.

7. PERFORMANCE WARRANTY

- Upon termination of the permit, the Contractor shall warranty all work, including but not limited to, storm sewer and BMP facilities installations, landscaping, turf, etc. for one year from the date of the substantial completion.
- In the event that such feature does not meet its designed and approved intent, the Contractor shall repair/replace the feature in kind per the Standards and Specifications outlined in this document at no expense to Mason.
- The repair/replacement shall be guaranteed to perform as designed for one year from the date of repair acceptance.

8. LONG-TERM MAINTENANCE

Project plans shall contain information on long-term inspection and maintenance of permanent SWM facilities. Mason Facilities Management is responsible for SWM facilities maintenance and repair. Inspectors shall inspect and note SWM facilities that were identified

for cleaning and/or repair. The inspection results shall be provided to Mason LD for recordkeeping and for assistance with the issuance of a work order to complete the activity. Work order status is documented and verified in the field before completion.

Mason LD plans to use GIS to track SWM facilities and associated watersheds. The Mason LD GIS map will be updated quarterly with information as related BMPs. The GIS map is available upon request.

APPENDIX A.1:
Land Disturbance Permit
Application Form

Permit Application - Land Disturbance Permit (PALD)

All Fields View Instructions

Project:	Permit Application - Land Disturbance Permit	Project Number:	
Process Document:		Overall Due Date:	
Current Workflow Step:		Step Due Date:	
* Subject:	"Land Disturbance Permit #" & {DataField.ead13169-15b9-45fb-96fc-6a47e5e0c039}		
Status:			

For more detailed information, go to [Land Disturbance Permit Policies and Procedures](#).

General Contractor:	[Lookup]	* Change to impervious area?:	-- Please select an option --
Responsible Land Disturber (RLD):		* Proposed Impervious Area (sq ft):	0.0
RLD Contact Number:			
RLD Certificate #:			

Documents

- For working drawings, a SWPPP Plan is required.
- Detailed submittal requirements and checklist in AS&S (Section 4 and Appendix C)
- A stand-alone submittal package for site development, ESC, SWM, SWPPP
- Any additional documents may be uploaded under the **Attached Documents** tab.

Schematic Drawings:	<div>Drag and drop file here</div> <div>Browse Computer</div>	or	Browse e-Builder
Preliminary Drawings:	<div>Drag and drop file here</div> <div>Browse Computer</div>	or	Browse e-Builder
Working Drawings:	<div>Drag and drop file here</div> <div>Browse Computer</div>	or	Browse e-Builder
Stormwater Pollution Protection Plan (SWPPP):	<div>Drag and drop file here</div> <div>Browse Computer</div>	or	Browse e-Builder

APPENDIX A.2:

Land Disturbance Permit



Facilities Administration
Land Development
(703) 993-2525

Land Disturbance Permit

#LD-XX-XXXX

Issued: XX-XX-XXXX

Annual Standards and Specification Edition: 20xx Version

Project Information

Project Name: _____

Description: _____

Campus: _____ Project Manager: _____

Drawings Dated: _____ Responsible Land Disturber: _____

SWPPP Dated: _____ RLD Certificate: _____

NOTICE

The permit authorizes the Contractor to **reduce/increase xxxx sq ft** of the impervious area within the approved Limits of Construction.

Any further increase in impervious area must be submitted for review and approval to George Mason University Land Development Authority.

Issuance of a permit does not indicate approval of site utilities. A separate building permit for the site utilities is required. This permit will be issued by BCOM.

Approved by XXX, Certificate # XXX

COMMENTS

APPENDIX A.3:

Plan Review Checklist

COMPLETION CHECKLIST FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT PLAN

Project Name: _____
 Drawing Date: _____ Receipt Date: _____
 Architect/ Engineer: _____ Phone Number: _____
 Are all of the following submitted? Yes No Check all that is submitted.

See back for descriptions.

Schematic (30%)
 Interim (70%)
 Final (100%)

I. General

Mason Land Disturbance Permit Application N/A
 VPDES Permit Registration Form N/A
 Applicable Federal, State and local Permits
 Virginia Water Protection Permit (VWPP) N/A
 Department of Historic Resources (DHR) N/A
 Virginia Department of Health (VDH) N/A
 Virginia Department of Transportation (VDOT) N/A
 Permits from localities N/A
 Others N/A
 Environmental Impact Review (EIR) N/A
 Geotechnical Report N/A

II. Site, ESC, and SWM Plan

Cover Sheet
 General Construction Details
 Demolition Plan
 Existing Conditions and Grading
 Existing Drainage Divides
 Proposed Site Plan Layout
 Proposed Grading Plan
 Proposed Drainage Divides
 Detailed Landscaping plan N/A
 E&S Narrative
 Project Description
 Existing site Conditions
 Adjacent Properties
 Off-site Areas
 Soils
 Critical Areas
 Erosion and Sediment Control Measures
 Permanent Stabilization
 Stormwater Runoff Considerations
 Calculations(Pre and Post Runoff; temporary and permanent practices
 Maintenance
 Phase 1 E&S w/Drainage Divides
 Phase 2 E&S w/Drainage Divides
 E&S Details
 Stormwater Quality Spreadsheet N/A
 Stormwater Quantity Computaions N/A
 Stormwater Details and Specifications N/A
 Stormwater Pipe Profile N/A
 Stormwater Calculations N/A
 PE Signature

III. SWPPP

Stormwater Pollution Prevention Plan (SWPPP) N/A

Comments:

Please submit the unchecked items to Mason LD Office or masonld@gmu.edu to continue the review.

Disclaimer: By providing the required documentation above, you guarantee that checked items had been through QA/QC process before submission.

Reviewer/Date: _____

DESCRIPTIONS

I. General

Mason Land Disturbance Permit Application: This form must be completed and submitted to Mason LD for a land disturbance of any size.

VPDES Permit Registration Form: Land disturbance equal or greater than one acre should submit a VPDES Permit registration form for construction general permit.

Other Permits: All applicable federal, state and local regulations pertaining to construction activity must be met.

Virginia Water Protection Permit (VWPP) – This permit is required if wetlands, streams, and/or the state waters are impacted during construction (Filled, excavated, drained or dredged). The permit is to be submitted to DEQ VWP office which will serve as liaison between USACE and their corresponding agencies.

Virginia Department of Historic Resources (DHR): must be contacted if any of the construction activity has any effects on historic sites/structures and cultural resources. Permit may be required.

Virginia Department of Health (VDH): must be contacted if it involves construction or repair of septic system or onsite sewage disposal system. Office of Drinking Water (ODW) must be contacted if there are any impacts on public water distribution system. Permit may be required.

Virginia Department of Transportation (VDOT): must be contacted if there are any potential impacts to existing and future transportation systems i.e. highway and road systems, rail, and public transportation systems. Land use permit from VDOT is required if activities other than travel on the commonwealth's highway systems that are under VDOT jurisdiction are conducted. These activities include but not limited to installation of utilities, construction of private and commercial entrances, landscaping and the temporary use of the right-of-way.

Environmental Impact Review (EIR): If applicable, a copy of the approved EIR shall be submitted to Mason LD with the plan. EIR is required for new construction, expansion, and land acquisition projects costing more than \$500,000.

Geotechnical Report: A copy of the geotechnical report with recommendations shall be submitted to Mason LD with the plan.

II. Site, ESC and SWM Plan

Cover Sheet: Includes general notes; soil maps and soil data tables with soil name, mapping unit, K-factor (erodibility), permeability, depth, texture, and soil structure, and a vicinity map that shows the general location of the project in relation to roads and topography.

General Construction Details: Any practices used other than ESC measures should be illustrated with detailed drawings

Demolition Plan: This plan illustrates the existing conditions with the marked areas and/or features to be demolished or removed per construction sequence such as roads, sidewalks, curbs, buildings, trees, light poles. It shall outline the areas of disturbance.

Existing Conditions and Grading: The existing property lines, land use, contours and features of the site such as roads, utilities, easement, etc. Includes dashed light lines for contours in intervals of 1 to 2 feet; environmental sensitive areas such as wetland, lakes, ponds, resources protection areas (RPA), existing tree lines; grassed areas or unique vegetation; potential critical areas (slopes); streams; swales and onsite and adjacent impaired waters.

Existing Drainage Divides: Dividing lines and the direction of flow for the pre-development drainage areas. It includes drainage areas (acres) and C-value for on-site and off-site areas.

Proposed Site Plan Layout: Refers to top view of a property that is drawn to scale. It should include the following: limit of the disturbance, SWM facilities; outline of existing and proposed buildings and structures; property lines, distance between buildings; distance between buildings and property lines (setbacks); parking lots indicating parking spaces; streets/trails/driveways; landscaped/vegetated areas; utilities, easements; etc.

Proposed Grading Plan: Changes made to the existing site contours should be shown as heavy solid lines with 1' – 2' intervals; spot elevations at high/low points and entrances; limits of disturbance; cut and fill information; steep slope information.

Proposed Drainage Divides: Dividing lines and the direction of flow for post-development drainage areas. It includes: drainage areas (acres) and C-value for on-site and off-site areas.

Detailed Landscaping Plan: Landscaping plans and narratives with detailed planting schedule should be provided for stormwater control measures (ponds, bio-retention, etc.), site reforestation, revegetation and final stabilization.

ESC Narrative: All plans must have Erosion and Sediment Control (ESC) Narrative. The narrative should be site specific and include the following items:

Project Description: This section should briefly describe the nature and purpose of the land-disturbing activity and the area (acres) to be disturbed. It also includes: project duration, pre and post impervious areas.

Existing Site Conditions: This section should provide a description of the existing features, topography, vegetation and drainage pattern of the site.

Adjacent Properties: Includes a description of neighboring areas such as streams, lakes, residential areas, roads etc., which might be affected by the land disturbance. Discuss any potential problem(s) that may be faced during and after construction. For instance: traffic, dust, increasing runoff.

Off-site Areas: This section should describe an off-site land-disturbing activities that will occur including borrow sites, stockpiles, etc. Includes responsible party of offsite areas.

Soils: This section should provide or refer to a brief description of the soils on the site giving such information as soil name, mapping unit, k factor (erodibility), permeability, depth, texture, and soil structure. Provides copy of the soils map.

Critical Areas: This section should provide a description of areas of the site which have potentially serious problems (steep slopes, channels, wetland, RPA, wet weather/underground springs, etc.). Includes areas to be left alone until they can be worked in favorable conditions and describes the construction sequence or other related issues to follow while working on them.

Erosion and Sediment Control Measures: This section should provide a list and description of the methods which will be used to control erosion and sedimentation on the site (Chapter 7 in Virginia Stormwater Handbook (the Handbook) and Mason Standards and Specifications for ESC and SWM)

Permanent Stabilization: This section should provide description, including seeding specifications, of how the site will be stabilized after construction is completed. Shall list timing of seeding and describe areas to be stabilized with vegetation, mulch, etc.

Stormwater Runoff Considerations: This section should address the question if the development site will cause an increase in peak runoff rates during construction; and if the increase in runoff will cause flooding or channel degradation downstream. It should also provide a description of the strategy to control stormwater runoff.

Calculations: This section should provide detailed calculations for the design of temporary sediment basins, diversions, channels, etc.

Maintenance: A schedule of regular maintenance, inspection and repair of ESC structures should be set forth in this section.

Phase I ESC w/Drainage Divides: The location of ESC and SWM practices used on site per construction sequence. Standard symbols and abbreviations in the Handbook should be used to indicate: the exact locations of all practices including vegetation and legends denoting symbols.

Phase II ESC w/Drainage Divides: Same description as Phase I ESC w/Drainage Divides.

ESC Details; list of Minimum Standards; and General ESC notes: Any ESC measures used should be explained and illustrated with detail drawings. Moreover, details should be provided which are clearly dimensioned and reflected the ability to be “built” in the field according to the proper design criteria; provides scales for all drawings; all details should list specification number from the Handbook if applicable. List Minimum Standards 1-19 and General Notes for ESC (Chapter 5 in the Handbook)

Stormwater Quality Spreadsheet: Includes Virginia Runoff Reduction Method spreadsheet for Total Phosphorus (TP) removal required to be in compliance with water quality criteria for VESMP regulations.

Stormwater Quantity Computations: Include pre- and post-construction runoff calculations, adequate outfall calculations and Energy Balance Equation Method in order to comply with MS-19.

Stormwater Details and Specifications: Include type, size, grade, bedding material, compaction, WSEL, inverts and top elevations related to proposed stormwater facilities

Stormwater Pipe Profiles: Pipe profiles should be provided to verify storm sewer systems adequacy. These profiles should include size, materials, slopes, structure depth, invert elevations, top elevations, dimensioned utility crossings, and shown at a scale (V=1:5 H=1:25). Includes calculated design storm elevation profiles, energy grading line profiles, and hydraulic grading line profiles. Project specific profiles might be requested.

Stormwater Calculations: Provide calculations showing the adequacy of ditches, pipes, inlets, ponds and other stormwater system to handle design storm runoff without excessive velocities and overtopping. Dimensions of all storage areas should be checked.

PE Signature: Plans should be signed/stamped by a Professional Engineer, Architect or a Professional Land Surveyor.

III. SWPPP

Stormwater Pollution Prevention Plan (SWPPP): A copy of the SWPPP shall be submitted to Mason LD for review. This is applicable for land disturbance areas equal or greater than 2500 square feet. SWPPP should include: site and contact/responsible parties information, site evaluation, assessment, and planning, ESC BMPs, good housekeeping BMPs, post-construction BMPs, inspections schedule and reports, record keeping on changes to SWPPP and training, final stabilization, and other information.

The Use of Mason LD's SWPPP template is preferred. Electronic template is available upon request.

APPENDIX A.4:

Environmental Compliance Report



Environmental Compliance Report

ECR-XXX

Project Name: _____ Project Location: _____
Project Authority: _____ LD Permit No.: _____
Project Operator: _____ Insp Date/Time: _____
LD Inspector: _____ Weather/Rain Info: _____

Permit(s) Displayed: _____

Stage of Construction: _____

State/Local Regulation ⁽¹⁾ (citation)	Occurrence	Practice/Problem/Violation Location and Description ⁽²⁾	Corrective Action Required, Completed, and/or Recommendations/Comments	Reference Image	GC Response

ADDITIONAL COMMENTS: *Additional images may be provided to help determine location of violation.*

If further explanation is needed, or if you have any questions or concerns, please contact the Mason LD inspector.

- (1) Refers to applicable regulations found in the most recent publication of the [Virginia Erosion and Stormwater Management Regulations](#) (9VAC25-875), or local ESC/SWM ordinance
- (2) Note whether or not off-site damage resulting from the practice, problem, or violation was evident during the inspection.

REQUIRED CORRECTIVE ACTION

DEADLINE DATE:

Re-inspection +/-:

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 date, 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.

Prepared by XXXX

Submitted on

Approved on _____

APPENDIX A.5:

Notice of Termination

Permit Termination - Land Disturbance (PTLD)

All Fields View

Instructions

Project:	Permit Termination - Land Disturbance	Project Number:	
Process Document:		Overall Due Date:	
Current Workflow Step:		Step Due Date:	
* Subject:	<input type="text"/>		
Tracking Prefix:	<input type="text"/>		
Status:			

Land Disturbance Permit Notice of Termination

* Land Disturbance Permit #:	<input type="text"/>		
Responsible Land Disturber (RLD):	<input type="text"/>	RLD Certificate #:	<input type="text"/>

Reasons for Terminating:

Reasons for Termination:	<input type="checkbox"/> Necessary permanent control measures included in the SWPPP are in place and functioning effectively and final stabilization has been achieved on portions for which the operator is responsible; <input type="checkbox"/> Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge; or <input type="checkbox"/> Coverage under an alternative VPDES permit or state permit has been obtained.
--------------------------	---

Verify permanent stabilization:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Permanent Stabilization Date:	<input type="text"/> 
Inspect permanent BMP/LIDs (Functional):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Confirm positive drainage:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
The Virginia Construction General Permit is closed:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Final As-Built Drawings:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
As Built Options:	<input type="checkbox"/> A. Engineer's Certification Statement (Refer to Mason's as-built specifications) <input type="checkbox"/> B. As-built plans (construction record drawings) - CAD and PDF <input type="checkbox"/> C. Stormwater Management Plans - CAD File and PDF <input type="checkbox"/> D. BMP Maintenance Agreement, if applicable

APPENDIX A.6:

Variance Request Form

Reply To:
Mason Land Development 4400
University Dr. Fairfax, VA 22030
PHONE: (703) 993-4051
FAX: (703) 993-2524



Variance Request Form

Requested By: _____ Date: _____
Street Address: _____
City/Town/Zip: _____
Telephone #: _____ Fax #: _____
Email Address: _____
Project Name: _____ Campus: _____
Project Number: _____

Project Description: (include existing conditions, and adjacent area, soil characterization, critical and sensitive areas, etc.)

Variance Requested for: (include appropriate minimum standards and requirements):

Reasons and Justification for Variance Request: (include mitigation, ESC measures, permanent stabilization, maintenance, etc.)

Signature of Applicant: _____ Date: _____

APPENDIX A-7:

Pre-Construction Statement

MASON LD PRE-CONSTRUCTION STATEMENT

George Mason University (Mason) seeks for the implement of environmental related good housekeeping practices, the minimum standards for Erosion and Sediment Control (ESC), and practices on Stormwater Management Pollution and Prevention (SWPPP) at all the construction sites on campuses. Minimizing the impacts of erosion, sediment transportation and other stormwater pollution as a result of land disturbing activities into adjacent properties and/or waterways is priority to Mason. Therefore, Mason expects a high compromise in this matter from contractors at pre-, during and post- construction activities in order to reach the best controlled potential for erosion and sediment, hazardous materials, trash and debris in surface runoff.

The following are reminders to and guidelines that every contractor must follow:

- ☐ At all times, the contractor is expected to adhere to all Federal, State, Local, and University laws and regulations.
- ☐ The approved plans, specifications, Land Disturbance permit, Stormwater Pollution Prevention Plan (SWPPP) and/or Virginia Erosion and Stormwater Management Program (VESMP) Construction General Permit must be available on-site at all times.
- ☐ Installation of ESC structures is required prior to any land disturbance. Mason Land Development (Mason LD) Compliance Inspector will perform initial inspection and approve the installation before any land disturbance activity. Please contact your Compliance Inspector to schedule inspection.
- ☐ The contractor shall inspect the site for good housekeeping practices and its ESC measures (i) at least once every four (4) business days or (ii) at least once every five (5) business days and no later than 24 hours following a measurable storm event. If it becomes necessary, daily inspections shall be performed in order to keep the public roads free from sediments and inlet protections in good conditions to prevent from potential impacts to properties, streams and downstream receiving waters.
- ☐ SWPPP shall be updated on a regular basis with records of land disturbance activities, site inspection, final stabilization, etc. SWPPP shall be amended whenever there is a change in design, construction, operation or maintenance of the construction site that has a significant effect on the discharge of pollutants to surface waters. Compliance Inspector will periodically review the SWPPP documentation.
- ☐ The assigned Mason LD Compliance Inspector will inspect the site and its controls at least bi-weekly and 48 hours after a significant hydrologic event. The responsible land disturber or delegated authorized person must be present at inspection.

- ECR reports will be sent via e-builder to contractor representatives, who will respond to the corrective action items in e-builder in a timely manner.
- If construction is expected to encroach upon wetlands, within an RPA, and/or in a significant concentrated waterway, 48 hour notice to Mason LD is required prior to encroachment.
- Mason Compliance Inspector shall be notified 24-hour prior to installation of SWM Facilities (BMPs) and shall be present for installation of those BMPs.
- An engineer's certification is required by Mason LD Permit and the DEQ Construction General Permit to confirm that a SWM facility is built per plan.
 - A pre-construction meeting should be scheduled prior to begin the installation of SWM facilities to discuss the requirements for the Engineer's certification.
 - Copies of all material delivery tickets, certifications from the material suppliers and the results of tests and inspections shall be submitted with or incorporated in the as-built drawings.
 - Provide manufacturer's certificate of final inspection for prefabricated BMP facilities.
 - Mason LD inspections will only cover the regulatory inspections and not the BMP's construction inspections needed for the Engineer's certification.
- If site condition changes, additional ESC measures may be requested by Mason Compliance Inspector. Mason LD reserves the right to contract a third party if not compliant.
- If circumstances arise where the current plan is proven inadequate to provide necessary protection and needs additional engineering evaluation, Mason Compliance Inspector is responsible to notify Mason LD, who shall take the necessary steps to coordinate with the Contractor and Engineer to address and resolve the issue through Request For Information (RFIs) process. Mason LD staff will coordinate with A/E if engineering analysis and computations are required for the proposed change of plan. If determined to be appropriate by Mason LD staff, Mason LD staff will send the amendment to the plan to DEQ for review and approval.
- Removal of ESC structures is strictly prohibited unless otherwise directed by the Mason Compliance Inspector. Phasing is permitted, but remains at the discretion of the Mason Compliance Inspector.
- Final stabilization will be determined by the Mason Compliance Inspector.
- Contractor should follow the Mason's Standards and Specifications (S&S) for ESC and SWM, latest edition.
 - Flushing and TV Run of the stormwater system are required before system's acceptance and permits termination.

- An Engineer or Surveyor's sealed and signed as-built of the new stormwater system including storm pipes and SWM Facilities are required for permit termination. See As-builts requirements in the S&S.

Thank you in advance for your adherence to the above guidelines. If you have any questions or concerns, please contact your Project Manager.

Contractor Representative: _____

Position: _____

Company: _____

Signature: _____

Date: _____

APPENDIX B:

Erosion and Sediment Control Structures

The use of Virginia Stormwater Management Handbook (VSMH), along with accompanying technical documents and guidance, are strongly preferred.

Non-VSMH and proprietary control measures shall be installed per the manufacturer's instructions, within the intent of the VSMH and follow the current version of the VSMH Chapter 7 specifications. Please note that all Non-VSMH measures will require a detail, narrative, and manufacturer's installation and maintenance requirements be shown on the approved plan and/or included in the SWPPP. Should non-VSMH and proprietary control measures fail to effectively control soil erosion, sediment deposition, and nonagricultural runoff, then VSMH measures shall be utilized.

The below list are examples of proprietary measures that may be used on sites, as long as the above noted items are addressed and in compliance with Chapter 7 of the latest version of VSMH.

1. Construction Entrance/Construction Road Stabilization Measures
 - MudMats
 - AlturnaMats
2. Inlet Protection Measures
 - Erosion Eel
 - Gutter Buddy
 - Gutter Gator
 - SiltSack
 - Grate Gater
3. Perimeter Control Measures
 - Erosion Eel

*****This appendix does not replace the need for variance requests according to 9VAC25-875-170 and associated regulations or the need to record amendments, modifications, or updates to the SWPPP from commencement of land disturbance to NOT issuance – which includes changes to control measures on site not already specified in the approved ESC and SWM Plan***

APPENDIX C:

As-built Specifications

Specifications for Construction Record or As-Built Drawings (Civil Discipline Only)

Prior to terminating Mason Land Disturbance Permit, the Contractor shall submit construction record drawings and/or as-built drawings to Mason Land Development (Mason LD) in conformance with the approved site plan. This may be submitted for a portion of a site, provided it constitutes a logical entity, subject to the approval of Mason LD.

1. Submission Requirements and Certifications

Construction record or as-built civil drawings must show the information specified in the [DEQ Virginia Stormwater Management Handbook, Version 1.0 \(under BMP Record Documents and Certifications\)](#), [Construction and Professional Services Manual \(CPSM\)](#) and [Mason's Design Standards Manual](#) and shall meet the following:

- Shall be provided in both PDF and CAD format.
- Size and scale of the drawing must be the same size and scale as the original approved site plan.
- Show locations of all storm sewer, stormwater management facilities, sanitary sewer lines and mains, water lines and mains, fire hydrants, other utilities and associated easements.
- Include profiles and details for all utilities structures.
- Dimensions, recorded deed book, and page numbers of the easements must be shown. Include a copy of each recorded easement plat and deeds.
- Enclose a copy of closed-circuit television (TV) test report for all storm sewer pipes of 12 inches or larger, including storm pipes at BMPs facilities.

2. Additional Information

The following information are required to be included **when applicable**:

- Provide a copy of the recorded BMP maintenance agreement
- For all stormwater facilities, the general contractor will provide a letter that certifies it was installed per approved plans and specifications with supporting documents such as manufacturer's activation letter, field reports, testing reports, material delivery tickets, construction photos, final inspection reports for installation, etc.
- Any additional information as deemed necessary by Mason LD to demonstrate compliance with the approved site plan.

APPENDIX D:
DCR Frequently Asked Questions
Native vs Invasive Species for
Erosion & Sediment Control

FREQUENTLY ASKED QUESTIONS (FAQ)

NATIVE VS. INVASIVE PLANT SPECIES FOR EROSION & SEDIMENT CONTROL

DCR's Natural Heritage Program and other conservation agencies and organizations recognize as "invasive non-natives" certain plant species referenced by DEQ in the *Virginia Erosion and Sediment Control Handbook*. This FAQ provides information regarding Virginia native and invasive non-native plant species and guidance for using natives in lieu of invasive Non-natives for vegetative stabilization of land-disturbing activities regulated by the Virginia Erosion and Sediment Control Law and Regulations. This document promotes sound ecological stewardship, while ensuring erosion control and compliance with the law and regulations. Visit DCR's website for further information about [native and invasive plant species](#) and for information about [erosion and sediment control](#) visit DEQ's website.

What is a Native Species?

Native species are those that naturally occur in the region in which they evolved. Plants evolve in specific habitats over extended periods of time in response to physical and biotic habitats processes that are characteristic of that place: the climate; the soils; the seasonal rainfall, drought, and frost; and interactions with other species occupying those habitats. Native species thus possess certain traits that enable them to thrive under local conditions.

What Are Invasive Non-Native Species and Why Are They of Concern?

Non-native plants, also known as exotic or non-native, are species that have been introduced intentionally or accidentally by human activity into a region in which they did not evolve. Many non-native species are well known and economically important in agriculture and horticulture, such as wheat, soybeans, and tulips. However, while some non-native plants are beneficial and have little capacity to spread in the natural environment, a few are *invasive* and pose serious threats to both natural communities and rare species. Because of a lack of natural controls like insect pests and competitors, some invasive non-native plants may escape cultivation, displace native plant species, reduce wildlife habitats, and alter ecosystem processes. The majority of invasive non-native plants are problematic due to their ability to easily and rapidly disperse across the landscape. Given this possibility of colonization, use of these species for erosion and sediment control should be avoided when possible.

How Many Invasive Non-Native Plant Species Have Been Identified in Virginia?

DCR's Natural Heritage Program and the Virginia Native Plant Society, in cooperation with land managers and agencies, nurserymen, landscape architects, horticulturalists, and other partners, have identified 90 (DCR 2014) invasive non-native plant species that threaten natural areas, forests, parks, and other conservation areas in Virginia. A complete [list of invasive non-native plants for Virginia](#) is available on DCR's website.

Why is Vegetative Stabilization of Land-Disturbing Activities Required?

Virginia Erosion and Sediment Control Law defines a land-disturbing activity as any land change of 10,000 sq. ft. or greater that involves clearing, grading, excavating, transporting, and filling of land. The Virginia Erosion and Sediment Control Regulations and local ordinances that implement the Law delineate strict requirements for timely temporary or permanent stabilization of land-disturbing activities, including denuded areas, soil stockpiles, earthen structures, cut and fill slopes, and watercourses, to prevent soil erosion from occurring in the first place. Planting vegetation, namely grasses or other herbaceous plants, is an effective and economic method for achieving expedient site stabilization. A copy of the Law and Regulations are available on DEQ's website.

Should Invasive Plants Referenced in the DCR Handbook Be Avoided?

Yes. DCR strongly discourages the use of the highly invasive **Common Reed** and **Chinese Lespedeza**. There are equally effective alternatives that are less problematic. It is especially important to avoid using these species in stormwater channels and on streambanks, as planting in these habitats may facilitate their wider distribution. Eight plant species considered invasive non-natives are referenced within the following sections of the *E&S Handbook*: Temporary Seeding (STD&SPEC 3.31), Permanent Seeding (STD&SPEC 3.32), Stormwater Conveyance Channels

(STD&SPEC 3.17), Vegetative Streambank Stabilization (STD&SPEC 3.22), and Sodding (STD&SPEC 3.33). However, DCR encourages using native plants whenever feasible as described in the remainder of this FAQ.

What Criteria Should Be Met For Native Species To Be Used for Stabilization?

The plant species chosen for stabilization must always be matched to the characteristics (climate, soils, etc.) of the site/region and must be commercially available in that region. Further, because interest in using native species for erosion and sediment control is relatively recent, alternative native species may not have been thoroughly field-tested to document their efficacy for erosion and sediment control. DCR recommends native plants for vegetative stabilization if the following criteria are met:

- Slopes < 15% slope gradient
- Soils with K factors < 0.36 (soils are not highly erodible)
- For use along roadways, species height must comply with Virginia Department of Transportation visibility requirements and not have characteristics that are highly attractive to birds and mammals
- For use on stormwater conveyance channels and streambanks, species must have proven effectiveness at the expected maximum stormwater flow volume and velocity

Generally, flat to gently sloping, open areas where there is little traffic are appropriate locales for planting most of the alternatives species suggested below. Utility easements or rights-of-way, park like areas, greenways, and other open tracks of land are excellent places to propagate native plants. However, natives may be considered even if one of these criteria is not met if there is sufficient evidence that the species is effective for erosion control.

What are Some Alternative Native Species to the Invasive Plants in the Handbook?

The table below provides a list of alternative Virginia native plants with similar attributes to the invasive non-native plants. These alternatives are offered as suggestions if the criteria listed above are met. Fact sheets for [30 invasive plant species](#) and five brochures on using [native plants for restoration and landscaping](#) are available on DCR's website.

Invasive Non-Native Species	Alternative Virginia Native	
<i>Common Name</i>	<i>Common Name</i>	<i>Scientific Name</i>
Common Reed	Great bulrush	<i>Schoenoplectus tabernaemontani</i>
	Common Cattail	<i>Typha latifolia</i>
Chinese Lespedeza Birdsfoot Trefoil Orchard Grass Redtop Weeping Lovegrass	Roundheaded bushclover	<i>Lespedeza capitata</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>
	Butterflyweed	<i>Asclepias tuberosa</i>
	Joe-pye weed	<i>Eutrochium dubium</i>
	Black-eyed Susan	<i>Rudbeckia fulgida</i>
	Big blue stem	<i>Andropogon gerardii</i>
	Indian grass	<i>Sorghastrum nutans</i>
	Side oats grama	<i>Bouteloua curtipendula</i>
Crownvetch	Roundheaded bushclover	<i>Lespedeza capitata</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>
	Big blue stem	<i>Andropogon gerardii</i>
	Little blue stem	<i>Schizachyrium scoparium</i>
	Indian grass	<i>Sorghastrum nutans</i>
	Switchgrass	<i>Panicum virgatum</i>
Tall Fescue	Big blue stem	<i>Andropogon gerardii</i>
	Little blue stem	<i>Schizachyrium scoparium</i>
	Indian grass	<i>Sorghastrum nutans</i>
	Switchgrass	<i>Panicum virgatum</i>
	Broomsedge	<i>Andropogon virginicus</i>
	Deertongue	<i>Dichanthelium clandestinum</i>
	Side oats grama	<i>Bouteloua curtipendula</i>
	Canadian wildrye	<i>Elymus canadensis</i>
	Bottlebrush grass	<i>Elymus hystrix</i>
	Virginia wildrye	<i>Elymus virginicus</i>

Are There Other Considerations When Employing Alternative Native Plants? Yes. The following potential issues should also be considered when employing alternative native plants:

- Always using a native seed mix is desirable for two reasons:
 - Some natives take several seasons to fully establish, so a seed mix including some non-competing annual plant species is recommended
 - To prevent establishing a “monoculture” and encourage biodiversity, multiple natives species should be established on site when possible
- Some natives have new/unique maintenance requirements (weeding, mowing, herbicides, etc.)
- Adding compost to raise the organic content of the soil will greatly enhance the success of vegetation
- Always coordinate with and educate local government officials, property owners, and the citizenry about the benefits of natives – many natives don’t produce lush green lawns, and are perceived as weeds

Who Must Approve Use of Alternative Native Plants?

Users should work with the local [Native Plant Society chapter](#) or equivalent and the erosion and sediment control program authority to select appropriate native plant species. Note that the selection of plant species for vegetative stabilization **must always** be approved by the program authority as a part of the erosion and sediment control plan.