NORFOLK STATE UNIVERSITY

Annual Standards and Specifications for

Erosion and Sediment Control and Stormwater Management

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Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

CERTIFICATION

"I certify under penalty of law that this document and all attachments related to the submission and updating of the Norfolk State University Annual Standard and Specifications for Erosion and Sediment Control and Stormwater Management 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."

[redacted]	Associate Vice President	6/18/20
Name	Title	Date

Norfolk State University, Virginia

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ACRONYMS AND ABBREVIATIONS

Bay	Chesapeake Bay
BMP	Best Management Practice
BSWCB	Board State Water Control Board
CWA	Clean Water Act
CGP	Construction General Permit
CSS	Combined Sewer System
DCR	Department of Conservation and Recreation
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
ERP	Enforcement Response Plan
ESC	Erosion & Sediment Control
FM	Facilities Management
GIS	Geographic Information Systems
GPS	Global Positioning System
HUC	Hydrologic Unit Code
IDDE	Illicit Discharge Detection & Elimination
NSU	Norfolk State University
LID	Low Impact Development
MEP	Maximum Extent Practicable
MCM	Minimum Control Measure
MS	Minimum Standard
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
NOI	Notice of Intent
NOV	Notice of Violation
POC	Pollutants of Concern
RLD	Responsible Land Disturber
SOP	Standard Operating Procedures
SWM	Stormwater Management
SWPPP	Stormwater Pollution Protection Plan
TMDL	Total Maximum Daily Load
UA	Urbanized Area
VESCL&R	Virginia Erosion & Sediment Control Law & Regulations
VESCH	Virginia Erosion & Sediment Control Handbook
VESCP	Virginia Erosion and Sediment Control Program
VPDES	Virginia Pollution Discharge Elimination System
VRRM	Virginia Runoff Reduction Method
VSMP	Virginia Stormwater Management Program
WLA	Waste Load Allocation

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Annual Standards and Specifications for ESC and SWM

INTRODUCTION

Norfolk State University (NSU) has incorporated Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) that are integral components of Norfolk State University's design, construction, maintenance, and management of the university's stormwater program. The Norfolk State University Annual Standards and Specifications for ESC and SWM submittal has been developed to provide information regarding NSU's implementation in accordance with the Virginia Erosion and Sediment Control Law (§62.1-44 et. seq.), the Virginia Erosion and Sediment Control Regulations (9VAC25-840 et. seq.), the Virginia Erosion and Sediment Control Certification Regulations (9VAC25-850 et. seq.), the Virginia Stormwater Management Act (§62.1-44 et. seq.), and the Virginia Stormwater Management Program (VSMP) Permit Regulations (9VAC25-870 et. seq.) as related to municipal separate storm sewer systems (MS4) and regulated construction activities.

Facilities Management (the AS&S Holder) shall administer the Norfolk State University Annual Standards and Specifications for ESC and SWM. Where design, plan review and approval, construction and maintenance activities are regulated by the Virginia ESC Law and Regulations or the Virginia SWM Act and VSMP Permit Regulations, these Annual Standards and Specifications shall apply to such activities carried out by Norfolk State University, either by its internal workforce or contracted to external entities. Compliance with the NSU Annual Standards and Specifications (and all parts thereof), the Virginia ESC Law and Regulations, the Virginia SWM Act and the VSMP Permit Regulations will be expected during any inspections of Norfolk State University's land disturbing activities by DEQ, EPA, or other such environmental agencies.

Norfolk State University Annual Standards and Specifications for ESC and SWM are submitted to the Virginia Department of Environmental Quality (DEQ) for review and approval on an annual basis per 9VAC25-870-170 and §62.1-44.15:55D, or as determined by the DEQ. The development and implementation of project specific plans that are in accordance with these Annual Standards and Specifications shall be ensured by Norfolk State University. While the Department of Environmental Quality or Board will remain the ESC and AS&S holder, NSU shall be able to act as the authority in order to implement all aspects of the program except for the following items:

- Construction General Permit registration statement review and acceptance. (9VAC25-880-50)
- Construction General Permit issuance.
- Construction General Permit enforcement.
- Construction General Permit Notice of Termination
- Acceptance of variances and exceptions.

Where applicable, the Department and the Board shall be the administrative authorities for the enforcement of SWM and ESC codes. These entities shall provide necessary project oversight along with comprehensive program compliance review and regulation. In addition, enforcement actions shall be taken in accordance to this article and related regulations.

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The Department shall perform random site inspections or inspections in response to a complaint. This is to assure compliance with this article, the Erosion and Sediment Control Law, and regulations adopted thereunder.

With regards to fees for SWM, an administrative charge to cover the costs of services performed associated with its responsibilities to the applicable section shall be assessed by the Department. For ESC fees, either $1,000 or a sufficient amount which covers the associated costs with review and approval, project inspections, and compliance, whichever is lower, shall be charged by the Board.

This submittal constitutes Norfolk State University's commitment to execute all provisions contained herein on regulated land disturbing activities and land development projects. As such, this submittal will be made available and utilized as an operational guidance document for Norfolk State University projects. This submittal will be included with the MS4 Annual report and is available for download as a PDF file at: https://www.nsu.edu/ehsrm

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9VAC25-850-10. DEFINITIONS.

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

Applicant - means any person submitting a request to be considered for certification.

Board - means the State Water Control Board.

Certification - means the process whereby the board, on behalf of the Commonwealth, issues a certificate to persons who have completed board-approved training programs and met any additional eligibility requirements of 9VAC25-850-50 related to the specified classifications (9VAC25-850-40) within the areas of ESC or SWM or in other ways demonstrated adequate knowledge and experience in accordance with the eligibility requirements of 9VAC25-850-50 in the specified classifications within the areas of ESC or SWM.

Certified combined administrator for ESC - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the combined ESC classifications of program administrator, plan reviewer, and project inspector in the area of ESC.

Certified combined administrator for SWM - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the combined classifications of program administrator, plan reviewer, and project inspector in the area of SWM.

Certified plan reviewer for ESC - means an employee or agent of a the AS&S Holder who:

(i) holds a certificate of competence from the board in the classification of plan reviewer in the area of ESC;

(ii) is licensed as a professional engineer, architect, certified landscape architect, or land surveyor pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia; or

(iii) is a professional soil scientist as defined in Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia.

Certified plan reviewer for SWM - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the classification of plan reviewer in the area of SWM.

Certified program administrator for ESC - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the classification of program administrator in the area of ESC.

Certified program administrator for SWM - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the classification of program administrator in the area of SWM.

Certified project inspector for ESC - means an employee or agent of the AS&S Holder who holds a certificate of competence from the board in the classification of project inspector in the area of ESC.

Certified project inspector for SWM - means an employee or agent of the AS&S Holder who holds a certificate of competence from the board in the classification of project inspector in the area of SWM.

Classification - means the four-specific certificate of competence classifications within the areas of ESC or SWM that make up activities being performed (program administrator, plan reviewer, project inspector, and combined administrator).

Combined administrator for ESC - means anyone who is responsible for performing the combined duties of a program administrator, plan reviewer and project inspector of the AS&S holder.

Combined administrator for SWM - means anyone who is responsible for performing the combined duties of a program administrator, plan reviewer and project inspector of the AS&S holder.

Department - means the Department of Environmental Quality.

Erosion and sediment control plan or ESC plan - means a document containing material for the conservation of soil and water resources of a unit or group of units of land. It may include appropriate maps, an appropriate soil and water plan inventory and management information with needed interpretations, and a record of all decisions contributing to conservation treatment. The plan shall contain all major conservation decisions to ensure that the entire unit or units of land will be so treated to achieve the conservation objective.

ESC - means erosion and sediment control.

ESC Act - means the Erosion and Sediment Control Law, Article 2.4 (§ 62.144.15:51 ets eq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

Plan reviewer - means anyone who is responsible for determining the accuracy of ESC plans and supporting documents or SWM plans and supporting documents for approval by a The AS&S Holder or a The AS&S Holder as may be applicable in the areas of ESC or SWM.

Program administrator - means the person or persons responsible for administering and enforcing the VESCP or VSMP of an AS&S Holder or an AS&S Holder as may be applicable in the areas of ESC or SWM.

Project inspector - means anyone who, as a representative of the AS&S Holder or an AS&S holder, is responsible for periodically examining the ESC or SWM activities and premises of a land-disturbing activity for compliance with the ESC Act and Regulations or the SWM Act and Regulations as may be applicable.

Responsible land disturber or RLD - means an individual holding a certificate issued by the department who is responsible for carrying out the land-disturbing activity in accordance with the approved ESC plan. The RLD may be the owner, applicant, permittee, designer, superintendent, project manager, contractor, or any other project or development team member. The RLD must be designated on the ESC plan or permit as a prerequisite for engaging in land disturbance.

Stormwater management plan or SWM plan - means a document containing material describing methods for complying with the requirements of a VSMP and the SWM Act and its attendant regulations.

SWM - means stormwater management.

SWM Act - means the Virginia Stormwater Management Act, Article 2.3 (§ 62.144.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

Virginia Erosion and Sediment Control Program or VESCP - means a program approved by the board that has been established by a the AS&S Holder for the effective control of soil erosion, sediment deposition, and nonagricultural runoff associated with a land-disturbing activity to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources and shall include such items where applicable as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement where authorized in the ESC Act and this chapter, and evaluation consistent with the requirements of the ESC Act and this chapter.

Virginia Erosion and Sediment Control Program authority or the AS&S Holder - means an authority approved by the board to operate a Virginia erosion and sediment control program. An authority may include a state entity, including the department; a federal entity; a district, county, city, or town; or for linear projects subject to annual standards and specifications, electric, natural gas and telephone utility companies, interstate and intrastate natural gas pipeline companies, railroad companies, or authorities created pursuant to § 15.2-5102 of the Code of Virginia.

Virginia Stormwater Management Program or VSMP - means a program approved by the board after September 13, 2011, that has been established by a the AS&S Holder 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, where authorized in the SWM Act and associated regulations, and evaluation consistent with the requirements of the SWM Act and associated regulations.

Virginia Stormwater Management Program authority or the AS&S Holder - means an authority approved by the board after September 13, 2011, to operate a Virginia Stormwater Management Program or, until such approval is given, the department. An authority may include a locality; state entity, including the department; federal entity; or, for linear projects subject to annual standards and specifications in accordance with subsection B of § 62.1-44.15:31 of the Code of Virginia, electric, natural gas, and telephone utility companies, interstate and intrastate natural gas pipeline companies, railroad companies, or authorities created pursuant to § 15.2-5102 of the Code of Virginia.

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Annual Standards and Specifications for ESC and SWM

1. ANNUAL STANDARDS AND SPECIFICATIONS ADMINISTRATION

1.1 Norfolk State University follows the policies and procedures described in the Virginia Erosion and Sediment Control Handbook and the Virginia Stormwater BMP Clearinghouse. Norfolk State University Annual Standards and Specifications for ESC and SWM approved by DEQ are composed of general specifications. The general specifications for erosion and sediment control and stormwater management are included by referencing the following:

1.1.1 Virginia Erosion and Sediment Control Law (§62.1-44.15:51. et seq. as amended, “Land Disturbing Activity”);
1.1.2 Virginia Erosion and Sediment Control Regulations (9VAC25-840 et seq. as amended);
1.1.3 Virginia Erosion and Sediment Control and Stormwater Management Certification Regulations (9VAC25- 850 et seq. as amended);
1.1.4 Virginia Erosion and Sediment Control Handbook, 1992, as amended;
1.1.5 Virginia Stormwater Management Act (§62.1-44 et seq. as amended);
1.1.6 Virginia Stormwater Management Permit Regulations (9VAC25-870 et seq. as amended. “Land-disturbing activity”, “Small construction activity”, “Construction activity” and “Large construction activity”);
1.1.7 Virginia Stormwater Management Handbook, 1999, as amended;
1.1.8 Virginia Stormwater Construction General Permit Regulations (9VAC25-880 et seq. as amended);
1.1.9 Virginia Stormwater BMP Clearinghouse, www.vwrrc.vt.edu/swc/StandardsSpecs.html
1.1.10 Technical Bulletins, as amended, on the Virginia DEQ website at www.deq.virginia.gov;
1.1.11 Stormwater, and Erosion and Sediment Control Guidance Memos, as amended, on the Virginia DEQ website at www.deq.virginia.gov.
1.1.12 If utilized, Off-Site Nutrient Credit requirements will be coordinated through DEQ’s Central Office NPS Water Quality Trading Coordinator.
1.1.13 Reports and Recordkeeping (9VAC25-870-126);

A. On a fiscal year basis (July 1 to June 30), the Annual Standards and Specification holder shall report to the department by October 1 of each year in a format provided by the department. The information to be provided shall include the following:
    1. Information on each permanent stormwater management facility completed during the fiscal year to include type of stormwater management facility, geographic coordinates, acres treated, and the surface waters or karst features into which the stormwater management facility will discharge;
    2. Number and type of enforcement actions during the fiscal year; and
    3. Number of exceptions granted during the fiscal year.

B. The AS&S Holder shall keep records in accordance with the following:

1. Project records - The AS&S Holder shall maintain, either on-site or in AS&S files, a copy of the approved plan, including approved stormwater management plans, contract documents (construction drawings), amendments to the plans based on field conditions or changes in facility requirements documented in a “redline markup” provided by the Contractor of Record, and a record of inspections for each active land disturbing activity shall be kept for three years after state permit termination or project completion.
2. Stormwater management facility inspection records shall be documented and retained for at least five years from the date of inspection.
3. Construction record drawings shall be maintained in perpetuity or until a stormwater management facility is removed.
4. 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.
5. All revisions to the Registration Statements shall be resubmitted to DEQ with applicable fees (based on level of disturbance) for review, acceptance, and reissuance of Permit.

1.1.14 General Permit for Discharges of Stormwater from Construction Activities (9VAC25-880, amending 9VAC25-880-30, 9VAC25-880-40, 9VAC25-880-50, 9VAC25-880-70); and

1.1.15 Criteria for determining status of land-disturbing activity (9VAC25-840-80).

1.1.16 Virginia Department of Conservation and Recreations Native vs. Invasive FAQ https://www.deq.virginia.gov/portals/0/deq/water/publications/nativeinvasivefaq.pdf

1.1.17 NSU Draft Stormwater Master Plan (SWMP) – To be utilized in concert as applicable with the proposed land disturbing projects for all stormwater impacts within the MS4 boundary. In addition, the SWMP shall be updated with as-built construction data.

1.2 Any land-disturbing activity, as defined in:

1.2.1 SWM Act (§62.1-44.15:24) - "Land disturbance" or "land-disturbing activity" means a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34.

1.2.2 ESC Law (§62.1-44.15:51), "Land-disturbing activity" 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:

1.2.2.1 Minor land-disturbing activities such as home gardens and individual home landscaping, repairs, and maintenance work;

1.2.2.2 Individual service connections;

1.2.2.3 Installation, maintenance, or repair of any underground public utility lines when such activity occurs on an existing hard surfaced road, street, or sidewalk, provided the land-disturbing activity is confined to the area of the road, street, or sidewalk that is hard surfaced;

1.2.2.4 Septic tank lines or drainage fields unless included in an overall plan for land-disturbing activity relating to construction of the building to be served by the septic tank system;

1.2.2.5 Permitted surface or deep mining operations and projects, or oil and gas operations and projects conducted pursuant to Title 45.1;

1.2.2.6 Tilling, planting, or harvesting of agricultural, horticultural, or forest crops, livestock feedlot operations, or as additionally set forth by the Board in regulation, including engineering operations as follows: construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation; however, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Chapter 11 (§ 10.1-1100 et seq.) of Title 10.1 or is converted to bona fide agricultural or improved pasture use as described in subsection B of § 10.1-1163;

1.2.2.7 Repair or rebuilding of the tracks, rights-of-way, bridges, communication facilities, and other related structures and facilities of a railroad company;

1.2.2.8 Agricultural engineering operations, including but not limited to the construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds not required to comply with the provisions of the Dam Safety Act (§ 10.1-604 et seq.), ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation;

1.2.2.9 Disturbed land areas of less than 10,000 square feet in size or 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations; however, the governing body of the program authority may reduce this exception to a smaller area of disturbed land or qualify the conditions under which this exception shall apply;

1.2.2.10 Installation of fence and sign posts or telephone and electric poles and other kinds of posts or poles;

1.2.2.11 Shoreline erosion control projects on tidal waters when all of the land-disturbing activities are within the regulatory authority of and approved by local wetlands boards, the Marine Resources Commission, or the United States Army Corps of Engineers; however, any associated land that is disturbed outside of this

exempted area shall remain subject to this article and the regulations adopted pursuant thereto; and

1.2.2.12 Emergency work to protect life, limb, or property, and emergency repairs; however, if the land-disturbing activity would have required an approved erosion and sediment control plan, if the activity were not an emergency, then the land area disturbed shall be shaped and stabilized in accordance with the requirements of the VESCP authority..

1.3 Any land-disturbing activity must be inspected through AS&S Holder. Prior to starting a regulated land-disturbing project, the project must have plans stamped approved by AS&S HOLDER.

1.4 Site specific ESC plans shall be prepared for all projects involving a regulated land-disturbing activity as defined in §62.1-44 or when deemed necessary by the AS&S Holder if development is outside the scope of the VESCL&R and poses potential environmental implications. Site specific ESC plans shall be submitted to the AS&S Holder for review. Prior to starting a land-disturbing project, the project must have plans stamped approved by the AS&S Holder. Projects requiring CGP coverage shall not begin land-disturbance until permit coverage letter has been received from DEQ.

1.5 Site specific SWM plans shall be prepared for all projects involving a regulated land-disturbing activity, as defined in the SWM Act (§62.1-44.15:24) and ESC Law (§62.1-44.15:51), that requires:

1.5.1 A Virginia Stormwater Management Program (VSMP) General Permit for Discharges from Construction Activities;

1.5.2 Land-disturbing activity contained within a watershed of a regional water quality stormwater management facility;

1.5.3 Incorporates the use of an LID and/or BMP; and/or

1.5.4 Changes in the University MS4.

Site specific SWM plans shall be submitted to the AS&S Holder for review. Prior to starting a land-disturbing project requiring a SWM plan, the project must have an approval issued by the AS&S Holder and proof of state permit coverage.

1.6 The design engineer may make requests for project specific variance and/or exceptions, in terms of ESC and SWM, to the AS&S Holder. For final approval, requests will be forwarded to the DEQ Central Office. Unless written approval from DEQ has been received, all requested variances and exceptions are considered unapproved. For more information, refer to Section 6, Variances and Exceptions.

1.7 The use of offsite options for stormwater quality compliance may be approved by NSU as long as conditions satisfy requirements stated in § 62.1-44.15:35 and 9VAC25-870-69.

1.8 Modifications to checklists, inspection reports, and worksheets provided in the appendix may be made as needed to provide additional information, clarify requested information, or to create more efficient workflows.

2. ANNUAL STANDARDS AND SPECIFICATIONS PERSONNEL

Richard A. Law, the University Architect and DEQ certified Combined Administrator, ESC/SWM Inspector and ESC/SWM Plans Examiner of the NSU Annual Standards and Specifications, shall be the plan approving authority for Norfolk State University projects. To guarantee compliance with erosion and sediment control and stormwater management regulations on all NSU projects. An the AS&S Holder may enter into agreements or contracts with soil and water conservation districts, adjacent localities, or other public or private entities to assist with carrying out the provisions of this article, including the review and determination of adequacy of erosion and sediment control plans submitted for land-disturbing activities on a unit or units of land as well as for monitoring, reports, inspections, and enforcement where authorized in this article, of such land-disturbing activities. A breakdown in responsibilities and titles regarding the Norfolk State University Annual Standards and Specifications for ESC and SWM are as listed below:

2.1 “DEQ-Certified ESC Inspector” means an individual who: (i) holds a certificate of competence from the Board in the area of project inspection; or, (ii) is enrolled in the Board’s training program for project inspection and successfully completes such program within one year after enrollment; and (iii) shall be responsible to inspect as mandated by the VESCL&R erosion and sediment control measures to ensure proper installation in accordance with the approved plan and record the state and effectiveness of such measures in an effort to minimize site erosion and sediment control.

2.2 “DEQ-Certified SWM Inspector” means an individual who: (i) holds a certificate of competence from the Board in the classification of project inspector in the area of SWM; or, (ii) is enrolled in the Board’s training program for project inspector and successfully completes such program within one year after enrollment; and, (iii) shall be responsible to inspect construction sites for SWPPP compliance.

2.3 “DEQ-Certified ESC Plan Reviewer” means an individual who: (i) holds a certificate of competence from the Board in the area of plan review; (ii) is enrolled in the Board’s training program for plan review and successfully completes such program within one year after enrollment; or (iii) is licensed as a professional engineer, architect, registered landscape architect, or land surveyor pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia; or (iv) is a professional soil scientist as defined in Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia.

2.4 “DEQ-Certified SWM Plan Reviewer” means an individual who: (i) holds a certificate of competence from the Board in the classification of plan reviewer in the area of SWM; or, (ii) is enrolled in the Board’s training program for plan reviewer and successfully

completes such program within one year after enrollment.

2.5 "DEQ-Certified ESC Program Administrator" means an individual who: (i) holds a certificate of competence from the Board in the area of program administration; or, (ii) is enrolled in the Board's training program for program administration and successfully completes such program within one year after enrollment.

2.6 "DEQ-Certified SWM Program Administrator" means an individual who: (i) holds a certificate of competence from the Board in the classification of program administration in the area of SWM; or, (ii) is enrolled in the Board's training program for program administration and successfully completes such program within one year after enrollment.

2.7 "DEQ-Certified ESC Combined Administrator" means an individual who: (i) holds a certificate of competence from the Board in the area of program administration, plan review and project inspection; or, (ii) is enrolled in the Board's training program for program administration, plan review and project inspection and successfully completes such program within one year after enrollment.

2.8 "DEQ-Certified SWM Combined Administrator" means an individual who: (i) holds a certificate of competence from the Board in the classification of program administration, plan reviewer and project inspector in the area of SWM; or, (ii) is enrolled in the Board's training program for program administration, plan reviewer, and project inspector and successfully completes such program within one year after enrollment.

Please note that any person who holds a valid and unexpired Certificate of Competence issued by the Board in the classification of ESC or SWM, or who obtains such a certificate, and who later successfully obtains an additional certificate may surrender both certificates of competence to the board and request in writing issuance of a dual certificate showing certification in both classifications. Such a request must be made while both the ESC and SWM certificates of competence obtained are valid and unexpired.

3. ANNUAL STANDARDS AND SPECIFICATIONS IMPLEMENTATION

ESC and SWM Plans shall comply with the NSU Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, the Virginia Erosion and Sediment Control Law (§62.1-44. et seq. as amended), the Virginia Erosion and Sediment Control Regulations (9VAC25- 840 et seq. as amended), the Virginia Stormwater Management Act (§62.1-44 et seq. as amended), and the Virginia Stormwater Management Permit (VSMP) Regulations (9VAC25-870 et seq. as amended). NSU shall be considered the plan approving authority for ESC and SWM. Refer to Section 1.1 for more information on general specifications.

3.1 Submittals: Project Manager will ensure that a professional engineer licensed in the

Commonwealth submits a site plan for review to the AS&S Holder that is designed to incorporate required stormwater management facilities and will meet current water quality and water quantity standards and specifications. Two complete printed sets of ESC/SWM plans, narratives, and necessary attachments along with digital copies shall be submitted to the NSU the AS&S Holder for review and approval prior to any land-disturbing activities. NSU the AS&S Holder shall have 30 days to review the plan and provide written comments.

3.2 Re-submittals: Re-submittals shall include revision notes referenced to written comments. For all second and subsequent submittals, a cover letter must be included by the submitting professional. This cover letter shall include accounts as to how each review comment is addressed with references to the relevant drawing sheet or narrative location and a list of any significant changes in the Plan. Depending upon the previous review comments or changes in the Plan, additional comments/discussion may be warranted by the cover letter.

3.3 Final Report: A final report shall be submitted to the NSU the AS&S Holder 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 (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 be signed and sealed by licensed professional(s) and include incremental surveys (drawings), a final survey (drawing), photographs, construction logs, inspection reports, geotechnical testing reports, soil reports, certification of materials, and all other applicable inspections, reports, and documents necessary to support and ensure the stormwater management and conveyance systems have been built in accordance with the approved Plan. The final report shall include the appropriate checklists provided in Stormwater Management Handbook. It shall be the licensed professional's responsibility to certify that the as-built condition of the system meets the quantitative and qualitative controls of the approved Plan.

3.4 Plan Reviews: NSU’s Stormwater Coordinator shall oversee the review of plans to ensure compliance with stormwater regulations. Certified personnel shall conduct plan reviews as defined in Section 2. When approved, additional copies may be requested to be stamped approved by NSU for ESC/SWM. One set shall be kept on file with the Stormwater Coordinator. Digital copies in pdf format are acceptable. Other copies of stamped approvals will be distributed to the Project Manager as needed. An ESW/SWM Plan Preparer/Reviewer Checklist is provided in the appendices 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.

3.5 Pre-Construction Conference: In order to clarify ESC/SWM roles, responsibilities and obligation of all parties involved with a land-disturbing activity, a pre-construction conference shall be held prior to commencement of the land disturbance. At a minimum, the pre-construction conference will be attended by the NSU Project Manager, NSU Construction Inspector, NSU Stormwater Coordinator, General Construction Permit Operator (if applicable) and the project RLD.

3.6 Inspections: Certified licensed personnel shall conduct site inspections as defined in Section 2. See Section 5 for more information.

3.7 Enforcement: NSU the AS&S Holder Project Manager shall guarantee that corrective action is taken in response to comments and violations listed on inspection reports. If the AS&S Holder is unable to get the contractor to comply with requests, documentation will be forwarded to the AS&S Holder Director of Capital Planning Improvements or designated representative of the AS&S Holder for further enforcement actions as deemed appropriate. This could include notifying the DEQ of project non-compliance for further enforcement and possible fines.

3.8 Changes and Amendments to Approved Plans: Amendments to approved ESC and / or SWM plans based on change in design scope must be reviewed and approved by the AS&S Holder DEQ Certified plans reviewer. Field red line changes shall not be considered approved until written notice is provided by the DEQ certified inspector. In addition, red line field changes and subsequent ESC/SWM design calculations shall be reviewed and reapproved by the applicable DEQ Certified plans reviewer. Project SWPPP will need to be updated with approved changes and amendments. If a change would increase the land disturbance to a higher permit fee, the difference in fees will need to be paid to the DEQ.

3.9 At DEQ's discretion, NSU may be required to provide inspection reports, complaint logs and complaint responses, along with weekly e-reporting to the Tidewater regional office.

4. PLAN REVIEW AND APPROVAL

The Project Manager will need a professional engineer, licensed in the Commonwealth, to prepare and submit a site plan with supporting documentation to the AS&S Holder for review once it is determined that project will require an approved site plan. Detailed requirements of specific items to be included in the ESC and SWM plans are located in the ESC/SWM Plan Submitter's Checklist (Appendix A) and General Erosion and Sediment Control Notes (Appendix B).

Certified individuals will review site plans to ensure compliance is met with these Annual Standards and Specifications, Virginia Erosion and Sediment Control Law, Virginia Erosion and Sediment Control Regulations, Virginia Stormwater Management Act, Virginia Stormwater

Management Permit Regulations, and any other applicable stormwater requirements.

A plan approval letter will be sent to the project engineer after the Plan and supporting documentation is deemed sufficient. If a state construction general permit is required, a construction general permit registration statement must be submitted to the DEQ and a SWPPP will need to be developed.

5. INSPECTIONS

Periodic inspections shall be conducted as required by state law § 62.1-44.15:37 and administrative code 9VAC25-840-60 for ESC and SWM. The intent of this section is that the AS&S holders conduct the required periodic inspections, although it worded as “DEQ-Certified ESC or SWM Inspectors”. Inspectors shall be notified 24 hours prior to installation of BMPs. Completion of the project will only be considered after establishment of permanent stabilization, not completion of construction.

5.1 Erosion and Sediment Control Inspections: Construction sites shall be inspected by DEQ-Certified ESC Inspector during or immediately following initial installation of erosion and sediment controls, at least once in every two-week period and within 48 hours following any runoff producing storm event, and at the completion of the project prior to the release of any performance bonds. In the event an inspection would fall on a weekend, or another day when the University is closed, the inspection will be performed on the next business day. The ESC Inspection Report form provided in Appendix C shall be used on each required site inspection visit. All control measures shown on the plan shall be inspected. Critical areas that require continuous inspections shall also be identified on the site plan. Any issues and violations shall be photographed and documented in the report. The inspection report shall specify the required corrective action for each issue or violation noted and a date by which all corrective actions must be completed. A copy of the ESC Inspection Report will be emailed to the project manager and any other persons identified during the pre-construction meeting.

5.2 Stormwater Management Inspections: Annual Standards and Specification holders shall have periodic inspections of the installation of the SWM measures by DEQ-certified inspector. The SWM Inspection Report form provided in Appendix C will also be used to record SWM inspections and any construction general permit deficiencies will be noted. If the Annual Standards and Specification holders elect to have a third-party inspector perform required inspections, the appropriate Delegation of Authority found in Appendix I shall be completed. The third-party inspector shall have a current DEQ Certification for the respective (ESC and/or) SWM Inspection. All stormwater BMPs must be identified on the site plan. Critical areas that require continuous inspections shall also be identified on the site plan. All issues and violations shall be photographed and documented in the report. The inspection report shall specify the required corrective action for each issue or violation noted and a date by which all corrective actions must be completed. A copy of the SWM Inspection Report will be

emailed to the project manager and any other persons identified during the pre-construction meeting. The projects SWPPP will be inspected for compliance at the beginning of the project and periodically throughout; including the development, updating, and implementation of a pollution prevention plan (≥ 1 acre). The AS&S Holder shall inspect the SWPPP at a minimum monthly frequency or shorter frequency as deemed necessary.

5.3 Project Close-Out: Project completion is defined as the achievement of one of the following:

a) Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long-term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a notice of termination;

b) 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

c) Coverage under an alternative VPDES or state permit has been obtained.

5.4 Post-Construction Inspections: Post-construction (maintenance) inspections for permanent SWM BMPs shall be made on an annual basis per the maintenance sections found within DEQ Clearing House Stormwater Design Specifications, made part of these standards by reference. Permanent BMPs (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 BMPs are constructed in accordance with the approved Plan. In the case where maintenance or repair is required, fund requests and/or work orders shall be made to have items corrected. The DEQ Maintenance Inspection Checklist provided in Appendix D shall be used during inspections. If proprietary structural BMPs are approved for use and utilized, the corresponding manufacturer's maintenance recommendations shall be followed and made part of the Annual Standards and Specifications (and included in the following year's updated AS&S document).

5.5 Violations and Documentation: Violations shall be documented in the respective ESC and / or SWM Inspection Reports, including photographs, descriptions, and necessary corrective actions. If a violation continues to be repeated, then a Notice to Comply will be issued and DEQ will be notified. At the discretion of the NSU AS&S Holder, the land disturbance approval may be suspended and/or revoked; at which time, all land disturbing activity must cease until corrective actions have been completed. Alternatively, the NSU AS&S Holder has the option to contract with a 3rd party to install and maintain ESC and/or SWM measures in accordance with the approved Plan, complete any necessary corrective actions, and/or abate any related damages. Site work may resume once the site is deemed compliant by NSU AS&S Holder. All

associated costs will be back-charged to the contractor.

6. VARIANCES AND EXCEPTIONS

6.1 Variances and exceptions to regulations must guarantee protection of off-site properties and resources from damage. Economic hardship is not sufficient reason to request a variance or an exception from VESCL&R or Norfolk State University Annual Standards and Specifications for ESC and SWM. Variances and exceptions are project specific. The following information needs to be included in variance requests:

a) Introduction
b) Project Description
c) Minimum Standards Variance Requests
d) Existing Conditions and Adjacent Areas
e) Soil Characterization
f) Critical and Sensitive Areas (Karst, wetland, etc.)
g) Mitigation
   I. ESC Measures
   II. Permanent Stabilization
   III. Vegetative Restoration
   IV. Maintenance
   V. Critical and Sensitive Areas
   VI. Self-Inspection, Reporting and DEQ-Certified Personnel

For a variance or exception to become part of the project ESC and SWM plans, a written request must be submitted to the NSU Stormwater Coordinator for a cursory review. If acceptable, the request will then be forwarded to the DEQ Central Office for final review and approval. This request must include an explanation and description of the specific condition necessitating the request. A detailed description of the alternative practice and justification that the practice meets the intent of the SWM Act and regulations for which the variance or exception is sought must also be included in the request. (Ref. 9VAC25-840-50). A Variance Request form is included in Appendix G.

6.2 Variance or Exception Request Policy and Procedure:

6.2.1 The design professional shall draft a letter of request to NSU the AS&S Holder and shall be accompanied by complete details and documentation, including justification and impacts associated with the request.

6.2.2 A cursory review will be completed by NSU AS&S Holder to ensure the request is complete and then will forward to the DEQ Central Office.

6.2.3 All requests shall be considered unapproved until written approval from DEQ is received. NSU may, at DEQ's discretion, be required to produce documentation to demonstrate the applicability of variance requests.

6.2.4 All approved variances or exceptions shall be included as part of the site plan.

6.2.5 NSU has included a list of non-VESCH specifications that are acceptable to be used for ESC measures on construction projects in Appendix F. Non-VESCH

specifications will require that the manufacturer's planning, construction, installation, and maintenance requirements be include with the approved Plan. Should Non-VESCH control measures fail to effectively control soil erosion, sediment deposition, and non-agricultural runoff, then VESCH control measures shall be utilized.

The use of Virginia Erosion and Sediment Control Handbook (VESCH) control measures is strongly preferred, along with accompanying technical documents and guidance. Non-VESCH control measures, BMPs, 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.

7. LAND-DISTURBING ACTIVITIES

7.1 A list of regulated land-disturbing activities currently under construction and expected to be under construction during this period are included in Appendix E.

a) An annual report shall be sent to DEQ Central Office for all ESC and SWM regulated land-disturbing activities prior to October 1st of each reporting year. These reports shall include items 7.2.a through 7.2.j as listed below and may be in excel spreadsheet format.

7.2 Norfolk State University the AS&S Holder will notify the DEQ Central Office two weeks prior to initiating a regulated LDA with project information. E-notification shall be sent to Standardsandspecs@deq.virginia.gov and shall include:

a) Project name or project number.
b) Any associated Construction General Permit Number
c) Project location (address, nearest intersection, lat/long, or nearest access point);
d) On-site project manager name and contact information;
e) Responsible Land Disturber (RLD) name and contact information;
f) Project description;
g) Acreage of disturbance of project (if Construction General Permit is required, the completion of Appendix Item H - Annual Standards & Specification (AS&S) Entity Information);
h) How off-site / borrow / laydown areas will be taken into account per sections 9VAC25-840-80.D and 9VAC-880-30.C.
i) Estimated project start and completion date; and
j) Any variances/exemption associated with project (except those listed in Appendix F).

7.3 Norfolk State University the AS&S Holder will notify the DEQ Central Office of any additional projects involving regulated land disturbing activities unknown at the time of the Annual Standards & Specifications submission.

8. LONG-TERM MAINTENANCE

Project-specific plans (plan sheets and narrative) shall contain information on long-term maintenance of BMPs. Permanent stormwater facilities will be inspected as required within stormwater regulations and campus policy and procedures.

8.1 The following information shall be printed on approved stormwater management plans:

a) The following description of the requirements for maintenance and maintenance inspection of the stormwater management facilities and a recommended schedule of maintenance inspection and maintenance.

I. Responsibility for the operation and maintenance of stormwater management facilities shall remain with the state agency and shall pass to any successor or owner. If portions of the land are to be sold, legally binding arrangements shall be made to pass the basic responsibility to successors in title. These arrangements shall designate for each state project the property owner, governmental agency, or other legally established entity to be permanently responsible for maintenance.

II. At a minimum, a stormwater management facility shall be inspected by the responsible state agency on an annual basis and after any storm which causes the capacity of the facility principal spillway to be exceeded.

III. During construction of the stormwater management facilities, the department shall make inspections on a random basis.

IV. The department shall require inspections and reports from the state agency responsible for ensuring compliance with the state permit and to determine if the measures required in the state permit provide effective stormwater management.

V. Inspection reports shall be maintained as part of the land disturbance project file.

b) The identification of a person or persons who will be responsible for inspections and maintenance.

c) 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.

d) Please 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 and please also provide a table that adds the land cover up by type on the sheet.

e) Please draw metes and bounds all the way around any conserved open space.

f) Please label any conserved open space as "Runoff Reduction Compliance Forest / Open Space"

g) Please 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 that an amended storm water management plan is approved

by the SWM plan approving authority." NSU shall track stormwater management facilities and associated watersheds.

8.2 The NSU BMP will be updated quarterly with information as related to the BMP.

8.3 Stormwater Pollution Prevent Plans (SWPPPs) shall be made available over the internet.

8.4 NSU shall inspect BMPs per the schedules included in the narratives or on the plans or both.

8.5 NSU shall perform maintenance of BMPs per the schedules included in the narratives or on the plans or both and as necessary to maintain the BMP's necessary function.

9. DEQ OVER-SITE INFORMATION

9.1 Enforcement

9.1.1 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.

9.1.2 ESC - § 62.1-44.15:54. E., § 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.

9.2 Complaints and Inspections

9.2.1 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.

9.3 Fees

9.3.1 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.

9.3.2 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.

9.4 Please note that DEQ is the authority and issuance and termination of Construction General Permits shall go through the Department.

9.4.1 Registration Statement - 9VAC25-880-50

9.4.2 Notice of Termination - CGP Part I.F.

9.5 Discretionary Requirements:

9.5.1 Inspection reports conducted by NSU as well as complaint logs and complaint responses may be required to be submitted to DEQ.

9.5.2 NSU may be required to provide weekly e-reporting to the Tidewater regional office:

9.5.2.1 Inspection reports;

9.5.2.2 Pictures;

9.5.2.3 Complaint logs and complaint responses; and

9.5.2.4 Other compliance documents.

10. CONSTRUCTION REQUIREMENTS

All contractors performing land disturbing activities on campus property are required through contract documents to follow existing ESC requirements and obtain all applicable permits before construction activity commences. The CO-7 General Conditions of the Construction Contract requires that the contractor have a DEQ-certified Responsible Land Disturber on-site. In addition to contract language, all work performed on University property is required to comply with the Construction and Professional Services Manual (CPSM) published by the Bureau of Capital Outlay Management and City of Norfolk Regulations. Any land-disturbing activity carried out in a locality outside of the City of Norfolk 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.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix A

ESC/SWM Plan Submitter's Checklist

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

SECTION 1: GENERAL INFORMATION

Plan Submission Date: _____ Total Disturbed Acreage: _____

Project Name: _____

Project Address or Location: _____

Principal Designer Name and Company: _____

Principal Designer Phone Number: _____ Email: _____

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

SECTION 2: ESC/SWM PLAN PREPARER/REVIEWER CHECKLIST

The Erosion and Sediment Control (ESC) and Stormwater Management (SWM) Plan consists of the Narrative (including any supporting calculations) and the construction sheets (site plan), as noted below. Please fill in all blanks and reference where the information may be found, where appropriate, or write N/A by items that are not applicable.

_____ 2.1 Complete set of plans and supporting documentation - Include all sheets pertaining to the site grading and stormwater and any activities impacting erosion and sediment control and drainage:

- o Existing conditions
- o Demolition
- o Site grading
- o Erosion and sediment control
- o Storm sewer systems
- o Stormwater management facilities
- o Utility layout
- o Landscaping
- o On-site and off-site borrow and disposal areas
- o Hydrologic and hydraulic computations, including runoff characteristics
- o Documentation and calculations verifying compliance with water quality and quantity requirements

_____ 2.2 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.

_____ 2.3 Number of plan sets - Three hard copy sets of ESC and SWM (if applicable) plans and engineering report are to be submitted initially and with each re-submission. With each submission, also submit a digital copy of the plan set and engineering report in pdf format, and a digital copy of the VRRM spreadsheet.

_____ 2.4 Variances & Exceptions – Provide a letter requesting a variance or exception with details and documentation including justification and associated impacts. Variances are governed by Section 9VAC25- 840-50 of the Virginia Erosion and Sediment Control Regulations. Exceptions are governed by Section 9VAC25-870-57 of the Virginia Stormwater Management Regulations.

_____ 2.5 Off-site Compliance – For off-site stormwater quality compliance, provide a letter of availability from the off-site provider as governed by Section 9VAC-

25-870-69 of the Virginia Stormwater Management Regulations.

_____ 2.6 Completed Plan Submitter's Checklist - Include a completed and signed ESC/SWM Plan Submitter's Checklist.

SECTION 3: ESC MINIMUM STANDARDS

Yes	No	NA		
[ ]	[ ]	[ ]	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?
[ ]	[ ]	[ ]		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 standard and specification?
[ ]	[ ]	[ ]	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?
[ ]	[ ]	[ ]	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?

Yes	No	NA		
[ ]	[ ]	[ ]	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 restabilization 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 restabilization?
[ ]	[ ]	[ ]	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?
[ ]	[ ]	[ ]		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?
[ ]	[ ]	[ ]		Have water quantity requirements under 9VAC25-870-66 been satisfied? Provide documentation.

SECTION 4: NARRATIVE AND ENGINEERING REPORT

Reference the plan sheet or engineering report page where the information can be found in the blanks below.

_____ 4.1 Project description - Briefly describe the nature and purpose of the land-

disturbing activity. Provide project specific information. Also include the following:

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

_____ 4.2 Existing site conditions - A description of the existing topography (% slopes), ground cover, and drainage (on-site and receiving channels).

- o Discuss any existing drainage or erosion problems and how they are to be corrected.

_____ 4.3 Adjacent areas - A description of all neighboring areas such as residential developments, agricultural areas, streams, lakes, roads, etc., that may be affected by the land disturbance. Discuss any environmentally sensitive areas, including any on-site or adjacent water bodies included in the Virginia 303(d) list of impaired waters, and any possible problems during and after construction (traffic issues, dust control, increases in runoff, etc.).

_____ 4.4 Off-site areas - Describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.).

- o Provide information on whether the proposed site is balanced, estimated cubic yards needed, or to be removed from the site.
- o If borrow/disposal site is known, provide documentation showing that site has an approved and current ESC plan (locality land-disturbance permit, construction general permit coverage letter, etc.). If borrow/disposal site does not have an approved ESC plan, this plan will need to incorporate that area as part of the proposed disturbance.
- o If borrow/disposal site will not be known until after a contractor has been hired, provide a narrative explaining that the contractor will need to provide documentation showing that their borrow/disposal site has an approved and current ESC plan, or will need to work with the engineer to have their borrow/disposal site included into the proposed plan.

_____ 4.5 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.

- o Indicate references for soil information.

- Provide a copy of soil survey map.

_____ 4.6 Critical areas - A description of areas on the site that may 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.

_____ 4.7 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 latest edition of the Virginia Erosion and Sediment Control Handbook (VESCH).

_____ 4.8 Management strategies / Sequence of construction - Address management strategies, the sequence of construction, and any phasing of installation of ESC measures.

_____ 4.9 Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed. List any soil testing requirements. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.

_____ 4.10 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. VESCH control measures shall be maintained in accordance with the VESCH maintenance schedules, and non-VESCH control measures shall be maintained in accordance with the manufacturer's recommendations.

_____ 4.11 Calculations for temporary erosion and sediment control measures - For each temporary ESC measure, provide the calculations and worksheets included in the standards and specifications (e.g. traps, basins, channels, outlet protection etc).

_____ 4.12 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? All calculations showing pre-development and post-development runoff should be provided including any worksheets, assumptions and engineering decisions. Describe the strategy to control stormwater runoff.

4.13 Water quality and quantity compliance – Provide a summary description of the water quantity and quality compliance strategy along with adequate documentation, including required limits of analysis, to show compliance with the criteria.

- o Water quality compliance: 9VAC25-870-65
  - • VRRM compliance spreadsheet (digital and printed format)
- o Water quantity, channel protection: 9VAC25-870-66 B
- o Water quantity, flood protection: 9VAC25-870-66 C

4.14 Adequate conveyances – Ensure that stormwater conveyances with adequate capacity and adequate erosion resistance have been provided for all on-site concentrated stormwater runoff. Off-site channels that runoff from the site, including those receiving runoff from stormwater management facilities, must be adequate. Increased volumes of sheet flows must be diverted to a stable outlet, adequate channel, pipe or pipe system, or a stormwater management facility.

- o Provide exhibits showing draining divides, direction of flow, and size (acreage) of each of the site drainage areas that discharge runoff off-site, both existing and proposed.
- o Provide calculations for pre- and post-development runoff from these drainage areas.
- o Ensure that quantity requirements are satisfied for each off-site receiving channel, including those that receive runoff from stormwater management facilities.
- o Provide calculations for the design of each permanent stormwater management facility.
- o Provide adequacy calculations for all on-site stormwater conveyances.

4.15 Documentation and Calculations - Provide the following design calculations, as applicable:

- o Drainage area map with time of concentration (TC) path shown and points of analysis with worksheets
- o TC calculation/nomograph
- o Locality IDF curve
- o Composite runoff coefficient or RCN calculation
- o Peak runoff calculations
- o Imperviousness of the entire site and each drainage area
- o NRCS runo· curve numbers or volumetric runo· coe·cients
- o Hydrologic analysis for the existing (pre-development) conditions,

including runoff rates, volumes, and velocities, showing the methodologies used and supporting calculations.

- o Hydrologic analysis for the proposed (post-development) conditions including runoff rates, volumes, and velocities, showing the methodologies used and supporting calculations.
- o Hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms.
- o Stormwater conveyance channel design calculations
- o Storm drain and storm sewer system design calculations
- o Hydraulic Grade Line on profiles of pipe systems
- o Culvert design calculations

_____ 4.16 BMP Information - Provide a table or summary for all stormwater quantity and quality BMP facilities including the following information: BMP Name, Impervious Acres Treated, Total Acres Treated, Amount of runoff treated by practice in acre-feet, geographic coordinates (Lat/Long), and Lifespan.

_____ 4.17 State Maintenance Agreement Information – The following information shall be printed on the approved stormwater management plan for state projects:

- o A description of the requirements for maintenance and maintenance inspection of the stormwater facilities and a recommended schedule of 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.
- o The identification of the person(s) who will be responsible for maintenance inspection and maintenance.
- o Inspections:
  - Facilities Management Building
    700 Park Avenue
    Norfolk, VA 23504
    Phone: (757) 823-2625
  - Or licensed qualified professional consultant
- o Maintenance:
  - Facilities Management Building
    700 Park Avenue
    Norfolk, VA 23504
    Phone: (757) 823-2625
- o 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. Also provide a table that adds the land cover up by type on the sheet.

- o Provide metes and bounds all the way around any conserved forest/open space.
- o Label any conserved forest/open space as "Runo· Reduction Compliance Forest/Open Space".
- o Include the following note on the sheet: "The Runo· Reduction Compliance Forest/Open Space area shown shall be maintained in a forest/open space manner until such time that an amended stormwater management plan is approved by the VSMP Authority or entity with DEQ approved standards and specifications for stormwater plan approval."

_____ 4.18 Page numbers – Number the pages of the Narrative and the Calculations.

_____ 4.19 Supporting documentation – Provide applicable supporting documents and studies (e.g. infiltration tests, geotechnical investigations, TMDLs, flood studies, etc.).

_____ 4.20 Other required permits – Provide a copy of other required permits as necessary (e.g. USACE).

SECTION 5: SITE PLAN

Reference the plan sheet or engineering report page where the information can be found in the blanks below.

_____ 5.1 Owner Contact Information – Provide name, address, telephone number and email of the owner representative.

_____ 5.2 Vicinity map - A small map locating the site in relation to the surrounding area. Include any landmarks that might assist in locating the site.

_____ 5.3 Indicate north - The direction of north in relation to the site.

_____ 5.4 Limits of disturbance – Areas which 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 for areas NOT to be disturbed.

_____ 5.5 Existing contours - The existing contours of the site shall be shown as dashed light lines and elevation labeled adequately.

_____ 5.6 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 and the elevation labeled adequately.

_____ 5.7 Plan view of storm drainage system – Existing and proposed storm drainage components shall be provided in a plan view. Pipe diameter, material, inverts, stationing, and direction of flow shall be included as part of the plan view.

_____ 5.8 Profile of storm drainage system – Existing and proposed storm drainage components shall be provided in a profile. Pipe diameter, material, inverts, stationing, percent slope, proposed and existing grade, and hydraulic grade lines shall be included as part of the profile.

_____ 5.9 Existing vegetation - The existing tree lines, grassed areas, or unique vegetation.

_____ 5.10 Soils map – The boundaries of different soil types, K factor and soil survey classifications.

_____ 5.11 Existing drainage patterns – The dividing lines and the direction of flow for the different drainage areas. Include the size (acres) of each drainage area and size of impervious area.

_____ 5.12 Proposed drainage patterns – The dividing lines and the direction of flow for the different drainage areas. Include the size (acres) of each drainage and size of impervious area.

_____ 5.13 Critical areas – Note all areas with potentially serious erosion problems. Identify any on-site or adjacent water bodies included in the Virginia 303(d) list of impaired waters.

_____ 5.14 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.

_____ 5.15 Landscape plan – Include a plan showing location and plant selection for landscaped areas.

_____ 5.16 Location of practices – Show locations of ESC and SWM practices to be used on the site. Use standard symbols and abbreviations from ESC and SWM handbooks. A legend denoting symbols, line uses and other special characters shall be provided.

_____ 5.17 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.

_____ 5.18 Specifications / Detail Drawings for erosion and sediment control measures – For each VESCH and accepted non-VESCH erosion and sediment control measure employed in the plan, include, at a minimum, the applicable standard detail, narrative, maintenance requirements and associated legend symbol. Include any approved variances or revisions to the standards and specifications. Details should be provided which are clearly dimensioned and reflect the ability to be "built" in the field according to proper design criteria.

_____ 5.19 Specifications / Detail Drawings for stormwater management structures – Provide specifications for stormwater management structures such as pipe materials, pipe bedding, structures, etc. Details should be provided which are clearly dimensioned and reflect the ability to be "built" in the field according to proper design criteria. VDOT IS-1 storm drain shaping will be required for storm drain structures.

_____ 5.20 Erosion and sediment control notes – At a minimum, include the erosion and sediment control notes found on appendix B. Ensure that all applicable Minimum Standards not covered elsewhere in the plan have been addressed.

_____ 5.21 Minimum Standards – Minimum Standard 1 through Minimum Standard 19 shall be included in the plan set.

_____ 5.22 Legend - Provide a complete listing of all ESC and SWM measures to be 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.

_____ 5.23 Property lines and easements - Show all property lines and known easements.

SECTION 6: CHECKLIST PREPARER CERTIFICATION STATEMENT

I certify that I am a professional in adherence to all minimum standards and requirements pertaining to the practice of that profession in accordance with Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia and attendant regulations. By signing this checklist, I am certifying that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete.

Signature: _____

Printed Name: _____

Date: _____

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix B

General Erosion and Sediment Control Notes

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and Virginia Regulations 9VAC25-840 Erosion and Sediment Control Regulations.

ES-2: The plan approving authority (NSU Stormwater Coordinator) must be notified at least one week prior to the pre-construction conference, one week prior to commencement of land disturbing activity and one week prior to final inspection. The name of the certified responsible land disturber, including their certification number and contact information must be provided to the plan approving authority prior to actual engagement in land disturbing activity.

ES-3: All erosion and sediment control measures shall be placed prior to or as a first step in clearing.

ES-4: A copy of the approved erosion and sediment control plan and access to the Virginia Erosion and Sediment Control Handbook shall be maintained on the site at all times.

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the NSU Stormwater Coordinator for review and approval, or submit documentation that the other area is currently covered under a separate approved erosion and sediment control plan.

ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

ES-7: All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved, after which, upon approval of the plan approving authority, the controls shall be removed. Disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized.

ES-8: During dewatering operations, water shall be pumped into an approved filtering device.

ES-9: The contractor shall inspect all erosion control measures at least once in every two-week period and within 48 hours following any runoff producing storm event. The operator shall inspect in accordance with the Construction General Permit requirements when applicable. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately. Contractor shall submit evidentiary of inspection reports to the

owner or within the Stormwater Pollution Prevention Plan (SWPPP).

ES-10: The contractor is responsible for the removal of sediment that has been transported onto paved or public roads. At a minimum, tracking shall be cleaned by the end of each work day.

ES-11: Temporary/Permanent stabilization operations shall be initiated within 7 days after reaching final grade or upon suspension of grading operations for anticipated duration of greater than 14 days or upon completion of grading operations for a specific area.

ES-12: The contractor shall be responsible for preventing surface and air movement of dust from exposed soils.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix C

ESC/SWM Inspection Report

NORFOLK STATE UNIVERSITY

EROSION AND SEDIMENT CONTROL INSPECTION REPORT

Click Here to Clear Form

PROJECT: _____ **STATE PROJECT NO:** _____

CERTIFIED DEQ INSPECTOR: _____ **DATE:** _____ **TIME:** _____

An erosion and sediment control inspection was conducted at the above referenced project, and the following deficiencies were found. Work must begin to correct these deficiencies immediately.

- ☐ Safety Fence (3.01)
- ☐ Construction Entrance (3.02)
- ☐ Straw Bale Barrier (3.04)
- ☐ Silt Fence (3.05)
- ☐ Storm Drain Inlet Protection (3.07)
- ☐ Sediment Trap (3.13)
- ☐ Sediment Basin (3.14)
- ☐ Outlet Protection (3.18)
- ☐ Temporary Seeding (3.31)
- ☐ Permanent Seeding (3.32)
- ☐ Sodding (3.33)
- ☐ Tree Protection (3.38)
- ☐ Dust Control (3.39)
- ☐ _____
- ☐ _____

Comments:

☐ An erosion and sediment control inspection was conducted at the above referenced project and no deficiencies were found.

Trash/Debris on site: ☐ YES ☐ NO _____

Sediment Leaving site: ☐ YES ☐ NO _____

Targeted Re-inspection Date / Compliance Time: _____ **calender days from receipt of this notice.**

Inspected by: (*print*) _____ (*signature*) _____

NORFOLK STATE UNIVERSITY

Stormwater Construction Site Inspection Report

General Information			
Project Name			
Location			
Date of Inspection		**Start/End Time**	
Certified DEQ Inspector:			
Inspector's Title(s)			
Inspector's Contact Information			

Phase of Construction

❑ Pre-construction conference ❑ Clearing and grubbing ❑ Rough grading ❑ Finish Grading
❑ Final stabilization ❑ Const. of SWM Facilities ❑ Maint. of SWM Facilities ❑ Other _____

Type of Inspection:

❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?

❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
15		❑Yes ❑No	❑Yes ❑No	
16		❑Yes ❑No	❑Yes ❑No	
17		❑Yes ❑No	❑Yes ❑No	
18		❑Yes ❑No	❑Yes ❑No	
19		❑Yes ❑No	❑Yes ❑No	
20		❑Yes ❑No	❑Yes ❑No	
21		❑Yes ❑No	❑Yes ❑No	
22		❑Yes ❑No	❑Yes ❑No	
23		❑Yes ❑No	❑Yes ❑No	
24		❑Yes ❑No	❑Yes ❑No	
25		❑Yes ❑No	❑Yes ❑No	
26		❑Yes ❑No	❑Yes ❑No	
27		❑Yes ❑No	❑Yes ❑No	
28		❑Yes ❑No	❑Yes ❑No	
29		❑Yes ❑No	❑Yes ❑No	
30		❑Yes ❑No	❑Yes ❑No	
31		❑Yes ❑No	❑Yes ❑No	
32		❑Yes ❑No	❑Yes ❑No	
33		❑Yes ❑No	❑Yes ❑No	
34		❑Yes ❑No	❑Yes ❑No	
35		❑Yes ❑No	❑Yes ❑No	
36		❑Yes ❑No	❑Yes ❑No	
37		❑Yes ❑No	❑Yes ❑No	
38		❑Yes ❑No	❑Yes ❑No	
39		❑Yes ❑No	❑Yes ❑No	
40		❑Yes ❑No	❑Yes ❑No	
41		❑Yes ❑No	❑Yes ❑No	
42		❑Yes ❑No	❑Yes ❑No	
43		❑Yes ❑No	❑Yes ❑No	
44		❑Yes ❑No	❑Yes ❑No	
45		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively bewing worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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."

Print name and title: _____

Signature: _____ **Date:** _____

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix D

BMP Field Assessment Worksheet

Maintenance Inspection Checklist:
Bioretention / Dry Swale

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service: _____
Date of Last Inspection: _____ Inspector_____
DEQ Certified Inspector: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Facility Location:
- G Surface
- G Underground

Hydraulic Configuration:
- ☐ On-line facility
- ☐ Off-line facility

Filtration Media:
- ☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.
- ☐ Sand
- ☐ Bioretention Soil
- ☐ Peat
- ☐ Other: _____

Type of Pre-Treatment Facility:
- ☐ Sediment forebay (above ground)
- ☐ Sedimentation chamber
- ☐ Plunge pool
- ☐ Stone diaphragm
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

Ideally, Bioretention facilities should be inspected and cleaned up annually, preferably during the spring. During the first 6 months following construction of a bioretention facility, the site should be inspected at least twice after storm events that exceed 1/2-inch of rainfall. Watering is needed once a week during the first 2 months following installation, and then as needed during the first growing season (April-October), depending upon rainfall. If vegetation needs to be replaced, one-time spot fertilization may be needed, preferably using an organic rather than a chemical fertilizer. Each facility should have a customized routine maintenance schedule addressing issues such as the following: grass mowing, weeding, trash removal, .mulch raking and maintenance, erosion repair, reinforcement plantings, tree and shrub pruning, and sediment removal.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Contributing Drainage Area	Adequate vegetation				Supplement as necessary	Owner or professional	
	There is excessive trash and debris				Remove immediately	Owner or professional	
	There is evidence of erosion and / or bare or exposed soil				Stabilize immediately	Owner or professional	
	There are excessive landscape waste or yard clippings				Remove immediately and recycle or compost	Owner or professional	
	Oil, grease or other unauthorized substances are entering the facility				Identify and control the source of this pollution. It may be necessary to erect fences, signs, etc	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Pre-Treatment (continued)	Excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
Pre-Treatment (continued)	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation, or oil/grease)				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
	There is evidence of erosion and / or exposed soil				Stabilize immediately	Owner or professional	
	There is dead vegetation or exposed soil in the grass filter				Restabilize and revegetate as necessary	Owner or professional	
Inlets	Check for sediment build-up at curb cuts, gravel diaphragms or pavement edges that prevent flow from getting into the bed, and check for bypassing.				Remove sediment and correct any other problems that block inflow.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion at or around the inlet				Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
	Inflow is hindered by trees and/or shrubs.				Remove woody vegetation from points of inflow and directly above underdrains. (Trees and shrubs may be located closer to the perimeter.)	Owner or professional	
Side Slopes (*Annually, after major storms*)	There is evidence of rill or gully erosion or bare soil				Identify the source of erosion damage and prevent it from recurring. Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
	There is excess sediment accumulation				Remove immediately	Owner or professional	
	Side slopes support nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
Vegetation (*monthly*)	Plant composition is consistent with the approved plans and any stakes or wires are in good condition.				Determine if existing plant materials are at least consistent with general Bioretention design criteria and replace inconsistent species.	Professional	
	There should be 75-90% cover (mulch plus vegetation), and the mulch cover should be 2-3 inches deep.				Supplement vegetation and mulch as needed.		

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Vegetation (*monthly*) **(continued)**	There is evidence of hydrocarbons or other deleterious materials, resulting in unsatisfactory plant growth or mortality,				Replace contaminated mulch. If problem persists, test soils for hydrocarbons and other toxic substances. If excess levels are found, the soils, plants and mulch may all need to be replaced in accordance with the approved construction plans.	Professional	
	Invasive species or weeds make up at least 10% of the facility's vegetation				Remove invasive species and excessive weeds immediately and replace vegetation as needed.	Owner or professional	
	The grass is too high				Mow within a week. Grass species should be selected that have dense cover, are relatively slow growing, and require the least mowing and chemical inputs. Grass should be from 6-10 inches high.	Owner or professional	
	Vegetation is diseased, dying or dead				Remove and replace. Increase watering, but avoid using chemical fertilizers, unless absolutely necessary.	Professional	
	Winter-killed or salt-killed vegetation is present.				Replace with hardier species.	Owner or professional	
Filter Media (*Annually*)	The filter media is too low, too compacted, or the composition is inconsistent with design specifications				Raise the level, loosen and amend or replace the media, as needed, to be consistent with the state design criteria for Bioretention (85-88% sand 8-12% soil fines 3-5% organic matter in form of leaf compost). Other remediation options are described in the maintenance section of the state design criteria for Bioretention	Professional	
	The mulch is older than 3 years or is otherwise in poor condition				The mulch must be replaced every 2-3 years	Professional	
	There is evidence that chemicals, fertilizers, and/or oil/grease are present				Remove undesirable chemicals from media and facility immediately, and replace mulch or media as needed	Professional	
	There is excessive trash, debris, or sediment.				Remove trash and debris immediately. Check plant health and, without damaging plants, manually remove the sediment, especially if the depth exceeds 20% of the facility's design depth.	Owner or professional	
	There is evidence of concentrated flows, erosion or exposed soil				Identify the source of erosion damage and prevent it from recurring. Repair the erosion damage and reseed or otherwise restabilize with vegetation.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Filter Media (*Annually*) **(continued)**	The filter bed is clogged and/or filled inappropriately				Redistribute the soil substrate and remove sediment within 2 weeks.	Professional	
	The topsoil is in poor condition (e.g., the pH level is not 6-7, the composition is inappropriate, etc.)				Ensure a 3-inch surface depth of topsoil consistent with the state design criteria for Bioretention (loamy sand or sandy loam texture, with less than 5% clay content, and organic matter content of at least 2%). If the pH is less than 6.5, spread limestone.	Professional	
Underdrain/ Proper Drainage	The perforated pipe is not conveying water as designed				Determine if the pipe is clogged with debris or if woody roots have pierced the pipe. Immediately clean out or replace the pipe, as necessary.	Professional	
	The underlying soil interface is clogged (there is evidence on the surface of soil crusting, standing water, the facility does not dewater between storms, or water ponds on the surface of basin for more than 48 hours after an event).				Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. .After three days, if there is standing water on top but not in the underdrain, this indicates a clogged soil layer. If standing water is both on the surface and in the underdrain, then the underdrain is probably clogged. This should be promptly investigated and remediated to restore proper filtration. Grading changes may be needed or underdrain repairs made. The filter media may need to be raked, excavated and cleaned or replaced to correct the problem. Holes that are not consistent with the design and allow water to flow directly through a planter to the ground must be plugged.	Professional	
Planters	The planter is unable to receive or detain stormwater prior to infiltration. Water does not drain from the reservoir within 3-4 hours of after a storm event.				Identify and correct sources of clogging. Topsoil and sand/peat layer may need to be amended with sand or replaced all together.	Owner or professional	
	The planter has structural deficiencies, including rot, cracks, and failure, or the planter is unable to contain the filter media or vegetation				Make needed repairs immediately.	Owner or professional	
Outlet/ Overflow Spillway	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	There is excessive trash, debris, or sediment at the outlet				Remove immediately, and keep the contributing area free of trash and debris.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Outlet/ Overflow Spillway (continued)	Any grates present are in good condition				Repair or replace as necessary	Owner or professional	
Observation Well	Is the observation well still capped?				Repair, as necessary.	Professional	
Overall	Access to the Infiltration facility or its components is adequate				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	There is evidence of standing water				Fill in low spots and stabilize; correct flow problems causing ponding.	Owner or professional	
	Mosquito proliferation				Eliminate stangant pools and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied *only if absolutely necessary*.	Owner or professional	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment on the bioretention area or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	

Maintenance Inspection Checklist:
Extended Detention Pond

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____
Date BMP Placed in Service: _____
Date of Last Inspection: _____
DEQ Certified Inspector:_____
Owner/Owner's Representative: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Pond characteristics and functions
(check all that apply)

- ☐ Water quality treatment
- ☐ Extended detention included
- ☐ Channel protection
- ☐ Ties into groundwater
- ☐ Single cell pond
- ☐ Multiple-cell pond system
- ☐ Pond with one or more wetland cells

Type of Pre-Treatment Facility:

- ☐ Sediment forebay (above ground)
- ☐ Vegetated buffer area
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

Hydraulic Configuration:

- ☐ On-line facility
- ☐ Off-line facility

Ideally, Extended Detention Ponds should be inspected annually. ED Ponds are prone to a high clogging risk at the ED low-flow orifice. Ideally, the orifice should be inspected at least twice a year after initial construction. The constantly changing water levels in ED Ponds make it difficult to mow or manage vegetative growth. The bottom of ED Ponds often become soggy, and water-loving tees such as willows may invade and will need to be managed. Periodic mowing of the stormwater buffer is only required along maintenance rights-of-way and the embankment. The remaining buffer may be managed as a meadow (mowing every other year) or forest. Frequent removal of sediment from the forebay (every 5-7 years, or when 50% of the forebay capacity is filled) is essential to maintain the function and performance of the ED Pond. Sediments excavated from ED Ponds are usually not considered toxic or hazardous, so they can be safely disposed of either by land application of land filling.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	Adequate vegetation				Supplement as needed.	Owner	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
	There is evidence of erosino and/or bare or exposed soil				Stabilize immediately.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	There is excessive landscape waste and yard clippings				Remove immediately.	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5-7 years, and earlier, as needed.	Professional	
	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical alignment	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications	Professional	
	There is dead vegetation				Revegetate, as needed	Owner or professional	
Inlet	The inlet provides a stable conveyance into the pond				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet				Repair erosion damage and restabilize	Owner or professional	
	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
	There is more than 1 inch of settlement.				Add fill material and compact the soil to the design grade	Owner or Professional	
	The inlet alignment is incorrect.				Correct immediately.	Owner or Professional	
Vegetation	Plant composition is consistent with the approved plans				Determine if existing plant materials are consistent with the general Wet Pond design criteria, and replace inconsistent species.	Professional	
	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season				Consider watering every 3 days for first month, and then weekly during first year (April – October), depending on rainfall.	Owner or professional	
	Grass around the facility is overgrown				Mow (at least twice a year) to a height of 4"-9" high and remove grass clippings.	Owner or professional	
	Vegetation is dead or reinforcement planting is needed.				Remove and replace dead or dying vegetation.	Professional	
Permanent Pool and Side Slopes	There is excessive trash and/or debris.				Remove immediately	Owner or professional	
	There is evidence of sparse vegetative cover, erosion or slumping side slopes.				Repair and stabilize physical damage, and reseed or plant additional vegetation.	Owner or professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.	Owner or professional	
	There is significant sediment accumulation.				Conduct a bathymetric study to determine the impact to design volumes, and dredge if necessary.	Professional	
Riser/Principle Spillway and Low-Flow Orifice(s)	There is adequate access to the riser for maintenance.				Establish adequate access	Professional and, perhaps, the locality	
	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	
	Seepage into conduit				Seal conduit	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specs.	Professional	
	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
Dam/ Embankment and Abutments	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing.				Repair and restabilize immediately, especially after major storms.	Professional	
	There are soft spots, seepage, boggy areas or sinkholes.				Reinforce, fill and stabilize immediately.		

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Dam/ Embankment and Abutments (continued)	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.		
	There is woody vegetation on the embankment.				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2 years.		
Overflow/Emergency Spillway	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There is evidence of erosion/back cutting				Repair erosion damage and reseed	Owner or professional	
	There are soft spots, seepage or sinkholes.				Reinforce, fill and stabilize immediately.	Owner or professional	
	Only one layer of stone armoring exists above the native soil.				Reinforce rip-rap or other armoring materials.	Professional	
Outlet	The outlet provides a stable conveyance from the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is woody growth within 5 feet of the outlet pipe barrel.				Prune vegetation back to leave a clear discharge area.	Owner or Professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There are excessive sediment deposits at the outlet.				Remove sediment.	Professional	
	Discharge is causing undercutting, erosion or displaced rip-rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Fences are inadequate				Collapsed fences must be restored to an upright position. Jagged edges and damaged fences must be repaired or replaced.	Professional	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate stagnant pools and stock the basin with mosquito fish to provide natural mosquito & midge control. Treat for mosquitoes as needed. If spraying, then use mosquito larvicide, (e.g., Bacillus thurendensis or Altoside formulations) *only if absolutely necessary*.	Owner or professional	
	Encroachment on the pond or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

Maintenance Inspection Checklist:
Grass Channel

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service: _____
Date of Last Inspection: _____ Inspector_____
DEQ Certified Inspector: _____
As-Built Plans available: Y / N

Type of pretreatment facility:

- ☐ Sediment Forebay
- ☐ Check Dam
- ☐ Grass Filter Strip
- ☐ Stone Diaphragm
- ☐ Other: _____
- ☐ None

Ideally, these BMP areas should be inspected annually, with the inspection conducted spring when the health of the grass channel lining should be evident. Once established, Grass Channels have minimal maintenance needs outside of the spring clean up: regular mowing, repair of check dams and other measures to maintain the hydraulic efficiency of the channel and a dense, healthy grass cover.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	There is excessive trash and debris				Remove immediately	Owner or professional	
	There is evidence of erosion and / or bare or exposed soil				Stabilize immediately	Owner or professional	
Pre-treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash / debris / sediment in the facility				Remove immediately	Owner or professional	
	There is evidence of erosion and / or exposed soil				Stabilize immediately	Owner or professional	
	There is evidence of diaphragm or other clogging				Identify and eliminate the source of the problem; . If necessary, remove and clean or replace the stone.	Professional	
	There is dead vegetation and evidence of erosion and / or exposed soil				Repair erosion damage, and reseed or otherwise restabilize with vegetation	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Inlets	The inlet is not maintaining a calm flow of water entering the channel or the conveyance capacity is blocked				Remove trash and sediment accumulated at the inflow. Sources of sediment and debris must be identified and corrected. Stone splash pads must be replenished to prevent erosion.	Owner or professional	
	There is evidence of erosion at / around inlet				Repair erosion damage, and reseed or otherwise restabilize with vegetation.	Owner or professional	
Vegetation	Native soil is exposed or erosion channels are forming				If sediment deposits are thick enough to damage or kill vegetation, remove the sediment by hand, while protecting the vegetation.	Owner or Professional	
	Grass height does not reach standards				Grass channels must be mowed to keep grass at a height of 4" to 9". Remove grass clippings after mowing.	Owner or Professional	
	Vegetation requires fertilizer or pest control				Fertilize according to specifications. Use organic rather than chemical fertilizer. If feasible, use compost. Use integrated pest management (IPM) techniques to minimize the use of pesticides and herbicides.	Owner or Professional	
	The plant composition is consistent with the approved plans				Make a judgment regarding whether plants need to be replaced, and replace if necessary	Professional	
	Invasive species or weeds are present				Correctly destroy and/or remove the invasive species; make a judgment regarding whether other weeds need to be removed, and remove if necessary	Owner or professional	
	There is dead vegetation and/or exposed soil				Reseed or replace dead vegetation and exposed soil areas	Owner or professional	
Side Slopes	Evidence of erosion on side slopes, introducing sediment into the swale.				Repair erosion damage immediately. Stabilize slopes using appropriate erosion control measures and plant appropriate vegetation.	Owner or Professional	
Check Dams	Dam is not functioning properly.				Check upstream and downstream sides of check dams for evidence of undercutting, side cutting or erosion and repair immediately.	Professional	
	There is a large accumulation of sediment or trash/debris behind the check dam.				Remove sediment when the accumulation exceeds 25% of the original Tv. Remove trash/debris and clear blockages of weep holes.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Channel Bottom	Undesirable plant species, accumulations of fallen leaves, and other debris from deciduous plant foliage are present.				Remove woody vegetation from the channel. Prune adjacent trees and shrubs to keep the channel clear. Remove/replace invasive veg. or weeds if they cover < 25% of the channel area. Remove accumulated organic matter and debris immediately.	Owner or Professional	
	Base soils are compacted. The practice does not draw down within 48 hours after a storm.				De-thatch and aerate the channel. Remove sediment when the accumulation exceeds 25% of channel volume. Restore the original cross section and revegetate the channel.	Owner or Professional	
	There is unhealthy or dead grass cover or evidence of erosion, braiding, or excessive ponding in the channel bottom				Fill in low spots, repair erosion, and add reinforcement planting to maintain 90% turf cover. Reseed any salt killed vegetation and stabilize immediately. Keep the grass in a healthy, vigorous condition at all times, since it is the primary erosion protection for the channel.	Owner or Professional	
Channel Outlet	The outlet does not maintain sheet flow of water exiting the channel (unless a collection drain is used).				The source of erosion damage must be identified and controlled when native soil is exposed or erosion channels are forming. Check the channel outlet and all road crossings for bank stability and evidence of piping or scour holes.	Owner or professional	
	The outlet provides stable conveyance out of the channel				Stabilize immediately, as needed.	Professional	
	There is excessive trash, debris or sediment accumulation at outlet				Check inflow points for cogging and remove any trash and sediment deposits	Owner or professional	
	There is dead vegetation and/or exposed soil				Reseed or replace dead vegetation and exposed soil areas	Owner or professional	
Pest Control	There is evidence of standing water and mosquito habitat or rodent damage				Pest control measures must be taken when mosquitoes and/or rodents are found to be present. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied *only if absolutely necessary*. Holes in the ground located in and around the swale must be filled and stabilized with vegetation.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall	Access to the Grass Channel is adequate				Establish adequate access	Professional and, perhaps, the locality	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment by buildings or other structures				Clearly mark BMP and inform those involved of the BMPs.	Owner, pro (and perhaps the locality)	

Sample VSMP Maintenance Inspection Checklist: Infiltration

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service_____
Date of Last Inspection: _____
DEQ Certified Inspector: _____
Owner/Owner's Representative: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Facility Location:
- G Surface
- G Underground

Hydraulic Configuration:
- ☐ On-line facility
- ☐ Off-line facility

Filtration Media:
- ☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.
- ☐ Sand
- ☐ Bioretention Soil
- ☐ Peat
- ☐ Other: _____

Type of Pre-Treatment Facility:
- ☐ Sediment forebay (above ground)
- ☐ Sedimentation chamber
- ☐ Plunge pool
- ☐ Stone diaphragm
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

Ideally, infiltration facilities should be inspected annually. Spill Prevention measures should be used around infiltration facilities when handling substances that contaminate stormwater. Releases of pollutants should be corrected as soon as identified.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	There is excessive trash and debris				Remove immediately	Owner or professional	
	There is evidence of erosion and / or exposed soil				Stabilize immediately	Owner or professional	
	Vegetative cover is adequate				Supplement as needed	Owner or professional	
	There are excessive landscape waste or yard clippings				Remove immediately and recycle or compost	Owner or professional	
Pre-Treatment Facility	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion and/or exposed soil				Stabilize immediately	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Pre-Treatment Facility (continued)	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation)				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
	There is dead vegetation or exposed soil in the grass filter				Restabilize and revegetate as necessary	Owner or professional	
Inlets	Inlets provide a stable conveyance into facility				Stabilize immediately, as needed.	Owner or professional	
	There is excessive trash/debris/sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion at or around the inlet				Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
Embankment, Flow Diversion Structures (e.g., Dikes, Berms, etc.) and Side Slopes	There is evidence of erosion or bare soil				Identify the source of erosion damage and prevent it from recurring. Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
	There is excess sediment accumulation				Remove immediately	Owner or professional	
	Water is not detained in the infiltration basin				Check for a breach in the containment structure and repair immediately.	Professional	
	Side slopes support nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.	Professional	
Maintaining Facility Capacity and Proper Drainage	Look for weedy growth on the stone surface indicating sediment accumulation and potential clogging				Identify and control sources of sediment and debris.Remove sediment and debris in excess of 4” in depth every 2-5 years (or sooner if performance is affected).	Professional	
	Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. If standing water is still observed after three days, this is a clear sign that clogging is a problem.				Immediately clear debris from the underdrain. Replace the underdrain if necessary. If needed, regrade and till to restore infiltration capacity (the need for this can be prevented by preventing upstream erosion and subsequent sediment transport to the facility).	Professional	
	There is excessive trash/debris				Remove immediately	Owner or professional	
Vegetation	Grass within the practice is overgrown				Grass must be mowed to a height of 4”-9” and grass clippings removed (ideally recycled or composted).	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Pioneer trees are sprouting in the base of the facility				Remove trees to prevent roots from puncturing the filter fabric, allowing sediment to enter		
	Vegetation forms an overhead canopy that may drop leaf litter, fruit and other vegetative materials that may cause clogging.				Prune or remove vegetation as necessary	Owner or professional	
Observation Well	Is each observation well still capped?				Repair, as necessary.	Professional	
Outlet	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	Evidence of flow bypassing facility				Repair immediately	Professional	
	There is excessive trash, debris, or sediment at the outlet				Remove immediately	Owner or professional	
Overflow or Emergency Spillway	The pipe or spillway is not effectively conveying excess water to an adequate receiving system				Clear sediment and debris whenever 25% or more of the conveyance capacity is blocked. When damaged pipe is discovered, it must be repaired or replaced immediately. Identify and control sources of erosion damage. Replace or reinforce stone armament whenever only one layer of stone remains.	Professional	
Structural Components	Evidence of structural deterioration				Repair as necessary	Professional	
	Evidence of spalling or cracking of structural components				Repair or replace, as necessary	Professional	
	Grates are in good condition				Repair or replace, as necessary	Owner or professional	
Overall	Access to the Infiltration facility or its components is adequate				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that manholes, valves and/or locks can be opened and operated.	Professional and, perhaps, the locality	
	There is evidence of standing water				Fill in low spots and stabilize; correct flow problems causing ponding	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate standing water and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied *only if absolutely necessary*.	Owner or professional	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment on the infiltration area or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	

Maintenance Inspection Checklist:
Wet Pond

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service: _____
Date of Last Inspection: _____
DEQ Certified Inspector:_____
Owner/Owner's Representative: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Pond characteristics and functions
(check all that apply)

- ☐ Water quality treatment
- ☐ Extended detention included
- ☐ Channel protection
- ☐ Ties into groundwater
- ☐ Single cell pond
- ☐ Multiple-cell pond system
- ☐ Pond with one or more wetland cells

Hydraulic Configuration:

- ☐ On-line facility
- ☐ Off-line facility

Type of Pre-Treatment Facility:

- ☐ Sediment forebay (above ground)
- ☐ Vegetated buffer area
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

During the first 6 months following construction, the pond should be inspected twice after storm events that exceed 1/2 inch of rainfall. The aquatic benches should be planted with emergent wetland species, consistent with the Wet Pond design specifications. Bare or eroding areas in the CDA or around the pond buffer should be stabilized immediately with grass cover. Trees planted in the buffer need to be watered every 3 days for the first month, and then weekly during the remainder of the first growing season (April-October), depending on rainfall. Due to typical vegetation survival problems, it is typical to plan and budget for a round of reinforcement planting during the second growing season after construction. Wet Ponds should be inspected and cleaned up annually.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	Adequate vegetation				Supplement as needed	Owner	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
	There is evidence of erosion and/or bare or exposed soil				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste and yard clippings				Remove immediately and recycle or compost	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash and debris				Remove immediately.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Pre-Treatment (continued)	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5-7 years, and earlier if performance is being affected.	Professional	
	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical alignment	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications	Professional	
Inlet	The inlet provides a stable conveyance into the pond				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet				Repair erosion damage and restabilize	Owner or professional	
	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
	There is more than 1 inch of settlement.				Add fill material and compact the soil to the design grade	Owner or Professional	
	The inlet alignment is incorrect.				Correct immediately.	Owner or Professional	
Vegetation	Plant composition is consistent with the approved plans				Determine if existing plant materials are consistent with the general Wet Pond design criteria, and replace inconsistent species.	Professional	
	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed.	Professional	
	Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season				Consider watering every 3 days for first month, and then weekly during first year (April – October), depending on rainfall.	Owner or professional	
	Grass around the facility is overgrown				Mow (at least twice a year) to a height of 4”-9” high and remove grass clippings	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Vegetation is dead or reinforcement planting is needed.				Remove and replace dead or dying vegetation.	Professional	
Permanent Pool and Side Slopes	There is excessive trash and/or debris.				Remove immediately	Owner or professional	
	There is evidence of sparse vegetative cover, erosion or slumping side slopes.				Repair and stabilize physical damage, and reseed or plant additional vegetation.	Owner or professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Remove burrowing animals humanely from the area.		
	There is significant sediment accumulation.				Conduct a bathymetric study to determine the impact to design volumes, and dredge if necessary.	Professional	
Riser/Principle Spillway and Low-Flow Orifice(s)	There is adequate access to the riser for maintenance.				Establish adequate access	Professional and, perhaps, the locality	
	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specs.	Professional	
	Seepage into conduit				Seal the conduit	Professional	
	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
Dam/ Embankment and Abutments	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing of the dam.				Repair and restabilize immediately, especially after major storms.	Professional	
	There are soft spots, seepage, boggy areas or sinkholes present.				Reinforce, fill and stabilize immediately.		
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.		
	There is woody vegetation on the embankment.				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2 years.		

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overflow/ Emergency Spillway	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There is evidence of erosion/back cutting				Repair erosion damage and reseed	Owner or professional	
	There are soft spots, seepage or sinkholes.				Reinforce, fill and stabilize immediately.	Owner or professional	
	Only one layer of stone armoring exists above the native soil.				Reinforce rip-rap or other armoring materials.	Professional	
Outlet	The outlet provides a stable conveyance from the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is woody growth within 5 feet of the outlet pipe barrel.				Prune vegetation back to leave a clear discharge area.	Owner or Professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There are excessive sediment deposits at the outlet.				Remove sediment.	Professional	
	Discharge is causing undercutting, erosion or displaced rip-rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Fences are inadequate				Collapsed fences must be restored to an upright position. Jagged edges and damaged fences must be repaired or replaced.	Professional	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	
	Mosquito proliferation				Eliminate stagnant pools and stock the basin with mosquito fish to provide natural mosquito & midge control. Treat for mosquitoes as needed. If spraying, then use mosquito larvicide, (e.g., Bacillus thurendensis or Altoside formulations) *only if absolutely necessary*.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Encroachment on the pond or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix E

Land Disturbance and Project Tracking Sheet

Norfolk State University
Regulated Land-Disturbing Activities

Project Name	Location	Project Manager Contact Information	RLD Contact Information	Est Area (ac)	Est Start Date	Est Completion Date
Brown Hall	Corprew Avenue, Norfolk, Virginia, 23504	Terry Woodhouse	SD Ballard Construction Co., 2828 Shipps Corner Rd., Virginia Beach, VA RLD# 42410	10.79	12/01/2014	12/31/2018 Completed
Residential Facility	Corprew Avenue, Norfolk, Virginia, 23504	Terry Woodhouse	SD Ballard Construction Co., 2828 Shipps Corner Rd., Virginia Beach, VA RLD# 42410	6.55	8/01/2018	2/01/2019 Expected Completion
Synthetic Turf Football Field	Presidential Avenue Norfolk, Virginia, 23504	Terry Woodhouse	RAD Sports 171 VFW Drive Rockland, MA 02370 RLD# 05491	2.05	6/1/2018	9/01/2018 Completed

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix F

Non-VESCH Specifications

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Annual Standards and Specifications for ESC and SWM

CONSTRUCTION ENTRANCE / CONSTRUCTION ROAD STABILIZATION

ALTURNAMATS & VERSAMATS

Definition

Temporary protective mats placed at points of ingress and egress or for access to other construction activities on-site.

Purpose

To protect existing ground cover from damage and provide tracking for vehicular access.

Conditions Where Practice Applies

Wherever traffic will be entering or leaving a construction site, particularly for areas that only need access for a short amount of time (2 weeks or less) when installing a construction entrance or construction road stabilization is not practicable.

Planning Considerations

Minimum Standard #17 requires that provisions be made to minimize the transport of sediment by vehicular traffic onto a public or paved surface. Providing matting to prevent tires from coming into contact with grassed or denuded areas will minimize possible tracking and assist in keeping existing vegetation in good condition. This measure is not acceptable where vehicular traffic will be driving off

of matting onto denuded areas, but may be used to connect to existing construction entrances or construction road stabilization.

Construction Specifications

1. Lay down mats where vehicle/equipment tires/tracks may come into contact with the ground.
2. To keep mats joined together, links may be installed.


VersaMATS
Most Versatile Mats in the Industry
Reverse Side
LIFETIME
VersaMATS
Easy to Walk On - Safe to Work On - Great to Drive On
Featuring an Exclusive Slip-Resistant Tread Design
VersaMATS literally are the most versatile ground protection mats in the industry. The flat, slip-resistant tread permits pedestrians to walk safely on the mats, yet they are as rugged as the original AlturnaMATS. The reverse side has the same diamond plate tread as AlturnaMATS, providing great traction for vehicles.
VersaMATS are also available in white, making them ideal for safe use as long walkways even in darkened conditions. They are also available smooth on one side.
• Leaves turf smooth even in soft soil conditions
• Tough 1/2" thick polyethylene
• Two practical cleat designs… for walking and vehicle traffic
• Withstand 120-ton loads
• Build a temporary roadway or walkway in minutes
• Lock together with Turn-A-Links
• Limited Lifetime Warranty
Sizes to meet your needs
Black White Weight
4' x 8' 4' x 8' 86 lbs.
3' x 8' 3' x 8' 64.5 lbs.
2' x 8' 2' x 8' 43 lbs.
Utilities
Golf Courses
Cemeteries

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Annual Standards and Specifications for ESC and SWM

AlturnaMATS Accessories

Turn-A-Links

Single Turn-A-Link

Double Turn-A-Link

Galvanized Turn-A-Link: Single or Double

Steel links lock mats together to form a semi-permanent, yet portable, continuous roadway, walkway or working platform.

The same steel material, but with a galvanized coating: easier to locate & harder to rust.

		Item #	Ship Wt.
Round Links	Single	RTL-S-G	8 oz.
	Double	RTL-G-G	20 oz.
Flat Links	Single	FTL-S-G	8 oz.
	Double	FLT-D-G	20 oz.
EZ Links	Single	EZL-S	4 oz.
	Double	EZL-D	6 oz.

Handi-Hooks

*Alturna*MATS' Handi-Hooks make moving mats easier, even in wet areas. Made of steel rod, painted white.

Length	Weight
3' (91.44 cm)	2.5 lbs. (1.13 kg)

E-Z Link System

E-Z Links are a quick & convenient linking system for the *Alturna*MATS VersaMATS. The links are available in single or double, & are suitable for pedestrian applications as well as movement of light, compact equipment (less than 12,000 GVW) when on stable ground conditions.

Single E-Z Link

MAT-PAK

This complete package is the handy way to transport and store your *Alturna*MATS.

Consists of:

12 Mats (4' x 8' or 3' x 8')
1 Metal storage, skid rack
20 Single Turn-A-Links
2 Handi-Hooks
2 Ratchet Straps

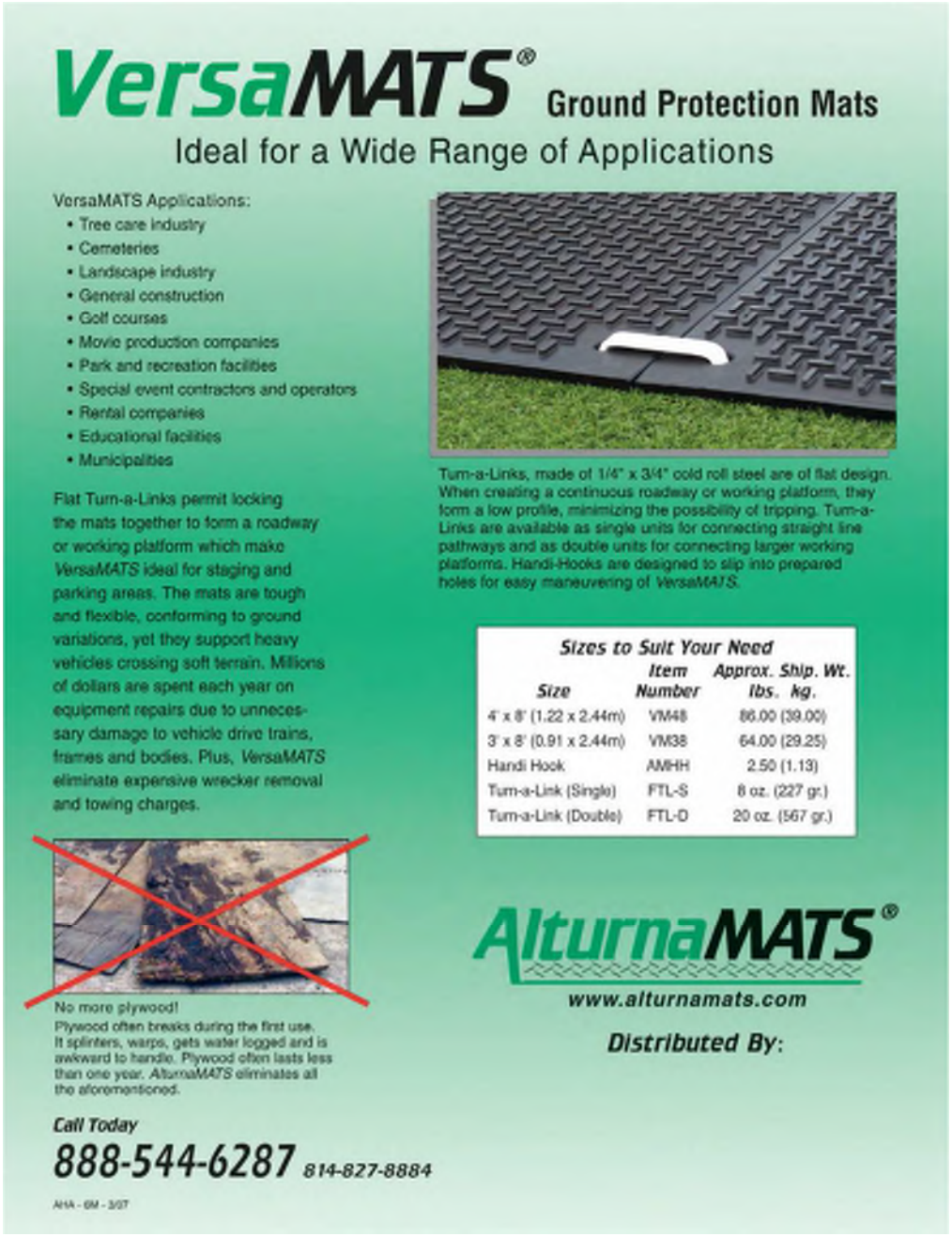
MAT-PAK	Item No.	Weight
Original Diamond Plate		
Black - 4' x 8' Package	AMCP4	1126 lbs.
Black - 3' x 8' Package	AMCP3	868 lbs.
White - 4' x 8' Package	WMCP4	1126 lbs.
White - 3' x 8' Package	WMCP3	868 lbs.
VersaMATS		
Black - 4' x 8' Package	VMCP4	1126 lbs.
Black - 3' x 8' Package	VMCP3	868 lbs.
White - 4' x 8' Package	WVCP4	1126 lbs.
White - 3' x 8' Package	WVCP3	868 lbs.

AlturnaMATS®

Phone: 888-544-6287 • Fax: 814-827-2903 • E-mail: sales@alturnamats.com

www.alturnamats.com

AHA - 408



VersaMATS® Ground Protection Mats

Ideal for a Wide Range of Applications

VersaMATS Applications:

- Tree care industry
- Cemeteries
- Landscape industry
- General construction
- Golf courses
- Movie production companies
- Park and recreation facilities
- Special event contractors and operators
- Rental companies
- Educational facilities
- Municipalities

Flat Turn-a-Links permit locking the mats together to form a roadway or working platform which make *VersaMATS* ideal for staging and parking areas. The mats are tough and flexible, conforming to ground variations, yet they support heavy vehicles crossing soft terrain. Millions of dollars are spent each year on equipment repairs due to unnecessary damage to vehicle drive trains, frames and bodies. Plus, *VersaMATS* eliminate expensive wrecker removal and towing charges.

Turn-a-Links, made of 1/4" x 3/4" cold roll steel are of flat design. When creating a continuous roadway or working platform, they form a low profile, minimizing the possibility of tripping. Turn-a-Links are available as single units for connecting straight line pathways and as double units for connecting larger working platforms. Handi-Hooks are designed to slip into prepared holes for easy maneuvering of *VersaMATS*.

Sizes to Suit Your Need

Size	Item Number	Approx. Ship. Wt. lbs. kg.
4' x 8' (1.22 x 2.44m)	VM48	86.00 (39.00)
3' x 8' (0.91 x 2.44m)	VM38	64.00 (29.25)
Handi Hook	AMHH	2.50 (1.13)
Turn-a-Link (Single)	FTL-S	8 oz. (227 gr.)
Turn-a-Link (Double)	FTL-D	20 oz. (567 gr.)

No more plywood!

Plywood often breaks during the first use. It splinters, warps, gets water logged and is awkward to handle. Plywood often lasts less than one year. *AlturnaMATS* eliminates all the aforementioned.

AlturnaMATS®

www.alturnamats.com

Distributed By:

Call Today

888-544-6287 *814-827-8884*

AHA - 6M - 3/07

Maintenance/Inspections

The matting and access way shall be maintained in a condition which will prevent tracking or flow of mud onto public rights- of-way and paved surfaces. All materials spilled, dropped, or washed from vehicles onto roadways or into storm drains must be removed immediately. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of the day as required my minimum standard #17.

If matting becomes separated from adjacent pieces, links will need to be installed to keep mats aligned as needed.

DEWATERING

DANDY DEWATERING BAG / DIRT BAG

Definition

A temporary settling and filtering device for water which is discharged from dewatering activities.

Purpose

To filter sediment-laden water prior to the water being discharged from the site.

Conditions Where Practice Applies

Wherever sediment-laden water must be removed from a construction site by means of pumping.

Planning Consideration

Minimum Standard #19 requires that properties and waterways downstream be protected from sediment deposition. Water which is pumped from a construction site usually contains a large amount of sediment. A dewatering structure is designed to remove the sediment before water is released off-site.

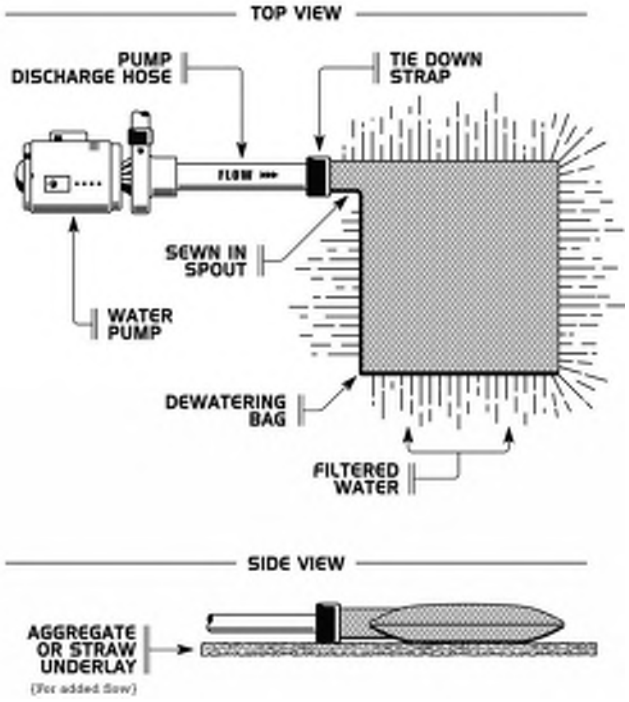
A dewatering structure may not be needed if there is a well stabilized, vegetated area on-site to which water may be discharged. The area must be stabilized so that it can filter sediment and at the same time withstand the velocity of the discharged water without eroding. A minimum filtering length of 75 feet must be available in order for such a method to be feasible.

Design Criteria

1. The Dewatering Bag used for each project must be sized appropriately for the pump used. DO NOT allow a pump to be used that discharges greater than the allowable rate allowed for the Dewatering Bag to be used.

Construction Specifications

1. Lifting straps (not included) should be placed under the unit to facilitate removal after use.
2. Unfold Dewatering Bag on a stabilized area over dense vegetation, straw, or gravel (if an increased drainage area is needed) or as detailed in plans.
3. Insert discharge hose from pump into Bag a minimum of six (6) inches and tightly secure with attached strap to prevent water from flowing out of the unit without being filtered.
4. Must be monitored during use.



Maintenance/Inspections

1. Ensure water is not discharging from the hose connection point. Stop pumping and re-secure if needed.
2. Replace the unit when ½ full of sediment or when sediment has reduced the flow rate of the pump discharge to an impractical rate.

DIVERSION DIKE

DIVERSION DIKE OF COMPACTED 21A OR #26 STONE

Definition

A temporary ridge of compacted stone constructed at the top or base of a sloped area of a proposed

construction site. Purpose

1. To divert stormwater runoff from upslope drainage areas away from construction activity.
2. To divert sediment-laden runoff from a disturbed area to a sediment-trapping facility such as a sediment trap or sediment basin.

Conditions Where Practice Applies

Wherever stormwater runoff must be temporarily diverted on an impervious surface (pavement, concrete, compacted gravel, etc.) where an earthen diversion dike is not practical to protect disturbed areas and slopes or retain sediment on site during construction. These structures generally have a life expectancy of 18 months or less, which can be prolonged with proper maintenance.

Planning Considerations

A temporary diversion dike of compacted 21A or #26 stone is intended to divert overland sheet flow to a stabilized outlet or a sediment-trapping facility. When used at the up-slope from construction activity, the structure prevents additional stormwater runoff from flowing through the construction site and the potential of greater erosion and sediment transportation. When used down-slope from construction activity, the structure protects adjacent and downstream areas by diverting sediment-laden runoff to a sediment trapping facility.

The dike itself must be adequately compacted to prevent erosion of the dike itself. The dike must have a positive grade to assure drainage, but if the gradient is too great, precautions must be taken to prevent erosion due to high velocity channel flow behind the dike. The cross-section of the channel which runs behind the dike should be of a parabolic or trapezoidal shape to help inhibit a high velocity of flow which could arise in a vee ditch.

Design Criteria

Drainage Area – The maximum allowable drainage area is 5 acres.

Height – The minimum allowable height measured from the upslope side of the dike is 18 inches.
Side Slopes – 1 1/2:1 or flatter, along with a minimum base width of 4.5 feet.

Grade – The channel behind the dike shall have a positive grade to a stabilized outlet.

Construction Specifications

1. Temporary diversion dikes of compacted 21A or #26 stone must be installed as a first step in the land-disturbing activity and must be functional prior to upslope land disturbance.
2. The dike shall be adequately compacted to prevent failure.
3. The dike should be located to minimize damages by construction operations and traffic.

Maintenance

The measure shall be inspected after every storm and repairs made to the dike, flow channel, outlet or sediment trapping facility as necessary. Once every two weeks, whether a storm event has occurred or not, the measure shall be inspected and repairs made as needed. Damages caused by construction traffic or other activity must be repaired before the end of the working day.

INLET PROTECTION

DANDY BAG / DANDY CURB / DANDY CURB BAG / DANDY CURB SACK / DANDY SACK

Definition

A temporary filter or a storm drain inlet or curb inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the

disturbed area. Conditions Where Practice Applies

Where existing or proposed grated storm drain inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

This practice contains several types of inlet filters which have different applications dependent upon site conditions and the type of inlet. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

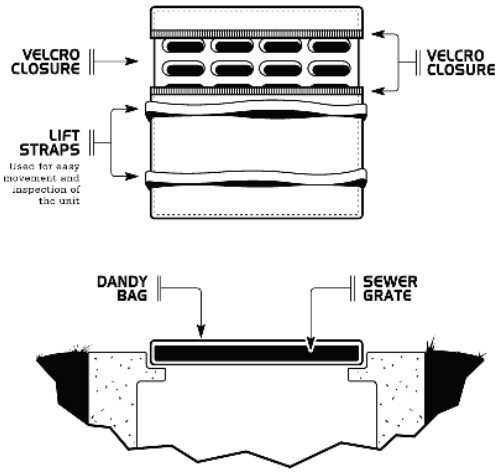
Design Criteria

1. The drainage area shall be no greater than 1 acre.
2. Dandy Bags, Curb Bags, and Curb Sacks are to be sized/ordered to fit the appropriately sized grate. (ie. A 3'x3' bag should not be used for a 2'x2' grate.)

Construction Specifications

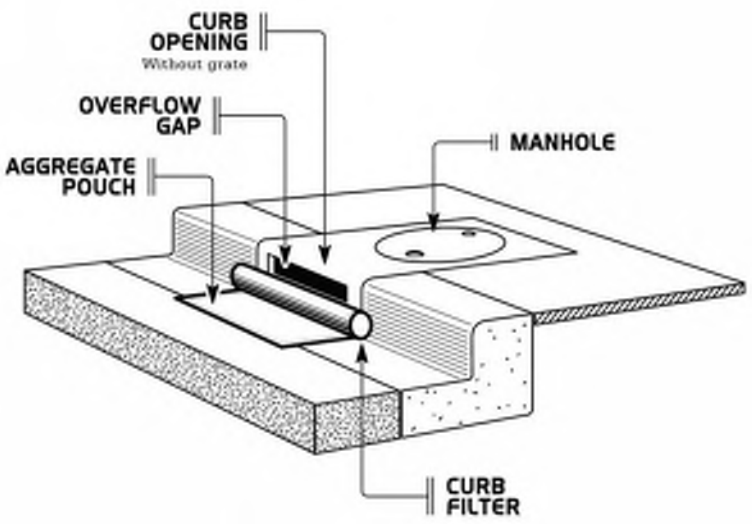
Dandy Bag

1. Place the empty Dandy Bag over the grate as the grate stands on end.
2. Tuck the enclosure flap inside to completely enclose the grate.
3. Holding the lifting devises, insert the grate into the inlet being careful not to damage the Dandy Bag unit.



Dandy Curb

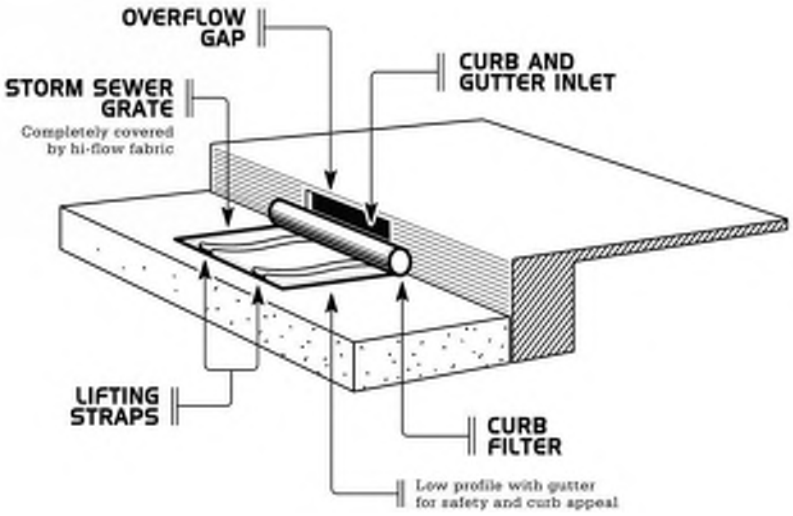
1. Place Dandy Curb inlet protection unit on ground with aggregate pouch on street side near inlet it will be installed on.
2. Fill pouch with aggregate such as #5-7, 8's or similar to a level (at least ½ full) that will keep unit in place during a rain event and create a seal between the Dandy Curb and the surface of the Street. Reseal Velcro access.
3. Center the unit against curb or median inlet opening so that the curb side of the unit creates a seal with the curb or median barrier and inlet structure. There will be approximately twelve (12) inches of the inlet protection unit overhanging on each side of the opening. If the unit is not installed in this manner, it will not function properly.



Dandy Curb Bag

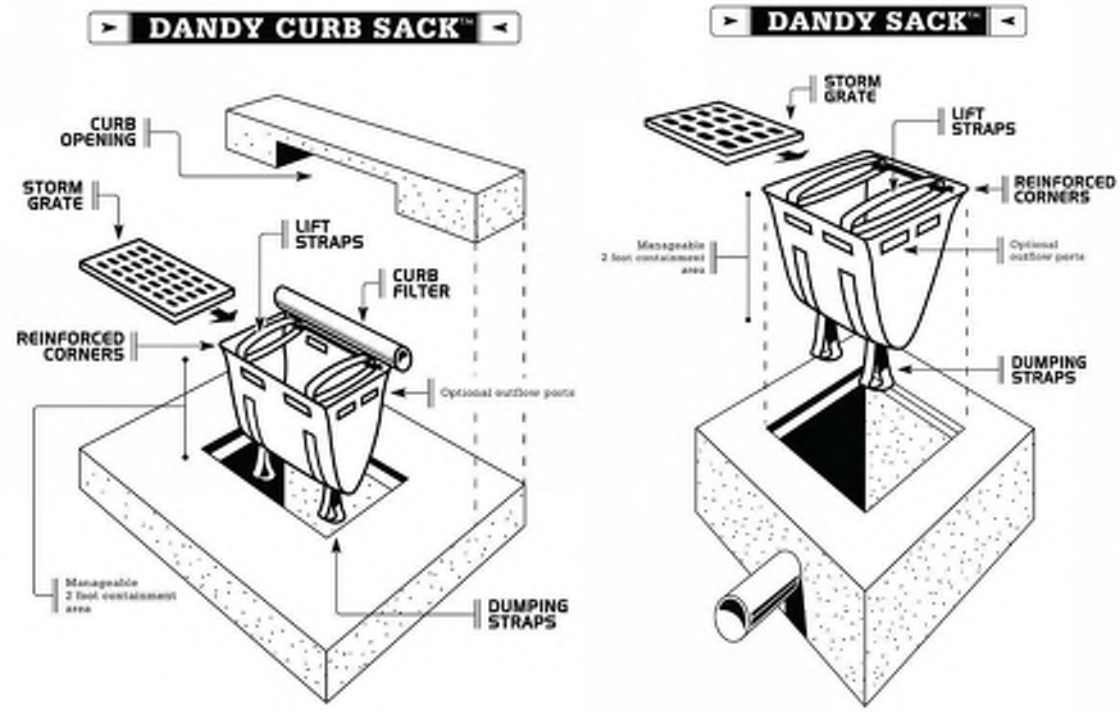
1. Place the empty Dandy Curb Bag unit over the grate as the grate stands on end.
2. Tuck the enclosure flap inside to completely enclose the grate.
3. Holding the lifting devices, being careful not to damage the sewn fabric unit, insert the grate into its frame, street side edge first, then lower back edge with cylindrical tube into place. The

cylindrical tube should be partially blocking the curb hold opening when installed properly.



Dandy Curb Sack

1. Remove the grate from the catch basin.
2. Stand the grate on end. Move the top lifting straps out of the way and place the grate into the Dandy Curb Sack unit so that the grate is below the top straps and above the lower straps. The grate should be cradled between the upper and lower straps.
3. Holding the lifting devices, insert the grate into the inlet, then lower back edge with cylindrical tube into place, being careful that the grate remains in place and being careful not to damage the Dandy Curb Sack unit. The cylindrical tube should partially block the curb hood opening when installed properly.



Dandy Sack

1. Remove the grate from the catch basin.
2. Stand the grate on end. Move the top lifting straps out of the way and place the grate into the Dandy Sack unit so that the grate is below the top straps and above the lower straps. The grate should be cradled between the upper and lower straps.
3. Holding the lifting devices, insert the grate into the inlet, being careful that the grate remains in place and being careful not to damage the Dandy Sack unit.

<u>Maintenance/Inspections</u>

1. Dandy products shall be inspected immediately after each measurable storm event (0.25” of rain or greater over a 24 hour period).
2. Accumulated sediment and debris from surface and vicinity of unit shall be removed.
3. If any rips/tears are noticed, unit will need to be replaced.

EROSION EEL / GUTTER BUDDY / GUTTER GATOR

Definition

A temporary sediment filter for a storm drain curb inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where existing or proposed storm drain curb inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

This practice contains several types of filters by different manufacturers. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

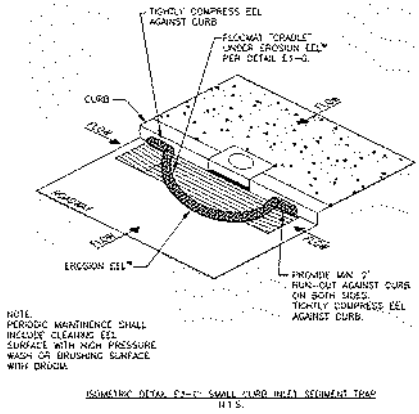
Design Criteria

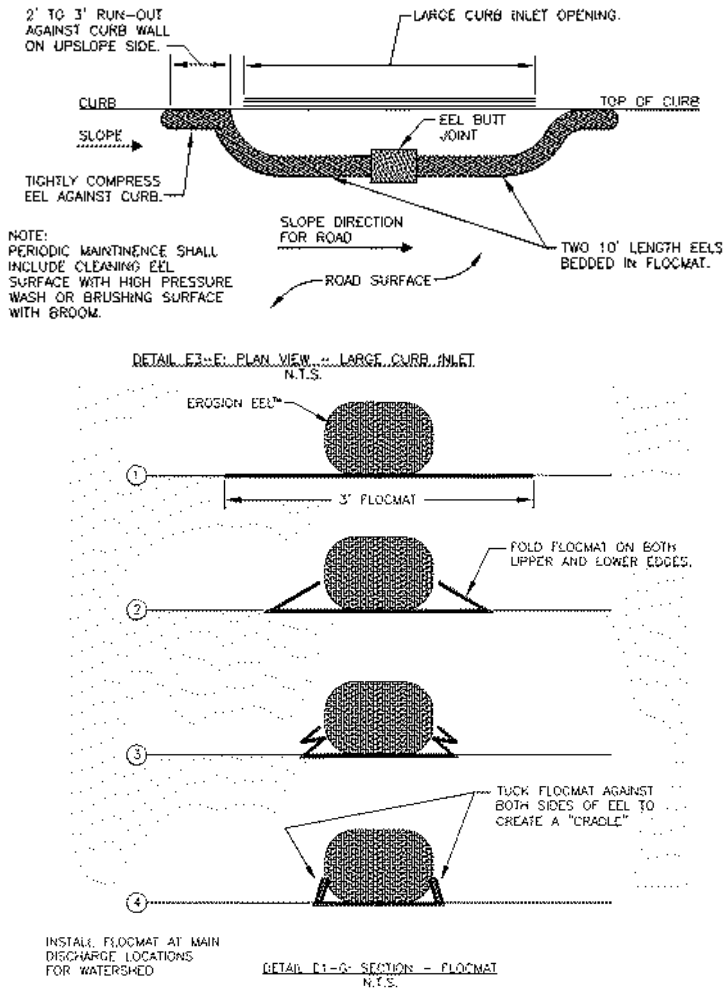
The drainage area shall be no greater than 1 acre.

Construction Specifications

Erosion Eel

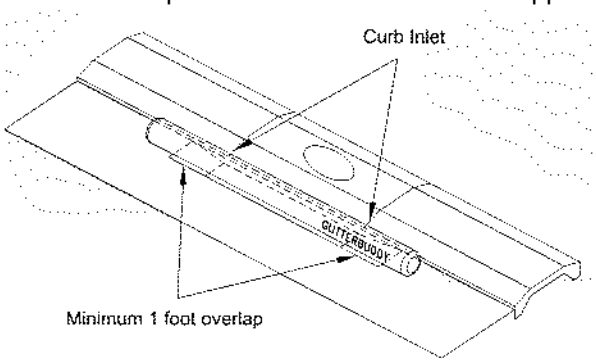
1. Center Erosion Eel at curb inlet. Install Flocmat “cradle” under Erosion Eel.
2. Ensure Erosion Eel does not completely cover inlet. Pull out from center to allow overflow as needed.
3. Tightly compress eel against curb on each end of inlet. There should be a minimum 2’ run-out against curb on both sides.





Gutter Buddy

1. Install the Gutterbuddy in front of the curb inlet opening. Each end of the Gutterbuddy should overlap the curb inlet a minimum of approximately 12”.



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GutterGator
Assembly Instructions:

1. Remove GutterGator grids and sleeves from box.

2. Slide grid sections to desired length.

3. Insert grid section into GutterGator sleeve.

4. Install stabilizer arms.

5. Seal velcro on GutterGator sleeve.

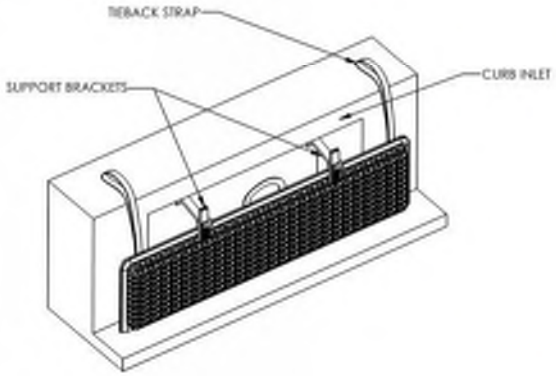
6. Remove Gatorweight from box.

7. Place 7lb minimum weight (Gatorweight recommended) into each weight pocket.

8. Slide weight pockets into curb throat, holding unit tight to curb face. (leave 12" overlap on each end of curb opening)

9. Use GutterGator tiebacks if applicable.

10. Clean unit after each wet weather event.



11. Replace GutterGator sleeves as needed.

Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25" of rain or greater over a 24 hour period).
2. Accumulated sediment and debris from surface and vicinity of unit shall be removed to prevent ponding.
3. If any rips/tears are noticed, unit will need to be replaced.

GRATE PYRAMID

Definition

A temporary filter for a grated storm drain inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where existing or proposed grated storm drain inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

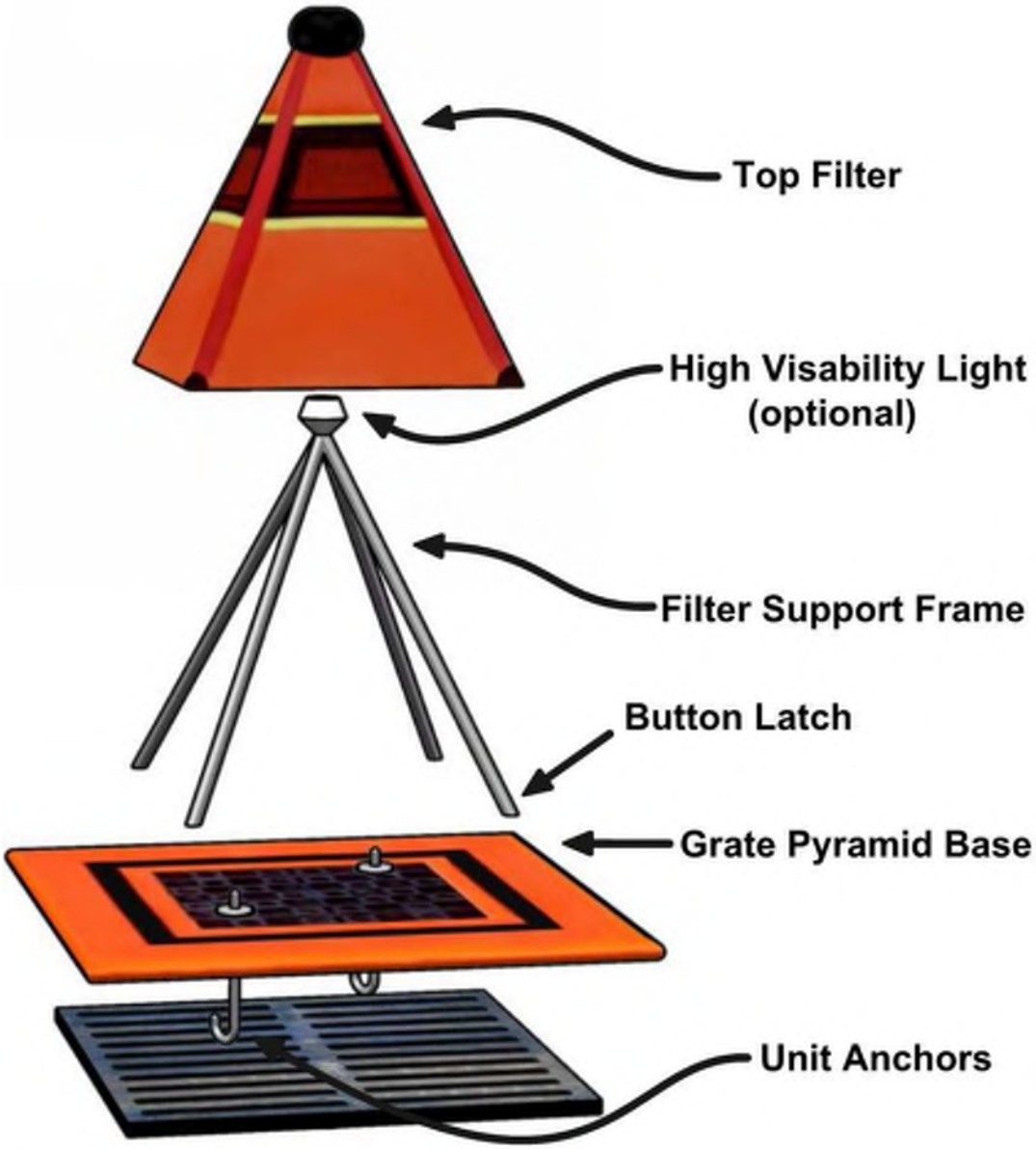
This practice contains several types of inlet filters which have different applications dependent upon site conditions and the type of inlet. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

Design Criteria

1. The drainage area shall be no greater than 1 acre.

Construction Specifications

1. Install Grate Pyramid base over grate.
2. Install anchors.
3. Install base with 2 to 4 anchors, as needed.
4. Install safety caps on anchors.
5. Install tower frame.
6. Push button to lock tower into base.
7. Slide tower filter over frame.
8. Tightly secure base to tower.



Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25" of rain or greater over a 24 hour period).
2. Accumulated sediment and debris from surface and vicinity of unit shall be removed to prevent ponding.
3. If any rips/tears are noticed, unit will need to be replaced.

SILTSACK

Definition

A temporary filter for a grated storm drain inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where existing or proposed grated storm drain inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

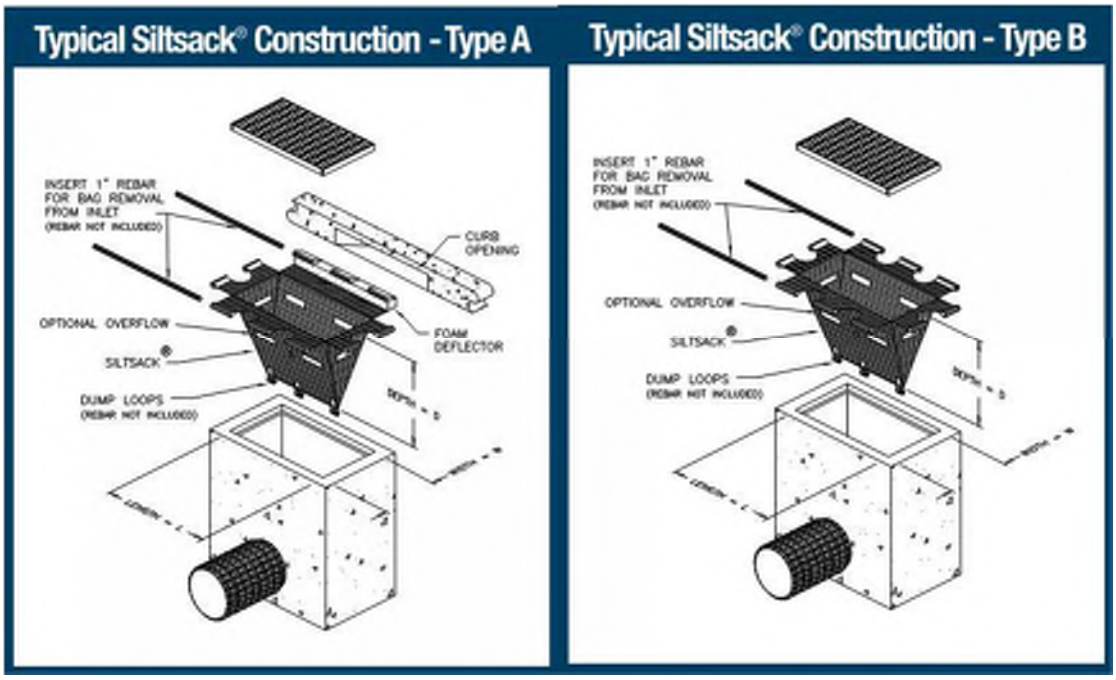
Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

This practice contains several types of inlet filters which have different applications dependent upon site conditions and the type of inlet. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

Design Criteria

1. The drainage area shall be no greater than 1 acre.



Construction Specifications

1. Remove the grate and place the sack in the opening. Hold approximately six inches of the sack outside the frame. This is the area of the lifting straps.
2. Replace the grate to hold the sack in place.

Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25” of rain or greater over a 24 hour period).
2. Check for tears/rips in sack. If noticed, have replaced immediately.
3. The SiltSack is full and should be emptied when the restraint cord is no longer visible.
    a. To remove, take two pieces of 1” diameter rebar and place through the lifting loops on each side of the sack to facilitate the lifting of the SiltSack.

PERIMETER CONTROL

EROSION EEL

Definition

A temporary sediment barrier for perimeter control.

Purpose

1. To intercept and detain small amounts of sediment from disturbed areas during construction operations in order to prevent sediment from leaving the site.
2. To decrease the velocity of sheet flows and low-to-moderate level channel flows.

Conditions Where Practice Applies

1. Below disturbed areas where erosion could occur in the form of sheet or rill erosion and the installation of silt fence is not practicable such as on paved, concrete or other similar surfaces.

Planning Considerations

1. Erosion Eels can be placed at the top, on the face, or at the toe of slopes to intercept runoff, reduce flow velocity, releasing the runoff as sheet flow, and provide

reduction/removal of suspended solids from the runoff.

2. No trenching is required for the installation of Erosion Eels.

Design Criteria

1. Where the size of the drainage area is no more than one quarter acre per 100 feet of Erosion Eels.
2. See spacing recommendations chart for slope percentages.

SPACING RECOMMENDATIONS FOR THE EROSION EEL™ FOR PERIMETER CONTROLS AND INTERCEPTING SHEET FLOW ON SLOPES

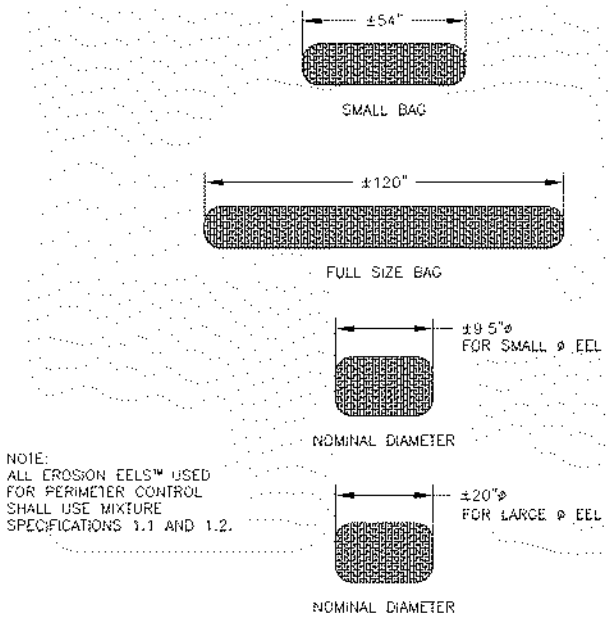
SLOPE(%)	SINGLE EEL SPACING(ft)	*STACKED DUAL EEL SPACING(ft)
0.5	300	N/A
1	200	N/A
2	160	N/A
3	80	N/A
4	50	N/A
5	40	N/A
6	35	N/A
8	30	N/A
10	25	N/A
15	+17	N/A
20	+12	+25
25	N/A	+15
33	N/A	+10
50	N/A	+6

* DUAL STACK REFERS TO TWO EELS STACKED ATOP ONE ANOTHER AND STABILIZED WITH T-POSTS. SEE DETAIL E2-E ON SHEET E-2.

+ PLACE STAKES BEHIND EELS @ 24" C/C SPACING. SEE SHEET E-2 FOR STAKING DETAILS.

Construction Specifications

1. Prepare bed for Eel installation by removing any large debris including rocks, soil clods, and woody vegetation (greater than 1 inch in size). Erosion eels can also be placed over paved surfaces including concrete and asphalt with no surface preparation required.
2. Rake bed area with a hand rake or by drag harrow.
3. All surfaces shall be uniformly and well-compacted for maximum seating and stability of the Eels in place.
4. Bed the Eels in a FlocMat (coir matting) cradle per the detailed drawings. (Detail E1-G)
5. As Eels are placed in a row, butt ends of Eels together tightly by firmly pressing the tied end of the Eel against the sewn edge of the adjacent Eel. (Detail E1-B1)

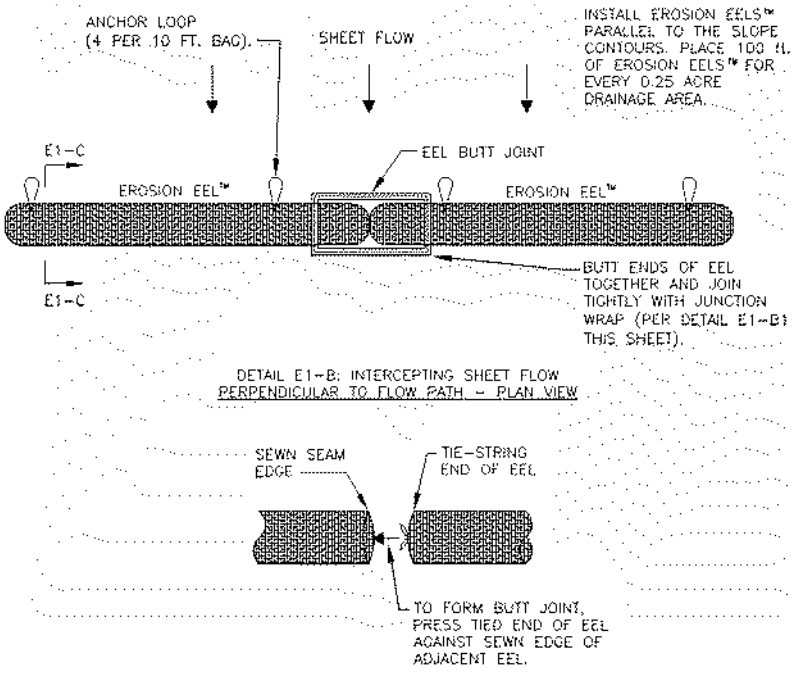


DETAIL E1-A: EROSION EELS™
N.T.S.

EROSION EELS® USED IN PERIMETER CONTROL APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.1 OR 1.2.

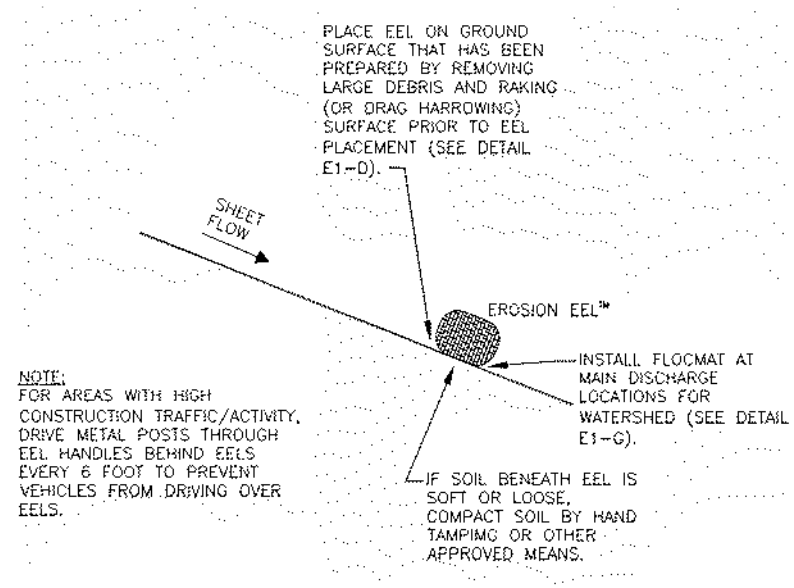
a. MIXTURE SPECIFICATION 1.1: A FILTER MIXTURE COMPRISED OF 50% SHREDDED RUBBER AND 50% WOOD CHIP PARTICLES BY VOLUME. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03.

b. MIXTURE SPECIFICATION 1.2: A FILTER MIXTURE COMPRISED OF 1/3 SHREDDED RUBBER, 1/3 WOOD CHIPS, AND 1/3 RECYCLED SYNTHETIC FIBERS. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03. THE SYNTHETIC FIBERS SHALL BE PRODUCED FROM RECYCLED, MANUFACTURED MATERIALS, SUCH AS, BUT NOT LIMITED TO, PRE-CONSUMER SCRAP CARPET, TIRE C-CORD, AND TIRE FIBER MATERIALS.

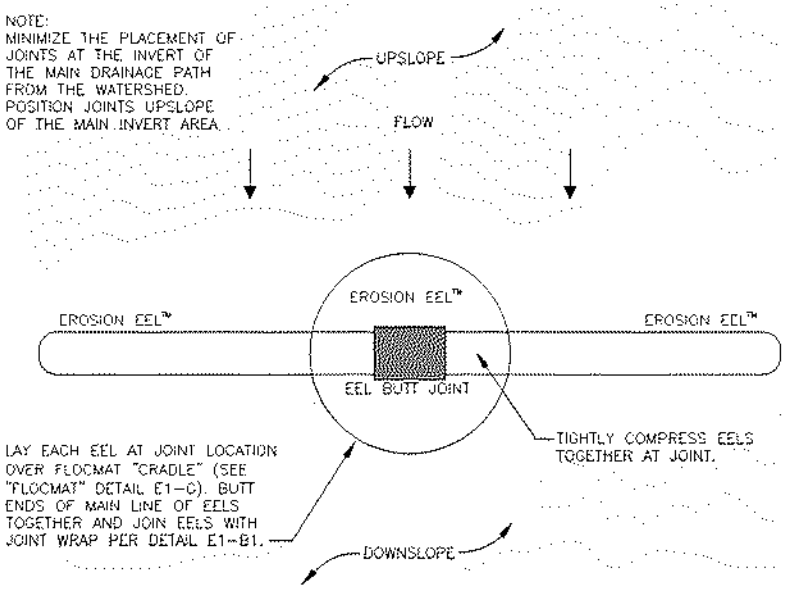


DETAIL E1-B: INTERCEPTING SHEET FLOW
PERPENDICULAR TO FLOW PATH - PLAN VIEW

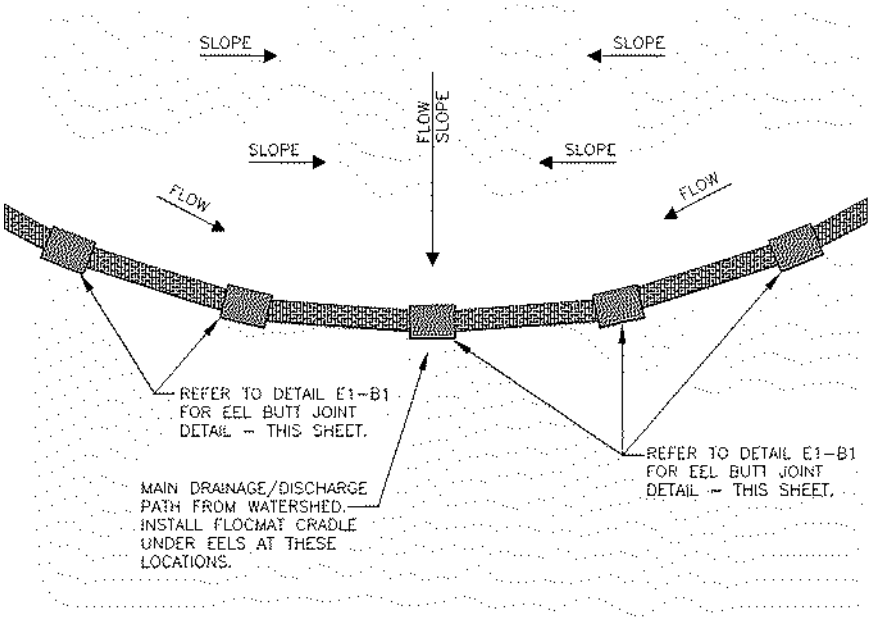
DETAIL E1-B1



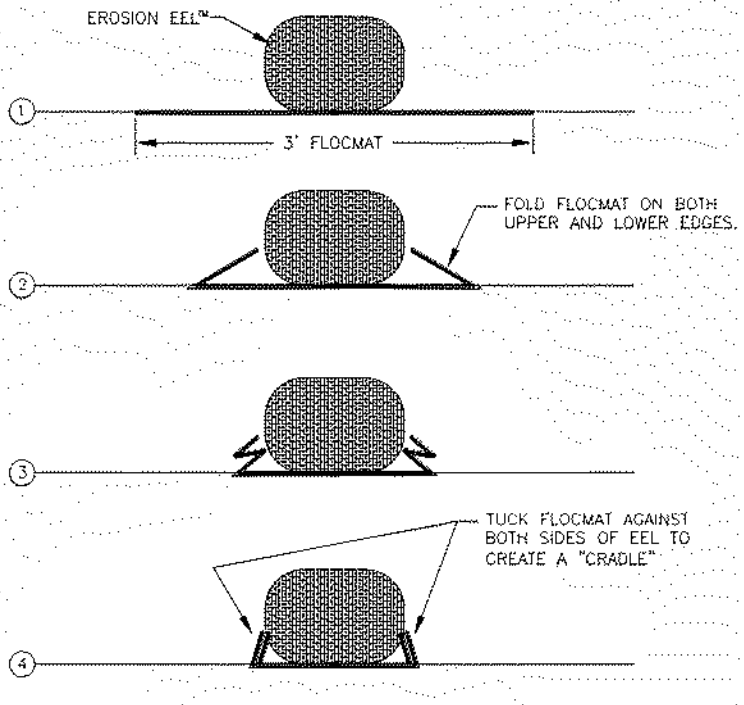
DETAIL E1-C: INTERCEPTING SHEET FLOW
PERPENDICULAR TO FLOW PATH - PLAN VIEW



DETAIL E1-E: PLAN VIEW -
OVERLAP/JOINT DETAIL NEAR DISCHARGE POINTS FROM WATERSHED
N.T.S.

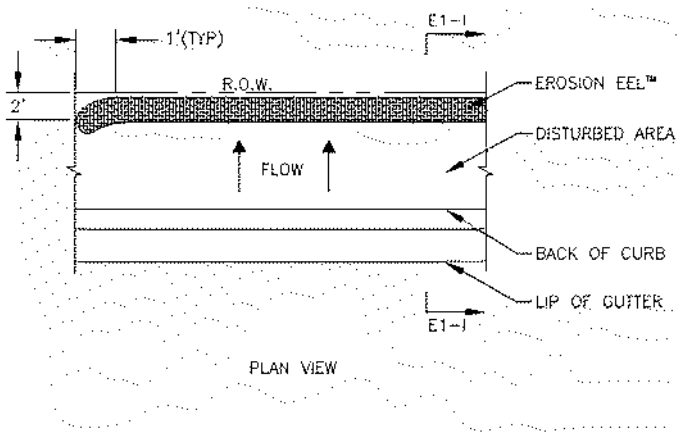


DETAIL E1-F: PLAN VIEW - TYPICAL ARRANGEMENT OF EELS USED FOR PERIMETER CONTROL
N.T.S.

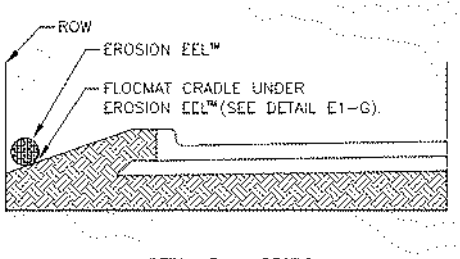


INSTALL FLOCMAT AT MAIN DISCHARGE LOCATIONS FOR WATERSHED.

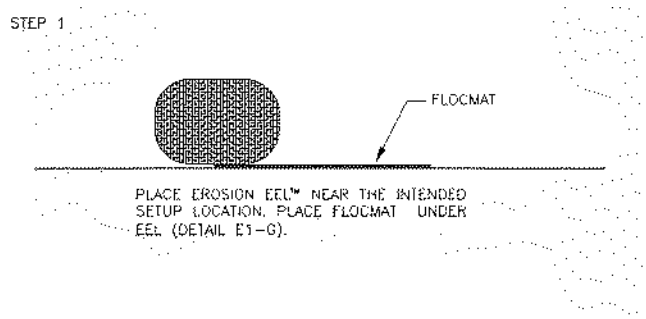
DETAIL E1-G: SECTION - FLOCMAT
N.T.S.

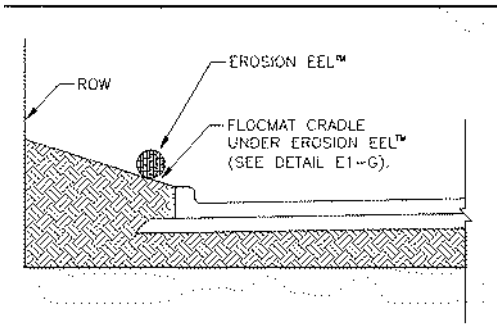


DETAIL E1-H: EROSION EEL™
PLACED AT EDGE OF ROADWAY RIGHT-OF-WAY
N.T.S.

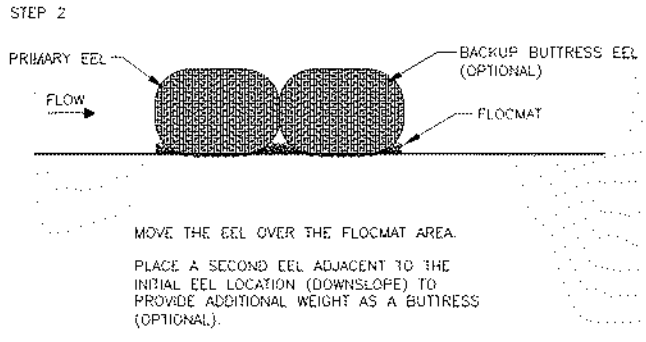


DETAIL E1-I: SECTION
N.T.S.





DETAIL E1-J: SECTION
N.T.S.



DETAIL E1-K: STABILIZING PROCEDURE FOR
EROSION EEL PLACED OVER HARD SURFACE (PAVED, ROCK, ETC.)
N.T.S.

Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25" of rain or greater over a 24 hour period). Any required repairs shall be made immediately.
2. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the Eel.
3. If any rips/tears are noticed, section of Erosion Eel will need to be replaced.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix G

Variance Request

NORFOLK STATE UNIVERSITY

VARIANCE 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.)

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix H

Annual Standards & Specification (AS&S) Entity Information

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**)**

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix I

Delegation of Authority – ESC / SWM Inspector Designation

Norfolk State University, Virginia
Annual Standards and Specifications for ESC and SWM

DELEGATION OF AUTHORITY/ ESC INSPECTOR

I, _____ (name), hereby designate the person or specifically described position below to be a duly DEQ Certified ESC Inspector for the purpose of inspecting the construction of proposed erosion and sediment control measures to be in compliance with the approved Plan and any remediation work completed to maintain compliance with Virginia Erosion and Sediment Control Law. The designee is authorized to prepare and sign off on erosion and sediment control inspection reports.

_____ (name of person or position)
_____ (DEQ Certification)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in the Annual Standards and Specifications and that the designee above meets the definition of a "DEQ Certified ESC Inspector" Representative as set forth in the Annual Standards and Specifications.

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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."

Signature: _____

Date: _____

Name: _____
Title: _____
Company: _____

Norfolk State University, Virginia
Annual Standards and Specifications for ESC and SWM

DELEGATION OF AUTHORITY/ SWM INSPECTOR

I, _____ (name), hereby designate the person or specifically described position below to be a duly DEQ Certified SWM Inspector for the purpose of inspecting the construction of proposed stormwater management measures to be in compliance with the approved Plan. The designee is authorized to prepare and sign off on erosion and sediment control inspection reports.

_____ (name of person or position)
_____ (DEQ Certification)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in the Annual Standards and Specifications and that the designee above meets the definition of a "DEQ Certified SWM Inspector" Representative as set forth in the Annual Standards and Specifications.

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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."

Signature: _____

Date: _____

Name: _____
Title: _____
Company: _____