

Appendix

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Administrative Appendix

Appendix 1.A

Plan Submission & Review Checklist – Concept ESC/Stormwater Management

Administrative Requirements

Design	Review
1 hard copy of the Concept Plan	
1 hard copy of the Concept Report	
1 hard copy of the Application for Sediment Control/Stormwater Management Plan Approval	
1 hard copy of the Concept Plan submission checklist, signed by Designer	
1 PDF copy of the Concept Plan	
1 PDF copy of the Concept Report	
1 PDF copy of the Application for Sediment Control/Stormwater Management Plan Approval	
1 PDF copy of the Concept Plan submission checklist, signed by Designer	

Plan/Report Requirements

(Refer to pages 5.5 through 5.11 of the SWM Design Manual and A-14 through A-16 of ESC Standards and Specifications)

Design	Review
Title Sheet with revision dates	
Plan scale of 1" = 100' minimum	
Site location	
Property boundaries, existing and proposed R/W & easements	
Existing site & resource mapping <ul style="list-style-type: none"> • Wetlands and waterways • Major waterways • Floodplains • Tidal and nontidal wetlands • Wetlands of special state concern • Wetland buffers • Stream buffers • Forrest buffers • Critical areas • Steep slopes greater than 20% • Slopes steeper than 15% • Highly erodible soils • Topography/slopes • Springs • Seeps • Drainage depressions • Vegetative cover • Soils • Bedrock/geology • Existing drainage areas • Existing drainage facilities • Aerial Mapping • Existing impervious areas 	
Proposed impervious areas	

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Appendix 1.A

	Proposed Limit of Disturbance	
	Existing and proposed utility locations	
	Preliminary estimates of stormwater requirements	
	Selection and location of proposed ESD practices including preliminary grading	
	Location of points of discharge	
	<p>Erosion & Sediment Control and Stormwater Management narrative to achieve:</p> <ul style="list-style-type: none"> • Natural resource protection and enhancement • Maintenance of natural flow patterns • Reduction of impervious areas through better site design, alternative surfaces, and nonstructural practices • Integration of erosion and sediment controls into the storm water strategy • Implementation of ESD planning techniques and practices to the MEP <p>Narrative to include:</p> <p>General description of the predominant soil types Proposed use of any waivers and/or variances Total Maximum Daily Load (TMDL) for Impaired Waters Tier II streams</p>	

Designer

Date

Reviewer

Date

Items not checked should be discussed in the narrative.

Appendix 1.B

Plan Submission & Review Checklist – Site Development Plan for ESC/Stormwater Management

Administrative Requirements

Design	Review
1 hard copy of the Site Development Plan	
1 hard copy of the Site Development Report	
1 hard copy of the Application for Sediment Control/Stormwater Management Plan Approval	
1 hard copy of the Site Development Plan submission checklist, signed by Designer	
1 PDF copy of the Site Development Plan	
1 PDF copy of the Site Development Report	
1 PDF copy of the Application for Sediment Control/Stormwater Management Plan Approval	
1 PDF copy of the Site Development Plan submission checklist, signed by Designer	

Plan/Map Requirements

(Refer to page 5.11 through 5.15 of SWM Design Manual and page A-14 through A-16 of ESC Standards & Specifications)

Design	Review
Title Sheet w/graphic scale and revision date	
Vicinity Map	
Location Map	
Existing site & resource mapping as listed on the Concept Plan requirements	
SWM Plan with layout of proposed improvements	
Property boundaries, Easements & R/W	
Structural and construction details for drainage and SWM facilities including profile, x-sections, etc.	
Construction specifications (non standard specification only)	
E&SC plan with interim & final grading , phasing, stabilization, sediment control measures and clear water diversions	
E&SC plan overlay of ESD types and locations	
Sequence of construction for E&SC and SWM <ul style="list-style-type: none"> • Notification of SHA’s QA Program • Clearing and grubbing for perimeter E&SC • Installation of perimeter E&SC • Clearing, grubbing and rough grading • Construction • Final grading • Vegetative stabilization • Installation of stormwater management practices • SHA/QA approval & removal of E&SC • Stabilization of disturbed areas from removal of E&SC 	
Planting Plan	
Planting schedule for SWM facilities	
Maintenance schedule for BMPs	
Maintenance access paths for BMPs	
Owner’s certification	
Engineer’s certification	
As-built certification block	
Additional protective measures for impaired waters	
BMP and ESD As-built tabulations	

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Appendix 1.B

	Copy of AASCD/CAC submissions including computations	
	General Note Sheet	

Report Requirements

Design	Review
Letter sized paper	
Typed report with handwritten computations allowed	
Any maps, diagrams or figures folded and placed in report	
Title sheet	
Table of contents	
List of figures or tables	
Body of report Introduction Methodologies used Narrative Analysis Summary and conclusions	
Appendices	
Site impervious area plan	
Drainage area plan Drainage boundaries Area to SWM practices Area to discharge points Soil types Ground cover Land uses POI Tc Paths	
TR-55 worksheets	
Hydraulic computations	
TR-20 analysis	
Spillway Computations	
Geotechnical data for SWM design	
Downstream information supporting analysis of downstream impacts: To downstream tributary whose drainage area equals or exceeds the contributing area to the BMP; or To downstream point where the flow rate is a minimum of twice the discharge rate from the BMP	
Hydrologic computations for ESD and BMP	
Unified sizing criteria computations	
Stormwater volume computations for ESD and BMP	
Hydraulic computations for ESD and BMP	
Small Pond flow chart for each facility (SWM & ESC)	
Outfall assessment sheets at each POI	
Velocity & outfall protection computations including 2, 10, and design year storm events	
Signed Waiver Request Forms (as applicable)	
Signed Variance Letters (as applicable)	

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Appendix 1.B

	Signed Water Quality Summary Sheet (as applicable)	
	Compensatory SWM	
	Small pond summary sheets	

Designer _____ Date _____ Reviewer _____ Date _____

Items not checked should be discussed in the narrative.

APPLICATION FOR SEDIMENT CONTROL/STORMWATER MANAGEMENT PLAN APPROVAL

PRD Information:

PRD Number: ___ -PR- _____			
PRD Team Leader:			
Phone:		Email:	
PRD Reviewer:			
Phone:		Email:	

Submission Information:

Submission Stage:	<input type="checkbox"/> Concept	<input type="checkbox"/> Site Development	<input type="checkbox"/> Final
Submission Type:	<input type="checkbox"/> Initial Submittal	<input type="checkbox"/> Resubmittal	<input type="checkbox"/> Modification Request
Information included with this application:			

Project Information:

Constr. Contract No.:		FMIS No.:	
Route No:			
Project Description:			
District:		County:	
Town/Municipality:			
Northing:		Easting:	
Watershed(s) (12 Digit):			
Tier II Watershed (Y/N)		Impairments:	
Acres of Disturbance:			

Project Milestone Information:

Milestone	Date	ESC/SWM Submission	Date
PI Meeting		Concept Plan	
SFR Meeting		Site Development Plan	
FR Meeting		Final Plan	
Advertisement			

Project Contact Information:

HHD Engineer:			
Phone:		Email:	
SHA Project Manager:			
Phone:		Email:	
HDD/CDD/ICD/District Consulting Firm:			
HDD/CDD/ICD/District Sub-consultant Firm(s):			
HHD Consulting Firm:			
HHD Sub-consultant Firm(s):			

Submitted to:

Karuna Pujara, PE
 Chief, Plan Review Division
 Maryland State Highway Administration
 211 E. Madison Street, MS M-101
 Baltimore, MD 21202
 Phone: 410-545-8946
 Email: KPujara@sha.state.md.us

Submitted by:

Dana Havlik, PE
 Chief, Highway Hydraulics Division
 Maryland State Highway Administration
 707 N. Calvert Street, MS C-102
 Baltimore, MD 21202
 Phone: 410-545-8418
 Email: DHavlik@sha.state.md.us

APPLICATION FOR SEDIMENT CONTROL/STORMWATER MANAGEMENT GENERAL APPROVAL**PRD Information:**

PRD Number: __ __ -PR- GA __ __			
PRD Team Leader:			
Phone:		Email:	
PRD Reviewer:			
Phone:		Email:	

Submission Information:

Submission Type:	<input type="checkbox"/> Initial Submittal	<input type="checkbox"/> Resubmittal
Information included with this application:		

Project Contact Information:

HHD Engineer:			
Phone:		Email:	
SHA Project Manager:			
Phone:		Email:	
HDD/CDD/ICD/District Consulting Firm:			
HDD/CDD/ICD/District Sub-consultant Firm(s):			
HHD Consulting Firm:			
HHD Sub-consultant Firm(s):			

Submitted to:

Karuna Pujara, PE
 Chief, Plan Review Division
 Maryland State Highway Administration
 211 E. Madison Street, MS M-101
 Baltimore, MD 21202
 Phone: 410-545-8946
 Email: KPujara@sha.state.md.us

Submitted by:

Dana Havlik, PE
 Chief, Highway Hydraulics Division
 Maryland State Highway Administration
 707 N. Calvert Street, MS C-102
 Baltimore, MD 21202
 Phone: 410-545-8418
 Email: DHavlik@sha.state.md.us

Appendix 1.F

Date

Ms. Karuna Pujara, P.E., Chief
State Highway Administration
Office of Highway Development
Plan Review Division
211 E. Madison St., MS M-101
Baltimore, Maryland 21202

SUBJECT: PRD No.
SHA Contract No.
Description

RE: Variance Request – Recharge Volume

Dear Ms. Pujara,

The State Highway Administration is asking the Plan Review Division to grant a written variance from Section 4.0 of the Stormwater Management Criteria of the Maryland Stormwater Management Guidelines as there are exceptional circumstances applicable to the site that restricts adherence to the guideline.

This is a formal written request for variance under Section 3.4 for Recharge Volume (Re_v) requirement since the project is located in a Karst region of Frederick County and there are active and previously remediated sinkholes within the limits of the project. The project site is located within the Grove Formation (limestone) and the Maryland Stormwater Design Manual, chapter 4 prohibits infiltration near sinkholes. See attached letter from SHA Engineering Geology Division. Based on Appendix D.2, section 1: Stormwater Management in Karst Areas, and the Geotech report recommendations, the SWM facilities are to be lined with PVC liner, therefore no recharge volume would be provided in the SWM facilities within the limits of this project.

Thank you for your consideration. If there are any questions and/or you need additional information, please contact Parley Hess at 410-545-8444 (phess@sha.state.md.us) or Wendell Winfield at 410-837-5840 (wendell.winfield@jacobs.com).

Sincerely,

Dana Havlik, P.E., Chief
Highway Hydraulics Division

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STATE HIGHWAY ADMINISTRATION – PLAN REVIEW DIVISION

STORMWATER MANAGEMENT WAIVER APPLICATION

OWNER:	Maryland State Highway Administration	PRD NO:	_____
ADDRESS:	707 North Calvert Street	PROJECT No.	_____
	Baltimore, MD 21202	Location/POI:	_____

PROJECT DESCRIPTION: _____
CONSULTANT: _____

MD SHA hereby requests a stormwater management waiver be granted for the above referenced project in accordance with the following section of the Stormwater Management Guidelines for State Highway Projects:

- | | | |
|--------------------------|--------------|---|
| <input type="checkbox"/> | 3.3.A. | Contract plans and provisions, stormwater management report. |
| <input type="checkbox"/> | 3.3.B.1.a. | Contract plans and provisions, stormwater management report. |
| <input type="checkbox"/> | 3.3.B.1.b. | Contract plans and provisions, stormwater management report.* |
| <input type="checkbox"/> | 3.3.B.1.c.i | Contract plans and provisions, stormwater management report.* |
| <input type="checkbox"/> | 3.3.B.1.c.ii | Contract plans and provisions, stormwater management report.* |
| <input type="checkbox"/> | 3.3.B.2.a. | Contract plans and provisions, stormwater management report. |
| <input type="checkbox"/> | 3.3.B.2.b. | Contract plans and provisions, stormwater management report.* |
| <input type="checkbox"/> | 3.3.B.2.c.i | Contract plans and provisions, stormwater management report.* |
| <input type="checkbox"/> | 3.3.B.2.c.ii | Contract plans and provisions, stormwater management report.* |

*Evidence of stable outfall with adequate capacity (e.g., video, photos, statement): _____

Other evidence submitted: _____

_____	_____	_____
Name	Signature	Date
Highway Hydraulics Division Chief		
or authorized representative		

_____ Approved _____ Denied/Reason _____

By: _____
Division Chief, Plan Review Division Date _____

Submit to:	Maryland State Highway Administration Plan Review Division 211 E. Madison St., MS M-101 Baltimore, MD 21202	If a project involves a waiver request for more than one (1) drainage area, a Stormwater Management Waiver Application is required for each point of Investigation (POI).
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MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
HIGHWAY HYDRAULIC DIVISION
707 N. Calvert Street
Baltimore, Maryland 21202

Date:

MEMORANDUM

TO: Ms. Karuna Pujara, P.E.
Division Chief, Plan Review Division

FROM: Dana Havlik, P.E.
Division Chief, Highway Hydraulics Division

SUBJECT: SHA Contract No.
Description:
PRD File Number

RE: *Submission Type*

Included herewith for your review are the [Concept/Site Development/Final] Stormwater Management Report and plans for the subject project in *County Location* scheduled to advertise on *Date*. The next milestone meeting is [PI/SFR/FR/PSE] and it is scheduled for *Date*. The Maryland State Highway Administration is proposing to construct *Description of Project*. Proposed improvements include: *List of Proposed Improvements*.

Stormwater Management (SWM) design is based on the Environmental Site Design (ESD) practices established in the new revised Chapter 5 of the *2000 Maryland Stormwater Design Manual*. ESD facilities are proposed to the maximum extent practicable, using *List Types of Control Facilities*.

If the proposed design does not meet the minimum requirements for quality and quantity controls, explain why and what is proposed to meet the requirements.

The Erosions and Sediment Control plans are designed in accordance with 2011 Standards and specifications. *List any additional information about ESC design approach/phasing etc.*

Please contact *HHD Contact* at (410) 545-#### or HHD@sha.state.md.us if you have any questions or comments.

DH/ /
Attachments

PRD Administrative Completeness Form

Date:

Attn:

To:

Dana Havlik, PE
 Chief, Highway Hydraulics Division
 Maryland State Highway Administration
 707 N. Calvert Street, MS C-102
 Baltimore, MD 21202
 Phone: 410-545-8418
 Email: DHavlik@sha.state.md.us

From:

Karuna Pujara, PE
 Chief, Plan Review Division
 Maryland State Highway Administration
 211 E. Madison Street, MS M-101
 Baltimore, MD 21202
 Phone: 410-545-8946
 Email: KPujara@sha.state.md.us

PRD Number: yy-PR-nnnn			
Submission Stage:	<input type="checkbox"/> Concept	<input type="checkbox"/> Site Development	<input type="checkbox"/> Final
Submission Type:	<input type="checkbox"/> Initial Submittal	<input type="checkbox"/> Resubmittal	<input type="checkbox"/> Modification Request
SHA Contract No:			
SHA FMIS No:			
Project Description:			

The Plan Review Division is in receipt of your submission for the above referenced project.
 The status of your submission is indicated below:

	Your submission is administratively complete and acceptable for processing.
	Your submission is administratively incomplete and unacceptable for processing. The following additional information should be provided when available:
	Plan
	Report
	Application
	Signed Checklist
	Other:

If you have any questions, please contact the PRD Team Leader assigned to this project:

PRD Team Leader

Signature

Date

Name:
Phone:
Email:

Cc: file

Appendix 1.J

Date:

Dana Havlik, PE, Chief
Highway Hydraulics Division
707 N Calvert St, MS C-201
Baltimore, MD 21202

Attn: HHD Liason

SUBJECT: SHA Contract No.
PRD No. YR-PR-####
Description: Route # and Scope

RE: PRD comments on *Type of Submittal (Concept, Site Development, Final)*

Dear HHD Liason:

Office of Highway Design – Plan Review Division has reviewed the submittal received (DATE) for the above-referenced project. The review was in accordance with Sections 4-106 and 4-205 of the Department of the Environment Article, Annotated Code of Maryland with regard to Sediment Control and Stormwater Management. The following comments are a result of the review:

General

1.

Stormwater Management

2.

Erosion & Sediment Control

3.

A set of marked up plans can be viewed on projectwise at the following link.

Review of this project will continue upon satisfactory response to the above comments. Please call the referenced reviewer at _____ with any questions or comments.

Sincerely,

Karuna Pujara, P.E., Chief
Plan Review Division

Cc:

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STORMWATER MANAGEMENT AND SEDIMENT & EROSION CONTROL
CONCEPT PLAN APPROVAL FOR STATE HIGHWAY PROJECTS

Date

PRD Number:

In compliance with Environment Article, Section 4-106 and 4-205 Annotated Code of Maryland,
Concept Plan Approval is hereby granted to: *Permittee*
Address

Hereafter known as owner, for the plans and specifications presented for:

Contract No.

Project Description and Location

Prepared by:

Plan dated:

Revisions dated:

This APPROVAL is granted with the following comments:

1. This project has _____ points of investigation (POI).
2. The project IART is _____ acres.
3. The new impervious area is _____ acres.
4. The impervious area being redeveloped is _____ acres.
5. The impervious area being removed is _____ acres.
6. The net increase in impervious area is _____ acres.
7. ESDv management for POI 1 is being provided by (list type and number of facilities).
8. A waiver/variance has been requested and approved for (list POI, waiver and variance type).
9. Water Quality has been addressed for the (6 digit watershed name and number) by the use of the proposed facilities.
10. Water quality will be addressed through the use of *list facilities and POI*.

Final design of all stormwater management practice shall meet MDE's design requirements for the respective practices. Significant changes to this concept design will necessitate a new concept approval.

Approved By: _____

Karuna Pujara, P.E., Chief
Plan Review Division

Cc: Assistant District Engineer, Construction
Division Chief, OED/EPD
Project Manager
OHD/HHD Liason
PRD Team Leader

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Appendix 1.M

STORMWATER MANAGEMENT AND SEDIMENT & EROSION CONTROL
FINAL PLAN APPROVAL FOR STATE HIGHWAY PROJECTS

Date

PRD Number:

In compliance with Environment Article, Section 4-106 and 4-205 Annotated Code of Maryland,

Approval is hereby granted to: *Permittee*

Address

Hereafter known as owner, for the plans and specifications presented for:

Contract No.

Project Description and Location

Prepared by:

Plan dated:

Revisions dated:

This APPROVAL is granted subject to the following conditions:

1. This approval shall become null and void if the construction authorized herein has not begun within two (2) years from the granting of the approval. If the construction authorized herein has not been completed within two (2) years from the granting of this approval, the approval shall become null and void except that these limits may be extended at the discretion of the Plan Review Division. Extensions shall be requested by the applicant.
2. The approval is subject to all laws and regulations now in effect, and may be revoked if it is subsequently determined that this authorization violates other laws of the State. Construction shall comply with approved terms.
3. The location and dimensions of all sediment control structures and storm water management facilities as well as grading, excavation and filling shall be in accordance with plans approved by the PRD. The owner or authorized agent must obtain written approval from the PRD for any plan modifications or changes. A copy of the approved plan with any approved modifications and this approval shall be available at the construction site for reference during the construction period.
4. Off-site borrow or waste sites require local county and Soil Conservation District approvals if they are located on private property, PRD approval if on State property, and MDE approval if on federal property. Local approval numbers shall be furnished to the SHA Quality Assurance Program Inspector.
5. SHA or their authorized agent shall notify the SHA QA Program at _____, at least seven (7) days prior to initiation of the project and five (5) days after the construction activities end.
6. Prior to any earth disturbance, an NPDES Application for an Individual or a General Permit to Discharge Stormwater Associated with Construction Activities shall be submitted to and approved by MDE for all projects with earth disturbance of 1.0 acre or greater.
7. SWM is met for this project with *list the number and type of facilities.* *There are no credits or debits to the water quality bank.*

Approved By: _____ (Pursuant to Criteria Noted Above)

Karuna Pujara, P.E., Chief
Plan Review Division

Cc: Assistant District Engineer, Construction
Division Chief, OED/EPD
Project Manager
OHD/HHD Liason

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**STATE HIGHWAY ADMINISTRATION
 EROSION / SEDIMENT CONTROL AND STORMWATER MANAGEMENT FIELD INVESTIGATION REPORT**

DISTRICT: _____ COUNTY: _____ CONTRACT NO: _____

DATE & TIME OF INSPECTION: _____

PROJECT DESCRIPTION: _____

CONTRACTOR: _____

NOI/PERMIT # _____

INSPECTORS NAME AND GC CERTIFICATION # _____

SITE STATUS: CURRENTLY ACTIVE CURRENTLY INACTIVE

PHASE OF CONSTRUCTION CLEAR & GRUB GRADING FINAL STABILIZATION
 AS-BUILTS SUBMITTED NOT SUBMITTED

SITE CONDITION: COMPLIANCE NEEDS CORRECTIONS NON-COMPLIANCE

REASON FOR INSPECTION: WEEKLY INVESTIGATION PRE-STORM POST-STORM OTHER

STORM EVENT SINCE LAST REPORT YES NO

DATE & TIME _____ DURATION _____ AMOUNT _____

1. IS PROJECT IN SCOPE?	* If No, Project is automatically in non-compliance.	Y	N	N/A
* 1.1	Have all appropriate permits and approvals been obtained (SHA/Contractor)?	<input type="checkbox"/>	<input type="checkbox"/>	
* 1.2	Are specified LOD, wetlands, buffers, jurisdictional waters, floodplains and/or tree protection areas demarcated and disturbed areas contained within the LOD (active work areas)?	<input type="checkbox"/>	<input type="checkbox"/>	
* 1.3	Is the project in conformance with the E&S plan, schedules and contract documents?	<input type="checkbox"/>	<input type="checkbox"/>	
1.3.1	Are sediment controls in place prior to disturbing areas of intended control?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3.2	Are controls removed with QA program approval?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4	Have all changes been approved to date including stream crossings/diversions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.5	Have approved changes been implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.6	Are the ESCM duties in compliance with specification 308.03.03?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.7	Are stockpiles/staging/waste areas approved?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.8	Is grading limited to maximum grading unit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.9	Are roadways clear of sediment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.10	Are contractor daily reports up to date and reviewed by the SHA inspector?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.11	Are the contractor operations in sequence with the approved plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.12	Is the SWM as-built inspector on-site during the construction stages of SWM BMP's?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.13	Have the as-built plans been accepted and construction completed prior to NOT submission associated with NPDES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NPDES - The following question are also applicable when the project has 1 acre or more of disturbance				
1.14	Is trash collected and placed in a covered dumpster?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.15	Are washout facilities (concrete, paint, etc.) clearly marked, maintained and wash water properly contained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.16	Are fuel containers and vehicle maintenance areas free of spills, leaks or any other deleterious material?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.17	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.18	Is there evidence of the discharge of significant amounts of sediment (See definitions below) to surface waters, or conveyance systems leading to surface waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.19	Have required notifications (to MDE) been complied with? (Triggering Event, Upset, Bypass)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Definition of significant amount of sediment A discharge of significant amounts of sediment may be indicated by (but is not limited to) observations of the following. Note whether any are observed during this inspection:

1. Earth slides or mud flows
2. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment
3. Turbid flows of stormwater that are not filtered, settled or otherwise treated to reduce turbidity
4. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge directly to surface waters
5. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity
6. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity
7. Discharges from the construction site to municipal conveyances, curbs and gutters, or streams running through or along the site where visual observations show that the discharges differ from ambient conditions in terms of turbidity so as to indicate significant amounts of sediment present in them

Project Engineer / Inspector: _____

DATE: _____

ORIGINAL: Project Engineer

cc: District Engineer Contractor

2. ARE CONTROLS PROPERLY INSTALLED?				3. ARE CONTROLS PROPERLY MAINTAINED?				
Y	N	N/A	2.1	Water Conveyance	3.1	Y	N	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1.1.	Earth Dikes	3.1.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1.2.	Temporary Swales	3.1.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1.3.	Perimeter Dike/Swales	3.1.3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1.4.	Diversion Fence	3.1.4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1.5.	Temporary Asphalt Berm	3.1.5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1.6.	Clear Water Diversion Pipe	3.1.6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.2.	Erosion Control Devices	3.2.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2.1.	Pipe Slope Drains	3.2.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2.2.	Rip-rap Inflow Protection	3.2.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2.3.	Gabion Inflow Protection	3.2.3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2.4.	Stone Check Dams	3.2.4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2.5.	Rock Outlet Protection	3.2.5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.3.	Sediment Trapping Devices	3.3.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.3.1.	Sediment Traps	3.3.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.3.2.	Sediment Basins	3.3.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.4.	Dewatering Practices	3.4.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.4.1.	Removable Pumping Station	3.4.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.4.2.	Sump Pits	3.4.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.4.3.	Portable Sediment Tanks	3.4.3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.4.4.	Dewatering Bags	3.4.4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.5.	Filtering Practices	3.5.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.1.	Silt Fence	3.5.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.2.	Super Silt Fence	3.5.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.3.	Inlet Protection	3.5.3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.4.	Temporary Stone Outlet Structures	3.5.4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.5.	Temporary Gabion Outlet Structure	3.5.5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.6.	Filter Log	3.5.6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.5.7.	Filter Berm	3.5.7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.6.	Grading and Stabilization	3.6.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.6.1.	Stabilized Construction Entrance	3.6.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.7.	Miscellaneous Practices	3.7.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.7.1.	Temp. Access Waterway Crossing	3.7.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.7.2.	Dust Control	3.7.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.7.3.	Onsite Concrete Washout Area	3.7.3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.7.4.	Maintenance of Stream Flow	3.7.4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			2.8.	Special Features	3.8.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.8.1.		3.8.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.8.2.		3.8.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.8.3.		3.8.3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.8.4.		3.8.4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. IS STABILIZATION PROVIDED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS?				Y	N	N/A
4.1 Is stabilization provided as specified?						
4.1.1. Temporary mulch or substituted matting				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.2. Temporary stabilization				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.3. Permanent stabilization				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.4. Stabilization matting called for by plan				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.5. Sod				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.6. Stone				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.7. Other				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Is stabilization provided in the specified time frame?						
4.2.1 Same day stabilization				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.2 3-7 day stabilization				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.3. Other				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Is incremental stabilization provided during construction?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4 Is the stabilization performing as specified?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Is vegetation being established?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**STATE HIGHWAY ADMINISTRATION
INDEPENDENT QUALITY ASSURANCE
EROSION / SEDIMENT CONTROL AND STORMWATER MANAGEMENT FIELD INVESTIGATION REPORT**

DISTRICT: _____ COUNTY: _____ CONTRACT NO: _____ DATE OF INSPECTION: _____
PROJECT DESCRIPTION: _____ TIME: _____

CONTRACTOR: _____
CONTRACTORS ESCM: _____ YELLOW CARD #: _____ EXP. DATE: _____
S.H.A. PROJECT REPRESENTATIVE: _____
REGIONAL ENVIRONMENTAL COORDINATOR: _____

- SITE STATUS:** CURRENTLY ACTIVE CURRENTLY INACTIVE
SITE CONDITION: COMPLIANCE NEEDS CORRECTIONS **NON-COMPLIANCE
REASON FOR INSPECTION: ROUTINE INVESTIGATION CITIZEN COMPLAINT M.D.E. COMPLAINT OTHER
***RECOMMENDED ACTION:** NOTIFY CONTRACTOR FOLLOW UP INSPECTION NOTIFY M.D.E.
 **SHUT DOWN GRADING OPERATIONS **SHUT DOWN ENTIRE PROJECT
 REFER TO NOTES
 NO GRADE

GRADE

Section	Number of points awarded	Number of points available	Percent Awarded for section(s) (X/Y) x 100
1	x	y	
2	x	y	
3	x	y	
4	x	y	
Total (1-4)	x	y	
(Section 1-4 Total) x 80%			A
5	x	y	
Section 5 x 20%			B
Total Grade (Add box A and B)			
6	Bonus Section, Number of points awarded		
Final Score			

RATING: **A** **B** ****C** ****D** ****F**

(A = 105 – 90, B = 80-89.9, C = 70-79.9, D = 60-69.9, F = < 60)

REGIONAL ENV. COORDINATOR: _____ DATE: _____

CONTRACTOR: _____ DATE: _____

RECEIVED BY: _____

** Follow the "QA communication Protocol"

(SHA REPRESENTATIVE)
(SIGNATURE IMPLIES RECEIPT OF THIS REPORT ONLY)

ORIGINAL: Project Engineer
cc : Contractor

Point Value	I. IS PROJECT IN SCOPE? * If No, Project is automatically Rated an "F".	Y	N	Pts. Awarded	N/A	Pts. Excluded
*	1.1. Have all appropriate permits and approvals been obtained (SHA/Contractor)?	<input type="checkbox"/>	<input type="checkbox"/>			

*	1.2.	Are specified LOD, wetlands, buffers, jurisdictional waters, floodplains and/or tree protection areas demarcated and disturbed areas contained within the LOD (active work areas)?	<input type="checkbox"/>	<input type="checkbox"/>			
*	1.3.	Is the project in conformance with the E&S plan, schedules and contract documents?	<input type="checkbox"/>	<input type="checkbox"/>			
4	1.3.1.	Are sediment controls in place prior to disturbing areas of intended control?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	1.3.2.	Are controls removed with QA program approval?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
4	1.3.3.	Are the SWM as built activities being performed per the contract documents?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
4	1.4.	Have all changes (modifications) been approved to date?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
1	1.5.	Have approved changes (modifications) been implemented?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
4	1.6.	Are the ESCM duties in compliance with specification 308.03.03	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
3	1.7.	Are stockpiles/staging/waste areas approved?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	1.8.	Is grading limited to maximum grading unit?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	1.9.	Are roadways clear of sediment?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
NPDES The following question are also applicable when the project has 1 acre or more of disturbance							
2	1.10	Is trash collected and placed in a covered dumpster?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	1.11	Are washout facilities (concrete, paint, etc.) clearly marked, maintained and wash water properly contained?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	1.12	Are fuel containers and vehicle maintenance areas free of spills, leaks or any other deleterious material?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	1.13	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
34	= Total Possible Points					Subtotal =	

Total Points Available = 34 - ____ = ____

2. ARE CONTROLS PROPERLY INSTALLED?						3. ARE CONTROLS PROPERLY MAINTAINED?						
Y	N	Pts.	N/A	Pts.		Pts.		Y	N	Pts.	N/A	Pts.
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.1.1.	1	Water Conveyance	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
							Earth Dikes	1	3.1.1.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.1.2.	1	Temporary Swales	1	3.1.2.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.1.3.	1	Perimeter Dike/Swales	1	3.1.3.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.1.4.	2	Diversion Fence	2	3.1.4.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.1.5.	1	Temporary Asphalt Berm	1	3.1.5.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.1.6.	1	Clear Water Diversion Pipe	1	3.1.6.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.2.		Erosion Control Devices		3.2.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.2.1.	2	Pipe Slope Drains	2	3.2.1.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.2.2.	1	Rip-rap Inflow Protection	1	3.2.2.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.2.3.	1	Gabion Inflow Protection	1	3.2.3.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.2.4.	2	Stone Check Dams	2	3.2.4.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.2.5.	1	Rock Outlet Protection	1	3.2.5.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.3.		Sediment Trapping Devices		3.3.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.3.1.	3	Sediment Traps	3	3.3.1.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.3.2.	3	Sediment Basins	3	3.3.2.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.4.		Dewatering Practices		3.4.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.4.1.	2	Removable Pumping Station	2	3.4.1.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.4.2.	2	Sump Pits	2	3.4.2.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.4.3.	2	Portable Sediment Tanks	2	3.4.3.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.4.4.	2	Dewatering Bags	2	3.4.4.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.5.		Filtering Practices		3.5.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.1.	2	Silt Fence	2	3.5.1.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.2.	3	Super Silt Fence	3	3.5.2.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.3.	2	Inlet Protection	2	3.5.3.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.4.	2	Temporary Stone Outlet Structures	2	3.5.4.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.5.	3	Temporary Gabion Outlet Structure	3	3.5.5.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.6.	2	Filter Log	2	3.5.6.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.5.7.	2	Filter Berm	2	3.5.7.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.6.		Grading and Stabilization		3.6.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.6.1.	2	Stabilized Construction Entrance	2	3.6.1.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.7.		Miscellaneous Practices		3.7.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.7.1.	3	Temp. Access Waterway Crossing	3	3.7.1.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.7.2.	1	Dust Control	1	3.7.2.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.7.3.	2	Onsite Concrete Washout Area	2	3.7.3.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.7.4.	4	Maintenance of Stream Flow	4	3.7.4.	<input type="checkbox"/>	<input type="checkbox"/>	
					2.8.		Special Features		3.8.			
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.8.1.	1		1	3.8.1.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.8.2.	1		1	3.8.2.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.8.3.	1		1	3.8.3.	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		2.8.4.	1		1	3.8.4.	<input type="checkbox"/>	<input type="checkbox"/>	
Subtotal =						60	= Total Possible Points =	60	Subtotal =			

Total Points Available = 60 - ____ = ____

Total Points Available = 60 - ____ = ____

Point Value	4. IS STABILIZATION PROVIDED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS?	Y	N	Pts. Awarded	N/A	Pts. Excluded
4.1. Is stabilization provided as specified?						
1	4.1.1. Temporary mulch or substituted matting	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
2	4.1.2. Temporary stabilization	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	

2	4.1.3. Permanent stabilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	4.1.4. Stabilization matting called for by plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	4.1.5. Sod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1	4.1.6. Stone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1	4.1.7. Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2. Is stabilization provided in the specified time frame?					
3	4.2.1. Same day stabilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	4.2.2. 3-7 day stabilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	4.2.3. Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1	4.3. Is incremental stabilization provided during construction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	4.4. Is the stabilization performing as specified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	4.5. Is vegetation being established?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25	= Total Possible Points	Subtotal =			*

Total Points Available = 25 - ____ * = ____

Point Value	5. WAS CORRECTIVE ACTION TIMELY FROM PREVIOUS QA REPORT?	Select one
5	5.1. No corrective action needed.	<input type="checkbox"/>
4	5.2. Action completed < 24 hours.	<input type="checkbox"/>
3	5.3. Action completed within 24 < 48 hours.	<input type="checkbox"/>
2	5.4. Action completed within 48 < 72 hours.	<input type="checkbox"/>
1	5.5. Action completed > 72 hours.	<input type="checkbox"/>
0	5.6. Action not completed.	<input type="checkbox"/>
5	= Total Possible Points	Total Points Awarded =

Point Value	6. IS THE CONTRACTOR PROACTIVE? (Bonus area)	Y	N	Pts. Awarded
1	6.1. Is sole duty of ESCM E&S activities?	<input type="checkbox"/>	<input type="checkbox"/>	
1	6.2. Recognizes and requests changes in a timely manner as warranted by any Changes or Modifications.	<input type="checkbox"/>	<input type="checkbox"/>	
1	6.3. ESCM conducts daily joint inspection with SHA staff.	<input type="checkbox"/>	<input type="checkbox"/>	
1	6.4. Contractor initiates corrective action.	<input type="checkbox"/>	<input type="checkbox"/>	
1	6.5. Contractor practices Environmental Awareness/Stewardship by training employees.	<input type="checkbox"/>	<input type="checkbox"/>	
5	= Total Possible Points	Total Awarded		

Item No.	Notes:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**MARYLAND STATE HIGHWAY ADMINISTRATION
REQUEST FOR REVISION OF ENVIRONMENTAL PLANS / PERMITS**

Modification Origin Date: _____ District Number: _____

Contract Number: _____ PRD/MDE Number: _____ Modification Number: _____

Project Description: _____

Contractor: _____ Phone: _____ Email _____

SHA Project Engineer _____ Phone: _____ Email: _____

Nature of Revision: See Attached Sketch

Original Drawing Sheet Number(s): _____ Original Stamped Date: _____

Contract Item(s): _____

Indicate Location: _____

ACTIVITY LOCATION: Does the modification affect any of these locations on the project:

- | | |
|--|--|
| A. <input type="checkbox"/> Tidal Waters | H. <input type="checkbox"/> 100-foot buffer (non-tidal wetland of Special State concern) |
| B. <input type="checkbox"/> Tidal Wetlands | I. <input type="checkbox"/> In stream channel |
| C. <input type="checkbox"/> AASCD | 1. <input type="checkbox"/> Tidal 2. <input type="checkbox"/> Non-tidal |
| D. <input type="checkbox"/> Critical Area | J. <input type="checkbox"/> 100 year floodplain (outside stream channel) |
| E. <input type="checkbox"/> Non-tidal Wetland | K. <input type="checkbox"/> Stormwater Management |
| F. <input type="checkbox"/> 25-Foot buffer (non-tidal wetlands only) | L. <input type="checkbox"/> Other (Explain) _____ |
| G. <input type="checkbox"/> Areas beyond the approved LOD | _____ |

Reason for Revision

NOTE: Any change in a contract quantity resulting from revision will not be basis for renegotiation of unit price by either party for any affected item(s).

Requested By: _____
Contractor

Date: _____

Concurrence By: _____
SHA Project Engineer

Date: _____

Submitted to QA program: _____

Date: _____

Approved By: _____ Division _____ Date: _____

****If not approved, the QA program will return to SHA Project Engineer with reason for disapproval specified below on this form. SHA-PE will furnish a copy of the unapproved request, including reason, to the contractor.**

****REASON FOR DISAPPROVAL:**

Name _____ Title _____ Date _____

INSTRUCTION AND EXAMPLE

1. The entire form will be completed in the Quality Assurance Toolkit for approval.
2. Contract Item(s) – All contract items affected by this revision will be listed.
3. Explain in detail the nature of the revision. (Example: Eliminate A-1 earth dike and substitute with diversion fence; Upgrade from silt fence to super silt fence)
4. Indicate location: Include drawings on approved/stamped plan sheet as necessary for clarification: (Station Limits, ML, North Arrow, Ramps, Grade Lines, Tree Preservations, Tidal and/or Non-tidal Waterways including Wetlands, Floodplains and Buffers, Limits of Disturbance, etc).
5. Reason for Revision (Example: More cost effective, superior control, not required, minimizes disturbance, etc).

PURPOSE:

1. To streamline the approval of minor field changes to the approved plans associated with Erosion and Sediment Control measure contained in the contract documents.
2. To separate small changes (Those that can be handled through the QA program) from a change that requires PRD (PR number) or MDE (SF number) review/approval.
3. To enable the QA Program to make minor field approvals associated with Erosion and Sediment Control measure.
4. To document revisions that had prior verbal agreement of the Contractor and SHA. It will be completed by the contractor with the concurrence of SHA and approval by SHA QA program, PRD (PR number) or MDE (SF number). **If it is found that this revision has created a situation whereby erosion and sediment runoff is not effectively controlled, immediate corrective action will be taken and the originally approved controls will be implemented**

PROCEDURE:

The procedures outlined below are to be used to process all Requests for Revisions/Field Design Changes. Revisions may require modifications to the approved Erosion and Sediment plans and/or specifications, and can be classified according to the following:

LEVEL 1: Request for Existing Conditions Adjustments, Upgrade, Adjust and/or Add an Erosion and Sediment Control (Considered Minor in scope requiring review by the Quality Assurance program).

These modifications are adjustments to match project elements with conditions encountered in the field, upgrades to existing controls and/or add controls. This may include specific details to use an alternative controls that can substitute an existing control. They are limited to layout adjustments to the approved plans and do not impact future construction and installation and can be approved by the QA Team Approver.

LEVEL 2: Request for Revision to Design of the Project that Requires Drainage Calculations and/or is a Deviation from Project Resource Impacts (Considered Major in scope requiring review by SHA Plan Review Division).

These are modifications to the approved plans that involve design changes considered to be significant changes in scope or changes that deviate from approved impacts. The proposed revisions should involve an isolated part of the project, and should be fully justified by the Contractor prior to SHA consideration. Examples include revisions to dimensions and layout, materials changes, or design revisions to accommodate adjustments to the work. Modifications affecting SWM and revisions of this nature may impact several disciplines, and will undergo a review process from multiple divisions/agencies and SHA PRD for approval.

Specific procedures to follow:

1. Modifications (in the Quality Assurance Toolkit) are initiated by the Contractor.
2. SHA Project Engineer reviews the completed modification along with supporting documentation and upon concurrence with signature contacts the QA program with a phone call (at a minimum) that will assist with moving the process forward.
3. The QA Package reviewer ensures all necessary information is included with the modification request and then forwards to the necessary reviewers

4. Plan and specification modifications classified as level 2 or 3 the modifications will be subject to a design review and approval process similar to that for the original design.
5. If plan design review is necessary, the QA program will forward to the necessary offices/agencies and all design changes to plans, specifications, calculations, and additional impacts will be subject to a design review and approval process similar to that for the original design.
6. Approval status will be tracked by the QA toolkit and remain pending until all required approvals have been obtained
7. Approval and/or rejection of the request are documented on the QA-3 form. (Quality Assurance Toolkit) for the SHA Project Engineer to submit to the contractor where he/she is responsible for filing.
8. ** If the modification is not approved, the QA program will return to SHA-PE with the reason for disapproval. SHA Project Engineer will furnish a copy of unapproved request, including reason, to the contractor
9. Informing the SHA Project Engineer will be through Quality Assurance Toolkit with a final completed QA-3 including all required signatures and a phone call.
10. With completed and signed approval the SHA Project Engineer will inform the Contractor that work related to the modification can proceed.

Appendix 1.Q

STATE HIGHWAY ADMINISTRATION – OFFICE OF HIGHWAY DEVELOPMENT
PLAN REVIEW DIVISION
NOTICE OF CONSTRUCTION COMPLETION FORM (NOCC)
BMP for State Highway Projects

PRD Number: _____ BMP ID Number: _____ Date Sent to PRD: _____

Applicant Name: Maryland State Highway Administration

Project: _____

County where project is located: _____

Structure/Site Address (numbered roadway address as in *475 W Main St* or intersection as in directional *E, N, S, W, NE, NW, SE and SW of Cranberry Ave & Cornwall R*, and/or the Department of Assessment and Taxation Map/Parcel/Lot numbers):

Street Address/Route # : _____

Place/City : _____ Zip5: _____

Map: N/A Grid: N/A Parcel: N/A Lot: N/A

Location:

Northing/Latitude _____

Easting /Longitude _____

ADC Map Coordinates _____

Structure Drainage Area:

Facility Drainage Area (acres) _____ Total Project Disturbance (acres): _____

Land Use Code (see MDP Update Attached) 80

Structure Description (Check One):

- | | | | |
|-------------------------------------|--------------------------|-------------------------|--------------------------|
| Detention Structure (Dry Pond) | <input type="checkbox"/> | Dry Well | <input type="checkbox"/> |
| Extended Detention, Dry | <input type="checkbox"/> | Extended Detention, Wet | <input type="checkbox"/> |
| Infiltration Basin | <input type="checkbox"/> | Infiltration Trench | <input type="checkbox"/> |
| Oil Grit Separator /WQ Inlet | <input type="checkbox"/> | Porous Pavement | <input type="checkbox"/> |
| Retention Structure (Wet Pond) | <input type="checkbox"/> | Sand Filter | <input type="checkbox"/> |
| Shallow Marsh (Artificial Wetlands) | <input type="checkbox"/> | Underground Storage | <input type="checkbox"/> |

Other (Describe) _____

Facility Site Location:

On-Site Facility Off-Site Facility

PRD Approval Date: _____ Construction Completion Date: _____ First Inspection Date: _____

General Comments:

The person completing this form should provide the following information:

Name: Plan Review Division Title: _____

Agency/Company State Highway Administration Phone: _____

Signature/Initials: _____ Date: _____

PRD Contact: State Highway Administration
Plan Review Division
211 E. Madison Street, MS M-101
Baltimore, MD 21202
Phone: 410-
Fax: 410-209-5022

**STATE HIGHWAY ADMINISTRATION – OFFICE OF HIGHWAY DEVELOPMENT
PLAN REVIEW DIVISION
NOTICE OF CONSTRUCTION COMPLETION FORM (NOCC)
ESD Practices for State Highway Projects**

PRD Number: _____

Date Sent to PRD: _____

Applicant Name: Maryland State Highway Administration

Project: _____

County where project is located: _____

Project Address (numbered roadway address as in *475 W Main St* or intersection as in directional *E, N, S, W, NE, NW, SE and SW of Cranberry Ave & Cornwall R*, and/or the Department of Assessment and Taxation

Map/Parcel/Lot numbers):

Street Address/Route # : _____

Place/City : _____ Zip5: _____

Map: N/A Grid: N/A Parcel: N/A Lot: N/A

Location:

Northing/Latitude _____

Easting /Longitude _____

ADC Map Coordinates _____

ESD Drainage Area:

Total Drainage Area to ESD Practices (acres) _____ Total Project Disturbance (acres): _____

Land Use Code (see MDP Update Attached) 80

ESD Description (Enter number):

Detention Structure (Dry Pond)	<input type="checkbox"/>	Dry Well	<input type="checkbox"/>
Extended Detention, Dry	<input type="checkbox"/>	Extended Detention, Wet	<input type="checkbox"/>
Infiltration Basin	<input type="checkbox"/>	Infiltration Trench	<input type="checkbox"/>
Oil Grit Separator /WQ Inlet	<input type="checkbox"/>	Porous Pavement	<input type="checkbox"/>
Retention Structure (Wet Pond)	<input type="checkbox"/>	Sand Filter	<input type="checkbox"/>
Shallow Marsh (Artificial Wetlands)	<input type="checkbox"/>	Underground Storage	<input type="checkbox"/>
Other (Describe) _____			

PRD Approval Date: _____ **Construction Completion Date:** _____ **First Inspection Date:** _____

General Comments:

The person completing this form should provide the following information:

Name: _____ Plan Review Division _____ **Title:** _____

Agency/Company State Highway Administration **Phone:** _____

Signature/Initials: _____ **Date:** _____

PRD Contact: State Highway Administration
Plan Review Division
211 E. Madison Street, MS M-101
Baltimore, MD 21202
Phone: 410-
Fax: 410-209-5022



Maryland Department of Planning 2007 Land Use/Land Cover Update

The Maryland Department of Planning is in the process of completing our statewide Land Use/Land Cover analysis for 2007. As a part of this process, we have shared the preliminary results with local jurisdictions to ensure accuracy and consistency in the update. To assist in the understanding of our update process, this document will outline the department's update methodology to help explain the results.

The primary purpose of the 2007 Land Use/Land Cover update is to help MDP and the state analyze the consumption of land due to new development. The main intent of this update is to capture the conversion of land from these uses to development and in the process, characterize this development.

Beginning with the 2002 Land Use/Land Cover as a starting point for the update, MDP utilized updated aerial imagery in conjunction with parcel information to develop the 2007 Land Use/Land Cover. Aerial photography collected in 2005 serves as the imagery to underlie all land use change. Parcel information from Maryland Property View 2006, in tandem with the imagery, helped to classify land use information into specific categories. Throughout the process, the 2002 Land Use/Land Cover layer was edited to be consistent with land use information presented by the aerial imagery and the parcel information.

The land use\land cover classification scheme described below has been used to identify the predominant usage of land that could be interpreted from high altitude aerial photography and satellite imagery. The LU_CODE field, in each county land use shape file, contains the 2 or 3 digit integer numbers identified below. Two new categories have been added to the 2007 Land Use/Land Cover layer; very low density residential development and transportation.

For the 2007 Land Use/Land Cover update, the following categories are utilized:

Urban Land Uses

- 11 Low-density residential - Detached single-family/duplex dwelling units, yards and associated areas. Areas of more than 90 percent single-family/duplex dwelling units, with lot sizes of less than five acres but at least one-half acre (.2 dwelling units/acre to 2 dwelling units/acre).
- 12 Medium-density residential - Detached single-family/duplex, attached single-unit row housing, yards, and associated areas. Areas of more than 90 percent single-family/duplex units and attached single-unit row housing, with lot sizes of less than one-half acre but at least one-eighth acre (2 dwelling units/acre to 8 dwelling units/acre).
- 13 High-density residential - Attached single-unit row housing, garden apartments, high-rise apartments/condominiums, mobile home and trailer parks; areas of more than 90 percent high-density residential units, with more than 8 dwelling units per acre.
- 14 Commercial - Retail and wholesale services. Areas used primarily for the sale of products and services, including associated yards and parking areas.
- 15 Industrial - Manufacturing and industrial parks, including associated warehouses, storage yards, research laboratories, and parking areas.
- 16 Institutional - Elementary and secondary schools, middle schools, junior and senior high schools,

public and private colleges and universities, military installations (built-up areas only, including buildings and storage, training, and similar areas), churches, medical and health facilities, correctional facilities, and government offices and facilities that are clearly separable from the surrounding land cover.

- 17 Extractive - Surface mining operations, including sand and gravel pits, quarries, coal surface mines, and deep coal mines. Status of activity (active vs. abandoned) is not distinguished.
- 18 Open urban land - Urban areas whose use does not require structures, or urban areas where non-conforming uses characterized by open land have become isolated. Included are golf courses, parks, recreation areas (except areas associated with schools or other institutions), cemeteries, and entrapped agricultural and undeveloped land within urban areas.
- 191 Large lot subdivision (agriculture) - Residential subdivisions with lot sizes of less than 20 acres but at least 5 acres, with a dominant land cover of open fields or pasture.
- 192 Large lot subdivision (forest) - Residential subdivisions with lot sizes of less than 20 acres but at least 5 acres, with a dominant land cover of deciduous, evergreen or mixed forest.

Agriculture

- 21 Cropland - Field crops and forage crops.
- 22 Pasture - Land used for pasture, both permanent and rotated; grass.
- 23 Orchards/vineyards/horticulture - Areas of intensively managed commercial bush and tree crops, including areas used for fruit production, vineyards, sod and seed farms, nurseries, and green houses.
- 24 Feeding operations - Cattle feed lots, holding lots for animals, hog feeding lots, poultry houses, and commercial fishing areas (including oyster beds).
- 241 Feeding operations - Cattle feed lots, holding lots for animals, hog feeding lots, poultry houses.
- 242 Agricultural building breeding and training facilities, storage facilities, built-up areas associated with a farmstead, small farm ponds, commercial fishing areas.
- 25 Row and garden crops - Intensively managed truck and vegetable farms and associated areas.

Forest

- 41 Deciduous forest - Forested areas in which the trees characteristically lose their leaves at the end of the growing season. Included are such species as oak, hickory, aspen, sycamore, birch, yellow poplar, elm, maple, and cypress.
- 42 Evergreen forest - Forested areas in which the trees are characterized by persistent foliage throughout the year. Included are such species as white pine, pond pine, hemlock, southern white cedar, and red pine.
- 43 Mixed forest - Forested areas in which neither deciduous nor evergreen species dominate, but in which there is a combination of both types.
- 44 Brush - Areas which do not produce timber or other wood products but may have cut-over timber stands, abandoned agriculture fields, or pasture. These areas are characterized by vegetation types such as sumac, vines, rose, brambles, and tree seedlings.

Water

50 Water - Rivers, waterways, reservoirs, ponds, bays, estuaries, and ocean.

Wetlands

60 Wetlands - Forested or non-forested wetlands, including tidal flats, tidal and non-tidal marshes, and upland swamps and wet areas.

Barren Land

70 Barren land

71 Beaches - Extensive shoreline areas of sand and gravel accumulation, with no vegetative cover or other land use.

72 Bare exposed rock - Areas of bedrock exposure, scarps, and other natural accumulations of rock without vegetative cover.

73 Bare ground - Areas of exposed ground caused naturally, by construction, or by other cultural processes.

Transportation

80 Transportation - Miscellaneous Transportation features not elsewhere classified.

Appendix 1.R

LETTER OF INTENT FOR SWM CONCEPT APPROVAL FOR STATE HIGHWAY
DESIGN/BUILD PROJECTS

Date

Ms. Dana Havlik, Chief
Highway Hydraulics Division
State Highway Administration
707 N. Calvert St., MS C-201
Baltimore, MD 21202

Attn:

Re: SHA PR#
SHA FMIS#
SHA Contract#
Description

Dear Ms. Havlik:

The SHA Plan Review Division (PRD) has reviewed the submittal received DATE for the above referenced project in COUNTY. The review was in accordance with Section 4-106 and 4-205 of the Department of the Environment Article, Annotated Code of Maryland with regard to Sediment Control and Stormwater Management. The information summarizes the hydrologic analysis and required storm water management using environmental site design (ESD) practices for developing the proposed improvements. The following comments are a result of the review:

PRD has determined that the Preliminary Erosion and Sediment Control Plans and the hydrologic analysis for the existing and proposed conditions presented in the Stormwater Management Concept Report (dated) **are acceptable** for evaluating the SWM requirements for the project's points of investigation (PIOs) as specified. **Please note that if the hydrologic parameters for the proposed conditions are revised in the final design of the project, the status of the items noted below shall be re-evaluated and modifications may be required.**

1. Stormwater Management is to be provided for the points of investigation as summarized below:

Point of Investigation	Proposed SWM Measure
<i>POI I.C.-7</i>	<i>ESD_v/WQ_v, CP_v and Q₁₀ provided by four ESD practices and one structural BMP</i>

List POI# and proposed measures for each POI where controls are proposed. Proposed measures should list scope of controls and types of facilities proposed. An example is provided in the table above. Any conditions associated with the controls should be listed below.

2. Water Quality Banking Summary Sheets must be submitted with the final design.
3. Approval from MDE's Wetlands and Waterways Program will be required for all work impacting wetlands or waterways.

1/28/15

Rev:

Rev#:

4. An NPDES Application for an Individual or a General Permit to Discharge Stormwater Associated with Construction Activities must be submitted to and approved by MDE prior to any earth disturbance.
5. Stormwater Management and Erosion/Sediment Control Plans shall be submitted for site development and final review and approval.
6. Final design of all storm water management practices shall be in accordance with the requirements of the 2010 Maryland Stormwater Design Manual. In addition, significant changes to this approved concept design will necessitate a new concept approval.
7. The following comments must be addressed with the site design submittal:

Stormwater Management

a.

Sediment Control

a.

Review of this project will continue upon satisfactory response to the above comments. Please call *Team Lead* at (410) 545-#### or PRD@sha.state.md.us with any questions or comments.

Sincerely,

Karuna Pujara, Chief
Plan Review Division
State Highway Administration

Cc: Project Manager
OHD/HHD Liason

Review the following during bi-weekly inspections to ensure project closeout

Yes	NO	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are the NPDES reports being fill out per MDE's requirement?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is Project Work Completed? If no, _____% complete
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are Storm Water Management Facilities Completed Per Contract Documents?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has Storm Water Management Facilities As-Built Plan and Certification been submitted to Highway Hydraulic Division?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has Storm Water Management Facilities As-Built Certification been accepted by Maryland Department of the Environment or State Highway Administration Plan Review Division (PRD)?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the Stabilization/Landscaping Established per the contract documents?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are Erosion and Sediment Controls Removed with Approval?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Have Maryland Department of Environment (MDE) completed their final inspection?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Have MDE modified requirements for NPDES Reporting?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the Nutrient Management Plan (NMP) on file and implemented?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Have E&S QA completed their final inspection?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has Landscape Operation Division (LOD) approved the projects vegetation establishment?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notice of Termination (NOT) completed and submitted?

REC Representative: _____ Date: _____

Plan Notes & Certifications Appendix

EROSION AND SEDIMENT CONTROL - GENERAL NOTES

1. MDE NOTIFICATION

IF AN EROSION AND SEDIMENT CONTROL PERMIT IS ISSUED FOR THIS PROJECT, UPON APPROVAL, NOTIFY THE SHA REGIONAL ENVIRONMENTAL COORDINATOR IN WRITING AND/OR BY TELEPHONE AT (410) 365-0164 AT THE FOLLOWING POINTS:

- PRE-CONSTRUCTION MEETING
- EROSION AND SEDIMENT CONTROL MEETING (MINIMUM 7 WORKING DAYS PRIOR TO COMMENCING EARTH DISTURBING ACTIVITIES)
- FOLLOWING INSTALLATION OF INITIAL SEDIMENT CONTROL MEASURES
- DURING INSTALLATION OF MAJOR SEDIMENT CONTROL BASINS/TRAPS
- PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S)
- PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES
- PRIOR TO FINAL ACCEPTANCE BY SHA/PRD

2. STANDARDS AND SPECIFICATIONS

CONSTRUCT THIS PLAN IN ACCORDANCE TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THE MARYLAND DEPARTMENT OF ENVIRONMENT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REGULATIONS, AND ALL REVISIONS THERE OF, AND AS SPECIFIED. KEEP A COPY OF THE 2011 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ON THE SITE AT ALL TIMES.

3. INGRESS / EGRESS CONTROLS

PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ON PUBLIC ROADS. MECHANICALLY REMOVE ALL MATERIALS DEPOSITED ON PUBLIC ROADS IMMEDIATELY. THE FLUSHING OF ROAD SURFACES IS PROHIBITED.

TYPICALLY, CONTROL ALL INGRESS AND EGRESS POINTS THROUGH THE USE OF A "STABILIZED CONSTRUCTION ENTRANCE."

THE LOCATIONS OF THE STABILIZED CONSTRUCTION ENTRANCES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION IN THE FIELD AND RELOCATE AS NEEDED WITH THE APPROVAL OF THE REGIONAL ENVIRONMENTAL COORDINATOR.

4. INSPECTION

INSPECT DAILY ALL EROSION AND SEDIMENT CONTROL MEASURES AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION.

5. SHUTDOWNS AND OR PENALTIES

TOTAL COMPLIANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS EXPECTED AT ALL TIMES. IN CASES WHERE THE CONTRACTOR IS FOUND TO BE IN NON-COMPLIANCE SHA MAY TAKE STEPS TO IMPOSE SELECTED OR TOTAL SHUTDOWNS AND IMPOSE LIQUIDATED DAMAGES FOR NON-COMPLIANCE.

THE DISTRICT ENGINEER CAN IMPOSE A TOTAL OR PARTIAL SHUTDOWN IF THE PROJECT MAY ADVERSELY IMPACT THE WATERS OF THE STATE.

6. RECORD KEEPING

THE PROJECT'S APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, APPROVED CHANGE REQUESTS, DAILY LOG BOOKS AND TEST REPORTS WILL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MDE AND SHA.

7. DEWATERING PRACTICES

DEWATERING PRACTICES ARE CONSIDERED TO BE ELECTIVE IN NATURE. LOCATE AND OPERATE DEWATERING PRACTICES IN A MANNER THAT DOES NOT DISCHARGE SEDIMENT INTO ANY WATERWAY. NO VISIBLE CHANGES TO STREAM CLARITY ARE PERMITTED.

THE LOCATIONS OF THE DEWATERING DEVICES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION IN THE FIELD AND RELOCATE AS NEEDED WITH THE APPROVAL OF THE REGIONAL ENVIRONMENTAL COORDINATOR.

8. EROSION AND SEDIMENT CONTROL EXCAVATION

PLACE SILT REMOVED FROM CONTROL DEVICES IN AN APPROVED WASTE SITE EITHER ON OR OFF THE PROJECT. MATERIAL STORED ON SITE MAY BE REUSED ONCE IT IS DRIED AND IF IT MEETS SHA REQUIREMENTS FOR EMBANKMENT OR ANY UNSPECIFIED NEED.

9. OFF-SITE UTILITY WORK

FOLLOW THESE ADDITIONAL BEST MANAGEMENT SEDIMENT CONTROL PRACTICES FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS:

(a) CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. (b) PLACE EXCAVATED MATERIAL ON THE HIGH SIDE OF THE TRENCH.

(c) BACKFILL, COMPACT AND STABILIZE TRENCHES FOR UTILITY INSTALLATIONS AT THE END OF EACH WORKING DAY. WHEN THIS IS NOT POSSIBLE, CONFORM TO (d).

(d) PLACE TEMPORARY SILT FENCES IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

10. SENSITIVE AREAS

OBTAIN APPROVAL FROM THE ENGINEER AND COORDINATE WITH THE PERMIT HOLDERS WHO WILL COORDINATE WITH THE APPROPRIATE REGULATORY AGENCIES TO ENSURE THAT ALL PERMIT CONDITIONS ARE MET PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY WITHIN SPECIFIED SENSITIVE AREAS OF THE PROJECT. DESIGNATE A RESPONSIBLE PARTY TO MONITOR ALL WORK IN THESE AREAS TO ASSURE THAT REASONABLE CARE IS TAKEN IN OR ADJACENT TO THESE AREAS. SENSITIVE AREAS ARE DEFINED AS: FLOODPLAINS, WETLANDS (TIDAL, NONTIDAL AND ASSOCIATED BUFFERS) CRITICAL AREAS, FORESTED AREAS, ARCHEOLOGICAL SITES, HISTORIC SITES, PARKLAND AND OPEN WATER.

11. STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, COMPLETE PERMANENT OR TEMPORARY STABILIZATION WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

12. SITE INFORMATION

Appendix 2.A

TOTAL AREA OF SITE:	_____	ACRES
AREA DISTURBED	_____	ACRES
AREA TO BE ROOFED OR PAVED	_____	ACRES
TOTAL CUT	_____	CU. YDS
TOTAL FILL	_____	CU. YDS
OFFSITE WASTE/BORROW	_____	_____
AREA LOCATION (IF KNOWN)		

13. INCREMENTAL STABILIZATION

REFER TO THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE INCREMENTAL STABILIZATION OF CUT AND FILLS.

14. MODIFICATIONS

SUBMIT MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROLS TO SHA FOR APPROVAL. OBTAIN ALL APPROVALS FROM SHA PRIOR TO IMPLEMENTING ANY MODIFICATION.

All ESC Plan sheets shall have the following note:

NOTE TO CONTRACTOR: EROSION/SEDIMENT CONTROL WILL BE STRICTLY ENFORCED

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES 1 & II INCLUDING SUPPLEMENTS, THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND COMAR 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTIVELY.

DATE

DESIGNER'S SIGNATURE

MD REGISTRATION NO. _____
P.E., R.L.S., R.L.A., OR R.A. (CIRCLE ONE)

PRINTED NAME

P.E. CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NO. _____, EXPIRATION DATE: _____.

AASCD CERTIFICATION

CONSULTANT'S CERTIFICATION

"THE DEVELOPER'S PLAN TO CONTROL SILT AND EROSION IS ADEQUATE TO CONTAIN THE SILT AND EROSION ON THE PROPERTY COVERED BY THE PLAN. I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THIS SITE, AND WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER."

SIGNATURE

DATE

MD P.E. LICENSE NO.

NAME

FIRM NAME

ADDRESS

TELEPHONE NUMBER

AASCD CERTIFICATION

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. _____, EXPIRATION DATE: _____.

15. ANNE ARUNDEL SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT, OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN (7) DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

1. PERMANENT SEEDING:

A. SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TEST RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.

OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILING OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6 WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.

THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

- SOIL pH SHALL BE BETWEEN 6.0 AND 7.0.
- SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
- THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE.

AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.

- SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
- SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.

B. SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSENEED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS OF DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-10-10 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3 INCHES ON SLOPES FLATTER THAN 3:1.

C. SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER, CULTIPACKER SEEDER, OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/2 INCH IN CLAYEY SOILS AND 1/4 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE 25, ENTITLED "PERMANENT SEEDING FOR LOW MAINTENANCE AREAS" FROM THE CURRENT STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. MIXES SUITABLE FOR THIS ARE 1, 3, AND 5-7. MIXES 5-7 ARE SUITABLE IN NON-MOWABLE SITUATIONS.

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D. MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING.

MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED TO A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). IF A MULCH ANCHORING TOOL IS USED, APPLY 2.5 TONS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.

E. SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:

- USE A MULCH ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.

- WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

- LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.

- LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2. TEMPORARY SEEDING:

LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.

FERTILIZER: 15 POUNDS OF 10-10-10 PER 1,000 SQUARE FEET.

SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH NOVEMBER 1).

MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).

MULCH: SAME AS #1 D. AND E.

3. NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATE HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL FILL IN ROADWAYS AND PARKING AREAS IS TO BE CLASSIFIED TYPE 2 AS PER ANNE ARUNDEL COUNTY CODE - ARTICLE 16, SECTION 2-307, AND COMPACTED TO 90% DENSITY; COMPACTION TO BE DETERMINED BY ASTM D-1557-66T (MODIFIED PROCTOR). ANY FILL WITHIN THE BUILDING AREA IS TO BE COMPACTED TO A MINIMUM OF 95% DENSITY AS DETERMINED BY

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METHODS PREVIOUSLY MENTIONED. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.

4. PERMANENT SOD: INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3: 1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.
5. MINING OPERATIONS: SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE AND CONFORM TO APPROVED SEEDING DATES AND MIXTURES. FOR SEEDING DATES OF FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31, USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICEA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.
6. TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR TOPSOIL FROM THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

NOTE: PROJECTS WITHIN 4 MILES OF THE BWI AIRPORT WILL NEED TO ADHERE TO MARYLAND AVIATION ADMINISTRATION'S SEEDING SPECIFICATION RESTRICTIONS.

16. ANNE ARUNDEL SOIL CONSERVATION DISTRICT STANDARD RESPONSIBILITY NOTES

I (WE) CERTIFY THAT:

1. A. ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT BOARD OF SUPERVISORS OR THEIR AUTHORIZED AGENTS.

B. ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

RESPONSIBLE PERSONNEL ON SITE: _____.

- C. IF APPLICABLE, THE APPROPRIATE ENCLOSURE WILL BE CONSTRUCTED AND MAINTAINED ON SEDIMENT BASIN(S) INCLUDED IN THIS PLAN. SUCH STRUCTURE(S) WILL BE IN COMPLIANCE WITH THE ANNE ARUNDEL COUNTY CODE.
2. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHT, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THE PLAN.
 3. INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT TABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS FOR THE SURFACE OF ALL CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. TEMPORARY STABILIZATION OF THE SURFACE OF PERIMETER CONTROLS, DIKES, SWALES, DITCHES, AND PERIMETER SLOPES MAY BE ALLOWED AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.
 4. THE SEDIMENT CONTROL APPROVALS ON THIS PLAN EXTEND ONLY TO AREAS AND PRACTICES IDENTIFIED AS PROPOSED WORK.
 5. THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM COMPLYING WITH FEDERAL, STATE, OR COUNTY REQUIREMENTS APPERTAINING TO ENVIRONMENTAL ISSUES.
 6. THE DEVELOPER MUST REQUEST THAT THE SEDIMENT CONTROL INSPECTOR APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT, AND THE ORDINANCE.
 7. ALL MATERIAL SHALL BE TAKEN TO A SITE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.
 8. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF TWO ACRES, APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR SHALL BE REQUIRED ON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. THIS WILL REQUIRE FIRST PHASE INSPECTIONS. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE SEDIMENT AND EROSION CONTROL INSPECTOR IS GIVEN.
 9. APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF TWO ACRES BEFORE REMOVAL OF CONTROLS.
 10. EXISTING TOPOGRAPHY MUST BE FIELD VERIFIED BY RESPONSIBLE PERSONNEL TO THE SATISFACTION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO COMMENCING WORK.

SIGNATURE OF DEVELOPER/OWNER

DATE

NAME

Appendix 2.E

TITLE

AFFILIATION

ADDRESS

TELEPHONE NUMBER

OWNERS / DEVELOPERS CERTIFICATION:

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

SPECIAL PROVISIONS
300 – STORMWATER MANAGEMENT (SWM) FACILITY
AS-BUILT CERTIFICATION

CONTRACT NO.IFB_ContractNo

1 of 5

CATEGORY 300
DRAINAGE

STORMWATER MANAGEMENT (SWM) FACILITY AS-BUILT CERTIFICATION

DESCRIPTION. Arrange for the inspection of stormwater management (SWM) facilities during construction activities as specified and submit a SWM facility as-built certification package for each SWM facility constructed to the Administration within 45 calendar days of completing construction of all SWM facilities in the Contract.

As-Built (AB) Inspector. The AB inspector is responsible for the completion of the SWM facility as-built certification package. Select and designate the AB inspector prior to beginning construction activities. Use a professional engineer (P.E.) registered and licensed in the State of Maryland who has at least five years of experience in SWM facility design, overseeing SWM facility construction, and certifying SWM facility as-built plans. Ensure the AB inspector or his/her authorized representative is on site full-time during all activities associated with the construction of SWM facilities. Submit one copy of the AB inspector's resume to the Administration's Project Construction Engineer and Highway Hydraulics Division that includes following information.

- (a) Name of AB inspector.
- (b) Maryland professional engineering or professional surveyor license number and expiration date.
- (c) Name of employer.
- (d) Contact information.
- (e) Relevant work experience.
- (f) Maryland Department of the Environment Responsible Personnel Training for Erosion and Sediment Control (Green Card) number.
- (g) SHA Basic Erosion and Sediment Control Training for Contractors and Inspectors (Yellow Card) number and expiration date.

Do not proceed with the work until the AB inspector is approved by the Administration. Failure to receive approval for the AB inspector or failure of the AB inspector to adequately monitor the specified construction stages will be grounds for replacement.

SWM Facility As-Built Certification Package. The SWM facility as-built certification package certifies that all SWM facilities on the Contract have been constructed as specified, includes pertinent documentation demonstrating the validity and accuracy of the certification, and is submitted to the Administration's Highway Hydraulics Division.

MATERIALS. Not applicable.

CONSTRUCTION. Prior to beginning construction of or continuing work on SWM facilities, ensure the AB inspector is present. If the AB inspector is not present, suspend work on SWM facilities and do not resume until the AB inspector is present for the activities. Ensure that the facility features are constructed as specified in the Contract Documents. Correct any deficiencies reported by the AB inspector before proceeding to the next construction activity associated with SWM facilities.

Submit to the Administration within 45 calendar days of completing construction of all SWM facilities in the Contract a SWM facility as-built certification package that contains the specified information for each SWM facility constructed. Incomplete SWM facility as-built certification packages will be rejected. Submit two hard copies and one digital copy in PDF format on a CD.

Contents of the SWM Facility As-Built Certification Package. The SWM facility as-built certification package includes the following content, neatly presented and organized in an easy-to-follow format, for each SWM facility in the Contract.

- (a) SWM facility construction inspection reports.
- (b) Accompanying photographs taken during inspections documenting construction activities listed on the SWM Facility As-Built Certification Form with narrative descriptions of the photographs.
- (c) Photographs of the SWM facility after all landscaping has been installed and established along with narrative descriptions of the photographs.
- (d) Copies of applicable material approval forms.
- (e) Copies of applicable material and installation test reports or results.
- (f) Completed SWM facility as-built certification table.
- (g) As-built survey and green line revisions of the SWM facility. The as-built survey and green line revision data must be overlaid on the appropriate Contract Plan sheet(s). As-built survey and green line revision data must be green in color, clearly legible, and easily distinguishable. Printed copies must be submitted on 34 in. x 22 in. sheets.
- (h) Applicable supporting computations demonstrating that the functionality of the SWM facility meets the approved design requirements as noted in the approved stormwater management report for the Contract. Include any necessary revisions to the Final SWM Report.
- (i) Copy of documentation indicating acceptance or approval of the landscaping for the Contract.
- (j) Signature, seal, and date of license expiration of the professional engineer (P.E.) to certify the accuracy, validity, and completeness of the information contained in the SWM

facility as-built certification package and affirms the SWM facility has been constructed in accordance with the Contract Documents and functions as indicated in the approved stormwater management report for the Contract.

Information Supplied by the Administration. Upon written request, the Administration will provide CADD files in DGN format and the approved Final SWM Report in PDF format to facilitate completion of the SWM facility as-built certification package.

AB Inspector Responsibilities. The AB inspector performs the following activities.

- (a) Is present for all activities listed on the SWM as-built certification data forms and completes the entire form.
- (b) Prepares written inspection reports for activities. The inspection reports must include the following information.
 - (1) The SWM facility identification number.
 - (2) The date and location of the activity.
 - (3) Photographs of the activity with narrative descriptions.
 - (4) Whether SWM facility construction matches the Contract Documents, noting any deviations from the Contract Documents and how the deviations are addressed. Whenever deviations occur and exceed the specified tolerances, notify the Engineer.
- (c) Completes the SWM facility as-built certification data tables in the Contract Documents.
- (d) Takes photographs of the completed SWM facility, including photographs documenting completed landscape planting installation and establishment, and provides a narrative description of the photographs.
- (e) Obtains confirmation of soil test results, particularly for compaction of SWM facility embankments, such that the results are certifiable.
- (f) Oversees the completion of green line as-built surveys of the completed SWM facilities. When deviations between the as-built surveys and the Contract Documents exceed the specified tolerances, complete the necessary computations to demonstrate the SWM facilities function as designed in the approved Final SWM Report and provide a written narrative justification. When the SWM facilities functionality does not meet the design functionality presented in the approved Final SWM Report, notify the Engineer.
- (g) Provides green line revisions to the SWM facility profile information in the Contract Documents.

- (h) Completes any and all necessary computations to demonstrate the SWM facilities function as design in the approved Final SWM Report as well as any revisions to the report.

SWM Facility As-Built Surveys and Green Line Revision Requirements. Obtain the services of a Professional Land Surveyor (P.L.S.) registered and licensed in the State of Maryland to perform as-built surveys of the completed SWM facilities and include any green line revisions made during the construction of the SWM facility. As-built survey and green line revisions must be overlaid on the appropriate Contract Plan sheets at the same scale and datum. As-built surveys must include the following minimum coordinately correct information.

- (a) **Contours.** Contour intervals matching design plans and includes inflow and outflow conveyances. For shallow conveyance systems where the contours may not be appropriate, critical spot elevations and dimensions may be adequate and.
- (b) **Drainage Structures.** Includes all drainage and control structures within the SWM facility, including but not limited to inlets, manholes, risers, weirs, end sections, and end walls. Pertinent information includes but is not limited to top elevations, lengths, widths, inverts, pipe sizes, pipe materials, flow directions, orifice elevations, opening sizes, check dams, grates, and trash racks.
- (c) **Riprap and Aggregate.** Dimensions of riprap and other areas within the SWM facility that have a surface layer of aggregate.
- (d) **Embankment Information.** Clay core locations and dimensions.
- (e) **SWM Facility Access Roads.**
- (f) **Fences.**
- (g) **SWM Facility Profiles.** Show green line data for SWM facility profiles and typical sections including but not limited to check dam spacing, check dam top elevations, check dam dimensions, invert elevations, subdrain size, subdrain material, aggregate and soil thicknesses, materials types, and clay core dimensions. Data may be obtained by completing as-built surveys and data measured by the AB inspector. When construction tolerances are not met, re-computed water surface elevations, freeboard, and other pertinent SWM functionality data must be included.
- (h) Signature and seal of the PLS and acceptance signature and seal of the AB inspector.

Construction Tolerances. As follows.

- (a) **Earthwork.** Elevations within 3 in. of elevations specified in the Contract Documents.
- (b) **Drainage Structures.** Elevations within 1.2 in. (0.1 ft).
- (c) **Riprap.** Dimensions within 6 in. of dimensions specified in the Contract Documents.

(d) Freeboard. Exact. No freeboard deviation is acceptable.

When construction tolerances are not met, submit a justification with documentation and computations completed by the AB inspector that demonstrate the SWM facilities function as presented in the approved Final SWM Report. Information that must be examined includes but is not limited to storage volumes, discharge rates, detention times, water surface elevations, freeboard, and other applicable information as determined by the AB inspector or requested by the Administration.

MEASUREMENT AND PAYMENT. Stormwater Management (SWM) Facility As-Built Certification will not be measured but will be paid for at the Contract lump sum price and incrementally distributed according to the Payment Schedule. The payment will be full compensation for services of the professional engineer, services of a professional surveyor, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Subsequent inspections, surveys, and as-built re-certification of reconstructed SWM facilities because of failure to address deviations from the Contract Documents that exceed specified tolerances and do not meet the design functions as presented in the approved Final SWM Report shall be at no additional cost to the Administration.

Subsequent revisions to and submissions of the SWM facility as-built certification package following the initial submission shall be at no additional cost to the Administration.

Payment Schedule. Payments will be made as follows.

PAYMENT SCHEDULE	
REQUIREMENT	PERCENTAGE OF PAYMENT FROM TOTAL CONTRACT PRICE
Initial submission of the SWM Facility As-Built Certification Package to the Administration	40
Receipt of As-built acceptance for SWM Facility from the State Highway Administration Plan Review Division (SHA-PRD) <u>except</u> for the vegetative establishment	Number Pending Concurrence from OOC
Receipt of approval from the State Highway Administration Plan Review Division (SHA-PRD) <u>after</u> the vegetative establishment	Number Pending Concurrence from OOC
TOTAL	100

Forfeiture of Payment. Failure to meet any of the requirements of the payment schedule will result in forfeiture of that percentage of payment and begin incurrence of liquidated damages for non-compliance until requirements have been met.

STORMWATER MANAGEMENT AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY (FACILITIES) SHOWN ON THE PLANS AND INDIVIDUALLY IDENTIFIED BELOW HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS INCLUDED UNDER THE STATE HIGHWAY ADMINISTRATION'S PLAN REVIEW DIVISION APPROVAL, NUMBER ____ - PR - _____ EXCEPT AS NOTED IN GREEN ON THE "AS-BUILT" DRAWINGS. FURTHERMORE, THE GREEN-NOTED EXCEPTIONS DO NOT ADVERSELY AFFECT THE DESIGN AND/OR THE INTENDED PERFORMANCE OF THE FACILITY (FACILITIES).

EACH SWM FACILITY IS IDENTIFIED INDIVIDUALLY BY A UNIQUE SWM FACILITY NUMBER

Name (Printed)

Signature

Maryland Registration Number

Date

PROFESSIONAL CERTIFICATION. "I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. _____, EXPIRATION DATE _____."

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

NOTE: AS-BUILT CHECKLISTS CONTAINED IN THE CONTRACT DRAWINGS SHALL BE COMPLETED BY THE AS-BUILT INSPECTOR AND SUBMITTED TO THE SHA ALONG WITH THIS CERTIFICATION.

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:
Accepted by SHA_PRD:
<div style="display: flex; justify-content: space-between; width: 100%;"> <div style="border-bottom: 1px solid black; width: 40%;"></div> <div style="border-bottom: 1px solid black; width: 40%;"></div> </div> <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 5px;"> Name Date </div>

SAND FILTER CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location*			
Placement of geotextiles and filter fabric*			
Subdrain and observations well installed according to plans*			
Placement of aggregate layers according to plans and details*			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlets, outlets, orifices and flow distribution structures) installed according to plans			
Final grading and permanent stabilization completed*			

*AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

F-1 SAND FILTER TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Forebay Bed Area (L x W)					
Forebay Volume					
Forebay Bed Surface Elevation					
Filter Bed Area (L x W)					
Filter Bed Surface Elevation					
Filter Inlet Pipe Size					
Filter Inlet Pipe Invert Elevation					
Thickness of Filter Media					
Outlet Pipe (Subdrain) Size					
Outlet Pipe (Subdrain) Elevation					
Observation Well with depth to Filter Bottom indicated on cap					

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-2 SUBMERGED GRAVEL WETLAND CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Subdrain system and/ or observation well installed according to plans			
Placement of geotextiles, filter fabric, and/ or liners according to plans			
Wetland planting			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Composition of Filter Media			

**AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10
The As-Built Inspector is to verify the construction activities while activity is performed as listed above.
February 2011
Revised February 9, 2015**

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-2 SUBMERGED GRAVEL WETLAND TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Inflow Opening Size					
Inflow Invert Elevation					
Diversion Opening Size					
Diversion Invert Elevation					
Bypass Weir Length					
Bypass Weir Height					
Bypass Weir Elevation					
Bypass Opening Size					
Bypass Opening Elevation					
Forebay Area					
Forebay Volume					
Filter Bed Area (L x W)					
Filter Bed Surface Elevation					
Filter Inlet Pipe Size					
Filter Inlet Pipe Elevation					
Filter Inlet Pipe Invert					
Outlet Pipe (Subdrain) Size					
Outlet Pipe (Subdrain) Elevation					
Observation well installed according to plans					

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-3 LANDSCAPE INFILTRATION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Excavation to subgrade			
Placement of geotextiles, filter fabric, and/ or liners according to plans			
Placement of soil and or filter media			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Completion of final grading and establishment of permanent stabilization			

**AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10
The As-Built Inspector is to verify the construction activities while activity is performed as listed above.
February 2011
Revised February 9, 2015**

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:
Accepted by SHA-PRD:
<div style="display: flex; justify-content: space-between;"> _____ _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Name Date </div>

M-3 LANDSCAPE INFILTRATION TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Surface Area (CF)					
Water Volume (CF)					
Planting Soil Depth (inches)					
Gravel layer depth (inches)					
Composition of Planting Soil					
Placement of sand layer, gravel diaphragm for pretreatment					
Observation well installed according to plans					

February 2011
Revised February 9, 2015

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:
Accepted by SHA-PRD:
<div style="display: flex; justify-content: space-between;"> _____ _____ </div> <div style="display: flex; justify-content: space-between;"> Name Date </div>

M-4 INFILTRATION BERM TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Top of Berm Width (ft)					
Left cross slope (ft/ ft)					
Right cross slope (ft/ ft)					
Composition of Planting Soil					

February 2011
Revised February 9, 2015

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-5 DRY WELL CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Observation well installed according to plans			
Placement of backfill and perforated inlet pipe			
Placement of geotextiles and filter fabric according to plans			
Placement of gravel diaphragm, weirs, and/or check dams			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Completion of final grading and establishment of permanent stabilization acceptance by SHA-LOD			

AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10
The As-Built Inspector is to verify the construction activities while activity is performed as listed above.
February 2011
Revised February 9, 2015

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:
Accepted by SHA-PRD:
<div style="display: flex; justify-content: space-between; width: 100%;"> _____ _____ </div> <div style="display: flex; justify-content: space-between; width: 100%;"> Name Date </div>

M-5 DRY WELL TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Surface Area (CF)					
Depth (ft)					
Gravel depth (inches)					
Depth of sand layer (inches)					
Observation well installed according to plans					

February 2011
Revised February 9, 2015

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-6 MIRCOBIORETENTION CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Subdrain system and/ or observation well installed according to plans			
Placement of geotextiles and filter fabric according to plans			
Placement of gravel diaphragm			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Composition of Filter Media			

**AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10
The As-Built Inspector is to verify the construction activities while activity is performed as listed above.
February 2011
Revised February 9, 2015**

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-6 MICROBIORETENTION TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Forebay Area					
Forebay Volume					
Filter Bed Area (L x W)					
Filter Bed Surface Elevation					
Filter Inlet Pipe Size					
Filter Inlet Pipe Elevation					
Filter Inlet Pipe Invert					
Outlet Pipe (Subdrain) Size					
Outlet Pipe (Subdrain) Elevation					
Observation well installed according to plans					

**SWM FACILITY AS-BUILT CERTIFICATION DATA
FOR M-8 BIO-SWALES**

MAY ONLY BE COMPLETED AND/OR CERTIFIED BY THE AS-BUILT (AB) INSPECTOR AS REQUIRED BY THE MARYLAND STORMWATER MANAGEMENT GUIDELINES FOR STATE HIGHWAY ADMINISTRATION, SHA SPECIFICATIONS AND COMAR 26.17.02.10.

SWM FACILITY NUMBER

PR NUMBER

SHA CONTRACT NUMBER

ACTIVITY	ADDITIONAL REQUIRED SUPPORTING INFORMATION (CONFIRM DOCUMENTATION AVAILABLE AND SUBMIT IN SWM FACILITY AS-BUILT CERTIFICATION PACKAGE)	DATE OF INSPECTION
PRIOR TO EXCAVATION, VERIFIED E&S CONTROLS ARE INSTALLED AND CONFIRMED SURROUNDING AREA IS STABILIZED	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED EXCAVATION ACTIVITIES AND VERIFIED STAKEOUTS ARE ACCURATE AND RE-STAKED AS NEEDED	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF GEOTEXTILE AND VERIFIED PROPER INSTALLATION TECHNIQUES WERE PERFORMED AS SPECIFIED	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF NO. 57 AGGREGATE BEDDING FOR SUBDRAIN AND VERIFIED SPECIFIED THICKNESS	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF SUBDRAIN	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF NO. 57 AGGREGATE AROUND AND ABOVE SUBDRAIN AND VERIFIED SPECIFIED THICKNESS	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF NO. 7 AGGREGATE AND VERIFIED SPECIFIED THICKNESS	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF COARSE SAND AND VERIFIED SPECIFIED THICKNESS	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF APPROVED BSM AND VERIFIED SPECIFIED THICKNESS	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> MATERIAL APPROVAL FORM(S) <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION OF CHECK DAMS	<input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	
OBSERVED INSTALLATION AND ESTABLISHMENT OF VEGETATION AND VERIFIED TYPES AND QUANTITIES SPECIFIED	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> OTHER (LIST):	

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
BOTTOM WIDTH (FT.)			
TOTAL LENGTH (FT.)			
MAXIMUM CHANNEL SLOPE (FT./FT.)			
LEFT SIDE SLOPE (FT./FT.)			
RIGHT SIDE SLOPE (FT./FT.)			
THICKNESS OF NO. 57 AGGREGATE (IN.)			
THICKNESS OF NO. 7 AGGREGATE (IN.)			
THICKNESS OF COARSE SAND (IN.)			
THICKNESS OF BSM (IN.)			
SUBDRAIN PIPE DIAMETER (IN.)			
SUBDRAIN PIPE MATERIAL			
NUMBER OF CHECK DAMS			
DISTANCE BETWEEN CHECK DAMS (See profile)			

SWM FACILITY AS-BUILT CERTIFICATION ACCEPTED BY SHA-PRD:

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name _____	Date _____

SWALES CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Underdrain system and/ or observation well installed according to plans			
Placement of geotextiles and filter fabric according to plans			
Placement and composition of filter media			
Placement of gravel diaphragm, weirs, and/ or check dams			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Completion of final grading and establishment of permanent stabilization			

**AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10
February 2011
Revised February 9, 2015**

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:
Accepted by SHA-PRD:
<div style="display: flex; justify-content: space-between;"> _____ _____ </div> <div style="display: flex; justify-content: space-between;"> Name Date </div>

M-8 GRASS SWALES TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Bottom width					
Left side slope (ft/ ft)					
Right side slope (ft/ ft)					
Length					
Number of Check Dams/ Weirs					
10-Year Freeboard					
Maximum Channel slope (ft/ft)					

February 2011
Revised February 9, 2015

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
_____	_____
Name	Date

M-8 WET SWALE TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Bottom width (ft)					
Left side slope (ft/ ft)					
Right side slope (ft/ ft)					
Length (ft)					
Number of Check Dams/ Weirs					
10-Year Freeboard					
Maximum Channel slope (ft/ft)					
Volume (cf)					
Underdrain Pipe Diameter (in)					
Composition of Filter Media					

February 2011
Revised February 9, 2015

As-Built Inspection Tabulations/Checklist for BMP Number:	
PR No.:	
Accepted by SHA-PRD:	
Name _____	Date _____

O-1 DRY SWALE CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Underdrain system and/ or observation well installed according to plans			
Placement of geotextiles and filter fabric according to plans			
Placement and composition of filter media			
Placement of gravel diaphragm, weirs, and/ or check dams			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Completion of final grading and establishment of permanent stabilization			

AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10

**As-Built Inspection Tabulations/Checklist for BMP Number:
PR No.:**

Accepted by SHA-PRD:

Name

Date

O-1 DRY SWALE TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Bottom width					
Left side slope (ft/ ft)					
Right side slope (ft/ ft)					
Length					
WQ Storage Elevation					
WQ Storage Volume					
Number of check dams/weirs					
2 Year Discharge Elevation					
2 Year Freeboard Elevation					
2 Year Freeboard Dimension					
10 Year Discharge Elevation					
10 Year Freeboard Elevation					
10 Year Freeboard Dimension					

**As-Built Inspection Tabulations/Checklist for BMP Number:
PR No.:**

Accepted by SHA-PRD:

Name

Date

O-2 WET SWALE CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Excavated to proper size and location			
Underdrain system and/ or observation well installed according to plans			
Placement of geotextiles and filter fabric according to plans			
Placement and composition of filter media			
Placement of gravel diaphragm, weirs, and/ or check dams			
Appurtenant conveyance systems (diversion structures, pre-filters, filters, inlet, outlets, orifices and flow distribution structures) installed according to plan			
Completion of final grading and establishment of permanent stabilization			

AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10

**As-Built Inspection Tabulations/Checklist for BMP Number:
PR No.:**

Accepted by SHA-PRD:

Name

Date

O-2 WET SWALE TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECTOR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Bottom width					
Left side slope (ft/ ft)					
Right side slope (ft/ ft)					
Length					
WQ Storage Elevation					
WQ Storage Volume					
Number of check dams/weirs					
2 Year Discharge Elevation					
2 Year Freeboard Elevation					
2 Year Freeboard Dimension					
10 Year Discharge Elevation					
10 Year Freeboard Elevation					
10 Year Freeboard Dimension					

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
Name _____	Date _____

POND CONSTRUCTION CHECKLIST

ACTIVITY	ON SITE INSPECTION DATE	INSPECTOR INITIALS	ACCEPTANCE DATE
Pipe spillway installed properly with correct elevation, grade and watertight connections*			
Core trench has correct dimensions and compaction rate			
Anti-seep collars or diaphragms properly installed			
Diameter and material of pipe as designed			
Proper fill material and compaction constructed for embankment			
Embankment has correct side slopes, top width, and design elevation (plus allowance for settlement)			
Outfall securely in place and properly backfilled			
Final grading and permanent stabilization completed			
Minimum 50% survival rate of wetland plantings 1-year after installation			

*AB Inspector required to perform inspection on site for these steps as required by COMAR 26.17.02.10

As-Built Inspection Tabulations/Checklist for BMP Number: PR No.:	
Accepted by SHA-PRD:	
Name	Date

POND TABULATIONS

ACTIVITY	DESIGNED	AS-BUILT	DIFFERENCE	INSPECT OR INITIALS	ACCEPTANCE DATE
As-Built Survey	N/A				
Forebay Dimensions (W X L X D)					
Forebay Volume					
Forebay Weir Elevation					
Forebay Weir Length					
Forebay Weir Height					
WQ Storage Elevation					
WQ Storage Volume					
CPv Storage Elevation					
CPv Storage Volume					
CPv Discharge (CFS)*					
CPv Control Opening/Elevation					
2 YR Storage Elevation					
2 YR Storage Volume					
2 YR Discharge (CFS)*					
2 YR Control Opening/Elevation					
10 YR Storage Elevation					
10 YR Storage Volume					
10 YR Discharge (CFS)*					
10 YR Control Opening/Elevation					
100 YR Storage Elevation					
100 YR Storage Volume					
100 YR Discharge (CFS)*					
Principal Spillway: Elev. Out/ Diameter/ Slope					
Emergency Spillway: Width / Length / Elevation					
Outlet Protection: (W X L X D)					
Outlet Protection: Stone Size					
Embankment: Elevation					
___ Yr. Freeboard Provided					

* As-Built Discharges are not required if tolerances and freeboard are met.

Erosion and Sediment Control Appendix

EROSION AND SEDIMENT CONTROL

PLAN REVIEW CHECKLIST

PRD No. _____

___ acceptable unacceptable

INC incomplete R required

N/A not applicable NR not reviewed

Project: _____

Contract No. _____

NOTE: Project is exempt from erosion & sediment control if disturbed area is < 5000 s.f. & 100 c.y.

Notice of Intent (NOI) is required if disturbed area >= 1 acre.

1st 2nd 3rd

_____ Review Date

_____ Application Form with applicant information

GENERAL PLAN REQUIREMENTS

_____ Location Map (sufficient that inspector can locate facility)

_____ Owner's/Developer's Certification with signature

_____ Design Certification with signature

_____ Standard Stabilization Note

_____ Note to Contractor: "Erosion and Sediment Control Shall Be Strictly Enforced."

_____ Legend including sediment control items

_____ North arrow

_____ Scale (1"=50' max.)

_____ Topography - existing and proposed contours

Appendix 3.A

- _____ Property lines
- _____ Existing and proposed tree lines
- _____ Proposed buffer and conservation areas
- _____ Limits of wetlands
- _____ Limits of 100 Year Floodplain
- _____ Storm drain system shown – existing and proposed
- _____ Adequate Outfall(s)
- _____ Q10 and V10
- _____ Outfalls to toe of slope
- _____ Topo extends 75' downgrade of outfall
- _____ Proposed slopes 2:1 max
- _____ Standard Erosion and Sediment Control Notes
- _____ Completed Site Information
- _____ **Vegetative Stabilization Specifications**
- _____ MDE Standard proposed controls (2011 Standards and Specs)
- _____ Other details

SITE SPECIFIC REVIEW

Initial Phase Sediment Control

- _____ Sequence of Construction
- _____ Notification to compliance
- _____ Installation of controls
- _____ Phasing considerations
- _____ Construction of improvements
- _____ Stabilization
- _____ Removal of controls
- _____ Conversion of E&SC structures to SWM structures

Appendix 3.A

- _____ Remaining stabilization
- _____ Limits of Disturbance (LOD) delineated
- _____ Stabilized Construction Entrance (SCE)
- _____ Controls labeled using MDE standard symbol
- _____ Controls meet design parameters (DA, slopes, etc)
- _____ All disturbed areas drain to an approved sediment control device
- _____ Immediate stabilization note in designated areas
- _____ Dewatering addressed
- _____ Designated staging/stockpile area with sediment controls

Final Phase Sediment Controls

- _____ Sequence of Construction
- _____ Notification to compliance
- _____ Installation of controls
- _____ Phasing considerations
- _____ Construction of improvements
- _____ Stabilization
- _____ Removal of controls
- _____ Conversion of E&SC structures to SWM structures
- _____ Remaining stabilization
- _____ Limits of Disturbance (LOD) delineated
- _____ Stabilized Construction Entrance (SCE)
- _____ Controls labeled using MDE standard symbol
- _____ Controls meet design parameters (DA, slopes, etc)
- _____ All disturbed areas drain to an approved sediment control device
- _____ Immediate stabilization note in designated areas

Appendix 3.A

_____ Dewatering addressed

_____ Designated staging/stockpile area with sediment controls

COMMENTS: _____

