

MEMORANDUM

TO: Distribution

RECOMMENDED BY: Robin Bowie, Director
Office of Environmental Services

REVIEWED BY: Tom Varughese, PE, Director
Office of Engineering and Construction

THROUGH: Simon Taylor, Deputy Chief Engineer
Division of Planning and Engineering

APPROVED BY: Paul Shank, PE, C.M., Chief Engineer
Division of Planning and Engineering

DATE: October 19, 2017

SUBJECT: Design Standards Supplement DST-17-05
Stormwater Management & Coordination

Robin M. Bowie
Tom Varughese
S.R.H. Taylor
Paul Shank

Effective immediately, the following modifications shall be made to the 2017 Design Standards Manual:

1. **Chapter 2: Design Procedures,**
Section 2.4, Phase IV Record Drawings & Project Close Out
Insert new Subsection 2.4.3, *Procedure for SWM As-Built Certification.*
2. **Chapter 3: Deliverables**
Section 3.4, Drawing Requirements
Remove existing Item 3.4.2.3 in its entirety and replace with new Item, 3.4.2.3,
Stormwater Management Plans.
3. **Chapter 4: Environmental Coordination and Permitting**
Section 4.6, Environmental Coordination and Permitting
Remove existing Paragraph #12 of Item 4.6.1.1 in its entirety and replace with new
Paragraph #12.

4. Chapter 8: Environmental Design Criteria

Section 8.1, Sediment Control and Stormwater Management

Remove existing 1st Paragraph of Item 8.1.2.1 in its entirety and replace with new paragraph.

5. Appendix C: Standard Contract Drawings

Insert new drawing “General Stormwater Management Notes” for BWI Airport.

6. Appendix C: Standard Contract Drawings

Insert new drawing “General Stormwater Management Notes” for MTN Airport.

Consultants listed herein are required to distribute this design standard to their respective subconsultants.

If you believe the attached document conflict with any other codes or regulations, or if you should have any questions regarding this matter, please contact the Manager, GIS and Engineering Technology Section, at 410-859-7768.

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Mr. Tom Varughese (MAA)
Mr. Jim Walsh (MAA)
Mr. Scott Wardle (Baker)
Mr. Ralign Wells (MAA)
Mr. Mark Williams (MAA)

1. Chapter 2: Design Procedures

Section 2.4, Phase IV Record Drawings & Project Close Out

Insert new Subsection 2.4.3, *Procedure for SWM As-Built Certification*.

2.4.3 Procedure for SWM As-Built Certification

Deliverables shall be as described in Chapter 3 Deliverables.

The designer shall be responsible for including the General Stormwater Management Notes Sheet in the overall contract documents for the project.

The designer shall convey through the contract documents that it is the responsibility of the contractor to provide the completed as-built certification package for each SWM facility. The Contractor is responsible for submitting a complete As-Built Certification Package for each Stormwater facility to MAA Environmental Planning Section (EPS), which shall then be submitted by the Environmental Planning Section to MDE for final acceptance. If a project has multiple SWM facilities, the Contractor (while consulting with MAA) will review contract documents to determine if the As-Built certifications for each SWM facility will be submitted to MAA separately (once the facility is constructed) or collectively (at the close of the project).

2. Chapter 3: Deliverables

Section 3.4, Drawing Requirements

Remove existing Item 3.4.2.3 in its entirety and replace with new Item, 3.4.2.3, *Stormwater Management Plans*.

3.4.2.3 Stormwater Management Plans

The Designer shall ensure that the Stormwater Management Plans include As-Built certification and applicable SWM As-Built table(s) provided in accordance with MDE, available in the “Maryland Stormwater Management Guidelines For State & Federal Projects” and “Maryland Stormwater Management and Erosion & Sediment Control Guidelines for State and Federal Projects” and *MDE Technical Memorandum #1* which can be electronically accessed at the following MDE weblinks:

<http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/www.mde.state.md.us/assets/document/State%20and%20Federal%20SWM%20Guidelines%20final.pdf>

<http://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/SWM%20and%20ESC%20Guidelines%20for%20State%20and%20Federal%20Projects%20Feb%202015.pdf>

<http://mde.maryland.gov/programs/water/StormwaterManagementProgram/Documents/Technical%20Memorandum%20No.%201.pdf>

The Designer shall ensure that the contract documents state that the Contractor is responsible for surveying, and providing the As-Built quantities, dimensions and elevations for the table of each SWM facility once construction has been completed. The designer shall convey through the contract documents that it is the responsibility of the contractor to provide the completed as-built certification package for each SWM facility in the contract. Refer to [Chapter 4.6.1.1 Environmental Coordination and Permitting](#) and [Appendix C Standard Contract Drawings, General Stormwater Management Notes](#) Sheet for submission requirements.

General Stormwater Management Notes:

This is a standard sheet used in the Stormwater management package and therefore no additional changes are required to this sheet.

- This sheet summarizes the requirements of the SWM facility As-Built certification which shall be completed for each facility on the contract.
- The responsibilities of the Contractor are outlined as part of this plan sheet.
- The As-Built Approval Checklist shall be completed for all facilities in the contract.

3. Chapter 4: Environmental Coordination and Permitting

Section 4.6, Environmental Coordination and Permitting

Remove existing Paragraph #12 of Item 4.6.1.1 in its entirety and replace with new Paragraph #12.

4.6.1.1 Stormwater Management Specification Requirements

12. As-Built deliverable requirements for Stormwater Management facilities are described in Section 3.2 Deliverables by Design Phase. Once As-Built plans have been completed, the Contractor shall submit to the Environmental Planning Section (EPS) one hard copy and one CD of the documents, which EPS will then submit to MDE. As-Built documentation and certification is required for all Stormwater Management Facilities.

4. Chapter 8: Environmental Design Criteria

Section 8.1, Sediment Control and Stormwater Management

Remove existing 1st Paragraph of Item 8.1.2.1 in its entirety and replace with new paragraph.

8.1.2.1 Stormwater Management Requirements

The Designer must comply with the Maryland Department of the Environment's (MDE) stormwater management requirements as set forth in MDE's Maryland Stormwater Design Manual Volumes I & II, current edition and all subsequent revisions, and the Stormwater Management Act of 2007. The regulations outlined in this manual must be used during the design of all new stormwater management facilities on MAA-owned properties. MDE requires a comprehensive design strategy for maintaining predevelopment runoff characteristics and protection of natural resources, known as Environmental Site Design or "ESD," which relies on integrating site design, natural hydrology, and smaller controls to capture and treat runoff. The "Maryland Stormwater Management and Erosion & Sediment Control Guidelines for State and Federal Projects," "Maryland Stormwater Management Guidelines" and *MDE Technical Memorandum #1* should be utilized in design.

5. Appendix C: Standard Contract Drawings

Insert new drawing “General Stormwater Management Notes” for BWI Airport.

“Dwg.” format of this drawing is available in AIRPortal at:

Designer Tools>Standard CADD Files>BWI> 06_General Stormwater Management Notes

STORMWATER MANAGEMENT AS-BUILT REVIEW AND CERTIFICATION GENERAL NOTES

1. GUIDELINES:
AS-BUILT DOCUMENTATION AND CERTIFICATION WILL BE REQUIRED FOR ALL SWM FACILITIES. THE CONTRACTOR SHALL SUBMIT AS-BUILT CERTIFICATION PACKAGES FOR EACH SWM FACILITY TO MAA (ENVIRONMENTAL PLANNING SECTION). THE AS-BUILT CERTIFICATION PACKAGE SHALL CONSIST OF THE ITEMS DEFINED IN ITEM 3. THE CONTRACTOR MUST ARRANGE FOR INSPECTION OF SWM FACILITIES DURING CONSTRUCTION ACTIVITIES AS SPECIFIED; AND SUBMIT A SWM FACILITY AS-BUILT CERTIFICATION PACKAGE FOR EACH SWM FACILITY IN THE CONTRACT. SUBMISSIONS WHEN DEEMED COMPLETE AND ACCEPTABLE, MAA WILL ISSUE AN ACCEPTANCE LETTER THAT THE "AS-BUILT CERTIFICATION" DOCUMENTATION HAS BEEN ACCEPTED.
2. CONTRACTOR RESPONSIBILITIES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING A QUALIFIED GEOTECHNICAL PROFESSIONAL ENGINEER (P.E.) REGISTERED AND LICENSED IN THE STATE OF MARYLAND) TO INSPECT AND RECORD CONSTRUCTION/INSTALLATION ITEMS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR FINAL SURVEY & AS-BUILT CERTIFICATION.

a. 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:
1.1. THE SWM FACILITY IDENTIFICATION NUMBER.
1.2. THE DATE AND LOCATION OF THE ACTIVITY.
1.3. PHOTOGRAPHS OF THE ACTIVITY WITH NARRATIVE DESCRIPTIONS.
1.4. 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, AND PROVIDES A NARRATIVE DESCRIPTION OF THE PHOTOGRAPHS.
e. OBTAINS CONFIRMATION OF SOIL TEST RESULTS, PARTICULARLY FOR COMPACTION OF SWM FACILITY.
f. PROVIDES RED LINE REVISIONS TO THE SWM FACILITY PROFILE INFORMATION IN THE CONTRACT DOCUMENTS.
g. AS-BUILT SURVEY AND RED LINE REVISION DATA MUST BE RED IN COLOR, CLEARLY LEGIBLE, AND EASILY NOTICEABLE.
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. A SIGNATURE, SEAL, AND DATE OF LICENSE EXPIRATION OF THE PROFESSIONAL ENGINEER (P.E.), OR PROFESSIONAL LAND SURVEYOR, OR LANDSCAPE ARCHITECT LICENSED IN THE STATE OF MARYLAND TO CERTIFY THE ACCURACY, VALIDITY, AND COMPLETENESS OF THE INFORMATION CONTAINED IN THE SWM FACILITY AS-BUILT CERTIFICATION PACKAGE.

3. 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.
- SWM FACILITY CONSTRUCTION INSPECTION REPORTS.
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 - COPIES OF APPLICABLE MATERIAL APPROVAL FORMS.
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4. CONSTRUCTION TOLERANCES:

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- FREEBOARD: EXACT. NO FREEBOARD DEVIATION IS ACCEPTABLE.

WHEN CONSTRUCTION TOLERANCES ARE NOT MET, SUBMIT JUSTIFICATION WITH DOCUMENTATION AND COMPUTATIONS 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-BUILT APPROVAL CHECKLIST TEMPLATE

DATE LAST SUBMITTAL WAS RECEIVED _____ MDE NO. _____

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AS-BUILT

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NON-SHA

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- BMP(S) LISTED IN LETTER
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								SHEET TITLE: GENERAL STORMWATER MANAGEMENT NOTES	SHEET NO.: XX of XX
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Insert new drawing “General Stormwater Management Notes” for BWI Airport.

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								SHEET TITLE:	GENERAL STORMWATER MANAGEMENT NOTES		SHEET NO.:
								SCALE: NONE		DATE: DATE	IDENTIFIER:
										XXX	