

Bioswale Construction Checklist

This checklist has been developed for BMPs designed in accordance with the Delaware Sediment and Stormwater Program's Post Construction Stormwater BMP Standards and Specifications. Submit interim versions of this construction checklist to the approval agency weekly with the Certified Construction Reviewer report. Submit the final completed checklist with the PCVD.

PROJECT INFORMATION

Project Name/BMP Name: _____

Project Approval Number: _____ NOI number: _____

Location: _____

Contractor: _____

Construction Reviewer: _____

Supervising P.E.: _____

For each checklist item, enter in the blank the date (MM/DD/YY) the item is completed and verified by the construction reviewer. If an item is not applicable, enter "N/A" in the blank for that checklist item.

I. Pre-Construction

A. _____ Bioswale field meeting with responsible person and person completing construction checklist.

B. _____ Extents of bioswale (to include pretreatment area) delineated and access by equipment prohibited with Sensitive Area Protection (SAP) to prevent compaction of existing soils.

C. _____ Equipment on the site large enough to excavate bioswale from the sides of the facility.

D. _____ Pervious areas draining to the bioswale stabilized in accordance with the approved plans.

E. _____ Pipe and appurtenances on-site and dimensions and properties checked and confirmed to be in accordance with the approved plan.

i. _____ Discharge pipe

ii. _____ Inflow pipe

iii. _____ Underdrain pipe, *if applicable*

iv. _____ Other; list: _____

F. _____ Materials on-site and dimensions and properties checked and confirmed to be in accordance with the approved plan. ***Submit materials invoice or delivery tickets to approval agency as part of PCVD for the following items:***

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- i. _____ Soil amendments, *if applicable*
- ii. _____ Check dam material, *if applicable*
- iii. _____ Other; list: _____

II. Excavation and Grading

- A. _____ Bioswale excavated to dimensions and at location as per the approved plan.
- B. _____ Bioswale excavated to design bottom elevation as per the approved plan.
- C. _____ Bioswale excavated from the sides to not compact the existing soil.
- D. _____ Groundwater not encountered during excavation. (Note: If groundwater is encountered during the excavation process, construction of the facility must cease, and the designer notified that a plan modification is necessary)
- E. _____ Bottom width constructed minimum 2' wide
- F. _____ Sides slope excavated no steeper than 3:1.

III. Structural Components

- A. _____ Pretreatment and energy dissipation provided at bioswale inlets as specified on the approved plan.
- B. _____ Construction of check dams, *if applicable*.
- C. _____ Scour protection provided at all check dams and riprap stone size and dimension confirmed, *if applicable*.
- D. _____ Outlet protection provided at all points of discharge and riprap stone size and dimension confirmed.
- E. _____ Photo documentation of construction of structural components taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

IV. Vegetative Stabilization

- A. _____ Areas to be vegetated have completed the following items. ***Submit soil test report, lime, fertilizer, planting tags and seed tickets to approval agency as part of PCVD.***
 - i. _____ Soil testing.
 - ii. _____ Side slopes scarified to a minimum depth of 3 inches prior to placing topsoil.
 - iii. _____ Application of topsoil to a minimum depth of 4 inches.

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iv. _____ Application of soil amendments including lime and fertilizer in accordance with the recommendations of the soil test or the approved plan.

v. _____ Application of seed to the soil surface using approved methods.

vi. _____ Planting installed in accordance with the approved plan.

B. _____ Application of soil stabilization matting used on side slopes in accordance with approved plan.

C. _____ Turf cover established on side slopes if called for on the approved plan.

D. _____ Bioswale achieved 90% germination and as per the approved plan.

E. _____ Areas to be vegetated inside of the bioswale surface have been completed in accordance with the approved plans. **Submit planting tags to approval agency as part of PCVD.**

F. _____ Photo documentation of landscaping components taken. **Submit photo documentation to approval agency as part of PCVD.** (Photo #: _____)

V. Erosion and Sediment Control

A. _____ Sediment prevented from entering bioswale by keeping it off-line or using perimeter controls as specified on the approved plan.

B. _____ Drainage area and side slopes stabilized in accordance with the approved plan.

C. _____ Sediment controls removed once drainage area meets final stabilization standard.

VI. Maintenance Access

A. _____ Maintenance access to the perimeter of the bioswale has minimum width of 15 feet.

B. _____ Profile grade of maintenance access does not exceed 10H:1V.

C. _____ Minimum 10H:1V cross slope on maintenance access.

VII. Post Construction Verification

Owner shall submit post construction verification documents to demonstrate that the bioswale practice has been constructed within allowable tolerances in accordance with the Approved Sediment and Stormwater Management Plan and accepted by the approving agency.

A. _____ Spot elevations of top of bank, bottom of bank, and centerline of the vegetated channel every 25 feet throughout the length of the channel.

B. _____ Additional spot elevations that demonstrate positive downstream drainage beyond the end of the vegetated channel.

C. _____ Cross section of the vegetated channel at the midpoint.

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D. _____ Photo documentation of the vegetated channel depicting the channel bottom width and verification of achievement of the required 90% vegetated cover taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

E. _____ Constructed slope, bottom width, depth, and length of the bioswale are confirmed equal to or greater than 90% of the design once ESC controls are removed.

VIII. BMP Acceptance

A. _____ Final BMP construction review complete.

B. _____ All BMP punch list items addressed.

C. _____ Bioswale is online (stabilized drainage area is entering bioswale).

D. _____ As-built survey.

E. _____ PCVD submitted to approval agency for review and approval. Submit the following pieces of PCVD documentation to the approval agency:

- Materials invoice or delivery tickets
- Confirmatory infiltration testing report
- Photo documentation
- Soil test report
- Lime, fertilizer, and seed tickets
- As-built survey, including post construction verification checklist items
- Final, completed BMP Construction Checklist