Bioretention Facility Construction Checklist

This checklist has been designed for bioretention facilities constructed in accordance with the Delaware Sediment and Stormwater Program's Post Construction Stormwater BMP Standards, Specifications and Details

PROJECT INFORMATION

Project Name: _____

Location: _____

Contractor: _____

Construction Reviewer: _____

Date(s) / Time(s) of Inspections: _____

_____

_____

KEY:

✓	**Item meets standard**
X	**Item not acceptable**
N/A	**Item not applicable**

I. Pre-Construction

_____ A. Pre-construction meeting held.

_____ B. Facility location staked out. Extents of bioretention facility delineated and access by equipment prohibited to prevent compaction of existing soils.

_____ C. Upstream drainage area stabilized or effectively diverted.

_____ D. Materials on-site and dimensions and properties checked.

_____ (1) Underdrain/discharge pipe
_____ (2) Overflow catch basin
_____ (3) Underdrain stone
_____ (4) Filter fabric (if applicable)
_____ (5) Bioretention soil media _____Pre-2014 Mix w/Peat ____Compost Mix
_____ (6) Plants (*Note: Plants need not be at the site at onset of construction)*

_____ E. Equipment on the site large enough to excavate bioretention trench from the sides of the facility.

Effective February 2019

Construction Project Name:_____

Reviewer:_____

II. Excavation

_____ A. Facility excavated to dimensions and at location as per the approved plan.

_____ B. Stepwise excavation used for infiltration bioretention facilities.
(Note: only excavate the portion of the bioretention facility that may be backfilled with bioretention soil media in the same day)

_____ C. Facility excavated from the sides so as 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. Sides of excavation vertical.

_____ F. Bottom of excavation within design slope range.

_____ G. Sides and bottom of excavation scarified prior to placement of bioretention soil media.

III. Structural Components

(For bioretention facilities containing underdrains and/or pipe discharge components)

_____ A. Discharge pipe installed from overflow catch basin to discharge point.

Discharge pipe diameter:_____

Discharge pipe material:_____

_____ B. Outlet protection provided at discharge point.

_____ C. Overflow catch basin installed at elevations as specified on the approved plan (minimum of 6" higher than design top elevation of bioretention soil media).

_____ D. Underdrain pipe material according to approved plan.
(Note: If underdrain pipe material is not specified, it shall be SDR 35 minimum)
Underdrain pipe material:_____

_____ E. Underdrain pipe sizes according to approved plans.

Underdrain pipe diameter(s): _____

_____ F. Underdrain pipe perforations according to approved plans.
(Note: If not specified on the plan, three rows of 5/8" diameter perforations, 6" on-center, shall be provided)

_____ G. Underdrain piping laid flat or with positive slope toward outlet.

Construction Project Name:_____

Reviewer:_____

III. Structural Components (continued)

_____ H. Clean-outs and/or observation ports provided at endpoints of underdrain pipes.

_____ I. Double-washed crushed aggregate, clean DE #57 stone, used for the underdrain gravel. Stone free of rock dust, fines and soil particles.

_____ J. Minimum 3" of gravel over underdrain piping.

_____ K. Filter fabric (if applicable) in accordance with approved plan specification laid between underdrain gravel layer and bioretention soil media.
Filter fabric manufacturer's product number: _____

IV. Grading

_____ A. Channel protection and/or level spreader provided at bioretention facility inlets as specified on the approved plan.

_____ B. Side slopes of buffer area (above design top of bioretention soil media) no steeper than 3:1.

_____ C. Top of berm constructed to design elevation and width.

_____ D. Earth spillway constructed to design elevation and dimensions.

V. Bioretention Soil Media

_____ A. Bioretention soil media provided in accordance with current DNREC policy.

_____ B. Bioretention soil media placed in lifts of one foot and spread out using an excavator from the side of the excavation to minimize compaction. Skid steer loaders or other small equipment shall not be used within the bioretention facility excavation to place the soil media.

_____ C. Bioretention soil media placed when media is optimally moist (not wet or dry) and there is no precipitation.

_____ D. Bioretention soil media placed within infiltration bioretention facilities during the same day that the area is excavated to prevent contamination if a runoff event should occur prior to placement of soil media.

_____ E. Bioretention soil media allowed to settle for at least one storm event before the final lift is added.

_____ F. Bioretention soil media depth not less than 36" unless otherwise specified on the approved plan.

Construction Project Name:_____

Reviewer:_____

_____ G. Topdressing of 3" double-shredded aged hardwood mulch applied if desired or required by the approved plan. *(Note: A biodegradable netting may be used to prevent wind losses until several wet-dry cycles have occurred)*

VI. Vegetation

_____ A. Vegetation planted within the bioretention soil media according to the numbers and species on the approved bioretention planting plan.

_____ B. Plants occupy not more than 50% of the total surface area of the bioretention soil media.

_____ C. Individual plant spacing follows the recommendations on the plan.

_____ D. Trees planted only around the perimeter of the facility in the native soils, not in the bioretention soil media.

VII. Erosion and Sediment Control

_____ A. Silt fence placed around the bioretention area perimeter to prevent sediment contamination prior to full stabilization of contributory drainage area.

_____ B. Inlet protection provided on any catch basins that discharge to the bioretention facility.