



Construction Inspection

Checklist:

Spec 9: Bioretention

Level 1 _____ Level 2 _____

Project Name: _____ Plan Number: _____
 Address/Location: _____ LND Number: _____
 Phase/Section: _____ VSMP Permit #: _____
 Contractor & Phone#: _____ Inspector's Name: _____
 Certifying Professional & Phone #: _____ Date of Inspection: _____

***Certifying professional must be a licensed Professional Engineer (PE), Landscape Architect (LA), or Land Surveyor (LS) in the state of Virginia.**

The following checklist provides a basic outline of the anticipated items for the construction inspection of Bioretention Facilities. This checklist does not necessarily distinguish between all the design variations and differences in construction between the families of practices. Inspectors should review the plans carefully and adjust these items and the timing of inspection verification as needed to ensure the intent of the design is met. The standard of design of this practice is based on **Virginia Stormwater BMP Clearinghouse** and **Prince William County Design and Construction Standards Manual (DCSM)**.

All items should be checked when completed. Items labeled "Certification of..." must be crossed off, dated and initialed by certifying inspector.

1. Pre-Construction Meeting		Yes	No	N/A	Date
1.1	Pre-construction meeting between the contractor designated to install the bioretention practice and the person completing this checklist has been conducted.				
1.2	Identifying the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.				
1.3	All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation.				
1.4	Stormwater has been diverted around the area of the bioretention practice and perimeter erosion control measures to protect the facility during construction have been installed. Photo Required.				
1.5	Area of bioretention have been installed. Photo Required.				

2. Excavation		Yes	No	N/A	Date
2.1	Area of bioretention excavation is marked and the size and location conforms to the plan.				

2.2	Compare the bioretention surface and invert design elevations with the actual constructed elevations of the inflow and outlet inverts and adjust design elevations as needed.				
2.3	If the excavation area has been used as a sediment trap to verify that the bottom elevation of the proposed stone reservoir is lower than the bottom elevation of the existing trap.				
2.4	Subgrade surface is free of rocks and roots, and large voids. Any voids should be refilled with base aggregate to create a level of surface for the placement of aggregates and underdrain (if required).				
2.5	No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.				
2.6	Excavation of the bioretention practice has achieved proper grades and the required geometry and elevations without compaction at the bottom of the excavation. Constructed dimensions: _____				
2.7	Sides of excavation covered with geotextile, no tears or holes or excessive wrinkles are present.				
2.8	For Level 2 bioretention, ensure the bottom of the excavation is scarified to placement of stone.				
Certification of Excavation Inspection					Date
Inspector certifies the successful completion of the excavation steps listed above.					
<p>Photo required to include:</p> <ul style="list-style-type: none"> • Excavated area prior to installation of stone, including measurements (L*W*D); • Non-woven geotextile fabric installed on sides of excavated subgrade only. <p>Material delivery tickets required to include: Geotextile installed on sides.</p>					

	3. Filter Layer, Underdrain, Stone Reservoir Placement:	Yes	No	N/A	Date
3.1	Material Verification: 1.) All aggregates, including, as required, the filter layer (choker stone & sand), the stone reservoir layer or infiltration sump conform to specifications as certified by quarry. 2.) Underdrain size and perforations meet the specifications (if applicable).				
3.2	For Level 2 installation: placement of filter layer and initial lift of stone reservoir layer aggregated with underdrain or infiltration sump, spread (not dumped) to avoid aggregate segregation.				
3.3	Placement of underdrain, cleanouts, observation wells and underdrain fittings are in accordance with the approved plans.				
3.4	Elevations of underdrain and outlet structure are in accordance with approved plans, or as adjusted to meet field conditions.				
3.5	Placement of remaining lift of stone reservoir layers as needed to achieve the required reservoir depth.				
3.6	If underdrain provided, filter fabric shall be placed on pea gravel layer over underdrain for a width of 1'-2' on either side of pipe.				
Certification of Filter Layer and Underdrain Placement Inspection					Date
Inspector certifies the successful completion of the soil media steps listed above. Photos and material delivery tickets for these items are attached. Photo required include: <ul style="list-style-type: none"> • Perforated underdrain pipe (if applicable) with a solid vertical overflow pipe; • Depth of #57 stone; • Depth of pea gravel. Material delivery tickets required include: <ul style="list-style-type: none"> • 57 stone; • Pea gravel. 					

	4. Bioretention Soil Media Placement	Yes	No	N/A	Date
4.1	Soil media is certified by supplier or contractor as meeting the project specifications.				
4.2	Soil media is placed in 12-inch lifts to the design top elevation of the bioretention area. Elevation has been verified after settlement (2 to 4 days after initial placement).				
4.3	Side slopes of ponding area are feather back at the required slope (no steeper than 3H: IV).				

Certification of Filter Layer and Underdrain Placement Inspection	Date
<p>Inspector certifies the successful completion of the soil media steps listed above. Photos and material delivery tickets for these items are attached.</p> <p>Photo required of a measurement of the soil media installed.</p> <p>Material delivery ticket required from an approved soil media vendor.</p>	

	5. Pretreatment and Plant Installation:	Yes	No	N/A	Date
5.1	Placement of energy dissipaters and pretreatment practices (forebays, gravel diaphragms, etc.) are installed in accordance with the approved plans.				
5.2	Riser, overflow weir, or other outflow structure is set to the proper elevation and functional; or				
5.3	External bypass structure is built in accordance with the approved plans.				
5.4	Appropriate number and spacing of plats are installed in accordance with the approved plans.				
5.5	Ponding depth verification after plant and mulch placement.				

Certification of Pretreatment and Plant Installation	Date
<p>Inspector certifies the successful completion of any pretreatment measures, plants and mulch as listed above.</p> <p>Photo required for this step include:</p> <ul style="list-style-type: none"> • Overall photos of showing mulch and plants installed; • Location of inflow and appropriate energy dissipation; • Any pretreatment measures required per the approved plans; • Distance from the top of the mulch to the top of the overflow (either pipe or berm) <p>Material delivery tickets required for this step include:</p> <ul style="list-style-type: none"> • Approved plants listing number and species; • Shredding hardwood mulch. 	

	6. Post Construction:	Yes	No	N/A	Date
6.1	All erosion and sediment control practices have been removed.				
6.2	Follow-up inspection and as-built survey/certification has been scheduled.				
6.3	GPS coordinates have been documented for all bioretention practice installations on the parcel.				

Comments (Clarification, Deviations, etc.)	Date

All items checked above have been inspected by me (or an individual under my responsible charge) and have been completed to my satisfaction and meet the approved plans (or deviations are noted here).

Signature: _____ Date: _____

Certifying Professional's License Number: _____
(Seal)