

STORMWATER PERMIT DESIGN PROFESSIONAL COMPLETION CERTIFICATION

Demock Information			
Permit Information			
Project Name:			
Stormwater Permit Number:			
Design Professional Information			
Engineer/PLA Name: NC License #:			
Firm:			
Address:			
E-mail address:Phone:			
Certification			
I, the undersigned, hereby certify that the stormwater improvements for the above referenced projecon the attached "as-built" drawings and information provided below, have been installed in accordance stormwater plans, are in compliance with the Buncombe County Stormwater Ordinance, and are condesigned as of the date of this certification.	ance with the	approved	
Signature: Date:			
Name:		=	
(affix and sign seal below)			
Compliance Confirmation			
The following have been confirmed and are provided, as applicable, by the design professional in the	he certification	n above:	
 Notes: If Revisions Noted is selected, additional details on the revisions must be provided at the at the memo can be appended to provide additional details. If an item is stated to be 'as-shown' on the "as-built" drawings, sufficient details, dimensions, on the as-built plans to show compliance with the approved plans. 	v		-
1. Overall Site Compliance	Compliant 🗸	Revisions Noted	N/A
The built-upon area for the project constructed as shown on the attached "as-built" drawings, and aligns with the approved stormwater plans (Note: If there is an increase in BUA in any drainage area, revised calculations must be provided demonstrating compliance with peak flow attenuation and, if applicable, water quality requirements)			

The stormwater runoff from built-upon area and pervious areas is being directed per the attached "as-built" drainage area map, and aligns with the approved drainage area map

[Note: If there are changes to the revised drainage area map, revised calculations demonstrating compliance with peak flow attenuation and, if applicable, water quality requirements, and drainage basin shifts are negligible (e.g. less than 2% of the total

b

	drainage area to the discharge point from the site or 0.1 acres, whichever is greater must		
	be provided)]		
	30' vegetated setbacks are provided for all streams as shown on the attached "as-built"		
С	drawings, and there are no encroachments in these setbacks. Representative photos of		
	stream buffer are attached (at least one per buffer area) and labeled with location		
a	The drainage area to each SCM is stabilized. Pervious areas are fully vegetated.		
d	Representative photos are attached (at least one per SCM) and labeled with location.		

2.	Conveyance	Compliant 🗸	Revisions Noted	N/A
a	Pipes and structures are constructed in the locations, pipes have the size and slope, and structures are the type as shown on the attached "as-built" plans. All conveyance is shown on the plans. The conveyance aligns with the approved plans. (<i>Note: If significant changes</i>			
b	to piped conveyance have been made, revised capacity calculations must be provided.) Ditches are constructed in the locations to the full extents; have the side slope, bottom			
	width, and depth; and have the lining type as shown on the attached "as-built" plans. These align with the approved plans. Vegetated channels are fully vegetated. Representative photos are provided (at least one per channel) and labeled with channel label. All constructed channels are shown on the plans. (Note: If significant changes to channels have been made, revised capacity and stability calculations must be provided.)			
С	Outlet protection is constructed in the locations, have the dimensions and stone size as shown on the attached "as-built" plans. Representative photos are provided (at least one per outlet protection) and labeled with outlet protection label. All constructed outlet protection is shown on the plans. (Note: If outlet protection is constructed with smaller dimensions or stone size than the approved plans, revised stability calculations must be provided.)			
d	Area downstream of outlet protection is stable. Representative pictures are provided (at least one per outlet protection) and labeled with outlet protection label.			

3.	Infiltration System	Compliant 🗸	Revisions Noted	N/A
a	Water quality volume(s) is/are as stated in the attached documentation (append a table			
	showing the required, approved, and as-built water quality volume for each SCM).			
b	Infiltration system size and layout are as shown on the attached "as-built" drawings. Profile			
	depths (e.g. gravel, media, etc.) are at least as deep as shown on the approved stormwater			
	plans, and are as shown on the attached "as-built" plans. Infiltration system is at least 2'			
	above the seasonal high water table (SHWT).			
c	Outlet control structure(s) is/are constructed as shown in the attached "as-built" plan detail,			
	is/are not clogged and is/are functioning as designed. Elevations and sizes of the pipe			
	connections, weirs, are shown on the attached "as-built" plans. A photo of the OCS exterior			
	showing the outlet control devices (if applicable), and an interior photo showing the pipe			
	connections inside the OCS are provided for each OCS and labeled with SCM ID.			
d	There is no significant sediment accumulation within the infiltration system(s); the			
	infiltration system(s) is/are draining properly; vegetation side slopes are at no steeper than a			
	3:1 slope, if above-ground storage is present; the vegetation is fully established, including			
	on side slopes. Observation port is construction as shown on the attached "as-built"			
	drawings for underground systems. A photo of the infiltration system(s) is/are provided,			
	labeled with SCM ID.			
e	If applicable, the emergency spillway(s) is/are constructed per the dimensions and lining			
	material as shown on the attached "as-built" plans. A photo of the emergency spillway for			
	each bioretention cell is provided, where applicable, labeled with SCM ID.			

4.	Bioretention Cell	Compliant 🗸	Revisions Noted	N/A
a	Water quality volume(s) is/are as stated in the attached documentation (append a table			
	showing the required, approved, and as-built water quality volume for each SCM).			
b	Bioretention cell size(s) and layout are as shown on the attached "as-built" plans and			
	bioretention cell profile depths (e.g. gravel, media, etc.) are at least as deep as shown on the			
	approved stormwater plans, and are as shown on the attached "as-built" plans. Berms, if			
	applicable, are fully stabilized. Dam structures are clear of woody vegetation. A			
	representative photo of each dam structure is provided, labeled with SCM ID. Bioretention			
	cell is at least 2' above the SHWT.			
c	Outlet control structure(s) is/are constructed as shown in the attached "as-built" plan detail,			
	is/are not clogged and is/are functioning as designed. Elevations and sizes of the pipe			
	connections, weirs, orifices, etc. and, if applicable, internal water storage pipe, are shown on			
	the attached "as-built" plans. Trash racks and orifice protection, if shown on the attached			
	"as-built" plans, are properly installed. A photo of the OCS exterior showing the outlet			
	control devices, and an interior photo showing the pipe connections inside the OCS are			
	provided for each OCS and labeled with SCM ID.			
d	Underdrains and cleanouts are constructed as shown on the attached "as-built" drawings.			
	Cleanouts are not damaged and are securely capped with a water-tight cap.			
e	There is no significant sediment accumulation within the bioretention cell(s); the			
	bioretention cell(s) is/are draining properly; the vegetation side slopes are at no steeper than			
	a 3:1 slope; the vegetation per the planting plan is fully established, including on side			
	slopes; and the mulch, if applicable, is triple shredded hardwood mulch installed in a 2-4"			
	deep layer. A photo of the bioretention cell(s) is/are provided, labeled with SCM ID.			
f	If applicable, the emergency spillway(s) is/are constructed per the dimensions and lining			
	material as shown on the attached "as-built" plans. A photo of the emergency spillway for			
	each bioretention cell is provided, where applicable, labeled with SCM ID.			

5.	Wet Pond	Compliant ✓	Revisions Noted	N/A
a	Water quality volume, forebay volume, main pool surface area and volume, and average			
	depth is as is stated in the attached documentation (append a table showing the required,			
	approved, and as-built water quality volume, forebay volume, main pool surface area and			
	volume and average depth for each SCM).			
b	Wet pond size(s) and layout of main pool, forebay, berm(s), inlets and outlets are as shown			
	on the attached "as-built" plans. Berms are fully stabilized. Dam structures are clear of			
	woody vegetation. A representative photo of each dam structure is provided, labeled with			
	SCM ID.			
c	Outlet control structure is constructed as shown in the attached "as-built" plan detail, is not			
	clogged and is functioning as designed. Elevations and sizes of the pipe connections, weirs,			
	orifices, etc. are shown on the attached "as-built" plans. Trash racks and orifice protection,			
	if shown on the attached "as-built" plans, are properly installed. Dewatering device is			
	provided if shown on the approved plans, and is shown on the attached "as-built" plans. A			
	photo of the OCS exterior showing the outlet control devices, and an interior photo showing			
L.	the pipe connections inside the OCS.			
d	Vegetated side slopes are no steeper than a 3:1 slope and are fully vegetated; vegetated shelf			
	is constructed for a min. of 6 feet at a slope of no greater than 6:1 and is planted with at least			
	3 diverse species of herbaceous, native vegetation at least 50 plants per 200 SF, and is			
	shown on the attached "as-built plans". Plants are healthy. A photo of the wet pond(s) is/are			
	provided, labeled with SCM ID.			
e	If applicable, the emergency spillway(s) is/are constructed per the dimensions and lining			
	material as shown on the attached "as-built" plans. A photo of the emergency spillway for			
	each bioretention cell is provided, where applicable, labeled with SCM ID.			

6. Stormwater Wetland: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Stormwater Wetlands.

7.	Permeable Pavement	Compliant 🗸	Revisions Noted	N/A
a	Water quality volume(s) and/or storage volume and area is/are as stated in the attached documentation (append a table showing the required, approved, and as-built water quality volume, storage volume, and area for each SCM).			
b	Permeable Pavement size and layout are as shown on the attached "as-built" plans. Profile depths (e.g. pavers, gravel, etc.) are at least as deep as shown on the approved stormwater plans, and are as shown on the attached "as-built" plans. Infiltrating systems are at least 2' above SHWT.			
С	Permeable pavement materials are as specified in the approved plan and shown on the attached "as-built" drawings. If interlocking concrete pavers, edge restraints are provided.			
d	Observation well is constructed as shown on the attached "as-built" drawings. Cleanouts are not damaged and are securely capped with a water-tight cap.			
е	There is no significant sediment accumulation on or within the permeable pavement; the permeable pavement draining properly. A representative photo of each area of permeable pavement is provided, labeled with SCM ID.			

8.	Sand Filter	Compliant 🗸	Revisions Noted	N/A
a	Water quality volume(s) is/are as stated in the attached documentation (append a table			
	showing the required, approved, and as-built water quality volume for each SCM).			
b	Size and layout of sand filter sediment chamber, sand chamber, berm, inlets, and outlet			
	control structure are constructed as shown on the attached "as-built" drawings. Sand filter			
	profile depths (e.g. sand, gravel, etc.) are at least as deep as shown on the approved			
	stormwater plans, and are as shown on the attached "as-built" plans. Berms, if applicable,			
	are fully stabilized. Dam structures are clear of woody vegetation. A representative photo of			
	each dam structure is provided, labeled with SCM ID.			
c	Outlet control structure(s) is/are constructed as shown in the attached "as-built" plan detail,			
	is/are not clogged and is/are functioning as designed. Elevations and sizes of the pipe			
	connections, weirs, orifices, etc. are shown on the attached "as-built" plans. Trash racks and			
	orifice protection, if shown on the attached "as-built" plans, are properly installed. A photo			
	of the OCS exterior showing the outlet control devices, and an interior photo showing the			
	pipe connections inside the OCS are provided for each OCS and labeled with SCM ID.			
d	Underdrains and cleanouts are constructed as shown on the attached "as-built" drawings.			
	Cleanouts are not damaged and are securely capped with a water-tight cap.			
e	There is no significant sediment accumulation within the sand filter(s); the sand filter(s)			
	is/are draining properly; the vegetation side slopes, if applicable, are at no steeper than a 3:1			
	slope, and the sand filter top is not showing evidence of concentrated flow. A photo of the			
	sand filter(s) is/are provided, labeled with SCM ID.			
f	If applicable, the emergency spillway(s) is/are constructed per the dimensions and lining			
	material as shown on the attached "as-built" plans. A photo of the emergency spillway for			
	each sand filter is provided, where applicable, labeled with SCM ID.			

- 9. Rainwater Harvesting: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Rainwater Harvesting.
- **10. Green Roof:** Please reach out to the Stormwater Administrator at <u>stormwater@buncombecounty.org</u> to obtain the compliance certification for Green Roofs.

- 11. Level Spreader-Filter Strip: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Level Spreader-Filter Strip.
- **12. Disconnected Impervious Surface:** Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Disconnected Impervious Surface.
- 13. Treatment Swale: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Disconnected Impervious Surface.

14.	Dry Pond	Compliant 🗸	Revisions Noted	N/A
a	Storage volume(s) is/are as stated in the attached documentation (append a table showing the required, approved, and as-built storage volume for each SCM).			
b	Size and layout of pond, inlets, and outlet control structure are constructed as shown on the attached "as-built" drawings. Berms, if applicable, are fully stabilized. Dam structures are clear of woody vegetation. A representative photo of each dam structure is provided, labeled with SCM ID.			
С	Outlet control structure(s) is/are constructed as shown in the attached "as-built" plan detail, is/are not clogged, and is/are functioning as designed with a small permanent pool or orifice protection and trash rack provided, if shown on the attached "ast-built" drawings. Elevations of the pipe connections, orifices, weirs, etc. are shown on the attached "as-built" plans. A photo of the OCS exterior showing the outlet control devices, and an interior photo showing the pipe connections inside the OCS are provided for each OCS and labeled with SCM ID.			
d	There is no significant sediment accumulation within the pond(s); the pond(s) is/are draining properly; the vegetation side slopes, if applicable, are at no steeper than a 3:1 slope, and the pond bottom and vegetated side slopes are fully vegetated. The pond bottom has a uniform grade to outlet. If applicable, any low flow channel is constructed as shown on the attached "as-built" plans and is fully stabilized. A photo of the pond(s) is/are provided, labeled with SCM ID.			
е	If applicable, the emergency spillway(s) is/are constructed per the dimensions and lining material as shown on the attached "as-built" plans. A photo of the emergency spillway for each pond is provided, where applicable, labeled with SCM ID.			

15.	Pipe Storage	Compliant 🗸	Revisions Noted	N/A
a	Storage volume(s) is/are as stated in the attached documentation (append a table showing			
	the required, approved, and as-built storage volume for each SCM).			
b	Pipe layout; orientation of inlets and outlet(s); length and size of pipes; dimensions of cover,			
	bottom, side, and end stone, and row spacing (if applicable); are as shown in the attached			
	"as-built" plans.			
c	Outlet control structure is constructed as shown in the attached "as-built" plan detail, is not			
	clogged and is functioning as designed. Elevations and sizes of the pipe connections, weirs,			
	orifices, etc., are shown on the attached "as-built" plans. Photos of the OCS interior			
	showing the pipe connections inside the OCS are provided for each OCS and labeled with			
	SCM ID.			
d	There is not significant sediment accumulation within the pipe storage. Photos of the			
	interior of each inlet control structure, shown the pipe storage connection(s) are provided,			
	labeled with structure ID.			

16. Stormfilter: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Silva Suspended Pavement with Bioretention.

- 17. Silva Suspended Pavement with Bioretention: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Silva Suspended Pavement with Bioretention.
- **18. Filterra:** Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Filterras.
- 19. Bayfilter: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for Bayfilters.

20.	Proprietary SCMs - StormTech	Compliant 🗸	Revisions Noted	N/A
a	Water quality volume is as is stated in the attached documentation (append a table showing the required, approved, and as-built water quality volume for each SCM).			
b	StormTech layout; orientation of inlets and outlet(s); number and type of chambers, dimensions of cover, bottom, side, and end stone, and row spacing; are as shown in the attached "as-built" plans. Isolator Rows are constructed as shown on the attached "as-built" plans. Manifold orientation and connections are constructed as shown on the attached "as-built" plans, and elevations are provided for manifold connections to inlet and outlet structures.			
С	Outlet control structure is constructed as shown in the attached "as-built" plan detail, is not clogged and is functioning as designed. Elevations and sizes of the pipe connections, weirs, orifices, and underdrain are shown on the attached "as-built" plans. Photos of the OCS interior showing the pipe connections inside the OCS are provided for each OCS and labeled with SCM ID.			
d	Inspection ports are constructed and accessible at the locations shown on the "as-built" drawings. A photo of the overall ground surface above each StormTech is provided, labeled with SCM ID.			
e	There is not significant sediment accumulation within the Isolator Rows. Photos of the interior of each inlet control structure, shown the Isolator Row connection are provided, labeled with structure ID.			

21. Proprietary SCMs – Other: Please reach out to the Stormwater Administrator at stormwater@buncombecounty.org to obtain the compliance certification for the specific proprietary SCM used on the project.