

ADDENDUM _____
BIORETENTION CELL
STORMWATER CONTROL MEASURES
MINIMUM MAINTENANCE AGREEMENT

Project _____

After the first three months, the bioretention cell will be inspected quarterly and within 24 hours after every storm event greater than 1.0 inches. Records of operation and maintenance shall be kept in a known set location and shall be available to the Town of Spring Lake Stormwater Administrator upon request.

Any deficient SCM elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the SCM.

Important operation and maintenance procedures:

1. Immediately after the bioretention cell is established, the plants will be watered twice weekly if needed until the plants become established (commonly six weeks).
2. Inspections will be done weekly for the first three months.
3. Snow, mulch or any other material will NEVER be piled on the surface of the bioretention cell.
4. Heavy equipment will NEVER be driven over the bioretention cell.
5. Special care will be taken to prevent sediment from entering the bioretention cell.
6. Once a year, a soil test of the soil media will be conducted.
7. Remove top layer of fill media when the pool does not drain quickly. Based on the media specification, the pool should drain within 24 hours.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problems:	Solution:
The entire bioretention cell	Trash/debris is present.	Remove the trash/debris.
The perimeter of the bioretention cell	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, plant ground cover and water until it is established. Provide lime and a one-time fertilizer application.
The inlet	The inlet pipe is clogged (if applicable)	Unclog the pipe and dispose of any sediment in a location where it will not cause impacts to streams or the SCM.
	The inlet pipe is cracked or otherwise damaged (if applicable).	Replace or repair the pipe.
	Erosion is occurring in the swale (if applicable).	Regrade the swale if necessary and provide erosion control devices such as reinforced turf matting or riprap to avoid future erosion problems.
	Stone verge or riprap is covered in sediment or vegetation	Remove sediment and clogged stone and replace with clean stone.

The pretreatment system	Flow is bypassing pretreatment area and/or gullies have formed.	Regrade if necessary to route all flow to the pretreatment area. Restabilize the area after grading.
	Sediment has accumulated to a depth greater than three inches.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the SCM.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
Bioretention cell vegetation	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices. Maintain lines of sight between 2'-6'.
	Plants are dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary. If sod was used, check to see that it was not grown on clay or impermeable soils. Replace sod if necessary.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
	Tree stakes/wires are present six months after planting.	Remove tree stake/wires (which can kill the tree if not removed).
Bioretention cell mulch and media	Mulch is breaking down or has floated away.	Spot mulch if there are only random void areas. Replace whole mulch layer if necessary.

		Remove the remaining mulch and replace with triple shredded hard wood mulch at a maximum depth of four inches.
	Soils and/or mulch are clogged with sediment.	Determine the extent of the clogging - remove and replace either just the top layers or the entire media as needed. Dispose of the spoil in an appropriate off-site location. Use triple shredded hard wood mulch at a maximum depth of four inches. Search for the source of the sediment and remedy the problem if possible.
	An annual soil test shows that pH has dropped or heavy metals have accumulated in the soil media.	Dolomitic lime shall be applied as recommended per the soil test and toxic soils shall be removed, disposed of properly and replaced with new planting media.
The underdrain, filter fabric element, and outlet system	Clogging has occurred.	Wash out the underdrain system.
	Clogging has occurred.	Clean out the drop inlet. Dispose of the sediment off-site.
	The drop inlet is damaged	Repair or replace the drop inlet.
The receiving water	Erosion or other signs of damage have occurred at the outlet.	Repair the damage and improve the flow dissipation structure.
	Discharges from the bioretention cell are causing erosion or sedimentation in the receiving water.	Contact the local NCDEQ Regional Office.

I, _____, hereby acknowledge that I am the financially responsible party for maintenance of this stormwater control measure. I will perform the maintenance as outlined above, in compliance with the requirements of the Town of Spring Lake's Phase II MS4 Stormwater Ordinance and the most recent edition of the NC DEQ Stormwater Design Manual.

Signature: _____ Date: _____

STATE OF NORTH CAROLINA
COUNTY OF _____

I, _____, a Notary Public of _____ County, in the State of North Carolina, do hereby certify that _____ personally appeared before me this day and acknowledged the execution of the foregoing instrument.

Witness my hand and seal, this _____ day of _____, 20_____.

(SEAL)

Notary Public

My Commission Expires: _____