

CHARLOTTE ENGINEERING DEPARTMENT
LAND DEVELOPMENT REVIEW
Bioretention (Rain Garden) As-Built Plan Checklist²⁰¹¹

Project Name _____ **Date Reviewed** _____
Reviewer _____ **Phone No.** _____
Contact _____ **Phone No.** _____

GENERAL SUBMITTAL REQUIREMENTS

Note: Should constructed storage volume, orifices or weirs deviate from proposed, a new detention/BMP analysis may be required from the engineer.

- _____ A sealed as-built plan will be provided by the project design professional for all storm systems and BMP facilities. If applicable, include the following note with PE seal certifying that the BMP(s) have been constructed in accordance with the approved design plans: *The as-built storm water measures, controls, and devices are in compliance with the approved storm water management plans and designs and with the requirements of the Post-Construction Controls Ordinance.*
- _____ All associated storm water easements will be shown on the as-built plat which carries public runoff and has been captured in a public drainage easement which agrees with the same easements shown on the approved plat, as well as all required Post Construction Controls Easements per the regulations
- _____ Title block with site name, location, vicinity map and a description of Phase and Map being reviewed.
- _____ Subdivision as-built plans require the associated plats to be submitted with as-built plan for review. (All drainage systems within full plat must have completed as-built information).
- _____ A supplemental digital file is needed for City records and will be uploaded to Accela in AutoCAD format shown with the layer configurations described in Section 11.4 of the PCCO Administrative Manual.
- _____ All as-built plans will be based on NAD 83/1986 and tied to the North Carolina State Plan Coordinates System (NC GRID) with all BMPs shown and located by x and y coordinates.
- _____ All storm system structures identified and labeled the same as the approved plan. All structure elevations are to include an invert elevation, a top of grate (at grade) elevation and any opening elevations used for storm water intake purposes (NAVD 88). All data is to be verified to the closest hundredth of a foot (0.01).
- _____ All storm system pipes identified and labeled the same as the approved plan with upstream and downstream invert elevations (NAVD 88), the total length of the pipe run from end to end, with the calculated slope. All data is to be verified to the closest hundredth of a foot (0.01).
- _____ Name, location, size and elevation (NAVD 88) of the BMP actually constructed (includes contours within the BMP easement at no greater than two foot intervals).
- _____ As-built BMP Inset Table
- _____ Location and elevation (NAVD 88) of BMP storm water infrastructure inlets, outlets and locations of sizes of pipes and culverts within the facility.
- _____ All Natural Area drawn with closed polygons (labeled as undisturbed, mitigated or re-vegetated Natural Area) and acreages labeled for all Natural Areas
- _____ S.W.I.M. Buffers drawn with closed polygons and acreages labeled for all Stream Buffer areas
- _____ Legible scale

BIORETENTION (RAIN GARDEN) REQUIREMENTS

- _____ Labeled contours (all contours must close and not exceed 2 foot intervals)
- _____ Provide surface areas for each contour on as-built plan

- _____ Provide sufficient spot elevations for top of berm to determine the lowest point of containment
- _____ Provide a detail of outlet structures with all dimensions (including invert and top of structure)
- _____ Label all invert elevations and dimensions for orifices and weirs
- _____ Provide outlet pipe inverts, size, length, and slope
- _____ Provide sufficient media depth measurements to verify approved depth has been achieved
- _____ Locate and label underdrain cleanouts with inverts

MAINTENANCE AGREEMENT

- _____ The maintenance agreement will be recorded with the initial plat of each phase for that BMP within the drainage area of that initial plat.

Note: Any new or revised storm drainage systems or easements shown on as-built plans may require a subdivision plan revision along with engineering calculations and drainage area maps.

July, 2011