

Post Construction Storm Water Management As-Built Requirements

A. Total Impervious Area:

- 1) Visually inspect the impervious area coverage and note any discrepancies from the plans.
- 2) If significant deviations exist, recalculate the water quality volume (WQv) and all release rates to ensure that design criteria are still being met.

B. Infiltration Features (Permeable Pavement, Infiltration Trenches, Bioretention Cells, etc.):

- 1) Verify the dimensions and storage volumes of all infiltration features.
- 2) As-built storage volumes must be equal to, or greater than, the plan volumes. If the volumes are less than those planned, show that they will have a negligible effect on all design criteria.

C. Storm Water Conveyance Channels and Bioswales:

- 1) Perform an as-built survey of all channels and bioswales.
- 2) Calculate the as-built storm water conveyance capacities. Conveyance capacities must be equal to, or greater than, the capacities required for a 100 year event*.

D. Outlet Structures (Orifices, Perforated Risers, Pipes, Culverts, Weirs, etc.):

- 1) Perform an as-built survey of all outlet structure flowline elevations. If the structure contains a combination of outlets (i.e. perforated riser with weirs), then include the flowline elevations of each component.
- 2) As-built elevations must be within +/- 0.10 feet of the corresponding design elevations. Otherwise, show that the as-built elevations will have a negligible effect on all design criteria.

E. Detention Basin Inlet Structures:

- 1) Perform an as-built survey of all detention basin inlet structure flowline elevations.
- 2) As-built elevations must be within +/- 0.20 feet of the corresponding design elevations. Otherwise, show that the as-built elevations will have a negligible effect on all design criteria.
- 3) Verify that erosion/scour control measures (rip rap) are in place.

F. Detention Basins:

- 1) Perform an as-built survey of all detention areas. The survey should include all grade/break lines and other points necessary for an accurate determination of storage volumes.
- 2) Calculate the as-built water quality, channel protection, and 100 year storage volumes. The storage volumes must be equal to, or greater than, the allowable/required volumes and must not include freeboard (1' min) or any volume lost to ground water (excess water in a basin due to a high water table).
- 3) Calculate the as-built release rates for channel protection and the 5, 10, and 100 year events. The release rates must be equal to, or less than, the allowable/required release rates.
- 4) Calculate the as-built 100 year water surface elevations. Verify that the elevations do not encroach upon the corresponding basin's 100 year freeboard (1' minimum with emergency spillway; 2' minimum without), or any building 100 year freeboard (3' from the MPE).

G. Storm Water Management System Pipes, Culverts, and Structures:

- 1) After project seeding, visually inspect all storm water management system pipes, culverts, and structures for debris, sediment, low spots, defects, etc.
- 2) If visual inspection is not possible, video inspection is required.
- 3) If necessary, repair all defects and clean (jet) any existing debris and/or sediment out of the pipe, culvert, or structure. Perform re-inspections after corrective actions are taken.

*all rainfall events are 24-hour

PLEASE NOTE: The information provided in this report will be inspected and reviewed by City staff prior to final acceptance of the project and the release of any financial security pertaining to storm water management.

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Public Works

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As-Built Report Deliverables: (PDF emailed to Liz Calhoun at liz.calhoun@cityofames.org)

1. A completed City of Ames Elevation Certificate (page 26 of the Post Construction Storm Water Technical Guidance Documents: <http://www.cityofames.org/home/showdocument?id=18635>).
2. Design and as-built total impervious coverage (%) and, if necessary, any storm water design recalculations.
3. If curve numbers WITH soil quality restoration (SQR) were used in the storm water management design calculations, then state the SQR method(s) used and verify that those requirements were completed.
4. As-built CAD cross-sections for each infiltration feature. On each cross-section, label each type of material used and their thicknesses. (Drawings do not have to be to scale.)
5. Tabulation of all channel and bioswale design and as-built storm water conveyance capacities for a 100 year event.
6. As-built CAD drawings for each outlet structure. On each drawing, label each outlet type, size, and flowline elevation. (Drawings do not have to be to scale.)
7. Tabulation of all detention basin inlet and outlet design and as-built flowline elevations. Include verification that erosion/scour control (rip rap) is in place at all inlets.
8. Summary for each detention basin containing the following information:

CRITERIA	ALLOWABLE/REQUIRED	DESIGNED	AS-BUILT
WQv treated (list for each BMP, if multiple used)			
CPv release rate			
CPv storage			
5 year release rate			
10 year release rate			
100 year release rate			
100 year storage			
100 year water surface elevation			

9. Verify that adequate vegetative cover (erosion control and soil stabilization) is established.
10. Verify that all storm water management system pipes, culverts, and structures are free of defects and clear of debris and sediment. Include copies of all necessary inspection and re-inspection videos.
11. As-built site map with the following items:
 - a) Locations and elevations of all as-built points surveyed.
 - b) 2' elevation contours (within the as-built survey areas only).
 - c) Locations and flowline elevations of all inlet and outlet structures.
 - d) Locations, types, and sizes of all storm water pipes, culverts, and structures.
 - e) Sketch or draw the types, sizes, and approximate locations of all roof/subdrains. (Does not apply to single family dwellings.)
12. If not previously submitted, attach an estimate for the four (4) year storm water BMP maintenance performance bond per City code section 5B.5.2.
13. Maps and legal descriptions of all storm sewer or storm water management easements to be recorded or vacated.
14. Cover sheet stamped and signed by a licensed professional engineer or landscape architect along with the project name, location, company, etc. Include a written statement certifying that all storm water BMP's have been installed in accordance with the approved storm water management plan and other applicable City ordinances.

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