

General As-Built and Construction Certification

SCM Facility Name

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Note: This certification statement must be executed by a licensed North Carolina Professional Engineer with experience in the design, construction, and operation of SCMs of a nature similar in scope to that certified to in this certification. Observation/supervision of the above-listed critical SCM components and a final assessment for design compliance by the certifying licensed professional engineer will be required to complete this certification.

CERTIFICATION STATEMENT

Based upon (1) my observation of the construction of this facility, (2) my review of the as-built survey data, (3) my review of the drainage area treated or managed by the facility, and (4) my analysis of the hydraulic performance of the constructed facility, I hereby certify that the (A) hydrologic and hydraulic, (B) geometric, (C) public safety, (D) facility access, (E) drainage area¹, and (F) vegetative elements of the constructed facility are in compliance with the requirements of the facility as set forth in the approved Construction Drawings, approved design documents, and/or any approved modifications. Furthermore, I certify that the **red-noted exceptions do not adversely affect the required performance or public safety aspects of the facility.**

Note 1: The drainage area treated by the facility must, at a minimum, be equivalent to the area proposed for treatment in the approved construction drawings. In addition, a minimum of 85% of the drainage area to the facility must be adequately stabilized (e.g., with vegetation, mulch, impervious surface), and any remaining disturbed areas in the drainage area must have sufficient alternate controls in place to limit the deposition of sediment in the facility. If these drainage area requirements are not met, the Certification will be disapproved.

The following supporting documents are included in the formats required below. Note: All digital files must be in Adobe Acrobat (.pdf) format unless indicated otherwise below.

1. [Digital only] An executed "General Certification."
2. [Digital only] An Executive Summary describing the results of the as-built process, including any field changes and the results of remodeling the SCM under as-built conditions. Any item not meeting any minimum requirement and requesting to be accepted shall clearly be noted and the certifying engineer shall provide the following:
 - a. A description of how the non-compliant item deviates from the standards and/or approved construction drawings.
 - b. An explanation of why this deviation should be acceptable and how the deviation still meets the intended purpose behind the requirement.
3. [Paper and digital] As-built Drawings: One (1) copy of the approved construction drawings for the SCM with **redline/strikeout changes** to show any changes for the as-built SCM. All approved construction drawing sheets signed by Stormwater must be included, but the full set of construction drawings is not required or desired. All sheets must contain the executed General Certification, i.e., the statement in the box above must appear on the as-built drawings and must be signed and sealed by the certifying engineer.
4. [Digital only] The as-built survey, including all spot shots, of the SCM. Note that the survey plot must be signed and sealed by a Land Surveyor licensed in North Carolina. The plot must also include spot shots for all grade changes/break points and critical inverts, and all field values for elevations and dimensions shown on the approved construction drawings must be verified by the

surveyor.

In addition, the access to the facility and top of the dam shall be surveyed sufficiently to assess whether it is a minimum of 10 feet wide, and has a maximum centerline grade and cross-slope of fifteen percent (15%) and ten percent (10%) respectively.

The following Field Survey Certification Statement must be included on the as-built survey plot:

FIELD SURVEY CERTIFICATION STATEMENT

I, _____, as a duly licensed Professional Land Surveyor in the State of North Carolina, hereby certify that the data shown on this drawing, obtained under my supervision, is an accurate and complete representation of what was constructed in the field and that the physical dimensions or elevations shown are thus as-built conditions, except otherwise noted hereon.

5. [Paper and digital] One (1) copy of the drainage area map that delineates the drainage area to the SCM as presented in the approved construction drawings or Stormwater Impact Analysis, with **redline markups** for any as-built drainage area deviations from the design area. The area in square feet or acres for both the design and the as-built drainage areas should be quantified on the map.

The entire as-built drainage area does not need to be formally surveyed, but the ridge lines do need to be verified. Roof drain connections should be verified to ensure that roof drainage is routed as determined at the design stage.

If the engineer has verified there is no difference between the design and the as-built drainage area map, then a clear statement to that effect must be included on the map.

6. [Digital only] One (1) copy of the design summary sheet for the facility as approved with the construction drawings, with **redline/strikeout changes** to show any corrections for the as-built SCM.
7. [Digital only] One (1) copy of the hydrologic modeling inputs and results, using as-built data for the drainage area and SCM.
8. [Paper and digital] An original completed copy of the signed and sealed SCM-specific Field Checklist required by the City. A complete Checklist shall contain no non-compliant items. Note: If, while completing the Checklist, a non-compliant item is noted at an SCM by the certifying engineer, a Certification for that SCM should not be submitted until the non-compliant item has been brought into compliance.

If the engineer believes the non-compliant item still meets its intended purpose and is therefore acceptable, the engineer must include both of the following in the "Additional Comments" box at the end of the Field Checklist:

- a. A description of how the non-compliant item deviates from the standards and/or approved construction drawings.
- b. An explanation of why this deviation is acceptable and how the deviation still meets the intended purpose behind the requirement.

Final approval of a non-compliant item shall be based primarily on supporting justification. However, also factored into the City's approval or disapproval are:

- **Consistency – whether or not the City has approved this type of non-compliance at other SCMs, and**

- **Experience – whether this type of non-compliance has been approved previously and then over time has proved to be inadvisable.**
9. [Digital only] Color photographs of all SCM components (as shown on approved SCM plan and detail sheets) during their construction and after their completion. This includes an overall view of the SCM and individual components to include the dam, emergency spillway, riser, outfall structure, outfall area, impoundment area, access way, etc. (electronic format: .jpeg, .gif or .tiff).
 10. [Digital only] One (1) copy of the landscape company's letter certifying the installation of the specific plants at the SCM as required by the approved construction drawings or approved field changes. This letter must be on the company's letterhead, must list all of the plant species planted, and how many of each were planted. In lieu of listing all species and the number planted, the landscape company may attach to the letter the purchase receipts or bills of lading for the plants.
 11. [Digital only] One (1) copy of an Operations and Maintenance Manual for the SCM (electronic file: MS Word format, or if using the NC DEQ template, Excel format). The O&M Manual should now be submitted prior to construction drawing approval. However, if the as-builts are for an older SCM for which the O&M Manual was not included with the construction drawings, it must be included in the as-built package.
 12. [Digital only] One (1) copy of a cost accounting for the construction of the SCM (electronic file: Excel format). Note: If the cost accounting results in an amount 110% or greater than the original construction estimate (Engineer's Opinion of Probable Cost), an additional payment into the City's Stormwater Facility Replacement Fund will be required if this form of financial guarantee was utilized. This additional payment, for one-fourth of the amount greater than 100% of the original approved construction estimate, must be made prior to Certification approval. If construction cost accounting with sufficient supporting documentation results in an amount 90% or less than the original construction estimate, then a stormwater facility replacement payment refund will be provided for one-fourth the amount less than 100% with a written request submitted no later than one month after the SCM completion certificate is issued.
 13. [Digital only] An original signed and sealed Geotechnical Certification with all supporting geotechnical and materials testing documentation. The Geotechnical Certification should now be submitted within 30 calendar days of the construction of the dam embankment being completed. Failure to submit within 30 calendar days of dam completion will be considered a public safety issue, which will affect the future release of building permits and/or certificates of occupancy for the project. However, if the as-builts are for an older SCM for which the embankment construction was already completed, it must be included in the as-built package.
 14. [Digital only] An original signed and sealed Materials Certification, with all supporting documentation, for SCMs with filter media.
 15. [Digital only] A copy of the recorded plat showing the SCM and SCM Access and Maintenance Easement.

Name: _____ Date: _____

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