

Field Checklist

for

Underground Detention Systems

Date of Certification Assessment: _____

Assessing and Certifying NCPE: _____ Seal:

SCM Facility Name: _____

Access Address: _____

PIN/s of Parcel/s Where the Facility is Sited: _____

CHECKLIST

All items in this checklist must be compliant.

If an item is not applicable, write "N/A" next to the item.

If the engineer believes the non-compliant item still meets its intended purpose and is therefore acceptable, he/she must include the following in the "Additional Comments" box at the end of this form:

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

A. Drainage Area

- The drainage area to the facility is as per the design documents, or if there are deviations from the design drainage area, these deviations do not render the SCM undersized or result in insufficient on-site treatment to meet regulatory requirements.
- The drainage area to the facility is completely stabilized, and no excess sediment is discharging into the underground detention system.

B. Easements and Accessibility

- The SCM access way as constructed matches what is shown on the recorded final plat and is fully contained in the SCM Access and Maintenance Easement.
- The SCM Access and Maintenance Easement is clear of obstructions and traversable by anticipated maintenance equipment.
- Unobstructed maintenance vehicle access has been provided to the control structure and all inlets, and access to the facility and top of the dam meets the following conditions per field observation and survey spot shot data:
 - It is a minimum of 10 feet wide.
 - It has a maximum centerline grade of fifteen percent (15%).
 - It has a maximum cross-slope of ten percent (10%).

- Unless it has been surfaced with gravel, asphalt, concrete, etc., in accordance with approved construction drawings, 85% of the SCM Access and Maintenance Easement has achieved a healthy stand of grass.
- Manhole access has been provided at the four corners of the system. All access manholes are reinforced concrete manholes conforming to the construction drawings.
- Traffic bearing cleanouts have been provided at 100-foot intervals, with a minimum of two provided in each pipe run. Manhole access structures may be counted as cleanouts.
- A Bilco®-type door (or approved equivalent) has been placed at the inlets and at the control structure for the underground detention system. Access points that occur in areas subject to vehicular traffic are of the traffic bearing type.
- All access ways into the unit(s) have steps or ladders installed as shown on the construction drawings. Access ways do not decrease in size from the opening at ground level. Internal sections of the access way are not offset from the opening at the ground level.
- Provided openings do not inhibit confined space entry procedures for safety.
- All internal sections of the unit can be accessed from an approved access way.
- Access to all flow control valves (and/or valve operating handles) is provided from dry areas. Unit can be drained to accommodate maintenance activities and inspections. Method to drain unit appropriately described within operation and maintenance manual.

C. Underground Storage Chambers/Pipes

- The correct size, linear footage, and materials for the system have been installed in accordance with the construction drawings.
- The storage pipes and/or precast structures were installed to manufacturer specifications and in accordance with the approved construction drawings.
- The foundational support for and the backfill around the storage structure(s) have been placed in accordance with the construction drawings.
- All inlet pipes have been installed in accordance with the construction drawings.
- The system remains watertight per City of Durham requirements, and a memo from the certifying engineer describing the date and method of certification is attached.
- The surface or sub-surface bypass to safely convey the 100-year, 24-hour post-development storm event or the maximum storm has been installed in accordance with the construction drawings.
- All accumulated sediment and other debris in the system has been removed.
- All valves, pipe connections, and chamber section joints are sealed and are water tight.

D. Control Structure and Principal Spillway Pipe

- The control structure is reinforced concrete.
- The dimensions of the structure are _____.
- The structure and all appurtenant devices appear to be sound.
- The structure is free of debris or obstructions.
- The foundational support for and the backfill around the structure have been placed in accordance with the construction drawings.

- All orifices, siphons, ports, and weirs were installed in accordance with the construction drawings.
- The surface or sub-surface bypass designed to safely convey the 100-year, 24-hour post-development storm event or the maximum storm has been installed in accordance with the approved construction drawings.
- The PSP is reinforced concrete with a minimum pipe strength conforming to ASTM C-76 Class III standards.
- The diameter of the PSP is _____.
- The principal spillway pipe was wrapped with a layer of geotextile filter fabric on the outside of each pipe joint.
- Based on a visual inspection, it appears that the joints of the PSP were “homed” reasonably well, and it appears that no joints are leaking.
- Steps down the inside of the access manholes have been provided in accordance with the construction drawings.

E. Outlet and Outfall

- The control structure has been installed in accordance with the construction drawings.
- The principal spillway pipe is securely attached/grouted to the headwall or downstream manhole, and this joint is smoothly finished with no evidence of gaps, cracks, and spalling.
- If not discharging to a storm sewer system:
 - The outfall structure has been installed in accordance with the construction drawings and there is no evidence of stability issues.
 - Energy dissipation has been provided in accordance with the construction drawings.
 - The outfall area and downstream channel(s)/receiving area appear stable, and all accumulated silt and debris has been removed.
- If discharging to a storm sewer system, the receiving manhole appears stable and all accumulated silt and debris has been removed.

Additional Comments by Certifying Engineer: