

# Underground Infiltration Construction Checklist

*This checklist has been designed for BMPs designed in accordance with the Delaware Sediment and Stormwater Program's Post Construction Stormwater BMP Standards and Specifications. Submit interim versions of this construction checklist to the approval agency weekly with the Certified Construction Reviewer report. Submit the final completed checklist with the PCVD.*

## **PROJECT INFORMATION**

Project Name/BMP Name: \_\_\_\_\_

Project Approval Number: \_\_\_\_\_ NOI number: \_\_\_\_\_

Location: \_\_\_\_\_

Contractor: \_\_\_\_\_

Construction Reviewer: \_\_\_\_\_

Supervising P.E.: \_\_\_\_\_

For each checklist item, enter in the blank the date (MM/DD/YY) the item is completed and verified by the construction reviewer. If an item is not applicable, enter "N/A" in the blank for that checklist item.

### **I. Pre-Construction**

A. \_\_\_\_\_ Underground infiltration facility field meeting with responsible person and person.

B. \_\_\_\_\_ Extents of underground infiltration facility (to include pretreatment area) delineated and access by equipment prohibited with Sensitive Area Protection (SAP) to prevent compaction of existing soils.

C. \_\_\_\_\_ Equipment on the site large enough to excavate infiltration trench from the sides of the facility.

D. \_\_\_\_\_ Pervious areas draining to the infiltration trench stabilized in accordance with the approved plan.

E. \_\_\_\_\_ Pipe and appurtenances on-site and dimensions and properties checked and confirmed to be in accordance with the approved plan.

i. \_\_\_\_\_ Discharge pipe

ii. \_\_\_\_\_ Overflow collection pipe

iii. \_\_\_\_\_ Perforated pipes or arches or proprietary storage chambers

iv. \_\_\_\_\_ Inspection port(s)

v. \_\_\_\_\_ Other; list: \_\_\_\_\_

F. \_\_\_\_\_ Materials on-site and dimensions and properties checked and confirmed to be in accordance with the approved plan. ***Submit materials invoice or delivery tickets to approval agency as part of PCVD for the following items:***

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Construction Reviewer: \_\_\_\_\_

- i. \_\_\_\_\_ Clean, washed aggregate (max. diameter 2.5", min. diameter 0.5")
- ii. \_\_\_\_\_ Geotextile fabric with flow rate  $\geq$  110 gal/min/sf
- iii. \_\_\_\_\_ Coarse sand (e.g. ASTM C33, 0.02-0.04 inch)
- iv. \_\_\_\_\_ Other; list: \_\_\_\_\_

## II. Excavation and Grading

A. \_\_\_\_\_ Underground infiltration facility excavated to dimensions and at location as per the approved plan.

B. \_\_\_\_\_ Underground infiltration facility excavated to design bottom elevation.

C. \_\_\_\_\_ Underground infiltration facility excavated from the sides so as to not compact the existing soil. Stepwise excavation used for underground infiltration facilities too large to be fully excavated from the side.

D. \_\_\_\_\_ Groundwater not encountered during excavation. (Note: If groundwater is encountered during the excavation process, construction of the facility must cease, and the designer notified that a plan modification is necessary).

E. \_\_\_\_\_ Sides of underground infiltration facility excavated vertically.

F. \_\_\_\_\_ Bottom of excavation in accordance with the approved plan.

G. \_\_\_\_\_ Bottom of excavation scarified prior to placement of sand.

H. \_\_\_\_\_ Geotextile fabric placed along the vertical sides of the trench, tuck into sand at the bottom for anchoring.

I. \_\_\_\_\_ Confirmatory testing performed in native soil at design bottom elevation in accordance with Soil Investigation Procedures for Stormwater BMPs. ***Submit confirmatory infiltration testing report to approval agency as part of PCVD.***

- Confirmatory infiltration testing
  - Confirmatory rate is at least 150% of the approved design rate
  - Confirmatory rate is less than 150% of approved design rate; designer notified to provide plan revision
- Hand augers to a minimum depth of 3 feet below the bottom of the facility
  - Limiting layer not present
  - Limiting layer present; designer notified to provide plan revision

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### III. Structural Components

- A. \_\_\_\_\_ Pretreatment method(s) installed per the approved plan.
- B. \_\_\_\_\_ Discharge pipe installed from overflow collection pipe to discharge point.
- C. \_\_\_\_\_ Rock outlet protection provided at all points of discharge and riprap stone size and dimension confirmed.
- D. \_\_\_\_\_ Large diameter perforated pipes or arches or proprietary storage chambers installed.
- E. \_\_\_\_\_ Inspection port(s) installed.
- F. \_\_\_\_\_ Underground storage stone (clean aggregate) placed with the depth of stone in accordance with the approved plan.
- G. \_\_\_\_\_ Photo documentation of construction of structural components taken. **Submit photo documentation to approval agency as part of PCVD.** (Photo #: \_\_\_\_\_ )

### IV. Erosion and Sediment Control

- A. \_\_\_\_\_ Sediment prevented from entering underground infiltration facility by constructing the facility off-line or by using perimeter controls as specified on the approved plan.
- B. \_\_\_\_\_ Sediment controls removed once drainage area meets final stabilization standard.
- C. \_\_\_\_\_ Underground infiltration facility online.

### V. Maintenance Access

- A. \_\_\_\_\_ Maintenance access to the perimeter of the underground infiltration facility has minimum width of 15 feet.
- B. \_\_\_\_\_ Profile grade of maintenance access does not exceed 10H:1V.
- C. \_\_\_\_\_ Minimum 10H:1V cross slope on maintenance access.

### VI. Post Construction Verification

Owner shall submit post construction verification documents to demonstrate that the underground infiltration practice has been constructed within allowable tolerances in accordance with the Approved Sediment and Stormwater Management Plan and accepted by the approving agency.

- A. \_\_\_\_\_ Constructed top bank elevation at or above design elevation confirmed after ESC controls are removed.
- B. \_\_\_\_\_ Constructed infiltration surface area confirmed equal to or greater than 90% of the design surface area once ESC controls are removed.

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Construction Reviewer: \_\_\_\_\_

C. \_\_\_\_\_ Constructed volume of the infiltration storage confirmed equal to or greater than 90% of the of the design.

D. \_\_\_\_\_ Constructed elevation of all structures confirmed to be within 0.15 foot of the design elevation for:

i. \_\_\_\_\_ Discharge pipe

ii. \_\_\_\_\_ Overflow collection pipe

iii. \_\_\_\_\_ Perforated pipes or arches or proprietary storage chambers

iv. \_\_\_\_\_ Other; list: \_\_\_\_\_

### VII. BMP Acceptance

A. \_\_\_\_\_ Final BMP construction review complete.

B. \_\_\_\_\_ All BMP punch list items addressed.

C. \_\_\_\_\_ As-built survey.

D. \_\_\_\_\_ PCVD submitted to approval agency for review and approval. Submit the following pieces of PCVD documentation to the approval agency:

- Materials invoice or delivery tickets
- Confirmatory infiltration testing report
- Photo documentation
- Soil test report
- Lime, fertilizer, and seed tickets
- As-built survey
- Final, completed BMP Construction Checklist