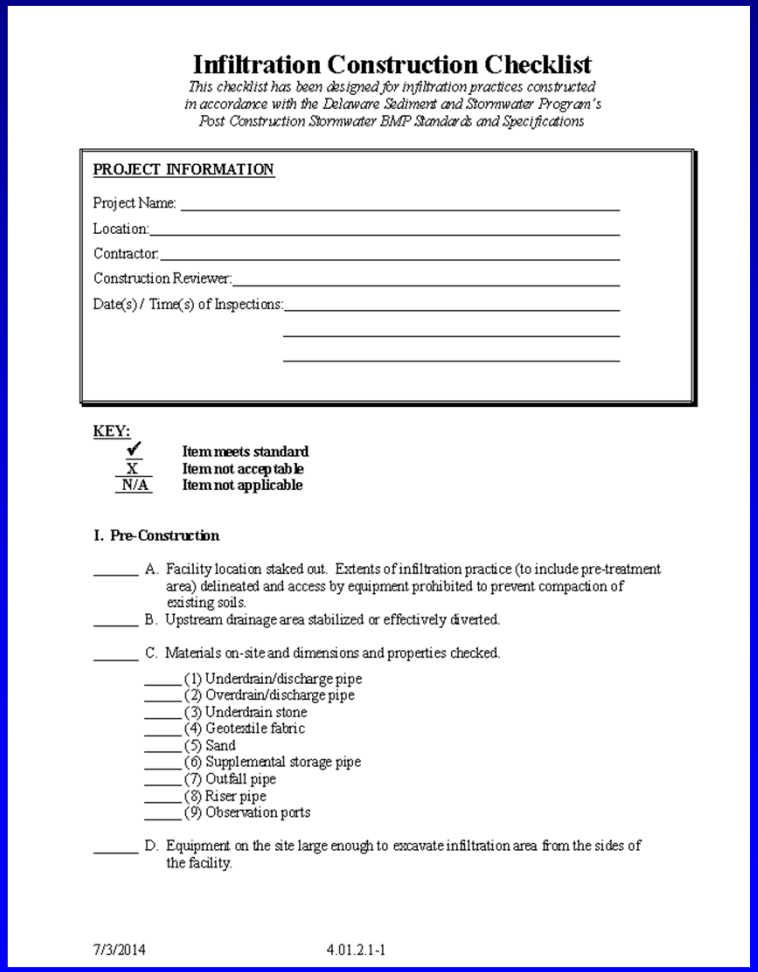
Construction Review of Post Construction Stormwater BMPs

What do Stormwater BMPs do?

- Storage
  - Sizing
- Runoff Reduction
  - Prevent compaction
  - Vegetation component
- Pollutant Removal
  - Manufacturer’s details

BMP Construction Checklists

- Technical Document 4.01.2
- Available on website: http://www.dnrec.delaware.gov/swc/Drainage/Pages/BMP-Construction-Checklists.aspx



Infiltration Construction Checklist

This checklist has been designed for infiltration practices constructed in accordance with the Delaware Sediment and Stormwater Program's Post Construction Stormwater BMP Standards and Specifications

PROJECT INFORMATION

Project Name: _____

Location: _____

Contractor: _____

Construction Reviewer: _____

Date(s) / Time(s) of Inspections: _____

KEY:

✓ Item meets standard

X Item not acceptable

N/A Item not applicable

I. Pre-Construction

_____ A. Facility location staked out. Extents of infiltration practice (to include pre-treatment area) delineated and access by equipment prohibited to prevent compaction of existing soils.

_____ B. Upstream drainage area stabilized or effectively diverted.

_____ C. Materials on-site and dimensions and properties checked.

_____ (1) Underdrain/discharge pipe
_____ (2) Overdrain/discharge pipe
_____ (3) Underdrain stone
_____ (4) Geotextile fabric
_____ (5) Sand
_____ (6) Supplemental storage pipe
_____ (7) Outfall pipe
_____ (8) Riser pipe
_____ (9) Observation ports

_____ D. Equipment on the site large enough to excavate infiltration area from the sides of the facility.

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BMP Construction Checklists

- Each BMP on site requires construction checklist
- CCR needs to be onsite enough during BMP construction to accurately fill out checklist
- Submit to Delegated Agency
- Becomes part of PCVD

BMP Construction Checklists

- Infiltration
- Bioretention
- Permeable Pavement
- Vegetated Roofs
- Rainwater Harvesting
- Rooftop Disconnection
- Vegetated Channels
- Sheet Flow
- Dry Detention
- Underground Detention
- Filtering Systems
- Constructed Wetlands
- Wet Ponds

General Checklist Sections

- Pre Construction
- Excavation
- Structural Components
- Grading
- Vegetation
- Erosion and Sediment Control

Pre Construction

Pre-Construction

- Meeting

Pre-Construction

- Meeting
- Stake-out

Pre-Construction

- Meeting
- Stake-out
- Stabilize upstream drainage area

Stabilize Drainage Area

Stabilize Drainage Area

Pre-Construction

- Meeting
- Stake-out
- Stabilize upstream drainage area
- Materials / Structures
  - Check dimensions

Materials and Structures

Pre-Construction

- Meeting
- Stake-out
- Stabilize upstream drainage area
- Materials / Structures
  - Check dimensions
- Equipment

Equipment

Excavation

Excavation

- Dimensions and location
- Side slopes
- Bottom slope

Excavation

- Dimensions and location
- Side slopes
- Bottom slope
- Infiltrating facilities
  - Stepwise excavation
  - Excavate from the sides
  - Scarify bottom

Infiltrating Facilities

Excavation

- Dimensions and location
- Side slopes
- Bottom slope
- Infiltrating facilities
  - Stepwise excavation
  - Excavate from the sides
  - Scarify bottom
- Groundwater

Groundwater / Dewatering

Structural Components

Structural Components

- Discharge pipes

Structural Components

- Discharge pipes
- Outlet / Overflow structure

Structural Components

- Discharge pipes
- Outlet / Overflow structure
- Outlet protection

Outlet Protection

Structural Components

- Discharge pipes
- Outlet / Overflow structure
- Outlet protection
- Underdrain pipes and cleanouts

Underdrain pipes and cleanouts

Structural Components

- Discharge pipes
- Outlet / Overflow structure
- Outlet protection
- Underdrain pipes and cleanouts
- Aggregate
- Geotextile fabric

Aggregate and Geotextile

Structural Components

- Discharge pipes
- Outlet / Overflow structure
- Outlet protection
- Underdrain pipes and cleanouts
- Aggregate
- Geotextile fabric
- Chambers

Chambers

Grading

Grading

- Inlets / Forebays

Inlets

Forebays

Grading

- Inlets / Forebays
- Side slopes

Side Slopes

Grading

- Inlets / Forebays
- Side slopes
- Bottom

Bottom

Grading

- Inlets / Forebays
- Side slopes
- Bottom
- Top of berm
- Spillway

Top of Berm / Spillway

Vegetation

Vegetation

- All disturbed areas stabilized
  - Permanent seed mixture on plan
  - Soil amendments
  - 90% germination for stormwater facilities
  - Bottom of infiltration not always seeded

90% Germintaion

90% Germination

Bottom of Infiltration Basin

Vegetation

- All disturbed areas stabilized
  - Permanent seed mixture on plan
  - Soil amendments
  - 90% germination for stormwater facilities
  - Bottom of infiltration not always seeded
- Planting plan for shrubs and trees
- Time of year considerations

Planting Plan

Planting Plan

Sod is not always the answer

Erosion and Sediment Control

Erosion and Sediment Control

- Soil stabilization matting
  - Biodegradable

Soil Stabilization Matting

Erosion and Sediment Control

- Soil stabilization matting
  - Biodegradable
- Geotextile over stone trenches
- Divert stormwater around facilities

Stabilization of Sediment Traps

Divert Stormwater

Erosion and Sediment Control

- Soil stabilization matting
  - Biodegradable
- Geotextile over stone trenches
- Divert stormwater around facilities
- Inlet protection

Inlet Protection

Erosion and Sediment Control

- Soil stabilization matting
  - Biodegradable
- Geotextile over stone trenches
- Divert stormwater around facilities
- Inlet protection
- Skimmers

Skimmers

Questions?