Delaware Department of Transportation
Dry Detention Construction Checklist

For permanent structures per USDA SCS Pond Code 378,
Delaware Sediment and Stormwater Regulations, and
Post Construction Stormwater BMP Standards and Specifications

Contract No.: _____ Contract Name: _____

Contractor: _____ Contractor Project Supt.: _____

CCR Name: _____ CCR No.: _____

TYPE: Basin: _____ Trench: _____

BMP No.: _____ BMP Location (Road/Crossroads): _____

Construction Dates & Time:

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

KEY:

✓	Item meets standard
X	Item not acceptable
N/A	Item not applicable

I. Pre-Construction

_____ A. Notification given

_____ B. Facility location staked out & detention area delineated to include pre-treatment areas

_____ C. Materials on-site and dimensions and properties verified per the approved plan

_____ 1. Pipe and appurtenances

_____ A. Pre-cast Outlet Structure

_____ B. Water control structures (orifices, weirs, etc.)

_____ C. Barrel stub for prefabricated pipe structures at correct angle for design barrel slope

_____ D. Number and dimensions of pre-fabricated anti-seep collar(s)

_____ E. Watertight connectors and gaskets

_____ F. Outlet drain valve

_____ 2. Appropriate compaction equipment

Contract No.: _____ Contract Name: _____

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_____ 3. Project benchmark near pond site

_____ 4. Dewatering equipment

II. Subgrade Preparation

_____ Area stripped of all vegetation, root mat, topsoil and organic matter

_____ Cut-off trench excavated a minimum of 4 feet below subgrade and minimum 4 feet below proposed pipe invert, side slopes ≤ 1v:1h

_____ Back-fill cut-off trench with impervious material

III. Structural Components *(Pipe Spillway Installation)*

_____ A. Method of installation detailed on the approved plan

_____ B. Bed preparation within a fill

_____ Construct the fill embankment 24" above the proposed top of pipe or as per the approved plan

_____ Excavate the trench to required grade with ≤ 1v:1h side slopes

_____ Pipe trench is free of standing water during pipe placement and backfilling

_____ Subgrade be stable, uniform and dry impervious material *(If subgrade is wet, contractor will have defined steps before proceeding with installation.)*

_____ Invert elevation verified and as per the approved plan

_____ C. Pipe placement

_____ Metal/Plastic Pipe

_____ 1. Water tight connectors and gaskets installed correctly

_____ 2. Anti-seep collar(s) properly spaced and watertight connection to pipe

_____ 3. Place and compact backfill to required elevation in 4" horizontal loose-thickness lifts maximum until 24" of cover over pipe is reached

_____ Concrete Pipe

_____ 1. Pipe set on blocks or concrete slab for pouring of low cradle

_____ 2. Pipe installed with rubber gasket joints with no spalling in gasket interface area

Contract No.: _____ Contract Name: _____

BMP No.: _____ BMP Location: _____

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___ 3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set

___ 4. Junction area for anti-seep collar(s) and pipe will be sufficiently coated with mastic or other approved waterproof sealant

___ 5. Low cradle and bottom half of anti-seep collar installed as monolithic pour as per the approved plan

___ 6. Upper half of anti-seep collar(s) formed with reinforcing steel set

___ 7. Pour and vibrate into place Class A concrete meeting the requirements of Standard Specification 812, as per the approved plan

___ 8. Strip forms and inspect collar for "honeycomb" prior to backfilling. Parge coat as necessary

___ D. Backfill

___ Place and compact backfill to required elevation in 4" horizontal loose-thickness lifts maximum

___ Compact each lift as per Standard Specification 910.03.C.5(a)

___ Install 24" hand compacted backfill material cover above pipe

IV. Riser/Outlet Structure Installation

___ A. Metal

___ Prepare a dry and stable subgrade per the approved plan for placement

___ Prepare embedded base sections by coating with zinc chomate or equivalent (inside/outside)

___ Block and level to designed elevations

___ Install reinforcing bars at right angles into the sides of riser

___ Pour concrete filling the inside riser to invert of barrel

___ B. Pre-cast concrete structure *(Class A concrete meeting the requirements of Standard Specification 812)*

___ Prepare a dry and stable subgrade per the approved plan for placement

___ Set riser base to design elevation per the approved plan

___ Fill any space between pipes and walls of pre-cast riser with grout

___ Sound watertight collar or gasket will be installed where the structure connects to the spillway pipe

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C. Poured concrete structure *(Class A concrete meeting the requirements of Standard Specification 812)*

_____ Prepare a dry and stable subgrade per the approved plan for placement

_____ Construct a reinforced steel footer as per the approved plan

_____ Pour and vibrate into place as per the approved plan

_____ Strip forms and inspect structure for "honeycomb" prior to backfilling. Parge coat as necessary

V. Embankment Construction

_____ A. Fill material

_____ Source ticket approval verified

_____ B. Compaction

_____ Visual test by inspector

_____ C. Embankment

_____ Fill placed and compacted in 8" lifts maximum as per the approved plan

_____ Construct embankment to lines, grades and details as per the approved plan

VI. Impoundment Area Construction

_____ Excavated to lines, grades and details as per the approved plan

_____ Outfall pipes protected as per the approved plan

_____ Forebay constructed as per the approved plan

Wet Basin Requirements

_____ 1. 10 foot reverse slope bench one foot above normal pool elevation

_____ 2. 10 foot wide level bench one foot below normal pool elevation

VII. Emergency Spillway Construction

_____ Spillway constructed to lines, grades and details as per the approved plan

_____ Riprap channel constructed as per the approved plan

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VIII. Outlet Protection

_____ A. End section

_____ Placed, properly backfilled and compacted as per the approved plan

_____ B. Headwall

_____ Construct a reinforced steel footer on prepared stable subgrade per the approved plan

_____ Construct headwall as per the approved plan

_____ Pour and vibrate into place as per the approved plan

_____ Strip forms and inspect structure for "honeycomb" prior to backfilling. Parge coat as necessary

_____ C. Riprap dissipator and/or channel

_____ Excavate dissipator or channel to lines, grades and details as per the approved plan

_____ Geotextile placed and keyed in 6" minimum depth

_____ Install specified riprap as per the approved plan

IX. Vegetative Stabilization

_____ Topsoil installed as per the approved plan and Standard Specification 908

_____ Permanently seed and stabilize as per the approved plan and Standard Specification 908

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X. Miscellaneous

_____ Dewatering device installed as per the approved plan and complies with Standard Detail E-7

_____ Trash rack/anti-vortex device installed securely on the outlet structure

_____ Trash protection for low-flow pipes, orifices, etc.

_____ Maintenance access road installed as per the approved plan

_____ Fence installed as per the approved plan

Comments (Date & Initial)