Wet Pond
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.: _____

Wet Pond Variant

☐ 13-A Wet Quantity Management Pond ☐ 13-B Wet Extended Detention (ED) Pond

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._____Wet pond field meeting with responsible person and person completing construction checklist.

B._____Wet pond location staked out.

C._____Pervious areas draining to the wet pond stabilized in accordance with the approved plans.

D._____Pipe and appurtenances on-site and dimensions and properties checked and confirmed to be in accordance with the approved plan, if applicable.

i._____ Discharge pipe

ii._____ Inflow pipe

iii._____ Watertight connectors/gaskets

iv._____ Other; list: _____

E._____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:***

i._____ Clean washed riprap, minimum d50 size of 6".

ii._____ Riser/outlet structure

iii._____ Trash rack for low flow orifice

iv._____ Trash rack for riser/outlet structure

v._____ Adjustable gate valve

vi._____ Impermeable poly-liner thirty mil (minimum) *if applicable*

vii._____ Clay pond liner, 12 inch thick *if applicable*

viii._____ Geotextile fabric with flow rate $\geq$ 110 gal/min/sf

ix._____ Anti-seep collar

x._____ De-watering equipment

xi._____ Embankment Material

xii._____ Other; list:_____

II. Excavation and Grading

A._____Wet pond excavated to dimensions and at location as per the approved plan.

B._____Wet pond excavated to design bottom elevation as per the approved plan.

C._____Cutoff trench excavated minimum of 4' below subgrade and minimum 4' below proposed pipe invert, with side slopes no steeper than 1:1.

D._____Placement of impervious material used to backfill cutoff trench.

E._____Area beneath embankment stripped of all vegetation, topsoil and organic matter.

F._____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 may be necessary is above the permanent pool elevation)

G._____Sides of wet pond excavated no steeper than 3:1.

H._____Construction of 10' wide safety bench. Max 5% slope that is 1' above permanent pool when side slopes are steeper than 4:1.

I._____Construction of 10' wide aquatic bench

J._____Bottom of excavation in accordance with the approved plan.

K._____Excavation for the riprap apron to the dimensions, bottom elevation, and location as per the approved plan.

L._____Forebay provided at wet pond major inlets as specified on the approved plan.

Pretreatment types constructed:

i._____ Forebay excavated to dimensions and at location as per the approved plan.

ii._____ Forebay excavated to design bottom elevation.

iii._____ Safety bench around forebay of depths greater than 3 feet with minimum flow length of 10 feet.

III. Principal spillway (outfall pipe) installation (Per Pond Code 378)

A._____Trench excavated with 1:1 side slope

B._____Subgrade of trench is dry, stable, and uniform of relatively impervious material.

C._____Pipe Placement

Metal/Plastic Pipe Only

i._____ Installation of watertight connectors/gaskets

ii._____ Installation of anti-seep collar(s) with watertight connections to the pipe

iii._____ Backfill placed and tamped by hand under "haunches" of pipe and remainder of backfill in max. 8" lifts using small power tamping equipment until 2' of cover.

Concrete Pipe Only

iv._____ Pouring of low cradle, pipe set on blocks or concrete slap.

v._____ Pipe installation with rubber gasket joints, no spauling in gasket interface area.

vi._____ Excavation for anti-seep collar(s)

vii._____ Construction/installation of anti-seep collar(s) with approved waterproof sealant

viii._____ Anti-seep collar(s) inspected for "honeycomb", parge if necessary.

D._____Trench filled in 8" lifts

E._____Backfilled 2' above anti-seep collar prior to traversing with heavy equipment.

F._____Photo documentation of construction of pipe spillway components taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

Project Name/BMP Name:_____

Construction Reviewer:_____

IV. Riser/Outlet control structure installation (Per Pond Code 378)

A._____Excavation for riser and subgrade stabilized and dry, with reinforcements as necessary.

B._____Riser/outlet control structure installed at design elevation and location.

C._____Installation of trash rack(s)

D._____Installation of anti-vortex device

E._____Installation of anti-floatation device

F._____Installation of adjustable gate valve

G._____Photo documentation of construction of riser/outlet control structure components taken. ***Submit photo documentation to approval agency as part of PCVD.***

(Photo #: _____)

Metal Riser

H._____ Embedded parts of the aluminum riser painted with zinc on both the inside and outside.

I._____Reinforcing bars placed at right angles and projecting into sides of riser.

J._____Concrete poured to fill inside of riser to invert of barrel.

Pre-cast concrete structure

K._____ Section installation with rubber gasket joints or caulk, no spauling in gasket interface area, *if necessary.*

L._____Installation of watertight and structurally sound collar or gasket joint at pipe spillway connection.

Poured concrete structure

M._____Structure formed to design dimensions, with reinforcing steel set as per plan.

N._____ Concrete of an approved mix and vibrated into place.

O._____ Concrete inspected for “honeycomb”, parge if necessary.

V. Embankment Construction

A._____Embankment fill place in max 8” lifts and compacted

B._____Embankment fill material in accordance with approved plan.

C._____Embankment installed to design cross-section, side slopes and top width after settlement.

D._____Photo documentation of construction of embankment taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

VI. Retaining Walls, *if applicable*

A._____Maximum 3' height above the aquatic bench for a wall at the permanent pool

B._____Maximum 2' height for any additional wall and minimum 10' wide terrace from lower wall

C._____Photo documentation of construction of retaining wall taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

VII. Earth Emergency Spillway Construction

A._____Spillway structurally stabilized with riprap, gabions, concrete, etc or located in natural grounds

B._____Emergency spillway constructed to design elevation and dimensions.

C._____Photo documentation of construction of emergency spillway taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

VIII. Outlet Protection

A._____Outlet protection provided at discharge point and riprap stone size and dimensions confirmed.

B._____Placement, securement, and backfilled end section

C._____***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

IX. Vegetative Stabilization

A._____Areas to be vegetated have completed the following items. ***Submit soil test report, lime, fertilizer, planting tags and seed tickets to approval agency as part of PCVD.***

i._____ Soil testing.

ii._____ Side slopes scarified to a minimum depth of 3 inches prior to placing topsoil

iii._____ Application of topsoil to a minimum depth of 4 inches.

iv._____ Application of soil amendments including lime and fertilizer in accordance with the recommendations of the soil test or the approved plan.

v._____ Application of seed to the soil surface using approved methods.

vi._____ Planting installed in accordance with the approved plan.

B._____Application of soil stabilization matting, and permanent seeding used on side slopes in accordance with approved plan.

C._____Confirmation of no woody vegetation planted or growing within 15 feet of the embankment and 10 feet of the principal spillway or inflow pipes.

D._____Photo documentation of landscaping components taken. ***Submit photo documentation to approval agency as part of PCVD.*** (Photo #: _____)

X. Erosion and Sediment Control

A._____Sediment prevented from entering wet pond by keeping it off-line or using perimeter controls as specified on the approved plan.

B._____Drainage area and side slopes stabilized in accordance with the approved plan.

C._____Sediment controls removed once drainage area meets final stabilization standard.

XI. Maintenance Access and Areas

A._____Maintenance access to the perimeter of the wet pond and forebay 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.

D._____Maintenance set-aside area located and dimensioned per approved plans

E._____Depth of set-aside area does not exceed 1 foot.

F._____Slope of set aside area does not exceed 5%

XII. Post Construction Verification

Owner shall submit post construction verification documents to demonstrate that the wet pond 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 wet pond surface area confirmed equal to or greater than 90% of the design surface area once ESC controls are removed.

C._____Constructed volume of the wet pond storage confirmed equal to or greater than 90% of the of the design.

Project Name/BMP Name:_____

Construction Reviewer:_____

D._____Constructed elevation of all structures confirmed to be within 0.15 of the design elevation for:

i._____ Emergency spillway

ii._____ Spillway pipe

iii._____ Riser/Outlet control structure

iv._____ Embankment

v._____ Outlet protection

vi._____ Other; list:_____

XIII. BMP Acceptance

A._____Final BMP construction review complete.

B._____All BMP punch list items addressed.

C._____Wet pond is online (stabilized drainage area is entering wet pond)

D._____As-built survey.

E._____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
- ☐ Photo documentation
- ☐ Soil test report
- ☐ Lime, fertilizer, and seed tickets
- ☐ As-built survey
- ☐ Final, completed BMP Construction Checklist