

F.13 Ponds and Wet Basins

F.13.1 Pond and Wet Basin Plan Standards

1. Verify that the plans include an appropriate sequence of construction that is specific to the construction of the pond or wet basin. Refer to Section 4.7.5 for guidance. [Section 2.3.1]
2. Verify that the plans include an appropriate cross-sectional detail for the pond or wet basin. [Section 2.3.1]

F.13.2 Pond and Wet Basin Design Standards

1. Verify that the SMP drains within the acceptable 72-hour period after the 24-hour storm event. [Section 4.7.3, 1]
2. Verify that positive overflow is provided for large storm events, up to and including the 100-year, 24-hour storm event, or, if the project is exempt from Flood Control, the ten-year, 24-hour storm. [Section 4.7.3, 2]
3. Verify that overflow structures and pipes are designed to convey at least the ten-year, 24-hour storm event. [Section 4.7.3, 2]
4. Verify that, during the 100-year storm, 24-hour storm event, or, if the project is exempt from Flood Control, the ten-year, 24-hour storm, the freeboard between the peak storage elevation and the emergency spillway invert elevation is a minimum of one foot. [Section 4.7.3, 3]
5. Verify that the distance between the emergency spillway crest elevation and the top-of-berm elevation is a minimum of one foot. [Section 4.7.3, 4]
6. Verify that the basin length-to-width ratio is a minimum of 2:1. [Section 4.7.3, 5]
7. Verify that the basin has a minimum width of ten feet. [Section 4.7.3, 6]
8. Verify that the sediment forebay has a minimum length of ten feet. [Section 4.7.3, 7]
9. Verify that the distance between the basin inflow and outflow points is maximized. [Section 4.7.3, 8]
10. Verify that a curve number of 98 is used for the area below the water surface elevation, where required for hydrologic calculations. [Section 4.7.3, 9]
11. Verify that all areas deeper than four feet must have two aquatic safety benches extending a combined total of 15 feet, at minimum, inward from the perimeter of the basin. One bench must be above the normal water surface elevation and extend up to the pond side slopes at a maximum slope of 10%. The other bench must be below the water surface extending into the pond at a 10% slope to a maximum depth of 18 inches. [Section 4.7.3, 10]
12. Verify that a dewatering mechanism is proposed for facilities that are not in connection with groundwater. [Section 4.7.3, 11]

13. Verify that pretreatment is provided for all runoff entering the pond or wet basin, including pretreatment of runoff from all inlets. At a minimum, this can be achieved through the use of sumps and traps for inlets, sump boxes with traps downstream of trench drains, and filter strips for overland flow. [Section 4.7.3, 12]
14. Verify that energy dissipaters, such as riprap stone, are proposed at all locations of concentrated inflow. [Section 4.7.3, 14]
15. Verify that the storage area provides static storage for the Water Quality Volume (WQv) between the overflow elevation and the basin's water surface. All permanent pool areas must be excluded from the SMP's storage volume estimation. [Section 4.7.3, 16]
16. Verify that the side slopes for all open storage areas do not exceed 2(H):1(V) (the recommended side slope is 3(H):1(V)), and that the side slopes of all mowed areas do not exceed 4(H): 1(V) to avoid "scalping" by mower blades. [Section 4.7.3, 18]
17. Verify that a minimum planting soil medium depth of 18 inches is provided under emergent planting zones. [Section 4.7.3, 19]
18. Verify that the planting design provides for at least 85% cover of the emergent vegetation zone (the area of the pond that is less than 18 inches deep) and buffer area. [Section 4.7.3, 23]
19. Verify that a vegetated pond buffer extends outward 25 feet from the permanent pool. [Section 4.7.3, 24]
20. Verify that energy dissipaters, such as riprap stone, are placed at the end of the primary outlet to prevent erosion. [Section 4.7.3, 26]
21. Verify that the primary and low-flow outlets are protected from clogging by an external trash rack. [Section 4.7.3, 27]
22. Verify that the emergency spillway does not direct flow toward neighboring properties. [Section 4.7.3, 28]
23. Verify that stabilized vehicular access is provided for sediment removal. Areas must be at least nine feet wide, have a maximum slope of 15%, and be stabilized as needed to provide load support for vehicles. [Section 4.7.3, 30]

F.13.3 Pond and Wet Basin Material Standards

1. Verify that the planting soil medium is specified on the plans as meeting the following specifications: [Section 4.7.4, 3]
 - a. Hydrologic soil groups "C" and "D" are suitable, without modification, for underlying soils.
 - b. If natural topsoil from the site is to be used, it must have at least 8% organic carbon content by weight in the A-horizon for sandy soils and 12% for other soil types.
 - c. If planting soil is imported, it must be made up of equivalent proportions of organic and mineral materials.
2. Verify that native grass/wildflower seed mix, if proposed as an alternative to groundcover planting, is free of weed seeds. [Section 4.7.4, 6]
3. Verify that the proposed pond or wet basin plantings are indicated on the plans and are non-invasive. Refer to **Appendix I** water.phila.gov/development/stormwater-plan-review/manual/appendices/i-plant-lists/ for plant lists. [Section 4.7.4, 7]