

## Oconee County As-built requirements

### Storm Pipe As-built

#### **Plan Requirements**

1. Show correct storm-water pipe location based on the Approved Design Plans and Final Plat.
2. Show and label existing storm-water pipes and structures.
3. Show and label the storm-water pipe - size and material.
4. Label storm-water structures.
5. Show and label any existing storm-water pipe or structures that are being abandoned.
6. Show and label all permanent storm-water drainage easements.
7. Show and label the 10' drainage easement around the detention pond from 100-yr pond elevation.
8. Show and label the Ingress/Egress easement to the detention pond.
9. Verify that all easements match the Final Plat.
10. Provide updated calculations for storm drainage pipe chart using as-built conditions.

#### **Profile Requirements**

1. Provide updated calculations for storm drainage pipe chart using as-built conditions for 25-yr storm event.
2. Show 25-yr HGL on pipe profiles.
3. Label length, slope, size, material, and velocity for each section of storm-water pipe.
4. Label structure numbers, structure type, station numbers, top elevations, and invert in & out elevations.
5. No slopes should be less than 0.5% without documentation proving a minimum velocity of 3 f.p.s.
6. Pipe velocities should be less than 3 f.p.s.
7. Show and label all utility crossings.
8. Show and label existing and post-construction ground surface.
9. Verify that elevation and graphics match.
10. Verify that profile matches the site plan layout.
11. Specify horizontal and vertical scales.

### As-built Hydrology Report

1. Show As-built adjusted calculations for WQv, CPv, orifice sizes and weir sizes.
2. Provide summary chart comparing design flows at each study, routing flows from ponds, and pond elevations from design conditions to as-built conditions.
3. Pre- and post-development peak discharges for the 1, 2, 5, 10, 25 and 100-yr, 24-hour storms.

- a. Hydrographs, hydrograph recaps, and hydrograph summaries
  - b. Stage/storage table for the entire pond, starting at pond's bottom
  - c. Pond summary report with orifices, weirs, culverts, and discharge data used to develop pond routing hydrographs.
4. On-site and off-site delineated basin area maps with impervious areas to stormwater pond
  5. Routing and storage calculations
    - a. Demonstrate detention facility can safely pass the 100-yr storm
    - b. Storage volumes greater than 100 acre-feet are subject to the requirements of the Georgia Safe
    - c. Dams Act.
    - d. Routing should begin at normal water surface elevation.
  6. Pretreatment/forebay dimensions and area sizing calculations
    - a. Volume: 0.1 inches of runoff per impervious acre of contributing drainage area, minimum
    - b. Depth: 4 - 6 feet
    - c. Vertical sediment depth marker should be placed in forebays to measure sediment deposition
    - d. Forebay at each inlet pipe, unless the inlet pipe discharges less than 10% of the total design storm inflow to the pond.
  7. The information required to be provided for the as-built survey shall be included in the report.

### As-built Survey

1. Provide topography survey of pond in as-built conditions, including embankment, downstream slope, fore bays, micro pools, etc. Topographic survey shall be stamped and signed by Registered Land Surveyor.
2. Spot elevations, including in front of the outlet device and at the opposite end of the pond, to verify positive drainage.
3. Elevations for:
  - a. Lowest point on top of the embankment
  - b. Bottom of facility
  - c. All inverts for pipes discharging into or discharging from the facility
  - d. Emergency spillway
  - e. Water surface elevation for the 100-year storm
  - f. Safety bench inside and outside breaks in grade, if applicable.
4. Freeboard from top of embankment of wall to 100-year water surface elevation
  - a. Earthen dams: 1.0 feet minimum
  - b. Walled ponds: 1.0 foot minimum
5. Ponding Limits for the 100-year storm.
6. Dimension 10-foot BMP drainage easement outside of the 100-year ponding limits.
7. Locate and dimension top of dam's minimum width.
8. Height of basin
  - a. Vegetative and rip rap embankments should be <20 feet in height; <10 feet is preferred.
  - b. A geotechnical slope stability analysis is recommended for embankments over 10 feet in height.
9. Identify material used for embankments.
  - a. Designs of non-earthen dams shall not include planned structure overtopping for emergency

- b. overflows.
  - c. Non-earthen pond dam structures shall be constructed of monolithic wall materials.
  - d. Walls shall extend from the toe of exterior fill slope into the pond's earthen embankment a distance 4 times the depth of the 100-year ponding limits.
10. Pond Embankment side slopes: maximum 3:1
11. Size, material, and slope of outlet pipe.
- Note: If the 100-year maximum flow velocity in a conduit through the dam is  $\geq 10$  feet per second and the hydraulic grade line is at or above the crown for at least 10% of the conduit length, the pipe must be superior to Class V RCP in its structural characteristics.
12. Seepage control or anti-seep collars.
13. Size, location, and type of pretreatment/sediment forebay(s).
14. Profile view of outlet structure
- a. Orifices smaller than 3 inches in diameter shall have internal orifice protection, such as a perforated vertical standpipe with 0.5-inch orifices or slots that are protected by wire-cloth and stone filtering jacket.
  - b. Orifices smaller than 15 inches in diameter shall be protected by a trash rack.
15. OCS diagram and with complete applicable information in the diagram.
16. Provide Profile view of detention facility out pipe.
17. Each pond must have a bottom drainpipe with an adjustable valve that can completely or partially drain the pond within 24 hours.
18. Pond drain should be sized one pipe size larger than the calculated design diameter.
- a. Drain valve is typically a hand-wheel activated knife or gate valve.
  - b. Valve controls should be located inside of the riser, at a point where they will not normally be inundated and can be operated in a safe manner.
19. Location of detention facility area in respect to property lines, road R/W, and easements.
- a. Show and dimension: access easement to the R/W
  - b. Show and dimension: 10 ft.-wide BMP drainage easement outside the 100-year ponding limits.
20. Maintenance access:
- a. Minimum width: 12 feet
  - b. Maximum slope: 15%.
21. Operation and Maintenance Schedule.