**Design Notes:**

1. See General Details for UDFCD Specs for Soil Riprap.
2. Perimeter Wall shall be cast-in-place reinforced concrete. Professional Engineer is responsible for structural design of all outlet structures and other concrete elements including rebar and rebar mats. In addition, cast-in-place concrete phasing and connection of structures via doweling throughout phased concrete pours.
3. For no infiltration section, spray on waterproofing lining shall be applied to all internal concrete surfaces. Spray on waterproofing lining shall be raven industries eccour spray liner system or approved equal.
4. As an alternative to spray-on waterproofing an impermeable geomembrane liner may be used. If impermeable geomembrane liner is installed below drain-on-water-media, a layer of nonwoven geotextile shall be placed between the liner and the drain-on-water-media. If substrate contains angular rocks or other material that could puncture the liner, a layer of nonwoven geotextile shall also be placed between the liner and the subgrade (see construction drawings for liner requirements).
5. Outlet shall be connected to perimeter wall along with geotextile using fabric attachment detail. All liner seams shall be welded. PVC boot shall be used for all underdrain penetrations through liner. Water tightness of liner shall not be compromised during construction or landscaping operation.
6. Cleanout(s) shall be provided at the upstream end. Upstream of any bends 22 degrees or greater and at a maximum spacing of 100 feet. See general details sheet for underdrain details. All underdrain bends shall be 45 degrees or less.

**Bioretention Surfacing:**

- Bioretention surfacing shall be seeded with native turf grass (per Table 3-3, USDOT Volume 3, Fact Sheet T-3) or sand grown sod. Seeded areas shall be protected with biodegradable double net 100% coconut fiber erosion control blanket. Until grass cover is established, shrubs are not permitted. Rocks are placed under the base of the shrub, with the rock covering no more than 15% of the surface area.

**Drainage:**

- Two-inch diameter and larger rocks may be used as an accent or barrier but may not cover more than 15% of the surface area. Wood mulch is not permitted.

**Soil Riprap:**

- If tributary area is greater than 4 acres to an inflow point, a forebay is required.

**Irrigation:**

- An irrigation system shall be provided. Irrigation system should be placed outside of perimeter walls whenever possible. If the irrigation system wall provide adequate coverage from outside the perimeter wall. Irrigation heads and laterals shall be located on the outside of the edges of the bioretention media surface.

**Grading:**

- The finished grade surrounding perimeter walls shall have a maximum slope of 3:1, slopes steeper than 1:1 must be blanketed, tamped and seeded.

**Furnishments:**

- Two-inch diameter and larger rocks may be used as an accent or barrier but may not cover more than 15% of the surface area.

**Paving:**

- Paving or other hard surfaces are required to the outlet structure via sidewalk, parking lot or other formalized path. A hard surface maintenance access is required to the outlet structure. When the distance from the top of grate to the inlet floor is greater than 6 inches (min.) or WQCV depth, a single EURV orifice shall provide runoff into the bioretention facility. Concrete floor can be sloped and/or paved areas.

**Landscape:**

- Landscape area shall be sloped parallel to underdrain to achieve minimum slope. For no infiltration section, concrete floor can be sloped and/or paved areas.

**Rebar Phasing and Connection:**

- Concrete phasing and connection of structures via doweling throughout phased concrete pours.