F.17 Inlet Controls

F.17.1 Flow splitter design and material standards

1. Verify that the bypass elevation is set, at minimum, at the design storage elevation in the SMP. Flow will then only start to bypass the SMP once it exceeds the design storage elevation of the SMP. The design storage elevation is the water surface elevation at which the SMP storage area contains the runoff volume from a design storm event (for example, the WQv or the 10-year, 24-hour storm). [Section 4.11.2, 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 4.11.2, 2]
3. Verify that overflow structures and pipes are designed to convey at least the ten-year, 24-hour storm event. The system should have enough capacity to transmit larger flows over the bypass weir without surcharging the structure. [Section 4.11.2, 2]

F.17.2 Curbless design/curb opening design and material standards

1. If flow is to be introduced through curb openings, verify that the pavement edge is slightly higher than the elevation of the vegetated areas within the SMP. [Section 4.11.3, 1]
2. Verify that curbless design/curb openings are designed to convey flow into an SMP without inducing erosive conditions. Integration of energy dissipaters is recommended where appropriate. [Section 4.11.3, 2]
3. Verify that curb openings are designed to reduce bypass of gutter flow past the curb opening. This is a common problem with many curb openings that are oriented perpendicular to flow. [Section 4.11.3, 3]
4. If curb openings are used to capture runoff, especially from driveways or roadways where the curb openings are not in a sump condition, verify that documentation that runoff from the one-year, 24-hour storm event will be captured by the curb opening is provided. [Section 4.11.3, 4]
5. Verify that erosion control fabric, if proposed, is designed in accordance with the channel design procedures in the latest edition of the *Pennsylvania Department of Environmental Protection (PA DEP) Erosion and Sediment Pollution Control Program Manual*, or per the manufacturer's specifications. [Section 4.11.3, 6]
6. Verify that curb openings are designed as gaps in otherwise continuous sections of concrete or granite curb conforming to the specifications of the *City of Philadelphia Department of Streets, Standard Construction Items (1997)*. [Section 4.11.3, 7]
7. Verify that all subsurface portions of concrete or granite curb (i.e. below finished pavement grade) are continuously installed within the extents of the curb opening. [Section 4.11.3, 8]
8. Verify that curb openings are appropriately sized to convey the design discharge. Curb openings are typically 12 to 48 inches wide. Verify that curb openings are at least eight inches wide to prevent clogging and for ease of maintenance. [Section 4.11.3, 10]

F.17.3 Energy dissipater design and material standards

1. Verify that an energy dissipater is proposed if flow is concentrated at the entrance to a surface SMP. [Section 4.11.4, 1]
2. Verify that riprap is designed and sized in accordance with the riprap apron design procedures in the latest edition of the *PA DEP Erosion and Sediment Pollution Control Program Manual* or *U.S. Army Corps of Engineers, Hydraulic Engineering Center Circular 14 (HEC-14)*. [Section 4.11.4, 2]
3. Verify that riprap stone is angular, graded stone aggregate meeting the specifications of *PennDOT Publication 408, Section 703.2, Coarse Aggregate, Type A*. [Section 4.11.4, 3]
4. For stream outfalls, verify that the energy dissipation design tools HEC 11, HEC 14, and HEC 15 are used for riprap, energy dissipaters, and flexible linings, respectively. [Section 4.11.4, 4]

F.17.4 Inlet design and material standards

1. Verify that inlets are not connected in series. Similarly, roof drainage systems must not be directly connected to inlets. [Section 4.11.5, 1]
2. Verify that all inlets include a sump and trap or sump and hood for pretreatment of stormwater runoff. The sump depth must be at least 15 inches below the bottom of the trap or at least 12 inches below the bottom of the hood. [Section 4.11.5, 2]
3. If non-standard inlets are used to capture runoff, especially from driveways or roadways where the inlets are not in a sump condition, verify that documentation that runoff from the one-year, 24-hour storm event will be captured by the inlet is provided. [Section 4.11.5, 3]
4. Verify that inlet spacing is designed to prevent water from overtopping the curb and gutter or drainage ditch. [Section 4.11.5, 4]
5. Verify that inlets are sized based on the size of the contributing drainage area, the amount of sediment expected from the discharging waters, the size and frequency of runoff events, and the amount of maintenance expected, recognizing that an undersized system will require more frequent maintenance. For large inlet drainage areas, area drains and yard drains 18 inches in diameter or smaller, or smaller than 2’ x 2’, should be upsized to at least 2’ x 2’ inlets. [Section 4.11.5, 5]
6. Verify that all area drains and yard drains 18 inches in diameter or smaller, or smaller than 2’ x 2’, include a permanent pretreatment device, such as a filter bag insert, for pretreatment of stormwater runoff. [Section 4.11.5, 6]
7. Verify that all inlets on sites that generate pollutants, such as loading docks, material storage facilities, junk yards, and waste collection and disposal sites, include a permanent filter bag insert. [Section 4.11.5, 8]