

## 917 Stormwater Facilities

### 917.1 General

A stormwater facility is often located at the downstream end of a drainage system for the purpose of treatment and attenuation of stormwater runoff. The Stormwater Facility sheet provides data and information for the proposed stormwater facilities, including:

- (1) Stormwater Facility Plan View
- (2) Stormwater Facility Sectional Views
- (3) Outlet Structure Details

~~This sheet may be produced on a standard format sheet (11"x17") or a large format sheet (24"x36", 36"x48", or 36"x72"). Use landscape orientation regardless of sheet size selected.~~

See **Exhibit 917-1** for an example of a Stormwater Facility sheet.

### 917.2 Stormwater Facility Plan View

~~The stormwater facility plan view is typically located in the upper left area of the sheet.~~ It is preferable to display a stormwater facility in its entirety on a single plan sheet. A common horizontal scale for the plan view is 1" = 50' (no larger than 1" = 20').

#### 917.2.1 Required Information

Display and label the following information in the plan view:

- (1) Baseline of construction stationing (typically increasing from left to right) with station and offset ties to the project centerline of construction. Include a north arrow and scale above and near the drainage plan view.
- (2) Elements of the proposed roadway, including drainage pipes and structures.
- (3) Location of stormwater facility sectional views (i.e., A-A, B-B).
- (4) Location of soil borings.
- (5) Stormwater facility delineations:

- (a) Facility bottom and top (often referred to as top of bank). Provide station/offset callouts and radii along the top of bank delineation.
  - (b) Changes in side slopes (e.g., 1:2 to 1:4).
  - (c) Maintenance berm limits.
- (6) Maintenance access road, fence and gates, and R/W lines.
- (7) Stormwater facility drainage structures and pipes with locations of outlet structure sectional views (i.e., C-C, D-D).

### 917.3 Stormwater Facility Sectional Views

~~The stormwater facility sectional views are typically located below or adjacent to the plan view.~~ Include a minimum of two sectional views, taken in directions perpendicular to each other (as shown on **Exhibit 917-1**). The horizontal scale should be the same as used for the stormwater facility plan view. The vertical scale is typically 4 to 5 times larger than the horizontal scale (e.g., 1" = 20' horizontal and 1" = 4' vertical).

#### 917.3.1 Required Information

Display and label the following information in the sectional views:

- Stormwater facility bottom and top (often referred to as top of bank) with elevations, side slopes, and maintenance berm.
- Existing groundline, limits of clearing and grubbing, limits of sod or vegetation, and the locations of R/W lines and fences.
- Symbols and elevations for Normal Highwater and Peak Design Stage.
- Soil borings.

Dimension the maintenance berm and the horizontal distances between the stormwater facility delineations.

#### 917.3.2 Cross Sections

~~Showing cross sections of the stormwater facility in the plans is typically not necessary. However, if it is determined that the sectional views do not adequately show the design~~

~~intent, cross sections may be included.~~ A horizontal scale of 1" = 10' is preferred. Use a vertical scale of 1" = 10'. If material is to be excavated from the pond, plot the soil borings on the cross sections. Place cross sections anywhere within available space on the Stormwater Facility sheet and include required information specified in **FDM 917.3.1**.

## 917.4 Outlet Structure Details

~~The stormwater facility outlet structure details are typically shown adjacent to the plan view.~~ Outlet structure information, elevations, and dimensions may be placed in a data table (as shown on **Exhibit 917-1**) or be labeled directly on the outlet structure sectional views. Information, elevation, and dimensions should clearly indicate the fabrication requirements of the modified inlet and skimmers.

### 917.4.1 3D Isometric View

Provide a 3D isometric view of the stormwater facility outlet structure that illustrates:

- Inlet with weir and drawdown.
- Outlet structure drainage structure number.
- Outlet pipe(s) with pipe number(s).
- Skimmer(s).
- Concrete apron.

Placement of the 3D isometric view may use any scale and angle that best displays the various components of the outlet structure.

### 917.4.2 Sectional Views

Provide a sectional view across each side of the outlet structure that contains a weir or drawdown. Sectional views must provide all pertinent dimensions and elevations needed to fabricate the outlet structure and illustrate the same elements required for the 3D isometric view (at a minimum). Any scale may be used that clearly conveys the requirements of the outlet structure. Elevation data may be provided in table format as shown in **Exhibit 917-1**.

## **Exhibit 917-1: Stormwater Facility Sheet**