

Chapter 8

Summary of Drainage Structures and Optional Materials Tabulation

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8.1 Summary of Drainage Structures

The summary of drainage structures sheet shows the location, size, length, number and type of drainage structures used in a project. The sheet format is available in the FDOT Engineering/CADD Systems Software. Specific levels and fonts which shall be used are given in the FDOT ***CADD Production Criteria Handbook***.

For an illustration of the summary of drainage structures sheet, see ***Exhibit SDS-1a***.

8.1.1 Sheet Setup and Data

A summary of drainage structures shall be prepared and included in the plans. The structures shall be listed by structure number in numerical order. The location of each structure shall be identified by station along the construction centerline (**Exhibit SDS-1a**).

For storm and cross drains, the summary of drainage structures shall be tabulated by structure number, providing the station, size, length and incidental quantities appropriate for the material detailed in the plans. Optional culvert material will be provided and a tabulation form shall be prepared and included (see **Section 8.2**).

Modification for Non-Conventional Projects:

Delete the last sentence of the above paragraph and replace with the following:

See **Chapter 6** of the **Drainage Manual** for Optional Material requirements. Installed material shall be designated on the Optional Materials Sheet, Summary of Drainage Structures or on the as-built plan view.

Various drainage elements shall be shown in columns. This information shall be obtained from drainage structure sheets and plan-profile sheets. The order in which the elements are listed should be as follows:

1. Pipe Sizes for
 - a. Storm and Cross Drains
 - b. Gutter Drain
2. Curb Inlets
3. Manholes
4. Junction Boxes
5. Ditch Bottom Inlets
6. Gutter Inlets
7. Flared End Sections
8. Mitered End Sections
9. Performance Turf, Sod
10. Class of Concrete
11. Reinforcing Steel
12. Riprap

The "Description" column shall be used to specify the type of structure, the outgoing pipe and the end treatment of that pipe, if applicable.

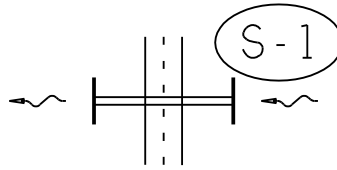
The remarks column shall contain all special notes pertaining to the structure. The "Final Quantity" line is for construction to use and shall be left blank.

On smaller projects the summary of quantities and the summary of drainage structures may be combined on one sheet.

It is recommended that structure numbers be established using the convention shown in the exhibits and described as follows:

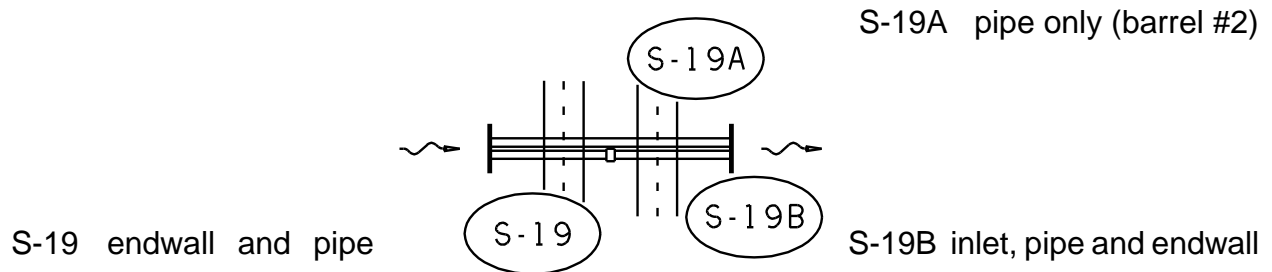
1. For simple cross drains, one structure number is appropriate for the inlet and outlet treatments and the pipe.

Example #1 (cross drain w/o median inlet)



2. For complex cross drains, it is suggested that the first and all intermediate structure numbers identify the hydraulically upper end treatment and pipe. The last structure number should identify the hydraulically upper end treatment, pipe and hydraulically lower end treatment.

Example #2 (Double pipe cross drain and median inlet)



8.2 Optional Materials Tabulation

All culverts, with the exception of pipe extensions and end section replacements require an Optional Pipe Materials Analysis. An optional materials tabulation shall be prepared and included in the plans (see **Exhibits SDS-2a** and **SDS-3a**). The sheet format is available in the FDOT Engineering Systems Software.

As a minimum, the optional pipe material tabulation should include size, thickness or class, corrugation requirements, if necessary, and protective coating, if any. Additional information such as structure number, design service life (DSL), length, and flow line information may be included.

The general notes shown on the exhibits are also required.

Modification for Non-Conventional Projects:

Delete **PPM** 8.2 and see **Chapter 6** of the **Drainage Manual** for Optional Material requirements. Installed material shall be designated on the Optional Materials Sheet, Summary of Drainage Structures, or on the as-built plan view.