308 Summary of Drainage Structures and Optional Materials Tabulation

308.1 General

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 CADD Software. Specific levels and fonts are in the ***CADD Manual***.

See ***Exhibit 308-1*** for an illustration of the Summary of Drainage Structures sheet.

The Optional Materials Tabulation sheet is an optional sheet that is included when providing acceptable options for pipe material and sizes that will satisfy the Design Service Life. The sheet format is available in the FDOT CADD Software.

See ***Exhibits 308-2*** and ***308-3*** for illustrations of Optional Materials Tabulation sheets.

308.2 Summary of Drainage Structures

Prepare and include a summary of drainage structures in the plans. List the structures in numerical order of structure number. Identify the location of each structure by station along the centerline of construction.

Tabulate storm and cross drains in the summary of drainage structures by structure number, providing the station, size, length and incidental quantities appropriate for the material detailed in the plans. When the number of columns exceeds one page, the additional sheet is to be numbered using a suffix (e.g., 3 and 3A, 4 and 4a). Information for the drainage elements in the columns is 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

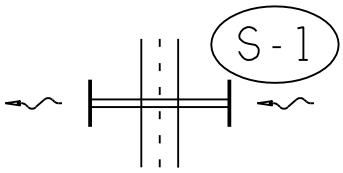
Use the "Description" column to specify the type of structure, the outgoing pipe and the end treatment of that pipe, if applicable.

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

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

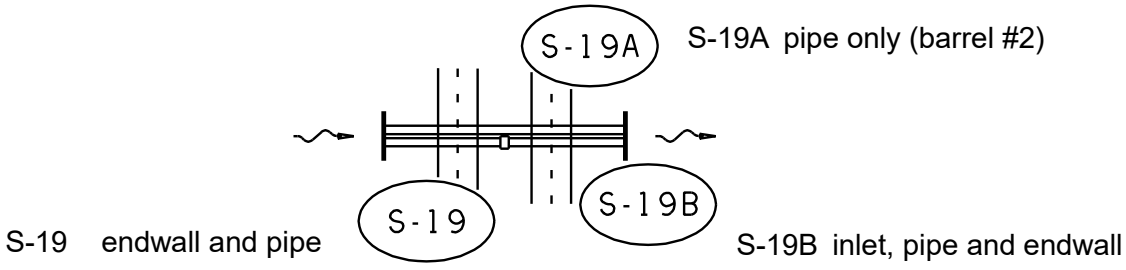
(1) For simple cross drains, one structure number is appropriate for the inlet, pipe and outlet treatments.

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)



308.3 Optional Materials Tabulation

Optional culvert materials must be considered for all culverts; however, culvert extensions and end section replacements are to match the existing culvert material. See the Department's ***Optional Pipe Material Handbook*** for more information.

Conduct an Optional Pipe Materials Analysis and prepare an Optional Materials Tabulation sheet to be placed in the plans.

The Optional Material Tabulation sheet is to include:

(1) Structure number, or description

(2) Design service life (DSL)

(3) Size

(4) Material and thickness or class, corrugation requirements, protective coating

(5) Flow line information

Modification for Non-Conventional Projects:
Delete ***FDM 308.3*** and see ***Chapter 6*** of the ***Drainage Manual*** for Optional Material requirements. Designate installed material on the Optional Materials Sheet, Summary of Drainage Structures, or on the as-built plan view.

QUANTITY	STR. NO.	STATION	SIDE	DESCRIPTION	BARRELS	STORM AND CROSS DRAIN OPTIONAL TYPE										GUTTER DRAIN OPT. TYPE	CURB INLETS				MH	DITCH BOTTOM INLETS				GUTTER INLET		FLARED END SECTION			MITERED END SECTION		PERF. TURF (SOD)	CLASS I CONC.	CLASS II CONC.	REINF. STEEL	SAND CEMENT RIPRAP	REMARKS
						ROUND SHAPE								OTHER			P-1	P-2	J-1	J-2	J-7	A	B	C	D	S		15"	18"	30"	18"	24"						
						15"	18"	24"	30"	36"	42"	48"	60"	24"	30"	15"	< 10'	< 10'	< 10'	< 10'	< 10'	< 10'	<10'	<10'	< 10'	< 10'	> 10'						SY	CY	CY	Lbs.	CY	
P	1	146+50	Rt.	Pipe	1		12'																													Const. Conc. Collar
F																																				
P	2	146+54.12	Lt.	Pipe	1		103'																													
F																																				
P	3	147+33.80	Rt.	Inlet, Pipe	1	89'											1																			
F																																				
P	4	147+61	Lt.	Inlet, Pipe	1					78'										1																
F																																				
P	5	148+15.96	Lt.	Inlet, Pipe	1	93'												1																		Mod. Height
F																																				
P	6	148+45.30	Rt.	MH, Pipe	1					28'											1															Alt. A, Brick
F																																				
P	7	148+77.55	Lt.	Inlet, Pipe	1					52'										1																RCP CLASS II
F																																				
P	8	148+77.55	Rt.	EW, Pipe	1						16'																							43	6.33				
F																																				
P	9	149+35	Rt.	Inlet, Pipe	1				185'										1																	
F																																				
P	10	149+35	Lt.	Inlet, Pipe	1		53'										1																			
F																																				
P	11	454+18 & Leg A	Lt.	MES, Pipe	1		76'																									1		9				
F																																				
P	12	150+27	Rt.	EW, Pipe	1			80'																										24				2.9	RCP CLASS III
F																																				
P	13	203+00	Rt.	FES, Pipe	1										96'																		32				
F																																				
P	14	5+00 Ramp A	Lt.	EW, Pipe, Inlet	1				72'																		1						62	3.26				
F																																				
P	14A	5+00 Ramp A	Rt.	Pipe, EW	1									50'																			62	3.26				
F																																				
P	15	15+00 Ramp A	Rt.	Inlet, Pipe, EW	1											32'											1						17	0.67				
F																																				
P	16	214+00	Lt.	EW, Pipe	2							320'																					97	10.48				Const. Collar, Pipe Ahead
F																																				
P	17	214+14	Rt.	Inlet, Pipe	1		8'																	1									6					
F																																				
P	18	219+00	Lt.	Inlet, Pipe, FES	1		62'																		1				1				17					
F																																				
P	19	229+00	Rt.	EW, Pipe, Inlet	1								102'										1										140		11.3	695		
F																																				
P	19A	229+00	Lt.	Pipe, EW	2								196'																				172		13.7	824		
F																																				
P	19B	229+00	Lt.	Pipe	1								204'																								
F																																				
P	20	229+42	Rt.	MES, Pipe	1			40'																							1		14					Const. Collar
F																																				
P	21	240+00	Lt.	MES, Pipe, Inlet	1		86'																	1						1		15					
F																																				
P	22	260+00	Rt.	FES, Pipe, Inlet	1	87'																1						1				19					
F																																				
P	23	281+00	Lt.	Inlet, Pipe, FES	1	89'																1						1				19					
F																																				
P																																				
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F																																				
GRAND TOTALS - PLAN QUANTITY						358'	400'	120'	257'	158'	16'	320'	502'	50'	96'	32'	2	1	1	2	1	2	1	2	1	1	1	2	1		2	1	748	24.00	25.00	1519	2.9	
FINAL QUANTITY																																				

Exhibit 308-1
Date: 1/1/13

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LUKE S. WALKER, P.E.
P.E. NO.: 99991
ROADWAY ENGINEERS, INC.
123 MAIN STREET
TALLAHASSEE, FL 32301
CERTIFICATE OF AUTHORIZATION: 12345

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

SUMMARY OF DRAINAGE STRUCTURES

SHEET NO.

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STR. NO.	DSL YEARS	SIZE (Inches)	PLOTTED	MATERIAL & THICKNESS	FL	FL	AS BUILT	REMARKS
1	100	18	X	RCP CLASS II				
2	100	18	X	RCP CLASS II				
3	100	15	X	RCP CLASS II	7.0			
				SRAP				
4	100	36	X	RCP CLASS II	5.7			
				SRSP, 12 GA.				
				SRAP, 12 GA.				
				SRASP, 16 GA.				
5	100	15	X	RCP CLASS II	7.7			
				SRAP				
6	100	36	X	RCP CLASS II	6.4	5.7		
				SRSP, 12 GA.				
				SRAP, 12 GA.				
				SRASP, 16 GA.				
7	100	36	X	RCP CLASS II	6.5	6.4		
8	100	42	X	RCP CLASS II	7.9	7.7		
				SRAP				
				SRSP				
9	100	30	X	RCP CLASS II	6.8	6.5		
				SRAP, 16 GA.				
				SRSP, 16 GA.				
10	100	18	X	RCP CLASS II	7.6	7.2		
				SRAP, 16 GA.				
				SRSP, 14 GA.				
				SRASP, 16 GA.				
11	100	18	X	RCP CLASS II	8.0	7.6		
				SRAP, 16 GA.				
				SRSP, 14 GA.				
				SRASP, 16 GA.				
12	100	24	X	RCP CLASS III				ENDWALL
13	100	24x38	X	ERCP CLASS II	10.4	10.3		
		35x24		ASPA, 14 GA.				
14	50	30	X	RCP CLASS III	6.0	5.9		
				SRASP 14 GA.				
				SRAP, 14 GA.				
				HDPE-1				
				PVC				
		36		CAP, 16 GA.	5.9	5.8		
		36		CSP, 16 GA. BIT. COATED	5.9	5.8		
14A	50	19x30	X		5.9	5.8		
		28x20		ERCP CLASS III				
				ASPA 14 GA.				

THIS EXAMPLE SHOULD BE USED WHEN PIPE FLOW LINES, AND/OR SIZES FOR INDIVIDUAL OPTIONS ARE NOT THE SAME (SEE STRUCTURE NO. 14) OR WHEN NUMEROUS EXCEPTIONS OCCUR.

Exhibit 308-2
Date: 1/1/15

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123456-1-52-01

OPTIONAL MATERIALS TABULATION

SHEET NO.

9/19/2017 2:28:42 PM

STRUCTURE	SIZE (Inches)	MATERIAL	PLOTTED	AS BUILT	REMARKS
	15	RCP CLASS II	X		
		SRAP, 14 GA.			
EXCEPTION	18	RCP CLASS II	X		
S-1 & S-2		SRAP, 16 GA.			
SRCP CLASS II		SRSP, 14 GA.			
ONLY		SRASP, 16 GA.			
EXCEPTION	24	RCP CLASS III	X		
S-12		SRAP, 16 GA.			
SRCP CLASS III		SRSP, 16 GA.			
ONLY		SRASP, 16 GA.			
	30	RCP CLASS III	X		
		SRAP, 14 GA.			
		SRASP, 14 GA.			
EXCEPTION	36	RCP CLASS II	X		
S-7		SRAP, 14 GA.			
SRCP CLASS II		SRSP, 12 GA.			
ONLY		SRASP, 16 GA.			
EXCEPTION	24x38	ERCP, CLASS II	X		
S-13	35x24	ASPA, 14 GA.			
EXCEPTION	19x30	ERCP, CLASS III	X		
S-14-A	28x20	ASPA, 14 GA.			

THIS EXAMPLE SHOULD BE USED WHEN MATERIAL OPTIONS ARE THE SAME FOR THE DIFFERENT PIPE SIZES AND WHEN LIMITED EXCEPTIONS ARE NOTED.

Exhibit 308-3
Date: 1/1/15

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 22	BAY	123451-1-52-01

OPTIONAL MATERIALS TABULATION

SHEET NO.

9/19/2017 2:29:09 PM