GENERAL NOTES:

1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of cross drain pipe; corrugated steel pipe mitered end sections may be used with any type of cross drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of cross drain pipe except steel pipe. When bituminous coated metal pipe is specified for cross drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the cross drain pipe, construct a concrete jacket in accordance with Index 430-001.

2. Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC), steel reinforced polyethylene pipe (SRPE), and polypropylene pipe (PP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE, PVC, SRPE, or PP pipe, with metal pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.

3. Class NS concrete cast-in-place reinforced slabs are required for all sizes of cross drain pipes. Construct slabs at 5½" thick, unless 3" thickness is called for in the Plans.

4. Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.

5. Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.

6. When existing multiple cross drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.

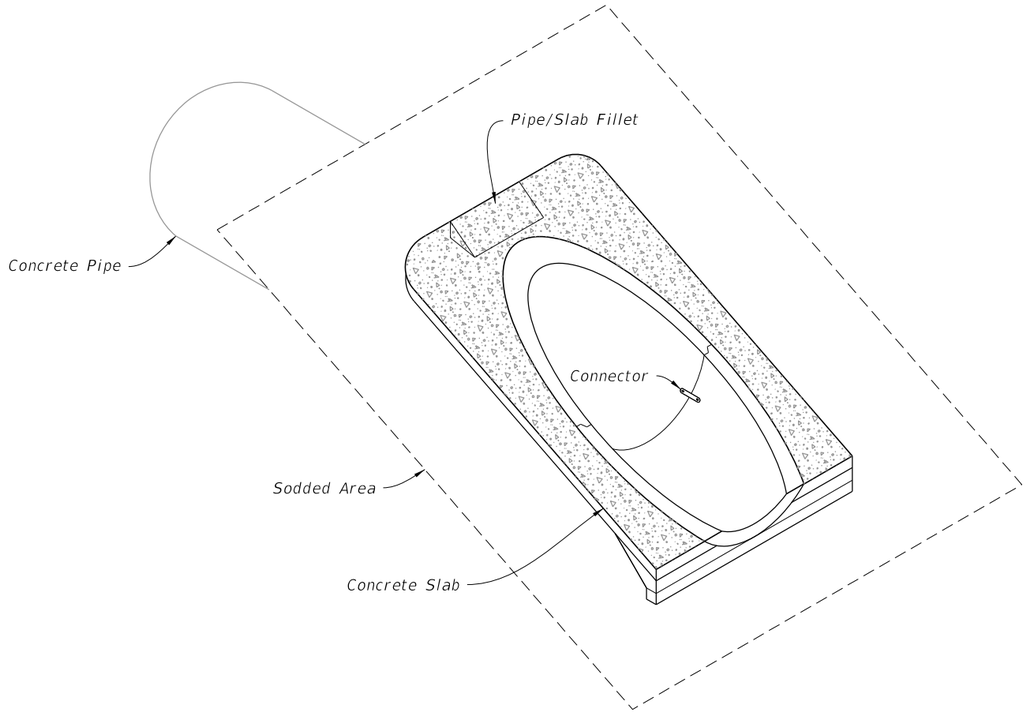
7. Saddle Slope:

   1:4 Miter – Slope to ℄ of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.
   Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.
   Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.

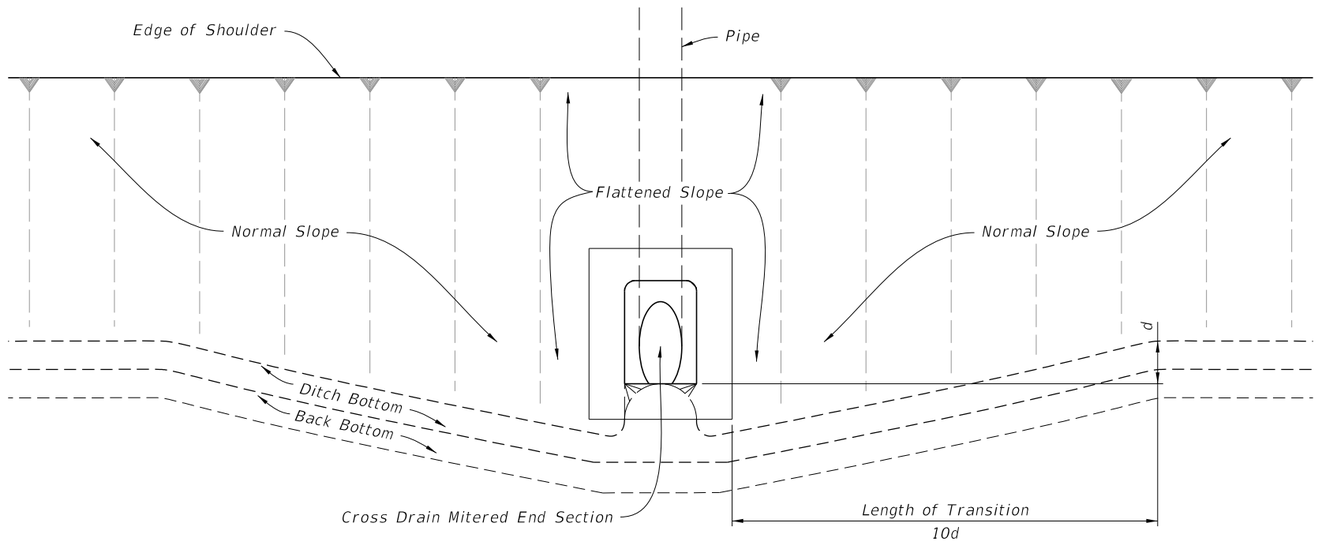
   1:2 Miter – Slope to ℄ of pipe for round pipes less than or equal to 18"diameter and 1:2 for round pipes greater than or equal to 24" diameter.
   Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.
   Slope 1:1 for all pipe arch sizes.

8. Quantities shown are for estimating purposes only.

TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Pipe Dimensions and Quantities
6	Concrete Pipe Connections and Corrugated Metal Pipe (CMP) Anchor Detail



CROSS DRAIN MITERED END SECTION
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)



SLOPE AND DITCH TRANSITIONS

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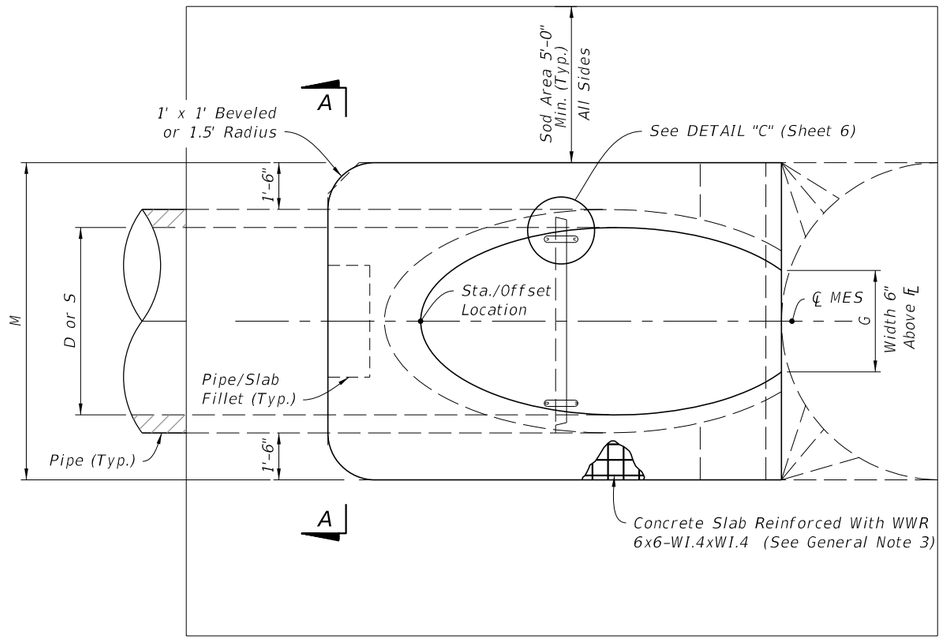
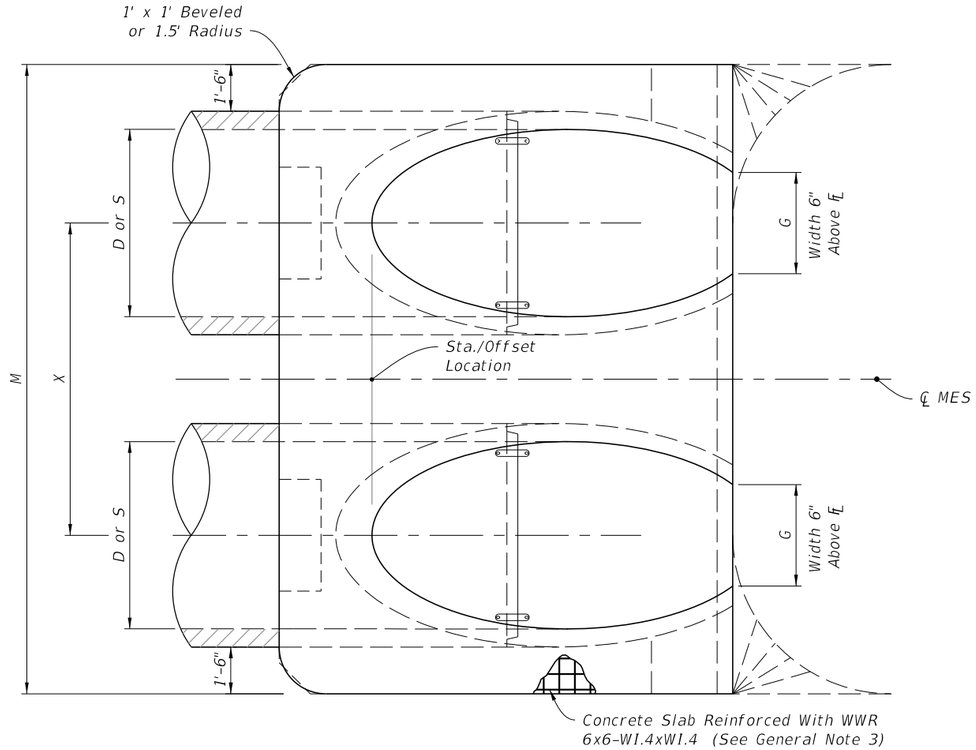


PLAN - SINGLE PIPE



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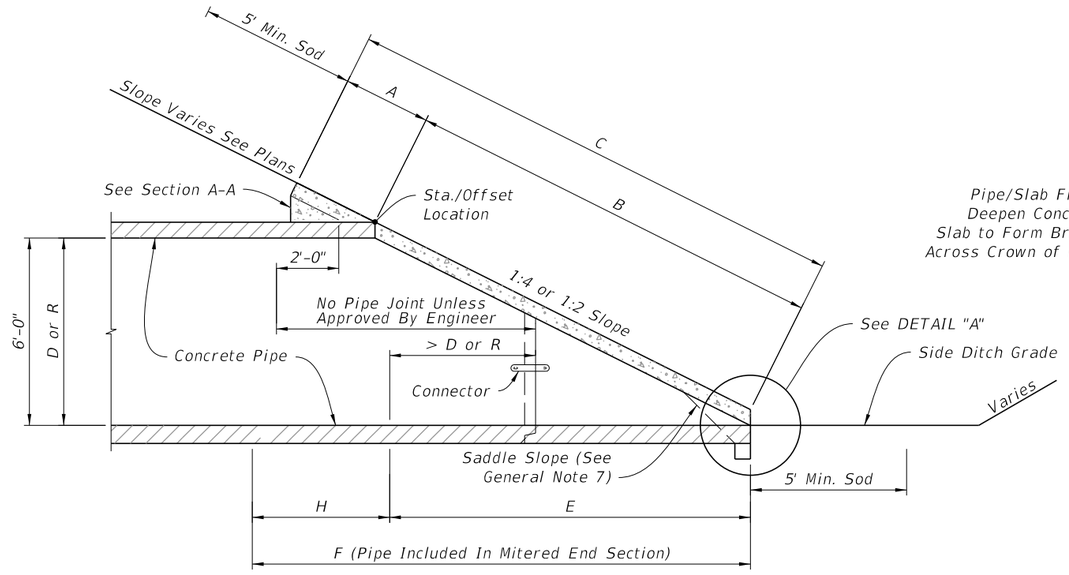

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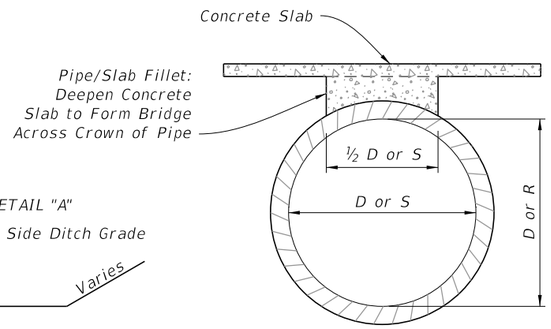
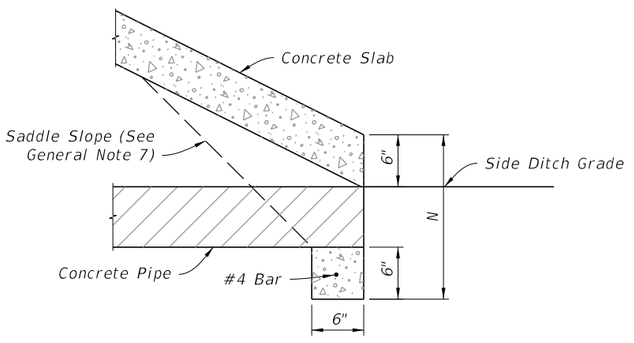


SECTION A-A
(Pipe/Slab Fillet)



DETAIL "A"

ROUND CONCRETE PIPE
(Elliptical Pipe Similar)

NOTE: See Table 1 on Sheet 3 for Dimensions and Quantities.

SINGLE AND MULTIPLE CONCRETE PIPE

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TABLE 1
SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES

		Dia. D	Rise R	Span S	X	A	B	C	E	F	G	H	M				N	5½" CONC. SLAB (CY) (See General Note 3)				3" CONC. SLAB (CY) (See General Note 3)				SODDING (SY)			
													Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe		Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Concrete Pipe	1:2 Slope	15"	—	—	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	2.9'	4.63'	7.21'	9.79'	12.37'	1.19'	0.38	0.58	0.77	0.96	0.27	0.41	0.54	0.67	21	24	27	30
		18"	—	—	2'-10"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	3.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.44	0.65	0.87	1.09	0.31	0.45	0.60	0.75	22	25	28	31
		24"	—	—	3'-5"	2.06'	3.85'	5.91'	3.56'	7'	1.73'	3.4'	5.50'	8.92'	12.33'	15.75'	1.25'	0.54	0.83	1.12	1.42	0.39	0.59	0.79	1.00	24	28	32	35
		30"	—	—	4'-3"	2.15'	4.95'	7.10'	4.56'	8'	2.00'	3.4'	6.08'	10.33'	14.58'	18.83'	1.29'	0.66	1.09	1.50	1.91	0.46	0.76	1.04	1.32	26	31	35	40
		36"	—	—	5'-1"	2.25'	6.08'	8.33'	5.56'	9'	2.24'	3.4'	6.67'	11.75'	16.83'	21.92'	1.33'	0.81	1.38	1.95	2.51	0.55	0.94	1.33	1.71	28	34	39	45
		42"	—	—	6'-0"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	3.4'	7.25'	13.25'	19.25'	25.25'	1.38'	0.97	1.70	2.45	3.19	0.66	1.15	1.66	2.15	30	37	43	50
		48"	—	—	6'-9"	2.43'	8.33'	10.76'	7.56'	11'	2.65'	3.4'	7.83'	14.58'	21.33'	28.08'	1.42'	1.13	2.04	2.93	3.84	0.76	1.37	1.96	2.57	32	39	47	54
		54"	—	—	7'-8"	2.52'	9.44'	11.96'	8.56'	12'	2.83'	3.4'	8.42'	16.08'	23.75'	31.42'	1.46'	1.31	2.44	3.58	4.72	0.87	1.62	2.38	3.14	34	42	51	59
		60"	—	—	8'-6"	2.62'	10.56'	13.18'	9.56'	14'	3.00'	4.4'	9.00'	17.50'	26.00'	34.50'	1.50'	1.51	2.89	4.28	5.68	0.99	1.90	2.81	3.73	36	45	55	64
		66"	—	—	9'-2"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	4.4'	9.58'	18.75'	27.92'	37.08'	1.54'	1.68	3.25	4.84	6.43	1.11	2.15	3.21	4.27	38	48	58	68
		72"	—	—	10'-0"	2.80'	12.80'	15.60'	11.56'	16'	3.30'	4.4'	10.16'	20.16'	30.16'	40.16'	1.58'	1.89	3.74	5.59	7.45	1.24	2.46	3.68	4.90	40	51	62	73
	1:4 Slope	15"	—	—	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.0'	4.63'	7.21'	9.79'	12.37'	1.19'	0.57	0.87	1.15	1.44	0.40	0.61	0.80	1.00	23	26	29	32
		18"	—	—	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.66	0.99	1.31	1.65	0.47	0.69	0.91	1.14	25	28	31	35
		24"	—	—	3'-5"	2.53'	7.18' △	9.71'	7.03' △	11'	1.73'	4.0'	5.50'	8.92'	12.33'	15.75'	1.25'	0.85	1.30	1.75	2.20	0.60	0.90	1.21	1.52	28	32	36	40
		30"	—	—	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	4.0'	6.08'	10.33'	14.58'	18.83'	1.29'	1.10	1.74	2.39	3.05	0.76	1.19	1.63	2.07	31	36	41	46
		36"	—	—	5'-1"	2.87'	11.31' ◇	14.18'	11.03' ◇	15'	2.24'	4.0'	6.67'	11.75'	16.83'	21.92'	1.33'	1.32	2.21	3.08	3.96	0.89	1.48	2.05	2.63	34	40	46	52
		42"	—	—	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	4.0'	7.25'	13.25'	19.25'	25.25'	1.38'	1.58	2.76	3.91	5.09	1.05	1.82	2.57	3.34	38	44	51	58
		48"	—	—	6'-9"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	4.0'	7.83'	14.58'	21.33'	28.08'	1.42'	1.85	3.30	4.73	6.17	1.21	2.15	3.07	4.00	41	48	56	63
		54"	—	—	7'-8"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	4.0'	8.42'	16.08'	23.75'	31.42'	1.46'	2.14	3.95	5.77	7.58	1.39	2.55	3.72	4.88	44	52	61	69
		60"	—	—	8'-6"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	4.0'	9.00'	17.50'	26.00'	34.50'	1.50'	2.45	4.66	6.87	9.07	1.59	3.02	4.44	5.86	47	56	66	75
		66"	—	—	9'-2"	3.73'	21.62'	25.35'	21.03'	25'	3.18'	4.0'	9.58'	18.75'	27.92'	37.08'	1.54'	2.88	5.54	8.18	10.84	1.91	3.66	5.40	7.15	49	59	69	80
		72"	—	—	10'-0"	3.91'	23.68'	27.59'	23.03'	27'	3.30'	4.0'	10.16'	20.16'	30.16'	40.16'	1.58'	3.54	6.61	9.87	13.13	2.12	4.18	6.24	8.30	52	63	74	85
Elliptical Concrete Pipe	1:2 Slope	—	12"	18"	2'-10"	1.97'	1.62'	3.59'	1.56'	4'	1.50'	2.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.30	0.49	0.67	0.85	0.19	0.33	0.45	0.57	21	24	27	30
		—	14"	23"	3'-4"	2.01'	1.99'	4.00'	1.89'	5'	1.90'	3.1'	5.38'	8.71'	12.04'	15.38'	1.23'	0.37	0.59	0.81	1.02	0.25	0.40	0.55	0.69	22	26	29	33
		—	19"	30"	4'-0"	2.11'	2.92'	5.03'	2.73'	6'	2.37'	3.3'	6.04'	10.04'	14.04'	18.04'	1.27'	0.50	0.80	1.09	1.39	0.34	0.55	0.75	0.95	24	28	33	37
		—	24"	38"	5'-0"	2.20'	3.85'	6.05'	3.56'	7'	2.85'	3.4'	6.79'	11.79'	16.79'	21.79'	1.31'	0.62	1.03	1.45	1.86	0.43	0.71	1.00	1.28	26	31	37	42
		—	29"	45"	5'-11"	2.34'	4.79'	7.13'	4.39'	8'	3.19'	3.6'	7.50'	13.42'	19.33'	25.25'	1.38'	0.75	1.30	1.84	2.39	0.52	0.90	1.27	1.65	28	34	41	47
		—	34"	53"	7'-0"	2.43'	5.72'	8.15'	5.23'	9'	3.57'	3.8'	8.25'	15.25'	22.25'	29.25'	1.42'	0.90	1.61	2.32	3.03	0.62	1.11	1.60	2.09	30	37	45	53
		—	38"	60"	7'-10"	2.52'	6.46'	8.98'	5.89'	9'	3.95'	3.1'	8.92'	16.75'	24.58'	32.42'	1.46'	1.03	1.89	2.74	3.60	0.70	1.29	1.87	2.46	31	40	49	57
		—	43"	68"	8'-11"	2.62'	7.39'	10.01'	6.73'	10'	4.28'	3.3'	9.67'	18.58'	27.50'	36.42'	1.50'	1.19	2.26	3.33	4.40	0.81	1.54	2.26	2.99	33	43	53	63
		—	48"	76"	9'-11"	2.71'	8.33'	11.04'	7.56'	11'	4.59'	3.4'	10.42'	20.33'	30.25'	40.17'	1.54'	1.38	2.65	3.93	5.21	0.93	1.79	2.66	3.53	35	46	57	68
		—	53"	83"	10'-8"	2.80'	9.26'	12.06'	8.39'	12'	4.77'	3.6'	11.08'	21.75'	32.42'	43.08'	1.58'	1.55	3.03	4.50	5.96	1.04	2.04	3.03	4.02	37	49	61	73
		—	58"	91"	11'-8"	2.90'	10.19'	13.09'	9.23'	13'	5.01'	3.8'	11.83'	23.50'	35.17'	46.83'	1.63'	1.75	3.47	5.20	6.93	1.17	2.33	3.49	4.66	39	52	65	78
	1:4 Slope	—	12"	18"	2'-10"	2.36'	3.06'	5.42'	3.03'	5'	1.50'	2.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.45	0.68	0.92	1.14	0.30	0.45	0.61	0.76	23	26	29	32
		—	14"	23"	3'-4"	2.44'	3.75'	6.19'	3.70'	6'	1.90'	2.3'	5.38'	8.71'	12.04'	15.38'	1.23'	0.53	0.83	1.13	1.42	0.36	0.56	0.76	0.95	24	28	32	35
		—	19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	2.6'	6.04'	10.04'	14.04'	18.04'	1.27'	0.74	1.15	1.57	1.98	0.51	0.79	1.08	1.36	27	32	36	40
		—	24"	38"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	3.0'	6.79'	11.79'	16.79'	21.79'	1.31'	0.97	1.57	2.19	2.81	0.68	1.10	1.53	1.96	30	36	41	47
		—	29"	45"	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.19'	3.3'	7.50'	13.42'	19.33'	25.25'	1.38'	1.22	2.07	2.92	3.77	0.86	1.45	2.04	2.63	33	40	46	53
		—	34"	53"	7'-0"	3.22'	10.62'	13.84'	10.36'	13'	3.57'	2.6'	8.25'	15.25'	22.25'	29.25'	1.42'	1.48	2.62	3.77	4.92	1.02	1.81	2.60	3.39	36	44	52	59
		—	38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	3.3'	8.92'	16.75'	24.58'	32.42'	1.46'	1.72	3.12	4.53	5.92	1.18	2.14	3.10	4.05	38	47	56	65
		—	43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	3.6'	9.67'	18.58'	27.50'	36.42'	1.50'	2.02	3.78	5.56	7.32	1.38	2.58	3.79	4.99	41	51	61	71
		—	48"	76"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	4.0'	10.42'	20.33'	30.25'	40.17'	1.54'	2.34	4.49	6.64	8.79	1.59	3.05	4.51	5.97	44	55	66	77
		—	53"	83"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	3.3'	11.08'	21.75'	32.42'	43.08'	1.58'	2.66	5.17	7.66	10.16	1.80	3.50	5.19	6.88	47	59	71	83
		—	58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	3.6'	11.83'	23.50'	35.17'	46.83'	1.63'	3.02	5.98	8.95	11.90	2.04	4.04	6.05	8.05	50	63	76	89

B	E	
△ 6.42'	△ 6.25'	Dimensions permitted to allow use of 8' standard pipe lengths.
◇ 10.40'	◇ 10.10'	Dimensions permitted to allow use of 12' standard pipe lengths.

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CONCRETE PIPE DIMENSIONS AND QUANTITIES

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX	SHEET
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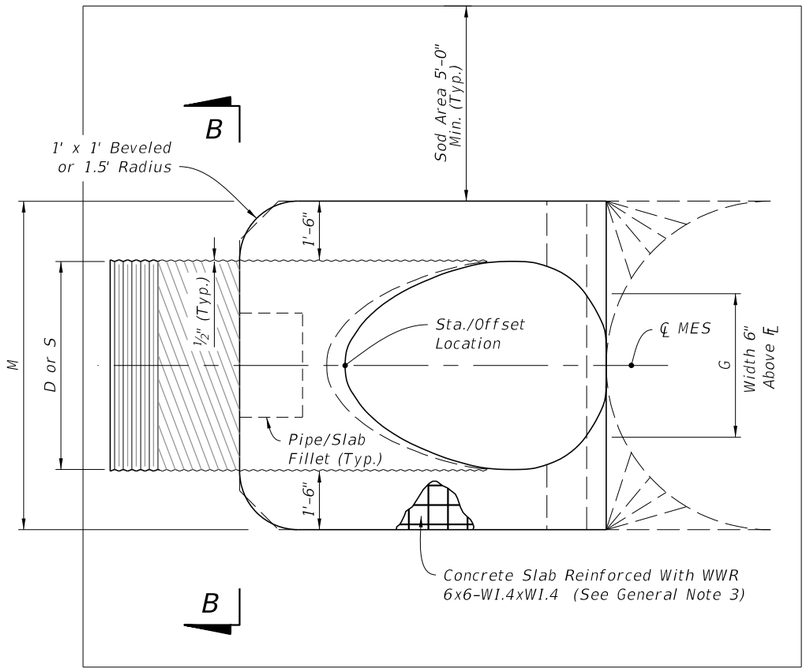
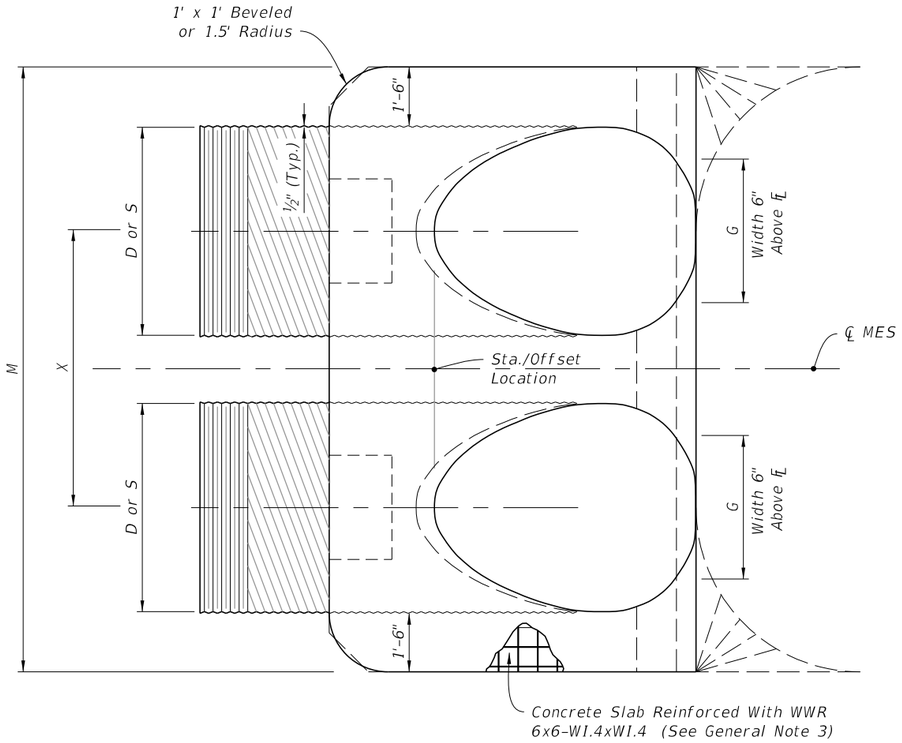
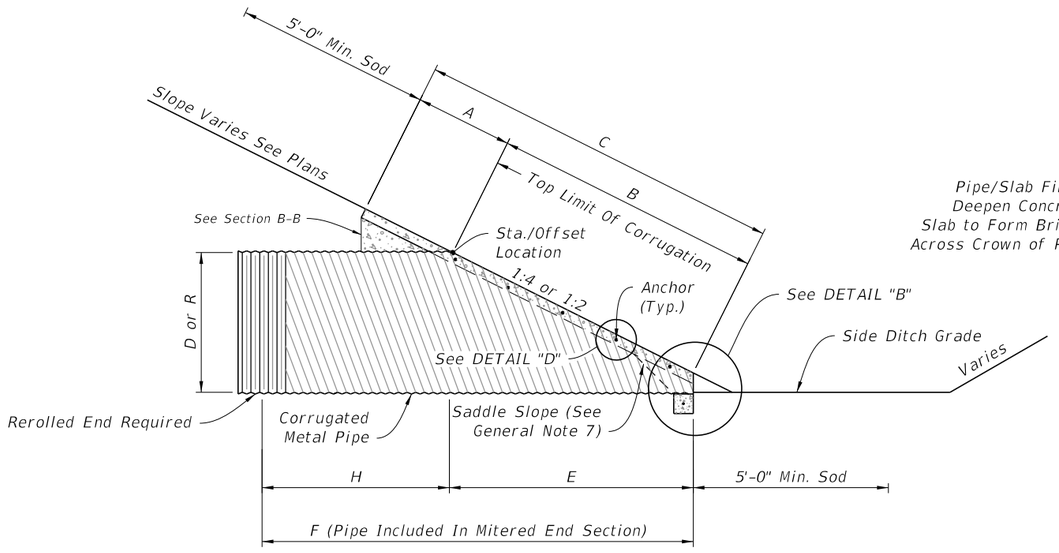


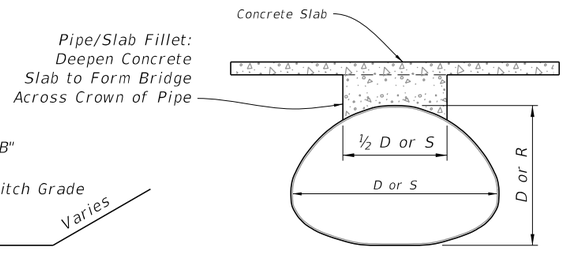
PLAN - SINGLE PIPE



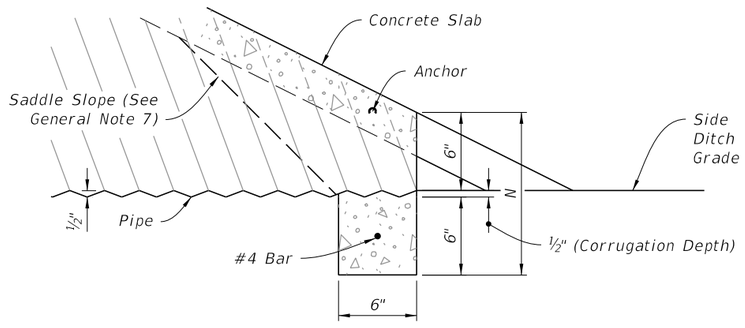
PLAN - MULTIPLE PIPE



ELEVATION



SECTION B-B
(Pipe/Slab Fillet)



DETAIL "B"

ARCHED CORRUGATED METAL PIPE
(Round Pipe Similar)

NOTE: See Table 2 on Sheet 5 for Dimensions and Quantities.

SIMGLE AND MULTIPLE CORRUGATED METAL PIPE

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/19			FY 2023-24 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	430-021	4 of 6

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TABLE 2
SINGLE AND MULTIPLE CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES

		Dia. D	Span S	Rise R	X	A	B	C	E	F	G	H	M				N	5½" CONC. SLAB (CY) (See General Note 3)				3" CONC. SLAB (CY) (See General Note 3)				SODDING (SY)			
													Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe		Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Corrugated Metal Pipe	1:2 Slope	15"	—	—	2'-7"	2.5'	1.68'	4.18'	1.5'	5.0'	1.23'	3.5'	4.33'	6.92'	9.50'	12.08'	1.04'	0.35	0.54	0.74	0.94	0.24	0.37	0.51	0.64	21	24	27	29
		18"	—	—	2'-10"	2.5'	2.24'	4.74'	2.0'	6.0'	1.41'	4.0'	4.58'	7.42'	10.25'	13.08'	1.04'	0.38	0.62	0.87	1.12	0.26	0.43	0.61	0.78	22	25	28	31
		24"	—	—	3'-5"	2.5'	3.35'	5.85'	3.0'	7.0'	1.73'	4.0'	5.08'	8.50'	11.92'	15.33'	1.04'	0.47	0.76	1.05	1.34	0.32	0.52	0.72	0.91	23	27	31	35
		30"	—	—	4'-3"	2.5'	4.47'	6.97'	4.0'	8.0'	2.00'	4.0'	5.58'	9.83'	14.08'	18.33'	1.04'	0.57	0.96	1.37	1.77	0.38	0.64	0.91	1.18	25	30	35	39
		36"	—	—	5'-1"	2.5'	5.59'	8.09'	5.0'	9.0'	2.24'	4.0'	6.08'	11.17'	16.25'	21.33'	1.04'	0.67	1.19	1.72	2.26	0.44	0.78	1.13	1.48	27	33	38	44
		42"	—	—	6'-0"	2.5'	6.71'	9.21'	6.0'	10.0'	2.45'	4.0'	6.58'	12.58'	18.58'	24.58'	1.04'	0.78	1.48	2.17	2.87	0.51	0.96	1.41	1.87	29	36	42	49
		48"	—	—	6'-9"	2.5'	7.83'	10.33'	7.0'	11.0'	2.65'	4.0'	7.08'	13.83'	20.58'	27.33'	1.04'	0.89	1.71	2.54	3.36	0.57	1.09	1.63	2.15	31	38	46	53
		54"	—	—	7'-8"	2.5'	8.94'	11.44'	8.0'	12.0'	2.83'	4.0'	7.58'	15.25'	22.92'	30.58'	1.04'	1.02	2.06	3.10	4.14	0.65	1.32	1.99	2.66	33	41	50	58
		60"	—	—	8'-6"	2.5'	10.06'	12.56'	9.0'	13.0'	3.00'	4.0'	8.08'	16.58'	25.08'	33.58'	1.04'	1.14	2.38	3.63	4.89	0.71	1.49	2.28	3.07	34	44	53	63
	1:4 Slope	15"	—	—	2'-7"	2.5'	3.09'	5.59'	3.0'	7.0'	1.23'	4.0'	4.33'	6.92'	9.50'	12.08'	1.04'	0.44	0.68	0.91	1.15	0.31	0.47	0.63	0.79	22	25	28	31
		18"	—	—	2'-10"	2.5'	4.12'	6.62'	4.0'	8.0'	1.41'	4.0'	4.58'	7.42'	10.25'	13.08'	1.04'	0.49	0.77	1.03	1.31	0.34	0.53	0.71	0.90	24	27	30	33
		24"	—	—	3'-5"	2.5'	6.18'	8.68'	6.0'	10.0'	1.73'	4.0'	5.08'	8.50'	11.92'	15.33'	1.04'	0.65	1.09	1.38	1.77	0.44	0.69	0.92	1.18	27	30	34	38
		30"	—	—	4'-3"	2.5'	8.25'	10.75'	8.0'	12.0'	2.00'	4.0'	5.58'	9.83'	14.08'	18.33'	1.04'	0.81	1.34	1.90	2.44	0.53	0.88	1.25	1.60	29	34	39	44
		36"	—	—	5'-1"	2.5'	10.31'	12.81'	10.0'	14.0'	2.24'	4.0'	6.08'	11.17'	16.25'	21.33'	1.04'	0.97	1.68	2.41	3.14	0.62	1.07	1.53	2.00	32	38	44	49
		42"	—	—	6'-0"	2.5'	12.37'	14.87'	12.0'	16.0'	2.45'	4.0'	6.58'	12.58'	18.58'	24.58'	1.04'	1.13	2.08	3.06	4.02	0.71	1.30	1.92	2.52	35	42	48	55
		48"	—	—	6'-9"	2.5'	14.43'	16.93'	14.0'	18.0'	2.65'	4.0'	7.08'	13.83'	20.58'	27.33'	1.04'	1.29	2.49	3.69	4.88	0.80	1.54	2.29	3.02	38	46	53	60
		54"	—	—	7'-8"	2.5'	16.49'	18.99'	16.0'	20.0'	2.83'	4.0'	7.58'	15.25'	22.92'	30.58'	1.04'	1.48	2.98	4.47	5.98	0.91	1.83	2.74	3.67	41	49	58	66
		60"	—	—	8'-6"	2.5'	18.55'	21.05'	18.0'	22.0'	3.00'	4.0'	8.08'	16.58'	25.08'	33.58'	1.04'	1.66	3.49	5.31	7.13	1.02	2.15	3.27	4.39	44	53	63	72
Corrugated Metal Pipe Arch	1:2 Slope	—	17"	13"	2'-6"	2.5'	1.30'	3.80'	1.17'	4'	1.39'	2.8'	4.50'	7.00'	9.50'	12.00'	1.04'	0.41	0.61	0.81	1.02	0.33	0.49	0.65	0.81	21	23	26	29
		—	21"	15"	2'-10"	2.5'	1.68'	4.17'	1.50'	5'	1.76'	3.5'	4.83'	7.67'	10.50'	13.33'	1.04'	0.43	0.66	0.88	1.10	0.33	0.50	0.67	0.83	22	25	28	31
		—	28"	20"	3'-5"	2.5'	2.61'	5.11'	2.33'	6'	2.22'	3.7'	5.42'	8.83'	12.25'	15.67'	1.04'	0.51	0.78	1.06	1.33	0.37	0.56	0.76	0.95	23	27	30	34
		—	35"	24"	4'-0"	2.5'	3.35'	5.85'	3.00'	7'	2.55'	4.0'	6.00'	10.00'	14.00'	18.00'	1.04'	0.57	0.90	1.22	1.55	0.40	0.62	0.84	1.07	24	29	33	38
		—	42"	29"	4'-9"	2.5'	4.29'	6.79'	3.83'	8'	2.97'	4.2'	6.58'	11.33'	16.08'	20.83'	1.04'	0.64	1.04	1.46	1.87	0.43	0.70	0.98	1.25	26	31	37	42
		—	49"	33"	5'-6"	2.5'	5.03'	7.53'	4.50'	9'	3.34'	4.5'	7.17'	12.67'	18.17'	23.67'	1.04'	0.73	1.23	1.72	2.22	0.49	0.82	1.15	1.48	28	34	40	46
		—	57"	38"	6'-4"	2.5'	5.96'	8.46'	5.33'	10'	3.65'	4.7'	7.83'	14.17'	20.50'	26.83'	1.04'	0.83	1.44	2.04	2.64	0.55	0.95	1.35	1.75	29	36	44	51
		—	64"	43"	7'-1"	2.5'	6.89'	9.39'	6.17'	11'	3.89'	4.8'	8.42'	15.50'	22.58'	29.67'	1.04'	0.95	1.67	2.39	3.11	0.62	1.10	1.57	2.05	31	39	47	55
		—	71"	47"	7'-10"	2.5'	7.64'	10.14'	6.83'	12'	4.14'	5.2'	9.00'	16.83'	24.67'	32.50'	1.04'	1.05	1.89	2.74	3.57	0.69	1.24	1.80	2.35	33	41	50	59
	1:4 Slope	—	17"	13"	2'-6"	2.5'	2.41'	4.91'	2.33'	7'	1.39'	4.7'	4.50'	7.00'	9.50'	12.00'	1.04'	0.48	0.71	0.95	1.18	0.38	0.56	0.74	0.92	22	25	27	30
		—	21"	15"	2'-10"	2.5'	3.09'	5.59'	3.00'	8'	1.76	5.0'	4.83'	7.67'	10.50'	13.33'	1.04'	0.52	0.80	1.09	1.31	0.39	0.59	0.80	0.95	23	26	29	32
		—	28"	20"	3'-5"	2.5'	4.81'	7.31'	4.67'	9'	2.22'	4.3'	5.42'	8.83'	12.25'	15.67'	1.04'	0.61	0.92	1.27	1.59	0.43	0.64	0.88	1.10	25	29	33	37
		—	35"	24"	4'-0"	2.5'	6.18'	8.68'	6.00'	11'	2.55'	5.0'	6.00'	10.00'	14.00'	18.00'	1.04'	0.73	1.14	1.55	1.97	0.49	0.77	1.05	1.33	28	32	37	41
		—	42"	29"	4'-9"	2.5'	7.90'	10.40'	7.67'	12'	2.97'	4.3'	6.58'	11.33'	16.08'	20.83'	1.04'	0.87	1.39	1.92	2.45	0.57	0.92	1.27	1.62	30	35	41	46
		—	49"	33"	5'-6"	2.5'	9.28'	11.78'	9.00'	14'	3.34'	5.0'	7.17'	12.67'	18.17'	23.67'	1.04'	1.00	1.66	2.30	2.96	0.65	1.08	1.50	1.93	32	38	45	51
		—	57"	38"	6'-4"	2.5'	11.00'	13.50'	10.67'	16'	3.65'	5.3'	7.83'	14.17'	20.50'	26.83'	1.04'	1.18	2.00	2.82	3.64	0.76	1.30	1.83	2.37	35	42	49	56
		—	64"	43"	7'-1"	2.5'	12.71'	15.21'	12.33'	17'	3.89'	4.7'	8.42'	15.50'	22.58'	29.67'	1.04'	1.36	2.39	3.38	4.38	0.87	1.55	2.18	2.83	38	45	53	61
		—	71"	47"	7'-10"	2.5'	14.09'	16.59'	13.67'	19'	4.14'	5.3'	9.00'	16.83'	24.67'	32.50'	1.04'	1.50	2.65	3.81	4.97	0.95	1.68	2.43	3.17	40	48	57	66

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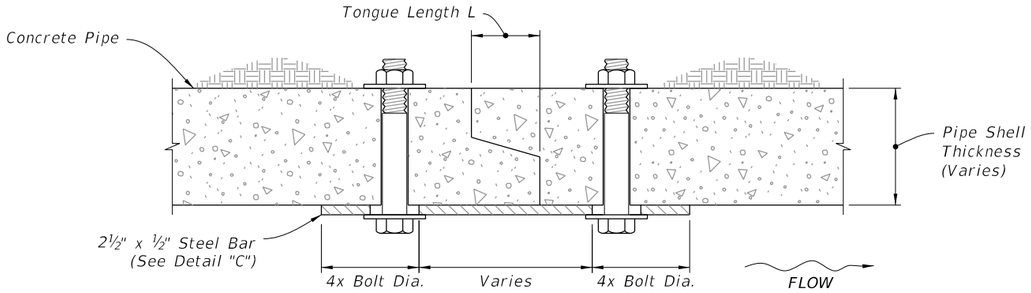
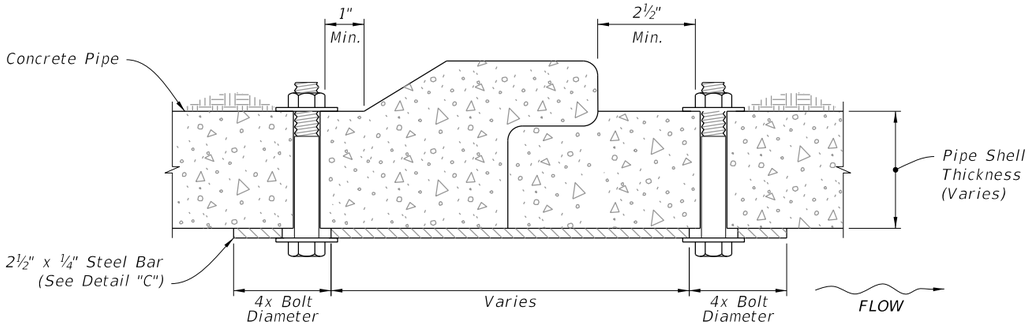
CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES

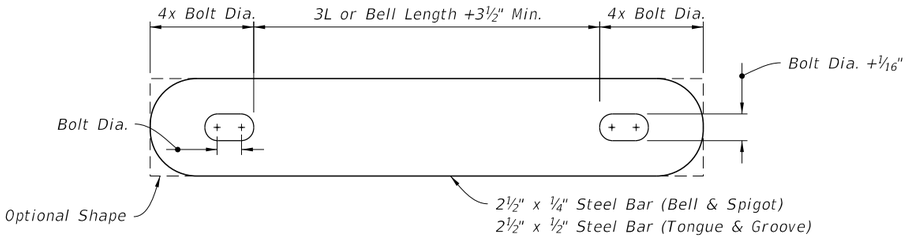
LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/19			FY 2023-24 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	430-021	5 of 6



TONGUE AND GROOVE CONNECTOR DETAIL



BELL AND SPIGOT CONNECTOR DETAIL



STEEL BAR

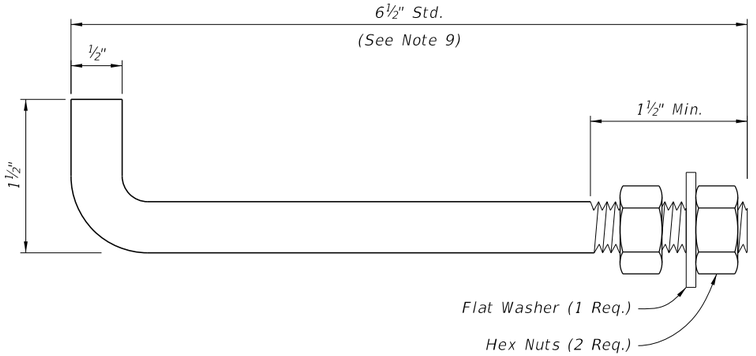
NOTES:

1. Use galvanized steel for all bars, bolts, nuts, and washers.
2. Two connectors required per joint, located 60° right and left of bottom center of pipe.
3. Bolt holes in pipe shell are to be drilled.

Bolt Dia.	Pipe Dia.
⅜"	15" to 36"
⅝"	42" to 72"

CONCRETE PIPE CONNECTION DETAIL

DETAIL "C"



NOTES:

1. Anchors required for CMP only.
2. Use galvanized steel for all anchors, nuts, and washers.
3. Bend anchor where required to center in concrete slab.
4. Repair damaged surfaces after bending.
5. Space anchors a distance equal to four (4) corrugations.
6. Place the anchors in the outside crest of corrugation.
7. Place flat washers on inside wall of pipe.
8. Drill or punch holes in the mitered end pipe; burning not permitted.
9. A 6" x ½" bolt substitution is permitted.

CORRUGATED METAL PIPE (CMP) ANCHOR DETAIL

DETAIL "D"

CONCRETE PIPE CONNECTION AND CORRUGATED PIPE ANCHOR DETAILS

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