

GENERAL NOTES:

1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of side drain pipe; corrugated steel pipe mitered end sections may be used with any type of side drain pipe except corrugated metal pipe. Corrugated aluminum mitered end sections may be used with any type of side drain pipe except corrugated steel pipe. When bituminous coated metal pipe is specified for side drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the side 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 designed to join HDPE, PVC, SRPE, or PP pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.
3. Use class NS concrete cast-in-place reinforced slabs for all cross drain pipes.
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 side 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 and sections as directed by the Engineer.
7. Saddle Slope:
  - 1/4 Miter: Slope to  $\pm 6^\circ$  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 axis for pipe 28"x20" or smaller and 1:2 for pipe 38"x24" or larger.
  - 1/2 Miter: Slope to  $\pm 6^\circ$  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.

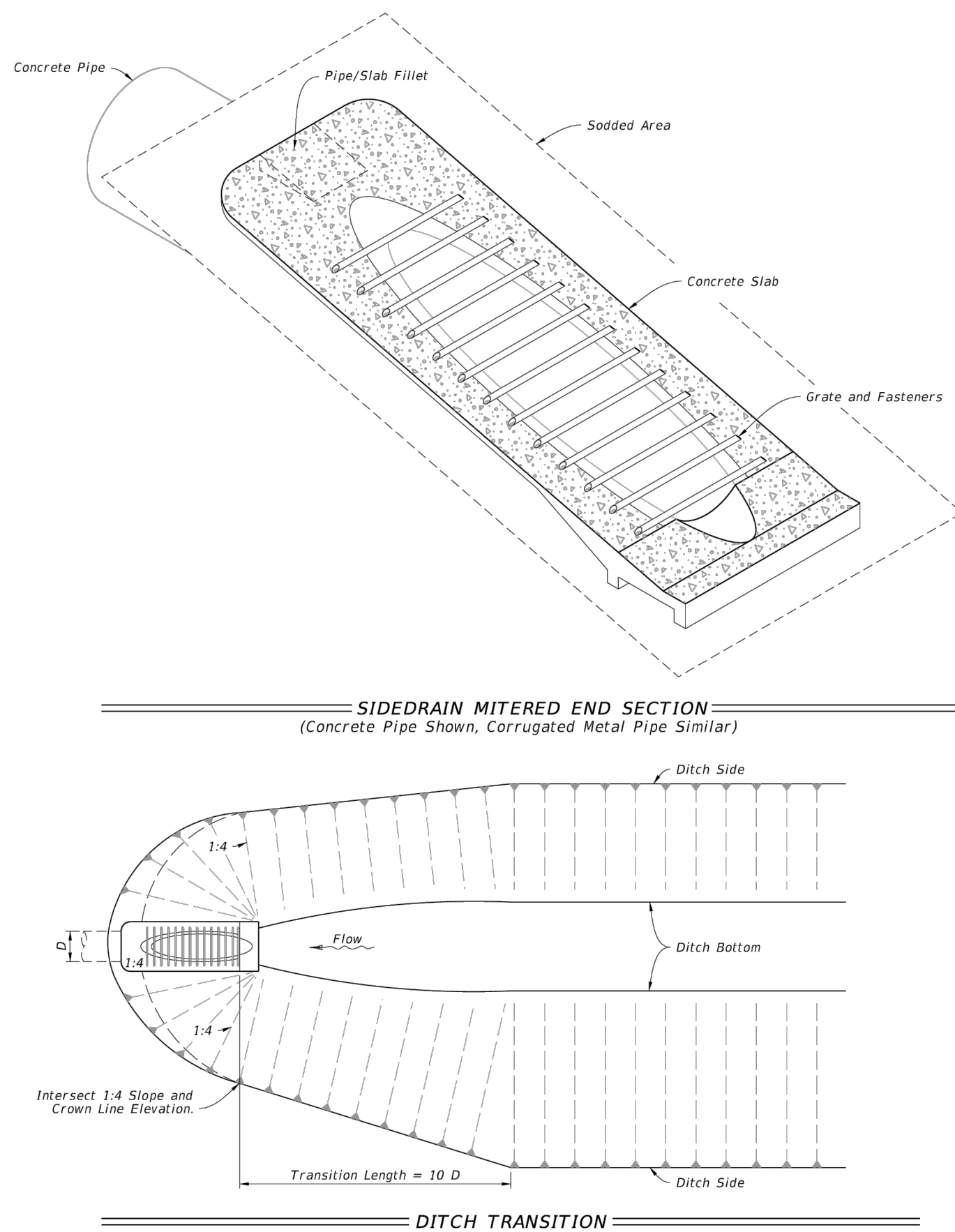

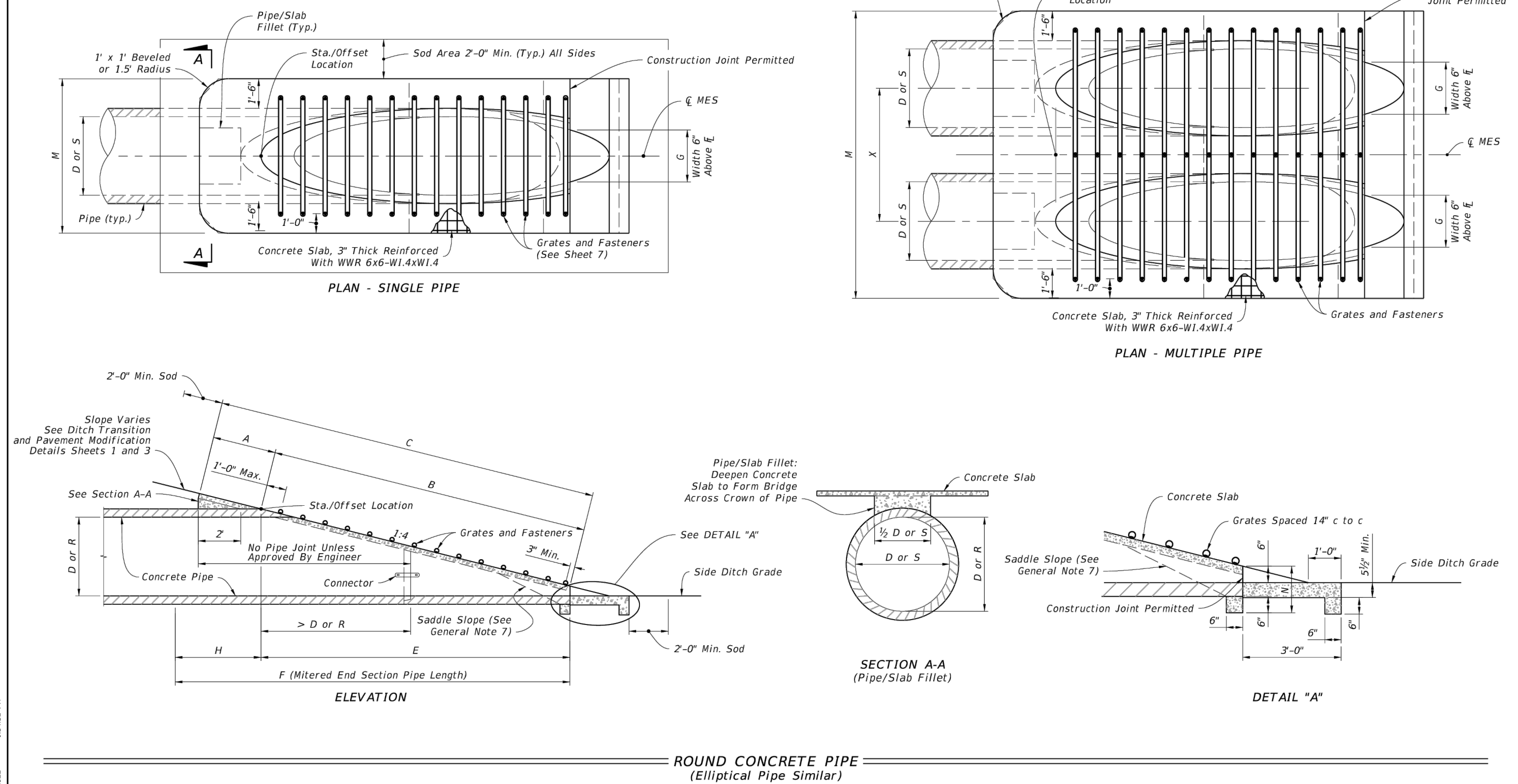



TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities and Permissible Pavement Modifications
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Dimensions and Quantities
6	Concrete Pipe Connection and Corrugated Metal Pipe Anchor Details
7	Fastener Unit and Grate Details

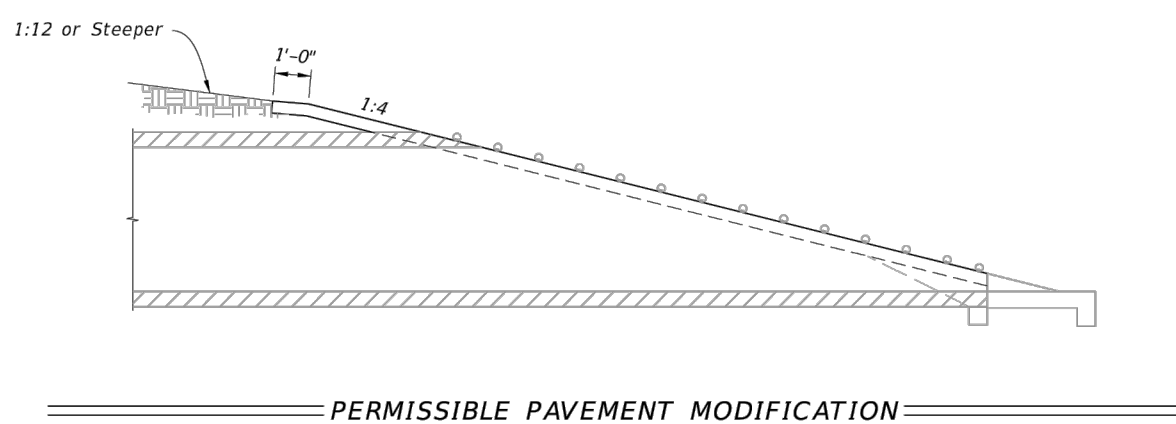
LAST REVISION 11/01/19	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION  430-022	INDEX 430-022	SHEET 1 of 7
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LAST REVISION 11/01/18	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 2 of 7
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SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES																											
Pipe	Dia. (ft.)	R. (in.)	Span (ft.)	M								N				GRATE SIZES				3" CONC. SLAB (CY)				SODDING (SY)			
				X	A	B	C	E	F	G	H	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	STANDARD WEDGE PIPE	EXTRA STRONG PIPE	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe		
Round Corrugated	12"	0-7	2-27	4.09	6.36	4.03	5.122	4.0	6.92	7.95	10.58	13.42	1.13	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23	
	18"	0-10	2-36	5.12	7.58	5.03	6.141	4.0	8.92	10.35	13.42	1.25	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23		
	24"	0-12	2-45	6.15	8.61	6.03	7.150	4.0	10.98	12.35	15.42	1.37	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23		
	30"	0-14	2-54	7.18	9.61	7.03	8.200	4.0	12.92	14.35	17.42	1.49	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23		
	36"	0-16	2-63	8.21	10.61	8.03	9.320	4.0	14.92	16.35	19.42	1.61	3"	1.40	2.38	3.33	4.24	13	15	17	19	21	23	25	27		
	42"	0-18	2-72	9.24	11.61	9.03	10.320	4.0	16.92	18.35	21.42	1.73	3"	1.40	2.38	3.33	4.24	14	17	19	21	23	25	27	29		
	48"	0-20	2-81	10.27	12.61	10.03	11.320	4.0	18.92	20.35	23.42	1.85	3"	1.40	2.38	3.33	4.24	15	17	19	21	23	25	27	29		
	54"	0-22	2-90	11.30	13.61	11.03	12.320	4.0	20.92	22.35	25.42	1.97	3"	1.40	2.38	3.33	4.24	16	19	21	23	25	27	29	31		
	60"	0-24	2-99	12.33	14.61	12.03	13.320	4.0	22.92	24.35	27.42	2.09	3"	1.40	2.38	3.33	4.24	17	19	21	23	25	27	29	31		
	66"	0-26	3-08	13.36	15.61	13.03	14.320	4.0	24.92	26.35	29.42	2.21	3"	1.40	2.38	3.33	4.24	18	21	23	25	27	29	31	33		
Elliptical Corrugated	12"	0-7	2-27	4.09	6.36	4.03	5.122	4.0	6.92	7.95	10.58	13.42	1.13	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23	
	18"	0-10	2-36	5.12	7.58	5.03	6.141	4.0	8.92	10.35	13.42	1.25	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23		
	24"	0-12	2-45	6.15	8.61	6.03	7.150	4.0	10.98	12.35	15.42	1.37	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23		
	30"	0-14	2-54	7.18	9.61	7.03	8.200	4.0	12.92	14.35	17.42	1.49	3"	1.02	1.58	2.17	2.75	10	12	13	15	17	19	21	23		
	36"	0-16	2-63	8.21	10.61	8.03	9.320	4.0	14.92	16.35	19.42	1.61	3"	1.40	2.38	3.33	4.24	13	15	17	19	21	23	25	27		
	42"	0-18	2-72	9.24	11.61	9.03	10.320	4.0	16.92	18.35	21.42	1.73	3"	1.40	2.38	3.33	4.24	14	17	19	21	23	25	27	29		
	48"	0-20	2-81	10.27	12.61	10.03	11.320	4.0	18.92	20.35	23.42	1.85	3"	1.40	2.38	3.33	4.24	15	17	19	21	23	25	27	29		
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	66"	0-26	3-08	13.36	15.61	13.03	14.320	4.0	24.92	26.35	29.42	2.21	3"	1.40	2.38	3.33	4.24	18	21	23	25	27	29	31	33		

Δ6.42'      Δ6.25' Dimensions permitted to allow use of 8' standard pipe lengths.  
 ◇10.40'      ◇10.10' Dimensions permitted to allow use of 12' standard pipe lengths.



## CONCRETE PIPE DIMENSIONS AND QUANTITIES AND PERMISSIBLE PAVEMENT MODIFICATION

LAST REVISION 11/01/19	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION  430-022	INDEX 430-022	SHEET 3 of 7
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