

Rise	Span	Opening Area (SF)				CONCRETE ELLIPTICAL PIPE											
						Dimensions											
		Number of Pipes												X			
		1	2	3	4	A	B	C	E	F	G	S	0°	15°	30°	45°	
12'	18'	1.3	2.6	3.9	5.2	1'-8"	1'-2"	3'-9"	1'-10"	1'-2"	0'-3"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	
14'	23'	1.8	3.6	5.4	7.2	1'-10"	1'-3"	4'-21/2"	1'-11"	1'-3"	8 1/2"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	
19'	30'	3.3	6.6	9.9	13.2	2'-3"	1'-4"	5'-11 1/2"	2'-0"	1'-4"	1'-7 1/2"	4'-2"	4'-2"	4'-4"	4'-10"	5'-11"	
24'	38'	5.1	10.2	15.3	20.4	2'-8"	1'-5"	6'-3"	2'-1"	1'-5"	2'-9"	5'-2"	5'-2"	5'-4"	6'-0"	7'-4"	
29'	45'	7.4	14.8	22.2	29.6	3'-1"	1'-6"	7'-0"	2'-2"	1'-6"	3'-6"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"	
34'	53'	10.2	20.4	30.6	40.8	3'-6"	1'-7"	7'-11 1/2"	2'-3"	1'-7"	4'-5 1/2"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"	
38'	60'	12.9	25.8	38.7	51.6	3'-10"	1'-8"	8'-9"	2'-4"	1'-8"	5'-3"	7'-11"	7'-11"	8'-2"	9'-2"	11'-2"	
43'	68'	16.6	33.2	49.8	66.4	4'-3"	1'-10"	9'-8 1/2"	2'-6"	1'-10"	6'-2 1/2"	8'-10"	8'-10"	9'-2"	10'-2"	12'-6"	
48'	76'	20.5	41.0	61.5	82.0	4'-8"	2'-1"	10'-8"	2'-9"	2'-0"	7'-2"	9'-9"	9'-9"	10'-1"	11'-3"	13'-9"	
* 53'	83'	24.8	49.6	74.4	99.2	5'-1"	2'-6"	11'-7"	3'-2"	2'-6"	8'-1"	10'-7"	10'-7"	10'-11"	12'-3"	15'-0"	
58'	91'	29.5	59.0	88.5	118.0	5'-6"	2'-10"	12'-6 1/2"	3'-6"	2'-10"	9'-0 1/2"	11'-4"	11'-4"	11'-9"	13'-1"	16'-0"	

Rise	Span	CONCRETE ELLIPTICAL PIPE														Span	Rise	Approx. Equiv. Round Pipe
		Concrete (CY)																
		Number Of Pipe And Skew Angle Of Pipe																
		Single	Double				Triple				Quadruple							
0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°		
12'	18"	1.09	1.45	1.46	1.51	1.60	1.80	1.82	1.91	2.09	2.16	2.20	2.33	2.60	12'	18"	15"	
14'	23"	1.36	1.82	1.84	1.89	2.01	2.29	2.32	2.43	2.68	2.75	2.80	2.97	3.33	14'	23"	18"	
19'	30"	1.89	2.55	2.57	2.65	2.82	3.22	3.27	3.43	3.77	3.88	3.95	4.19	4.70	19'	30"	24"	
24'	38"	2.64	3.55	3.58	3.69	3.93	4.48	4.54	4.77	5.24	5.39	5.49	5.82	6.53	24'	38"	30"	
29'	45"	3.32	4.48	4.52	4.66	4.96	5.64	5.72	6.00	6.60	6.80	6.92	7.34	8.24	29'	45"	36"	
34'	53"	4.24	5.76	5.81	6.00	6.39	7.29	7.40	7.76	8.55	8.81	8.97	9.52	10.7	34'	53"	42"	
38'	60"	5.22	7.16	7.23	7.46	7.96	9.10	9.24	9.70	10.7	11.1	11.2	12.0	13.5	38'	60"	48"	
43'	68"	6.63	9.01	9.09	9.38	10.0	11.4	11.6	12.1	13.4	13.8	14.0	14.9	16.7	43'	68"	54"	
48'	76"	8.66	11.7	11.8	12.2	13.0	14.8	15.0	15.8	17.4	17.9	18.2	19.3	21.7	48'	76"	60"	
* 53'	83"	12.5	16.9	16.9	17.7	18.8	21.5	21.8	22.9	25.2	26.0	26.4	28.1	31.6	53'	83"	66"	
58'	91"	16.5	22.3	22.5	23.2	24.7	28.0	28.5	29.9	32.9	33.9	34.5	36.6	41.0	58'	91"	72"	

\* SPECIAL ORDER; NOT STANDARD SIZE

STRAIGHT CONCRETE  
ENDWALLS SINGLE AND  
MULTIPLE PIPE

*CITY OF  
JACKSONVILLE  
STANDARD*

N. T. S.

PLATE D-405

DATE DRAWN 07/13/79

REVISED DATE 5-12-94