

Section 1006
Concrete and Plastic Pipe
Louisiana DOTD Standards

1006.01 GENERAL

- a) Portland-pozzolan cement conforming to Subsection 1001.02 may be used in the manufacture of concrete pipe and pipe arch.
- b) Any admixture for portland cement concrete listed in QPL 58 is allowed for use in concrete pipe manufacture except for chloride-type accelerators and high range water reducers.
- c) Compressive strength specimens for concrete pipe shall be made and cured in accordance with DOTD TR 227 and tested in accordance with DOTD TR 230.
- d) Concrete pipe shall be cured by one of the methods listed in ASTM C 76 as approved by the Materials and Testings Section.

1006.02 CONCRETE SEWER PIPE. Nonreinforced (plain) concrete sewer pipe shall conform to ASTM C 14, Class III. Joints shall conform to Subsection 1006.05.

1006.03 REINFORCED CONCRETE PIPE. Reinforced concrete pipe shall conform to ASTM C 76, amended as follows:

- a) Unless otherwise specified, Class III, Wall A, C or C pipe shall be furnished.
- b) When extra strength pipe is required, either Class IV or Class V pipe shall be furnished as specified. Either Wall A, B or C may be furnished.
- c) For pipe sizes not included in ASTM C 76, the area of reinforcement shall be approved in accordance with ASTM C 655. The producer shall provide fabrication drawings and design calculations reflecting conformance with these specifications prior to pipe fabrication.
- d) No modified designs will be allowed.
- e) Joints shall conform to Subsection 1006.05.

1006.04 REINFORCED CONCRETE PIPE ARCH. Reinforced concrete pipe arch shall conform ASTM C 506, amended as follows:

- a) Unless otherwise specified, Class A-III pipe arch shall be furnished.
- b) No modified designs will be allowed.
- c) For pipe arch sizes not included in ASTM C 506, the area of reinforcement shall be approved in accordance with ASTM C 655. The producer shall provide fabrication drawings and design calculations reflecting conformance to these specifications prior to pipe fabrication.
- d) Joints shall conform to Subsection 1006.05.

1006.05 CONCRETE PIPE JOINTS. Joints for concrete pipe and pipe arch shall conform to AASHTO M 198 with the following modifications. Gasket material shall conform to Subsection 1006.06. All joint systems will be approved by the Materials Engineer Administrator.

a) Type 3 Joints (T3):

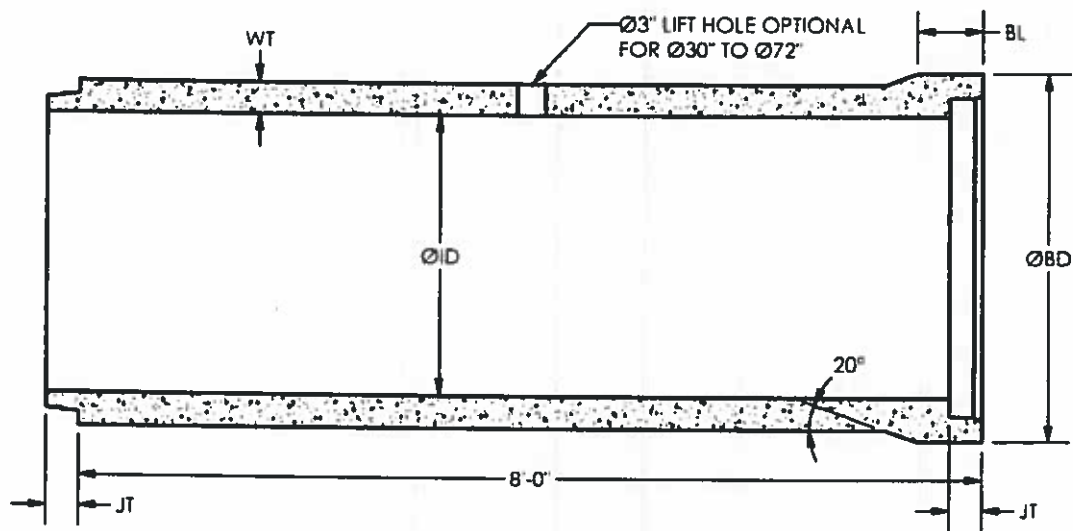
- 1. Pipe for Type 3 joints shall have a maximum taper of 12° and a maximum differential between the joint taper of the bell and spigot (tongue and groove) of 1° with the following exception. A maximum allowable differential between the bell and the spigot (tongue and groove) may be 2° provided the taper is 6° or less and it will pass the 10-psi hydrostatic pressure test. The 10-psi pressure hydrostatic test requirement will apply to all pipe with diameters greater than 15 inches when the groove (bell) depth and tongue (spigot) length is less than 2 ½ inches, and will apply to all pipe with diameters of 15 inches or less when the groove depth and tongue length is less than 2 inches.**
- 2. Joints for use with rubber gaskets which have a taper less than 6° will not require the hydrostatic pressure test, except as provided in Paragraph (1). If the joint taper is 6° to 8° inclusive, its use will be permitted provided the joint will pass the 10-psi hydrostatic test.**
- 3. Joint for use with flexible plastic gaskets which have a taper of 10° or less will not require the hydrostatic pressure test except as provided in paragraph (1). When the joint taper is 10° to 12° inclusive, its use will be permitted provided the joint will pass the 10-psi hydrostatic pressure test.**

b) Type 2 Joints (T2): Pipe for Type 2 joints shall have joints approved by the Materials and Testing Section, shall use approved rubber or flexible plastic gaskets and shall pass the 5-psi hydrostatic pressure test.

c) Type 1 Joints (T1): Pipe for Type 1 joints shall be soil tight, approved, and shall use approved rubber or flexible plastic gaskets.

d) Repair of Joints: Joint repairs shall conform to ASTM C 443.

ID	WALL	WT	BL	JT	BD	TONS
12"	B	2.00"	6.25"	3.50	20.000"	0.37
15"	B	2.25"	6.50"	3.50"	23.125"	0.61
18"	B	2.50"	6.50"	3.50"	26.625"	0.74
24"	B	3.00"	7.00"	3.50"	32.625"	1.10
30"	B	3.50"	7.00"	3.50"	39.500"	1.58
36"	B	4.00"	7.00"	3.50"	45.625"	2.07
42"	B	4.50"	7.00"	4.00"	52.000"	2.66
48"	B	5.00"	N/A	4.25"	N/A	3.47
54"	B	5.50"	N/A	4.25"	N/A	4.28
60"	B	6.00"	N/A	4.75"	N/A	5.18
72"	B	7.00"	N/A	5.00"	N/A	7.24



MATERIALS:


CONCRETE: 4,000 PSI, TYPE I/II CEMENT
 CONFORMS TO ASTM C-76
 JOINT CONFORMS TO ASTM C-443 / C-1628

NOTES:

AVAILABLE IN CLASS III, IV AND V
 SEE 3.2 FOR JOINT DETAIL

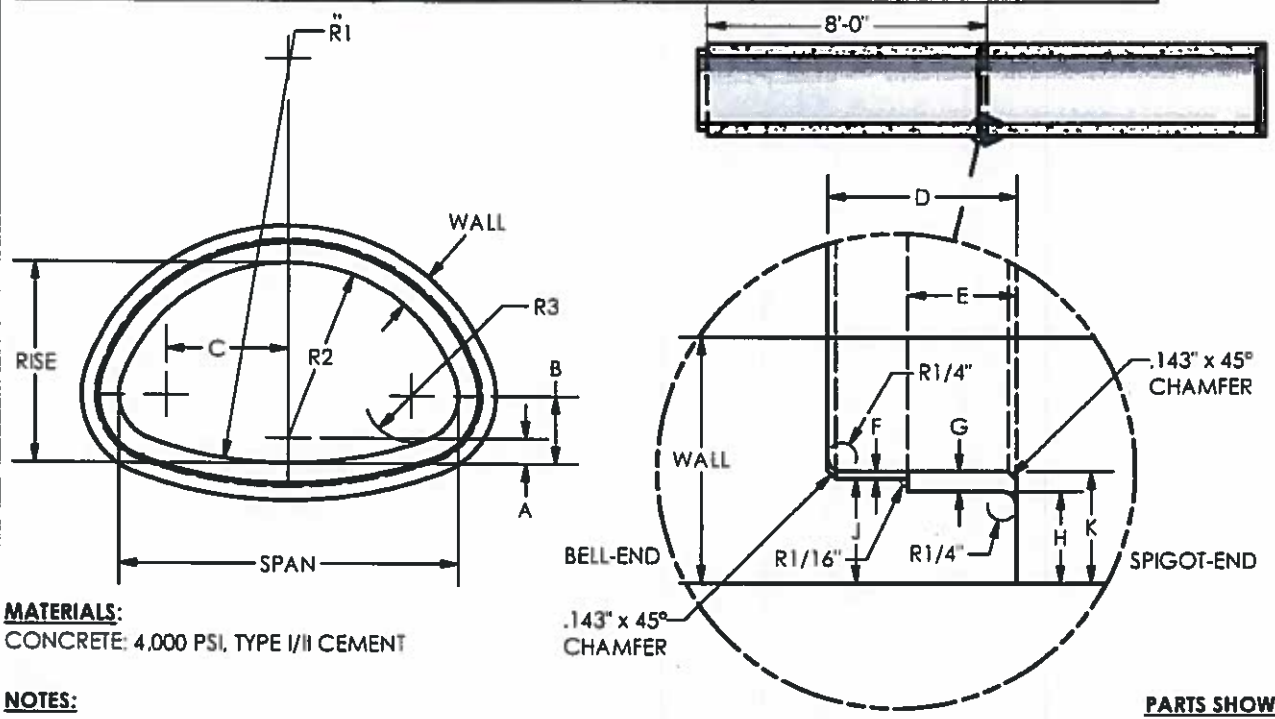
PARTS SHOWN:

Ø30" B-WALL WITH LIFT HOLE

	REINFORCED CONCRETE PIPE	3.1
	Ø12" - Ø72" B-WALL PIPE	

EQUIVØ	WALL	RISE	SPAN	R1	R2	R3	A	B	C
15"	3.250"	11.0000"	18.000"	22.8750"	10.6250"	4.041400"	0.3750"	4.68750"	4.03125"
18"	3.375"	13.5000"	22.000"	27.5000"	13.7500"	5.250000"	0.2500"	6.00000"	5.75000"
24"	3.750"	18.0000"	28.500"	40.6875"	14.5625"	4.593750"	3.4375"	5.90625"	9.65625"
30"	4.250"	22.5000"	36.250"	51.0000"	18.7500"	6.031250"	3.7500"	7.68750"	12.09375"
36"	4.750"	26.6250"	43.750"	62.0000"	22.5000"	6.375000"	4.1250"	8.56250"	15.50000"
42"	5.250"	31.3125"	51.125"	73.0000"	26.2500"	7.562500"	5.0625"	10.09375"	18.00000"
48"	5.750"	36.0000"	58.500"	84.0000"	30.0000"	8.750000"	6.0000"	11.59375"	20.50000"
54"	6.25"	40.0000"	65.000"	92.5000"	33.3750"	9.812500"	6.6250"	13.00000"	22.68750"
60"	6.75"	45.0000"	73.000"	105.0000"	37.5000"	11.21875"	7.5000"	14.68750"	25.28125"
72"	7.00"	54.0000"	88.000"	126.0000"	45.0000"	12.5625"	9.0000"	17.00000"	31.4375"

EQUIVØ	D	E	F	G	H	J	K	TONS
15"	3.25"	1.875"	.126000"	0.32600"	1.00000"	1.314"	1.326"	0.80
18"	3.25"	1.875"	0.12500"	0.34375"	1.25000"	1.564"	1.576"	0.96
24"	3.25"	1.875"	0.12500"	0.34375"	1.50000"	1.814"	1.826"	1.36
30"	3.25"	1.875"	0.12500"	0.34375"	1.59375"	1.912"	1.924"	1.93
36"	3.25"	1.875"	0.12500"	0.34375"	1.71875"	2.037"	2.049"	2.56
42"	3.75"	2.250"	0.15625"	0.43750"	1.90625"	2.350"	2.365"	3.34
48"	3.75"	2.250"	0.15625"	0.43750"	2.15625"	2.600"	2.615"	4.13
54"	4.25"	2.250"	0.14600"	0.44600"	2.30400"	2.752"	2.750"	4.92
60"	4.25"	2.250"	0.14600"	0.44600"	2.60400"	3.052"	3.050"	5.92
72"	4.25"	2.250"	0.14600"	0.44600"	2.60400"	3.052"	3.050"	7.30



MATERIALS:
 CONCRETE: 4,000 PSI, TYPE I/II CEMENT

NOTES:
 AVAILABLE IN CLASS III AND IV

PARTS SHOWN:
 30" ARCH RCP



REINFORCED CONCRETE PIPE

ARCH PIPE

3.9