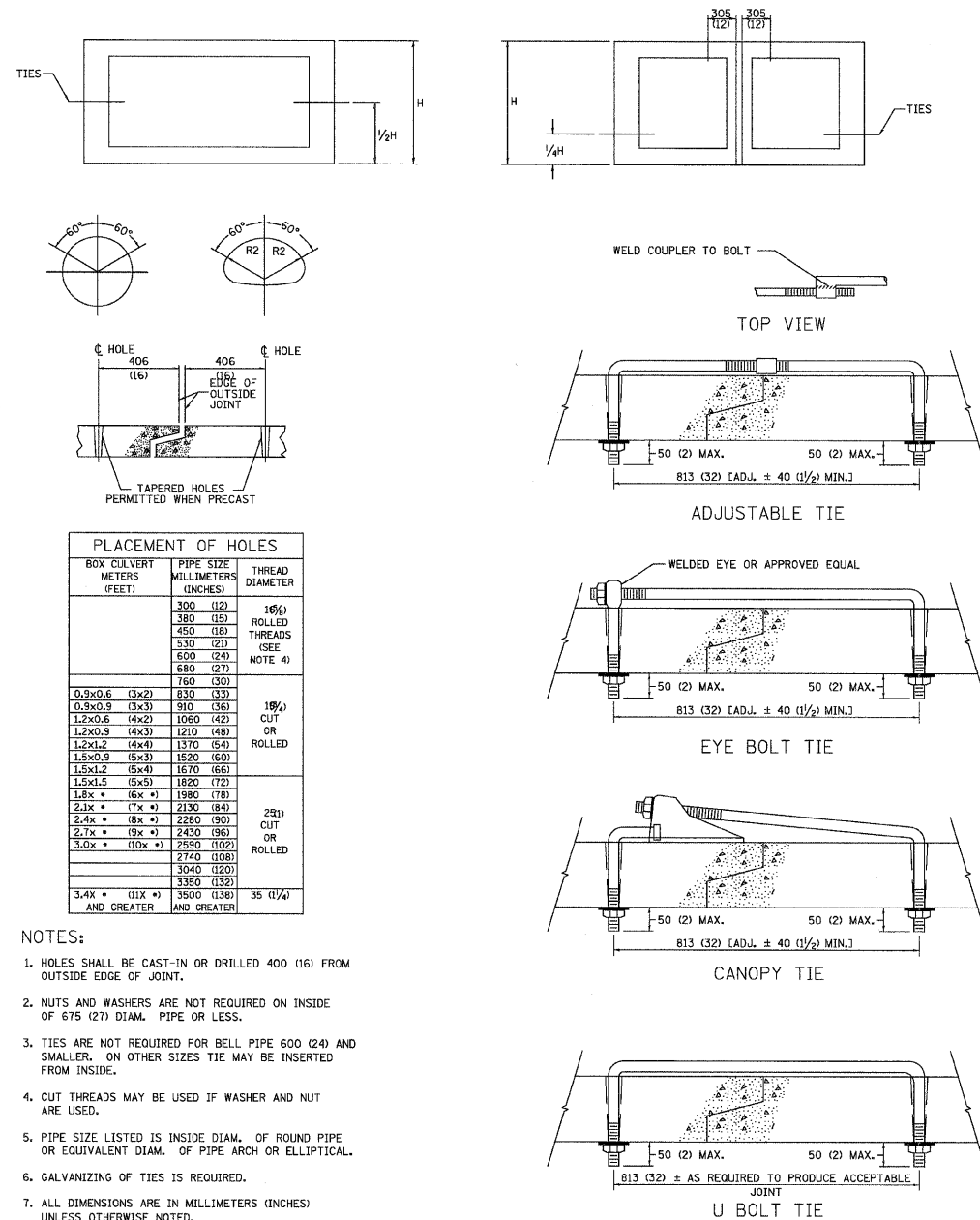


MECHANICAL JOINTS FOR CONCRETE PIPE AND BOX CULVERTS

THE CULVERT TIES SHALL BE INCLUDED IN THE COST OF THE CONCRETE PIPE CULVERTS OR THE PRECAST CONCRETE BOX CULVERT. THE MECHANICAL TIES SHALL BE ON THE OUTSIDE OF THE CULVERT. THE NUTS AND WASHERS SHALL BE PLACED ON THE INSIDE OF THE CULVERT AND COVERED WITH MASTIC JOINT SEALER CONFORMING TO ARTICLES 1055 OR 1056 IN THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.



PLACEMENT OF HOLES		
BOX CULVERT METERS (FEET)	PIPE SIZE MILLIMETERS (INCHES)	THREAD DIAMETER
	300 (12)	16(4)
	380 (15)	ROLLED THREADS (SEE NOTE 4)
	450 (18)	
	530 (21)	
	600 (24)	
	680 (27)	
	760 (30)	
	830 (33)	
	910 (36)	18(4)
	1060 (42)	CUT OR ROLLED
	1210 (48)	
	1370 (54)	
	1520 (60)	
	1670 (66)	
	1820 (72)	
	1980 (78)	
	2130 (84)	28(1)
	2280 (90)	CUT OR ROLLED
	2430 (96)	
	2590 (102)	
	2740 (108)	
	3040 (120)	
	3350 (132)	
	3500 (138)	35 (1 1/4)
3.4x AND GREATER	AND GREATER	

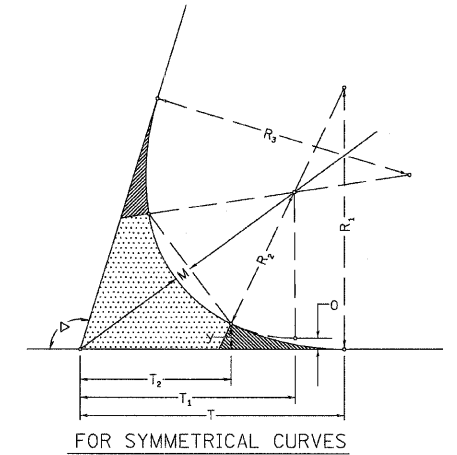
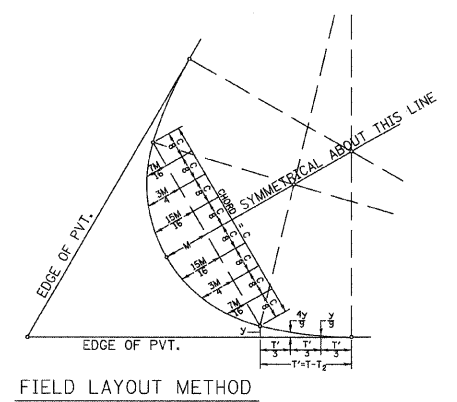
- NOTES:
- Holes shall be cast-in or drilled 400 (16) from outside edge of joint.
 - Nuts and washers are not required on inside of 675 (27) diam. pipe or less.
 - Ties are not required for bell pipe 600 (24) and smaller. On other sizes tie may be inserted from inside.
 - Cut threads may be used if washer and nut are used.
 - Pipe size listed is inside diam. of round pipe or equivalent diam. of pipe arch or elliptical.
 - Galvanizing of ties is required.
 - All dimensions are in millimeters (inches) unless otherwise noted.

REVISED 2-1-00

THREE CENTER CURVE DATA

SYMMETRICAL CURVES

CURVE #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
R ₁																					
R ₂																					
R ₃																					
O																					
T																					
T ₁																					
T ₂																					
T ₃																					
y																					
4y/3																					
y/3																					
M																					
15M/16																					
3M/4																					
7M/16																					
C																					



ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

TWO CENTER CURVE DATA

CURVE #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
R ₁	600.00	180.00	300.00	600.00																	
R ₂	60.00	70.00	70.00	60.00																	
O	12.00	7.33	17.00	15.00																	
Δ	92° 07' 25"	88° 21' 26"	90° 22' 44"	88° 45' 51"																	
T	175.92	125.30	163.08	186.01																	
T ₁	62.71	67.81	70.09	77.62																	
T ₂	50.13	42.69	43.92	45.66																	
T ₃	74.27	75.35	87.43	74.69																	
y	13.33	11.99	22.27	16.67																	
4y/3	5.92	5.33	9.90	7.41																	
y/3	1.48	1.33	2.47	1.85																	
M	14.04	11.74	12.17	12.77																	
15M/16	13.16	11.01	11.41	11.97																	
3M/4	10.53	8.81	9.13	9.58																	
7M/16	6.14	5.14	5.32	5.59																	
C	77.15	77.60	78.89	74.02																	

