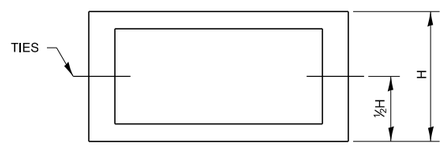
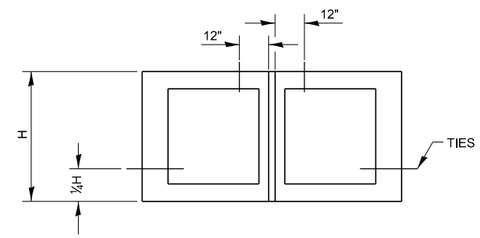
THE CULVERT TIES SHALL BE INCLUDED IN THE COST OF THE CONCRETE PIPE CULVERTS OR THE PRECAST CONCRETE BOX CULVERT. THE MECHANICAL TIES SHALL BE ON THE OUTSIDE OF THE CULVERT. THE NUTS AND WASHERS SHALL BE PLACED ON THE INSIDE OF THE CULVERT AND COVERED WITH MASTIC JOINT SEALER CONFORMING TO ARTICLES 1055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

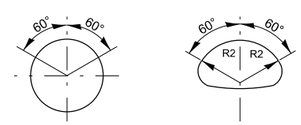


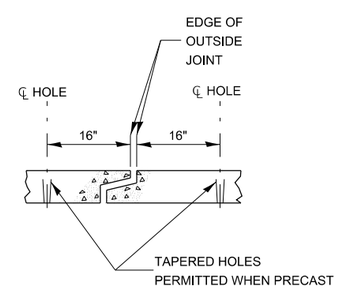


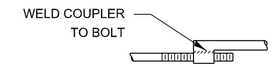
PLACEMENT OF HOLES		
BOX CULVERT FEET	PIPE SIZE INCHES	THREAD DIAMETER INCHES
	12	5/8 ROLLED THREADS (SEE NOTE 4)
	15	
	18	
	21	
	24	
	27	
	30	3/4 CUT OR ROLLED
3 x 2	33	
3 x 3	36	
4 x 2	42	
4 x 3	48	
4 x 4	54	
5 x 3	60	
5 x 4	66	
5 x 5	72	1 CUT OR ROLLED
6 x *	78	
7 x *	84	
8 x *	90	
9 x *	96	
10 x *	102	
	108	
	120	
	132	
11 x * AND GREATER	138 AND GREATER	1 1/4

NOTES:

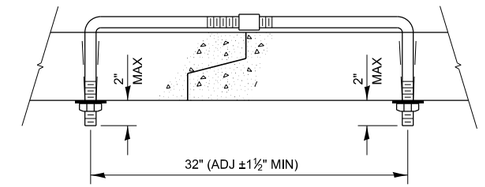
1. HOLES SHALL BE CAST-IN OR DRILLED 16" FROM OUTSIDE EDGE OF JOINT.
2. NUTS AND WASHERS ARE NOT REQUIRED ON INSIDE OF 27" DIAMETER PIPE OR LESS.
3. TIES ARE NOT REQUIRED FOR BELL PIPE 24" AND SMALLER. ON OTHER SIZES TIE MAY BE INSERTED FROM INSIDE.
4. CUT THREADS MAY BE USED IF WASHER AND NUT ARE USED.
5. PIPE SIZE LISTED IS INSIDE DIAMETER OF ROUND PIPE OR EQUIVALENT DIAMETER OF PIPE ARCH OR ELLIPTICAL.
6. GALVANIZING OF TIES IS REQUIRED.



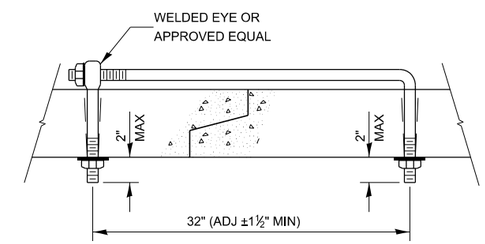




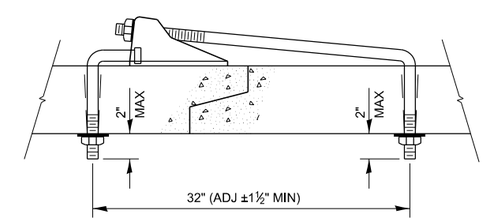
TOP VIEW



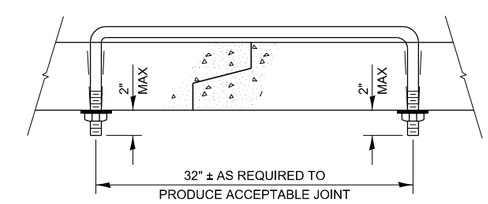
ADJUSTABLE TIE



EYE BOLT TIE



CANOPY TIE



U BOLT TIE

540-22

USER NAME = Anthony.Grunstad	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 9/27/23	DATE -	REVISED -	

MECHANICAL JOINTS FOR CONCRETE PIPE AND BOX CULVERTS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		

MODEL: dist 3 details
FILE NAME: pw:\\illinois-pw.bentley.com:PWIDOT\Documents\IDOT Offices\District 3\Projects\s-Darcy Detail\District 3 Detail Revisions 2023\500-599 STRUCTURES.dgn