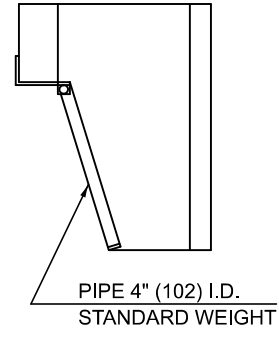
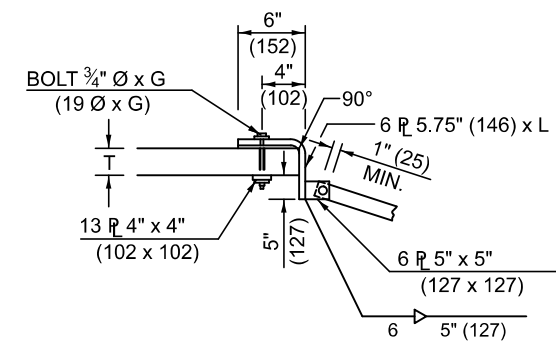


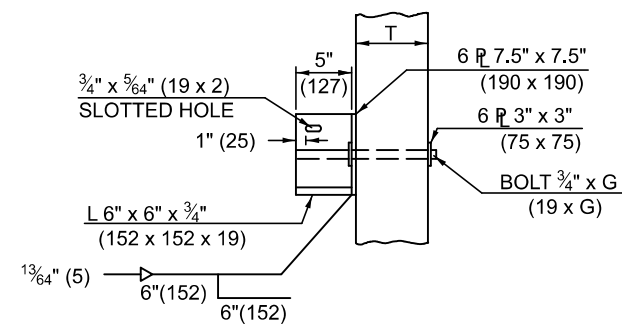
**PLAN VIEW**



**SECTION X-X**



**ELEVATION OF BRACKET "A"**

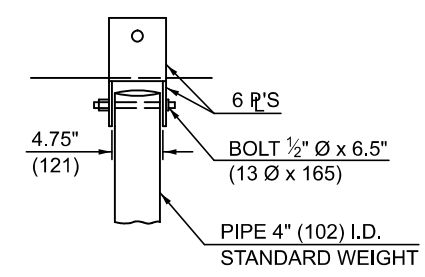


**PLAN OF BRACKET "B"**

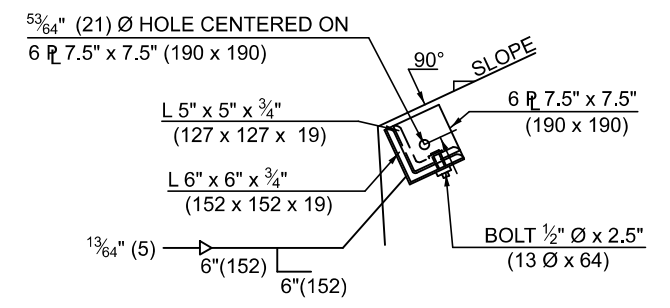
**GENERAL NOTES**

- BOLTS AND NUTS SHALL CONFORM TO A.S.T.M. A307, AND SHALL BE GALVANIZED IN ACCORDANCE WITH A.A.S.H.T.O. M232. ALL BOLTS SHALL HAVE WASHERS AT EACH END. HOLES SHALL BE 5/64" (2 mm) OVERSIZE UNLESS OTHERWISE NOTED EXCEPT IN CONCRETE WHICH SHALL BE 1/8" (3 mm) OVERSIZE.
- ANGLES AND STEEL PLATES SHALL CONFORM TO A.A.S.H.T.O. M183. STEEL PIPES SHALL CONFORM TO A.S.T.M. A53 GRADE B.
- STEEL PIPES, ANGLES AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH A.A.S.H.T.O. M-111.
- THE APPROXIMATE WEIGHT OF STEEL IS LISTED IN THE CHART. THIS TOTAL INCLUDES PLATES, ANGLES AND PIPES. BOLTS, NUTS AND WASHERS ARE NOT INCLUDED.
- THE CONTRACTOR SHALL VERIFY THE PIPE LENGTHS AND HOLE LOCATIONS PRIOR TO CUTTING THE PIPES TO LENGTH OR DRILLING HOLES.
- GRATING FOR THE PRECAST END SECTION WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "GRATING FOR PRECAST CONCRETE BOX CULVERT END SECTION (SPECIAL)" OF THE SIZE SPECIFIED WHICH PRICE SHALL INCLUDE FABRICATION, GALVANIZING AND INSTALLATION OF THE GRATING AS DETAILED.

BOX CULVERT SPAN AND RISE	EXT. SPACE C	INT. SPACE D	SLOPE	NO. PIPES REQ'D	PIPE LENGTH E	ANGLE LENGTH F	BOLT LENGTH G	WEIGHT	L	WALL THICK. T
FTxFT (mxm)	INCHES (mm)	INCHES (mm)			FT (m)	FT (m)	INCHES (mm)	POUNDS (kg)	INCHES (mm)	INCHES (mm)
3.0x3.0 (0.9x0.9)	18 (450)	N/A	3:1	1	3.74 (1.14)	2.82 (0.86)	5.5 (140)	150 (68)	15 (380)	4 (102)
4.0x3.0 (1.2x0.9)	15 (380)	18 (450)	3:1	2	3.74 (1.14)	3.84 (1.17)	6.5 (165)	227 (103)	16 (405)	5 (127)
4.0x4.0 (1.2x1.2)	15 (380)	18 (450)	2:1	2	4.00 (1.22)	3.84 (1.17)	6.5 (165)	234 (106)	16 (405)	5 (127)
5.0x3.0 (1.5x0.9)	12 (300)	18 (450)	3:1	3	3.74 (1.14)	4.82 (1.47)	7.5 (190)	304 (138)	17 (430)	6 (152)
5.0x4.0 (1.5x1.2)	12 (300)	18 (450)	2:1	3	4.00 (1.22)	4.82 (1.47)	7.5 (190)	313 (142)	17 (430)	6 (152)
5.0x5.0 (1.5x1.5)	12 (300)	18 (450)	2:1	3	4.00 (1.22)	4.82 (1.47)	7.5 (190)	313 (142)	17 (430)	6 (152)
6.0x3.0 (1.8x0.9)	18 (450)	18 (450)	3:1	3	3.74 (1.14)	5.74 (1.78)	8.5 (215)	331 (150)	18 (460)	7 (178)
6.0x4.0 (1.8x1.2)	18 (450)	18 (450)	2:1	3	4.00 (1.22)	5.74 (1.78)	8.5 (215)	337 (153)	18 (460)	7 (178)
6.0x5.0 (1.8x1.5)	18 (450)	18 (450)	2:1	3	4.00 (1.22)	5.74 (1.78)	8.5 (215)	337 (153)	18 (460)	7 (178)
7.0x3.0 (2.1x0.9)	15 (380)	18 (450)	3:1	4	3.74 (1.14)	6.82 (2.08)	9.5 (240)	408 (185)	19 (485)	8 (203)
7.0x4.0 (2.1x1.2)	15 (380)	18 (450)	2:1	4	4.00 (1.22)	6.82 (2.08)	9.5 (240)	419 (190)	19 (485)	8 (203)
7.0x5.0 (2.1x1.5)	15 (380)	18 (450)	2:1	4	4.00 (1.22)	6.82 (2.08)	9.5 (240)	419 (190)	19 (485)	8 (203)
8.0x3.0 (2.4x0.9)	12 (300)	18 (450)	3:1	5	3.74 (1.14)	7.84 (2.39)	9.5 (240)	487 (221)	19 (485)	8 (203)
8.0x4.0 (2.4x1.2)	12 (300)	18 (450)	2:1	5	4.00 (1.22)	7.84 (2.39)	9.5 (240)	500 (227)	19 (485)	8 (203)
8.0x5.0 (2.4x1.5)	12 (300)	18 (450)	2:1	5	4.00 (1.22)	7.84 (2.39)	9.5 (240)	500 (227)	19 (485)	8 (203)
9.0x3.0 (2.7x0.9)	18 (450)	18 (450)	3:1	5	3.74 (1.14)	8.83 (2.69)	10.5 (265)	511 (232)	20 (510)	9 (229)
9.0x4.0 (2.7x1.2)	18 (450)	18 (450)	2:1	5	4.00 (1.22)	8.83 (2.69)	10.5 (265)	527 (239)	20 (510)	9 (229)
9.0x5.0 (2.7x1.5)	18 (450)	18 (450)	2:1	5	4.00 (1.22)	8.83 (2.69)	10.5 (265)	527 (239)	20 (510)	9 (229)
10.0x4.0 (3.0x1.2)	15 (380)	18 (450)	2:1	6	4.00 (1.22)	9.84 (3.00)	11.5 (290)	608 (276)	21 (535)	10 (254)
10.0x5.0 (3.0x1.5)	15 (380)	18 (450)	2:1	6	4.00 (1.22)	9.84 (3.00)	11.5 (290)	608 (276)	21 (535)	10 (254)



**PLAN OF BRACKET "A"**



**END VIEW OF BRACKET "B"**

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

**DISTRICT 5 DETAIL NO. X0323237**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GRATING FOR PRE-CAST BOX CULVERT END SECTION**

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

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

MODEL: X0323237  
FILE NAME: c:\pwworking\illinois\detail\0323237\05\###\Sh-Detail\_X0323237.dgn

USER NAME = Bridgette.Pierson	DESIGNED -	REVISED - 12/06
PLOT SCALE = 0.16666633 / In.	DRAWN -	REVISED -
PLOT DATE = 4/26/2024	CHECKED -	REVISED -
	DATE -	REVISED -