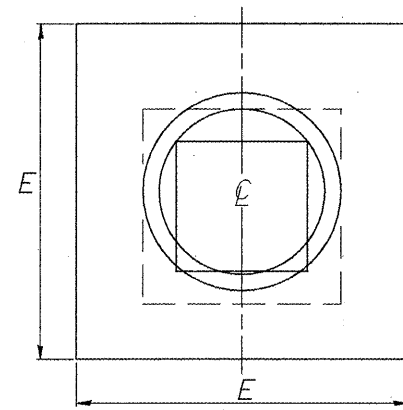
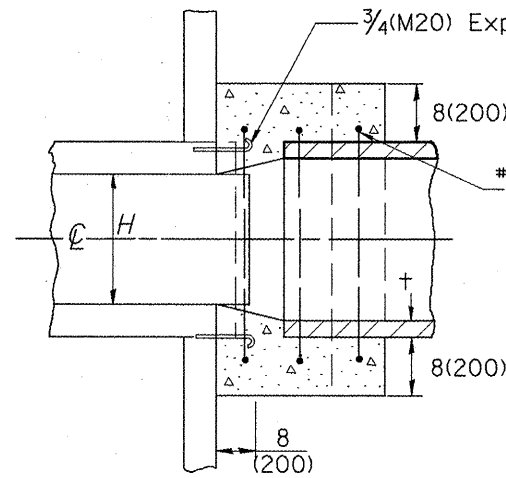


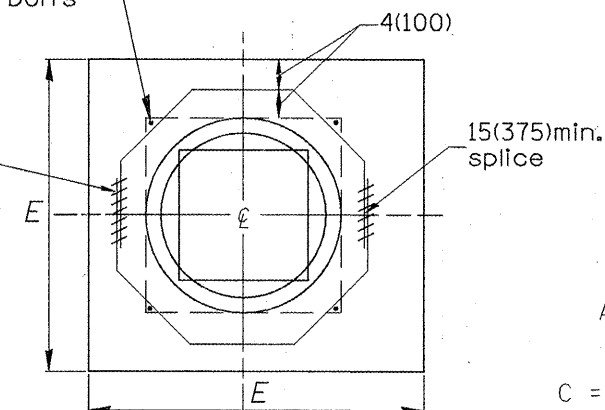
SECTION A-A



END VIEW



SECTION A-A



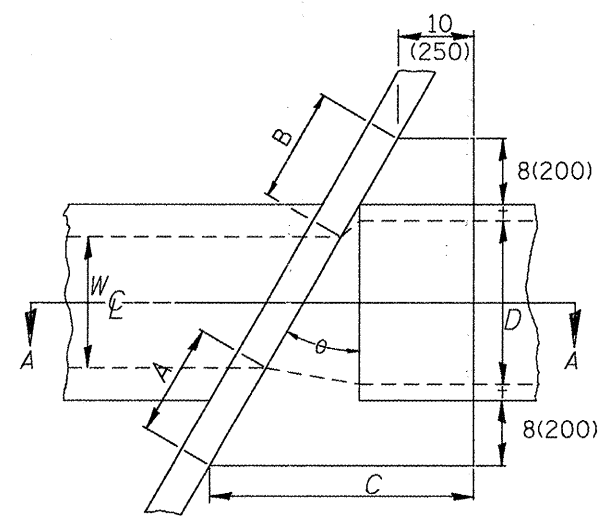
END VIEW

$$A = B = \frac{D - W}{2} + t + 8(200) \cos \theta$$

$$C = \tan \theta [D + 2t + 16(410)] + 10(250)$$

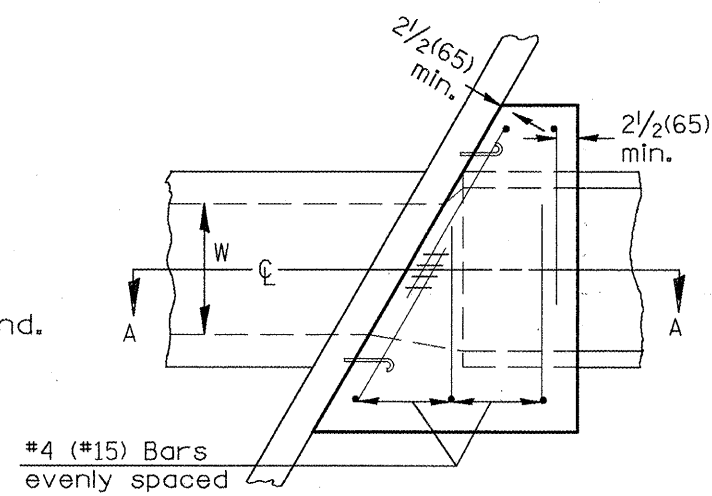
$$G = \frac{D + 2t + 8(200)}{2.4142 [\cos \theta]}$$

(Note: 'G' is based upon maximum skewed length)

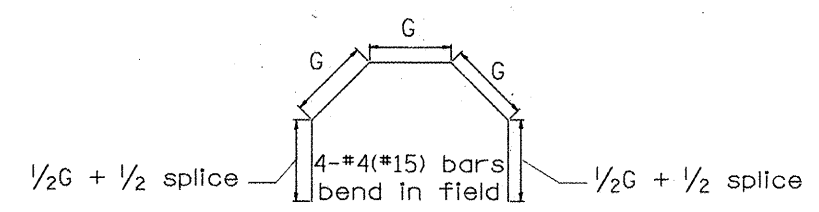


PLAN VIEW UP STREAM

NOTE:
Dimensions are shown in Plan View of Up Stream End while Reinforcement is shown in plan view of Down Stream End.



PLAN VIEW DOWN STREAM



GENERAL NOTES

- The collar shall be constructed entirely of CLASS SI CONCRETE and in accordance with the applicable portions of section 503 of the Standard Specifications. Reinforcement bars shall conform to section 508.
- Expansion bolts shall consist of approved expansion anchors, and 3/4 (M20) hook bolts which conform to section 1006.09. These bolts shall extend at least 8(200) into the new concrete.

EXISTING BOX		EACH COLLAR							EACH COLLAR			EXPAN. BOLTS EACH
		θ	A	B	C	D	E	t	CONCRETE CU. YD. (m ³)	REINFORCEMENT BARS G L KG(LBS.)		
42" PIPE	42" PIPE	44°	18"	18"	76"	42"	68"	5"	2.3	35" 16 @ 12'-11"	138	10
42" PIPE	42" PIPE	14°	14"	14"	27"	42"	68"	5"	1.0	26" 6 @ 9'-11"	40	10

QUANTITIES
CALC. BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

01-01-97	RENUM. J-11.03, NEW REVISION BOX, REVISED	T.P.
	TITLE BOX, ADDED QUANTITY CALCULATION BOX	
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SKewed PIPE CULVERT EXTENSION COLLAR (WITH END SECTION)
NOT TO SCALE

All dimensions are in Inches (millimeters) unless otherwise noted.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	16W-2,RS-4;17W-1,RS-3	FULTON	240	140
CONTRACT NO. 88703			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	