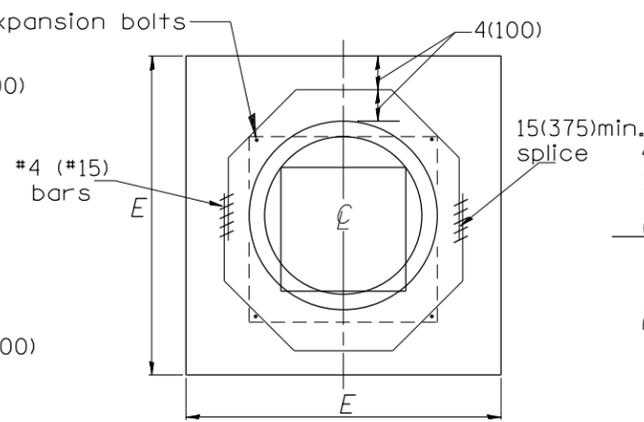
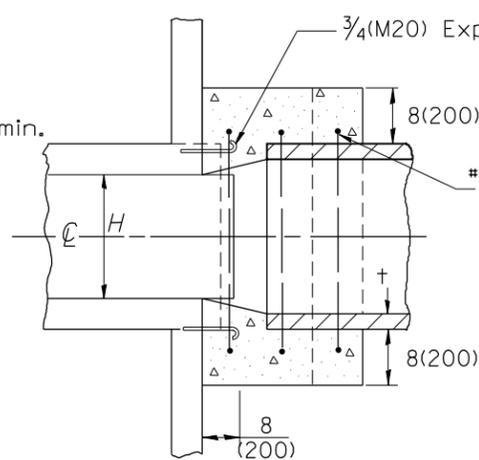


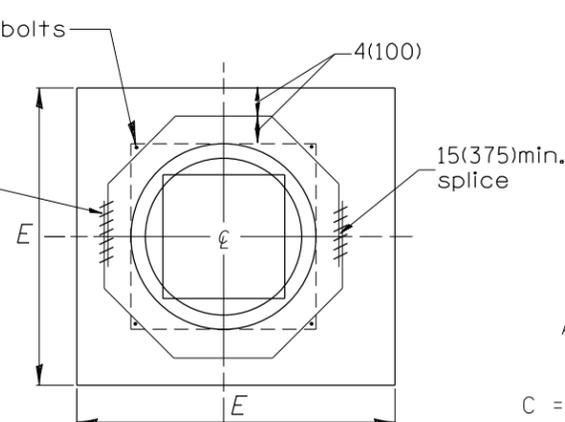
SECTION A-A



END VIEW



SECTION A-A



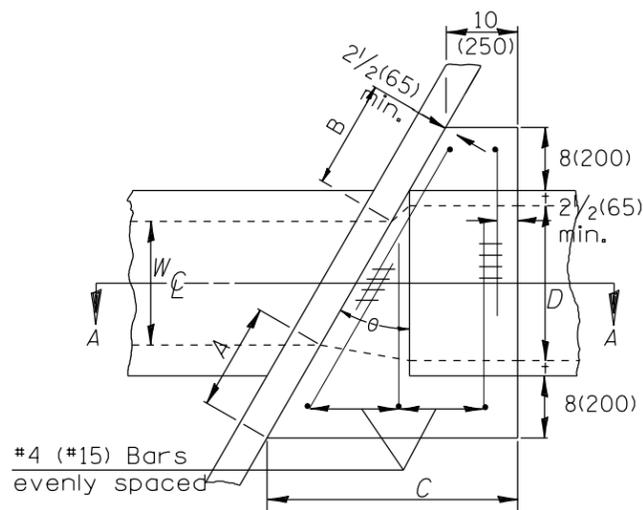
END VIEW

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

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

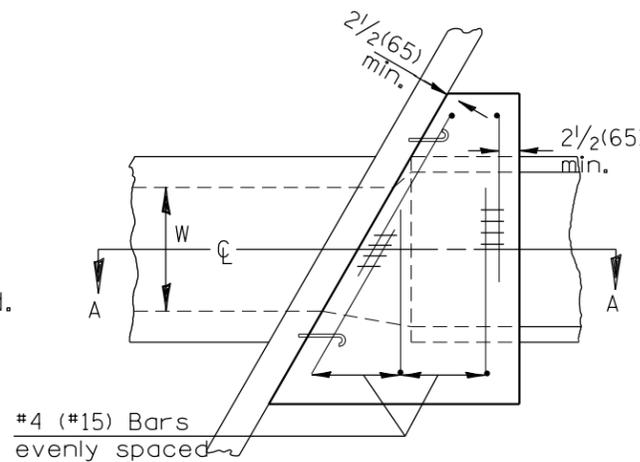
$$G = \frac{D + 2t + 8(200)}{2.4142 [\cos \theta]}$$

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

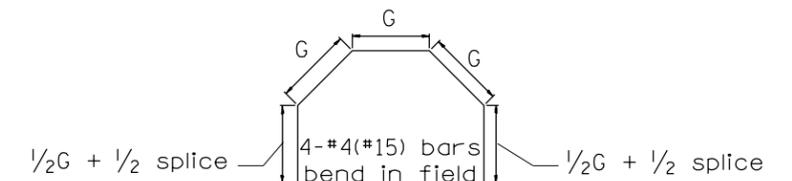


PLAN VIEW UP STREAM

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.
- This work will be paid for by the cubic yard (cubic meter) for CONCRETE COLLAR, by the pound (kg) for REINFORCEMENT BARS, and by Each for EXPANSION BOLTS of the size indicated.

EXISTING BOX		EACH COLLAR										
W	H	θ	A	B	C	D	E	t	REINFORCEMENT BARS			EXPAN. BOLTS
									CONCRETE	G	L	

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.
2-15-11	CHANGED REBAR DETAIL	R.D.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SKewed PIPE CULVERT EXTENSION COLLAR (WITH END SECTION)

NOT TO SCALE

CADD STD. 542011-D4

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

F.A. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				