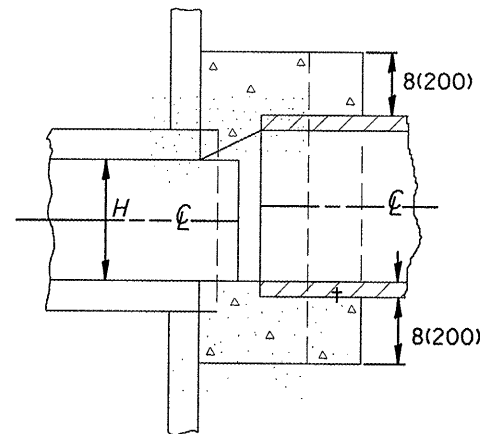
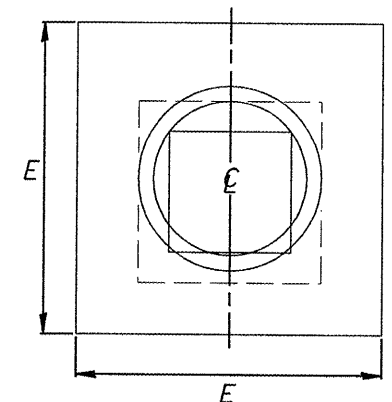


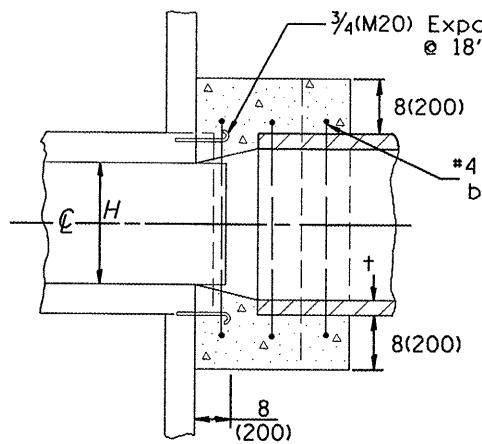
CONTRACT NO. 68352				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
685	37BR-1	MCDONOUGH/DULTON	138	86
STA. 557+20.00		TO STA. 589+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



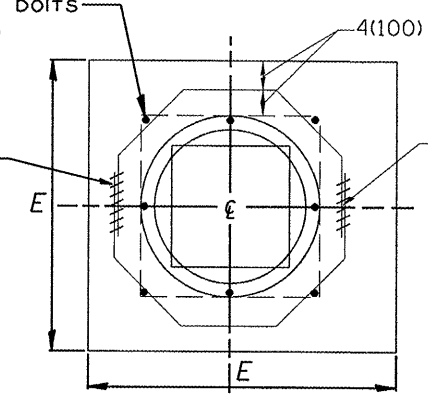
SECTION A-A



END VIEW



SECTION A-A



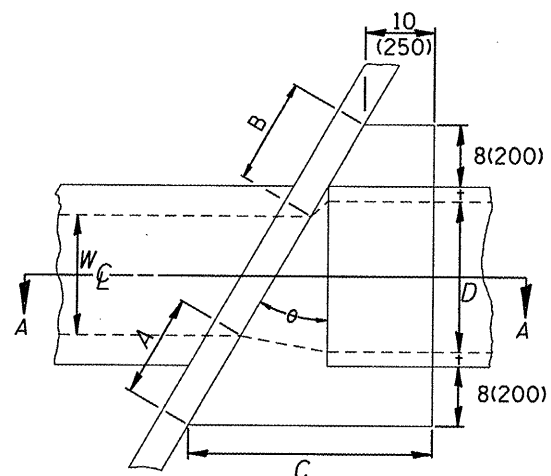
END VIEW

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

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

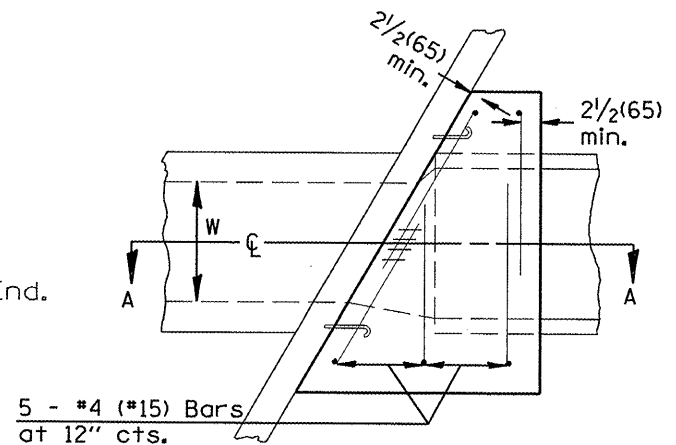
$$G = \frac{D + 2t + 8(200)}{2.4142 [\cos \theta]}$$

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

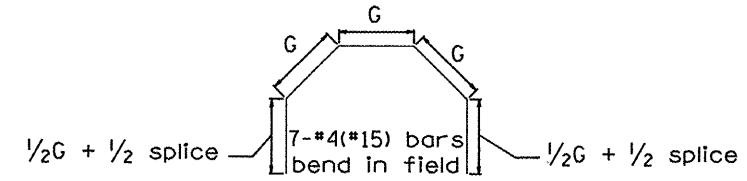


PLAN VIEW UP STREAM

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.

QUANTITIES		
CALC. BY:	SEC	8/09
CHECKED BY:	CTW	DATE: 8/09
		DATE:

QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

EXISTING BOX		θ	EACH COLLAR					CONCRETE CU. YD. (m <sup>3</sup> )	REINFORCEMENT BARS		EXPAN. BOLTS EACH
W	H		A & B	C	D	E	t		G	L	
36"	36"	34°22'3"	18-3/4"	55-7/8"	42"67"	4-1/2"	2.0 cy	29-5/8"	11'-2"	52 lb	8

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

DATE	REVISIONS	BY
1-1-97	RENUM. J-11.03, NEW REVISION BOX, REVISED TITLE BOX, ADDED QUANTITY	T.P.
	CALCULATION BOX	
10-16-06	REVISED TO 2007 SPEC.	M.A.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
DISTRICT CADD STANDARD  
SKewed PIPE CULVERT  
EXTENSION COLLAR  
(WITH END SECTION)

CADD STD. NO. 542011-04  
SCALE: NOT DRAWN TO SCALE

DRAWN BY CADD  
CHECKED BY