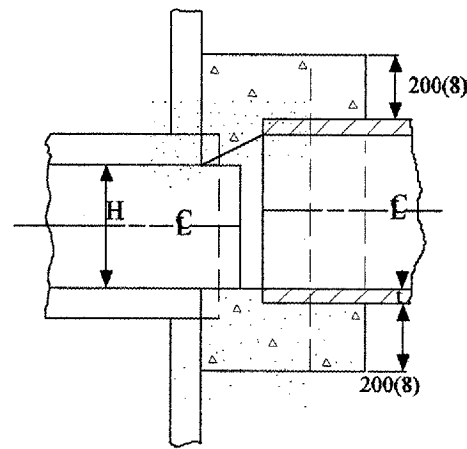
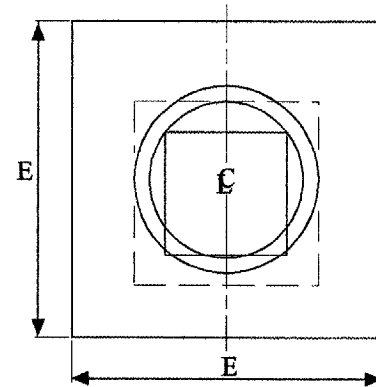


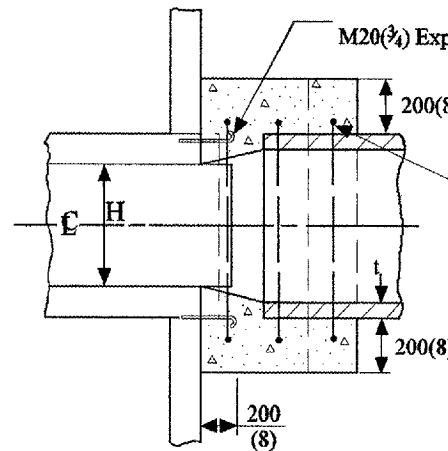
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------------------------|----------|--------------------|--------------|-----------|
| 687 | * | McDonough / Fulton | 58 | 52 |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |
| * D4 CULV EXT/ REPAIR 2006 | | | | |



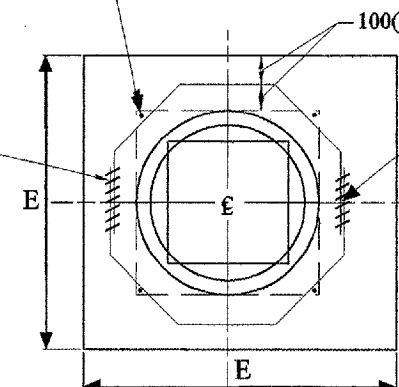
SECTION A-A



END VIEW



SECTION A-A



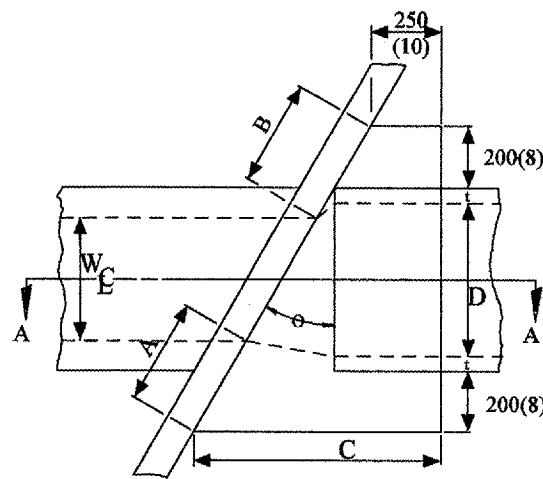
END VIEW

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

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

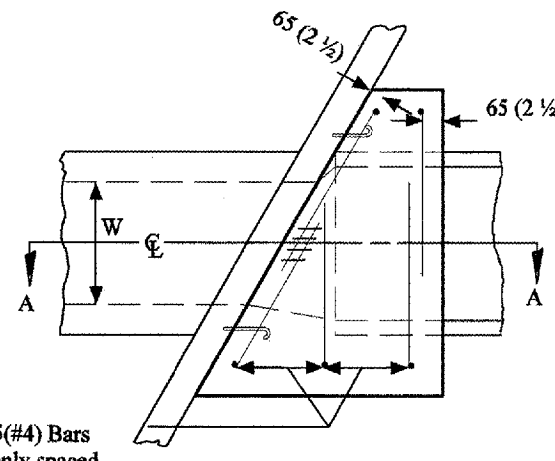
$$G = \frac{D + 2t + 200(8)}{2.4142 [\cos \theta]}$$

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

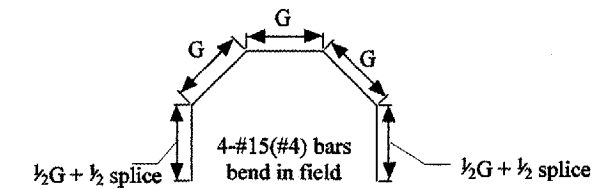


PLAN VIEW UP STREAM

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 M20 (3/4) hook bolts which conform to section 1006.09. These Bolts shall extend at least 200(8) into the new Concrete.

| EXISTING BOX | | EACH COLLAR | | | | | | | | | | | |
|--------------|---|-------------|---------|---------|---------|-----|-------|--------|----------|--------------------|--------|------|--------------|
| W | H | θ | A | B | C | D | E | t | CONCRETE | REINFORCEMENT BARS | | | EXPAN. BOLTS |
| | | | | | | | | | CU. YD. | G | L | LBS. | EACH |
| 3 | 3 | 10.93° | 12 3/4" | 12 3/4" | 21 3/4" | 36" | 5'-0" | 4 1/2" | 1.82 | 22 3/8" | 8'-10" | 24 | 10 |
| PIPE 36" | | 15.98° | 13" | 13" | 27 1/2" | 36" | 5'-1" | 4 1/2" | 2.08 | 23" | 8'-11" | 42 | 10 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT CADD STANDARD

**SKewed PIPE CULVERT
EXTENSION COLLAR
(WITH END SECTION)**

CADD STD. NO. 542011-D4
SCALE: NOT DRAWN TO SCALE

DRAWN BY CADD
CHECKED BY

| DATE | REVISIONS | BY |
|--------|---|------|
| 1-1-97 | RENUM. J-11.03, NEW REVISION BOX, REVISED TITLE BOX, ADDED QUANTITY CALCULATION BOX | T.P. |
| | | |
| | | |
| | | |
| | | |

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

DGN-ONLY