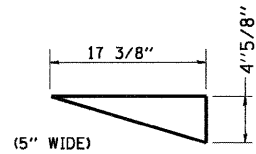


CONCRETE BOX CULVERTS

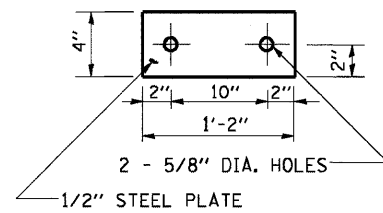
SN 043-1062 - STA 4+86.61 (IL RTE 78)

6' x 6' BOX CULVERT @ 10.8° SKEW

DETAIL "A"



DETAIL "B"



**** BILL OF MATERIALS**
(ONE END SECTION)
(FOR INFORMATION ONLY)

| BAR | SIZE | NO. | LENGTH | SHAPE |
|-----------------------|------|-----|--------|-------|
| a | #4 | 3 | 6'-8" | — |
| a ₁ | #5 | 57 | 7'-10" | ⌋ |
| d | #4 | 7 | 4'-4" | └ |
| h ₁ | #4 | 14 | 33'-4" | — |
| h ₂ | #5 | 6 | 38'-7" | — |
| h ₃ | #6 | 4 | 6'-8" | — |
| h ₄ | #4 | 2 | 25'-0" | — |
| v ₁ | #4 | 4 | 9'-9" | ⌋ |
| v ₂ | #4 | 28 | 12'-0" | ⌋ |
| DESCRIPTION | | | UNIT | QTY |
| CONCRETE BOX CULVERTS | | | CU YD | 9.8 |
| REINFORCEMENT BARS | | | LB | 1420 |

GENERAL NOTES:

THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER "CU YD" FOR **CONCRETE BOX CULVERTS**. THIS WORK SHALL INCLUDE THE EXPANSION BOLTS, GALVANIZED PIPE, STEEL PLATES, & CAPS, CLASS SI CONCRETE, REINFORCEMENT BARS, BOLTS, NUTS, WASHERS, PIPE GRATING, EARTH EXCAVATION WHERE REQUIRED, AND ANY NECESSARY GRADING TO FIT EXTENSION AS SHOWN IN THE CROSS SECTIONS OR TO SLOPE.

CLASS SI CONCRETE SHALL BE USED THROUGHOUT. EXPOSED EDGES SHALL BE BEVELED 3/4 ".

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR. 60 (IL MODIFIED).

SLOPE FLOW LINE FOR END SECTION IS THE SAME RATE AS THE FLOW LINE OF THE BOX CULVERT.

BOLTS, NUTS, AND WASHERS SHALL BE IN ACCORDANCE WITH ARTICLE 1006.08 OF THE STANDARD SPECIFICATION AND SHALL BE GALVANIZED.

STEEL PIPES SHALL CONFORM TO A.S.T.M. A-53 (TYPE E OR S) GRADE B, SCHEDULE 40, AND SHALL BE GALVANIZED CONFORMING TO A.S.T.M. A-120. CONTRACTOR SHALL FIELD VERIFY PIPE LENGTH.

STEEL PLATES SHALL CONFORM TO AASHTO M-183 AND SHALL BE GALVANIZED CONFORMING TO AASHTO M-111.

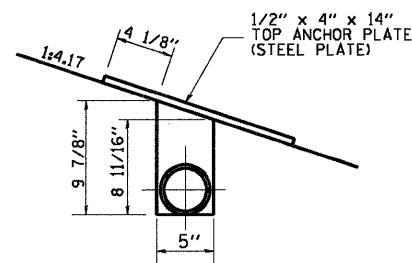
SEE PLAN AND PROFILE SHEET FOR MORE INFORMATION.

SEE CROSS SECTION SHEET FOR MORE INFORMATION INCLUDING INVERT ELEVATION.

CLEAR COVER INDICATED IS MINIMUM.

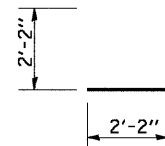
CLEAR COVER SHALL NOT EXCEED MINIMUM BY MORE THAN 1/2 ".

GRATING DESIGN CONFORMS TO AASHTO ROADSIDE DESIGN GUIDE ART. 3.4.2.1.

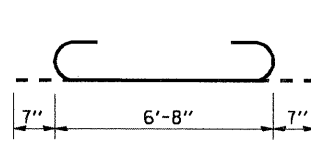


DETAIL "C"

#4 d BAR TOEWALL

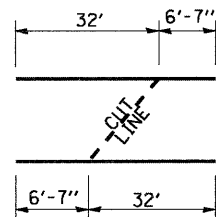


#5 a₁ BAR SLAB

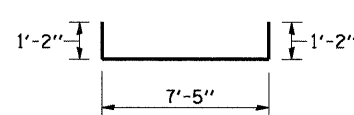


#5 h₂ BAR WINGWALLS

Cut Diagram (7 Req'd)

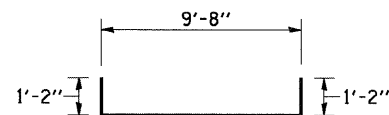
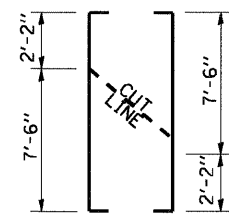


#4 v₁ BAR WINGWALLS



#4 v₂ BAR WINGWALLS

Cut Diagram (28 Req'd)



2 - #4 v₂ BAR (CUT VARIES)

**** BILL OF MATERIALS**
(ONE END SECTION)
(FOR INFORMATION ONLY)

| DESCRIPTION | UNIT | QTY. |
|-------------------------------------|------|--------------|
| 4" GALVANIZED STEEL PIPE | FOOT | 4 @ 7'-6.25" |
| | FOOT | 2 @ 31'-3" |
| 4" GALV PIPE CAPS | EACH | 12 |
| 1/4" GALV. STEEL PLATE (9" NOMINAL) | EACH | 8 |
| 1/2" x 4" x 14" GALV. STEEL PLATE | EACH | 8 |
| 5/8" x 9" GALV. STEEL BOLTS | EACH | 8 |
| EXPANSION BOLTS 1/2"Ø | EACH | 16 |

** INFORMATION INCLUDED IS FOR ONE END SECTION (TWO ARE REQUIRED) AND DOES NOT INCLUDE QUANTITIES FOR BARREL SECTIONS. SEE SHEET 1 FOR BARREL SECTION QUANTITIES.