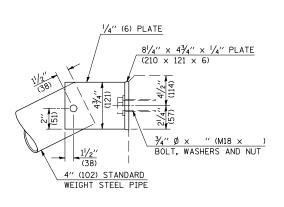


END VIEW OF WINGWALL



ELEVATION AT WINGWALL

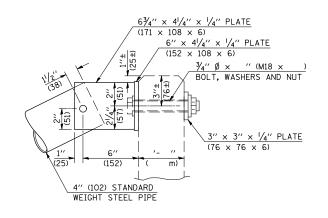
TOP OF WING $\frac{9\frac{1}{2}" \times 6\frac{1}{2}" \times \frac{1}{4}"}{(241 \times 165 \times 6)}$ PLATE (152) $\frac{1}{2}$ " $\emptyset \times 2\frac{1}{2}$ " (M13 \times 63) BOLT, WASHERS AND NUT

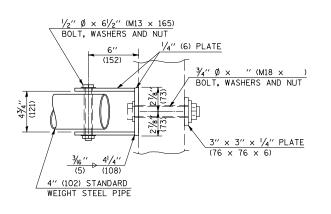
 $9'' \times 4\sqrt[3]{4}'' \times \sqrt[1]{4}''$ PLATE (229 × 121 × 6) $8\frac{1}{4}$ × $4\frac{3}{4}$ × $\frac{1}{4}$ PLATE (210 × 121 × 6) 3" × 3" × 1/4" PLATE (76 × 76 × 6) 3/4" Ø × " (M18 ×) BOLT, WASHERS AND NUT 4" × 43/4" × 1/4" PLATES (102 × 121 × 6) 1/2" Ø × 61/2" (M13 × 165) BOLT, WASHERS AND NUT (121) 4" (102) STANDARD WEIGHT STEEL PIPE

PLAN AT WINGWALL

ELEVATION AT END OF WINGWALL

 $\frac{9\frac{1}{2}" \times 6\frac{1}{2}" \times \frac{1}{4}" \text{ PLATE}}{(241 \times 165 \times 6)}$ ¾" Ø × " (M18 × BOLT, WASHERS AND NUT) (152) 3" × 3" × 1/4" PLATE (76 × 76 × 6) $\frac{6'' \times 6'' \times \frac{3}{4}''}{(152 \times 152 \times 19)}$ ANGLE





NUMBER OF CENTER SUPPORTS REQUIRED								
W.W. SPAN (TIP-TIP)	NUMBER REQUIRED	SPACING						
0' (0 m) T0 12'-6'' (3.8 m)	0	-						
12'-6" (3.8 m) TO 18'-0" (5.5 m)	1	CENTER OF W.W. SPAN						
OVER 18'-0" (5.5 m)	(1 CENTER SUPPORT EVERY ADDITIONAL 6'-0" (1.8 mm) OF W.W. SPAN)							

PLAN AT END OF WINGWALL

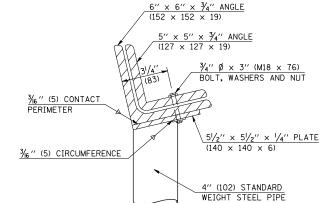
¾" × 2" (19 × 51) SLOTTED HOLE

(356)

PLAN VIEW OF SUPPORT (IF SPECIFIED)

(25)

 $\frac{6'' \times 6'' \times \frac{3}{4}'' \text{ ANGLE}}{(152 \times 152 \times 19)}$



ELEVATION AT HEADWALL

4" (102) STEEL PIPE, STANDARD WEIGHT X 24" (600) LONG TO BE CUT TO FIT IN THE FIELD $\frac{1}{2}$ " × 6" (M13 × 152) BOLTS (4) $9" \times 9" \times \frac{1}{4}"$ PLATE (229 x 229 x 6) CONCRETE FOUNDATION (CLASS X CONC.) 1' × 1' × 3' $(300 \times 300 \times 900)$

CENTER SUPPORT FOUNDATION (IF SPECIFIED)

PLAN AT HEADWALL

3. STEEL PIPES, ANGLES AND PLATES SHALL BE HOT DIPPED GALVANIZED CONFORMING

2. ANGLES AND STEEL PLATES SHALL CONFORM TO A.A.S.H.T.O. M 183. STEEL PIPES

SHALL CONFORM TO A.S.T.M. A 53, GRADE B OR A.S.T.M. A 501.

REQUIREMENTS OF A.A.S.H.T.O. M 232.

QUANTITIES FOR 2 HEADWALLS

BAR QTY. SIZE LENGTH

h₃ 20 #4 (#10) V₁ 12 #4 (#10) EXPANSION BOLTS, 3/4" (M18)

- TO THE REQUIREMENTS OF A.A.S.H.T.O. M 111. 4. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED CONFORMING TO THE
- 5. THE APPROXIMATE WEIGHT OF THE STEEL IS POUNDS (kg). THIS TOTAL INCLUDES PLATES, ANGLES AND PIPES. BOLTS, NUTS AND WASHERS ARE NOT INCLUDED.

GENERAL NOTES

1. BOLTS AND NUTS SHALL CONFORM TO A.S.T.M. A 307. ALL BOLTS SHALL HAVE WASHERS AT EACH END. HOLES SHALL BE $V_{16}^{\prime\prime}$ (2 mm) OVERSIZED UNLESS OTHERWISE NOTED EXCEPT IN CONCRETE WHICH SHALL BE $V_{8}^{\prime\prime}$ (4 mm) OVERSIZED.

- 6. ALL DIMENSIONS ARE TO BE VERIFIED IN THE FIELD. CUTTING OF THE STANDARD WEIGHT PIPE AND ANGLES TO THE EXACT LENGTH AND DRILLING HOLES IS TO BE DONE IN THE FIELD.
- 7. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "GRATING FOR BOX CULVERT" WHICH PRICE SHALL INCLUDE ALL MATERIAL AND LABOR TO COMPLETE THE INSTALLATION AS SHOWN.

END VIEW OF SUPPORT (IF SPECIFIED)

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

							DISTRICT 5 DETAIL NO. X0321560
FILE NAME =	USER NAME = craigre	DESIGNED -	REVISED - 11/06				F.A. SECTION COUNTY TOTAL SHEET SHEETS NO.
c:\pw_work\PWIDOT\CRAIGRE\dØ101509\x032	1560.dgn	DRAWN -	REVISED - 01/08 (KAG)	STATE OF ILLINOIS		GRATING FOR CONCRETE HEADWALL	NIE. SILETO NO.
	PLOT SCALE = 40.000 '/ IN.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION			CONTRACT NO.
	PLOT DATE = 1/7/2010	DATE -	REVISED -		SCALE:	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT