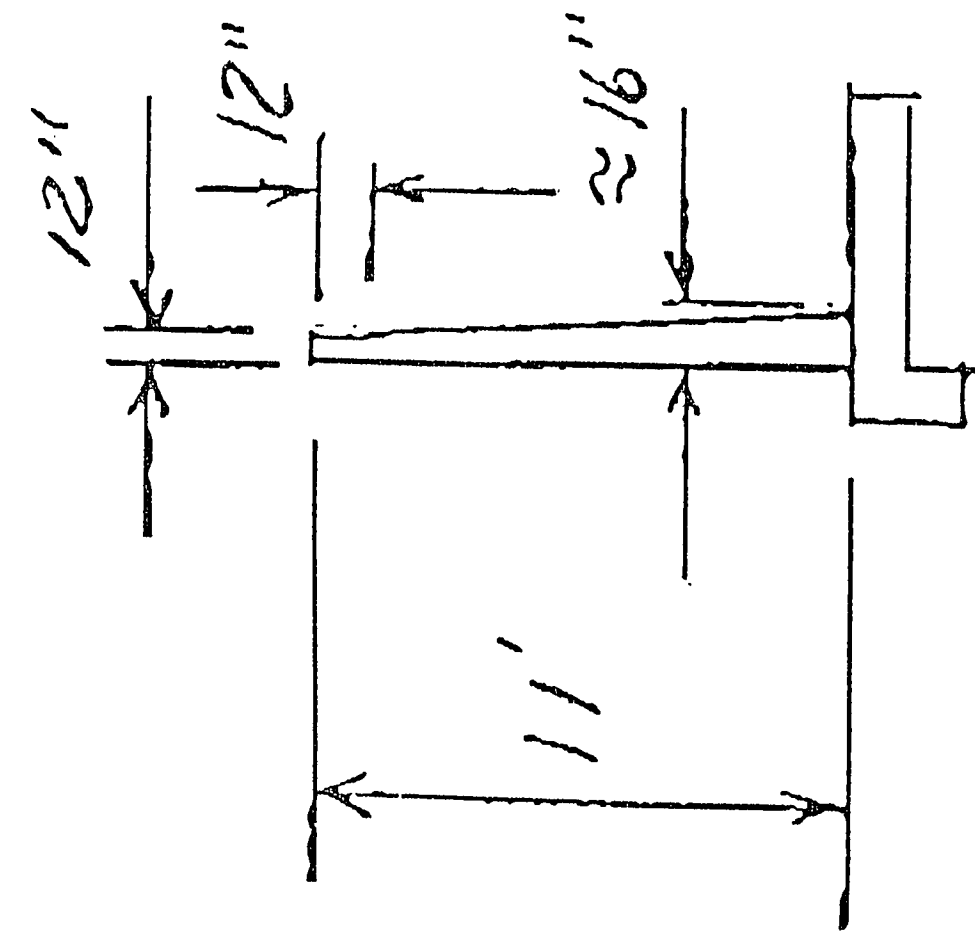


STA. 48+10.00 BUTTON WILLOW DR. - HEADWALL & WING WALL DESIGN CONT'D



INTERMEDIATE
PORTION OF
WING WALL

Size stem reinf. for intermediate moment:

$$M = 45(11)^3/6 = 9.9 \text{ K.FT}$$

Try # 7 @ 12"

$$A_s = 0.60 \text{ in}^2/\text{ft}$$

$$M_c = 24.8 \text{ K.FT}$$

$$M_s = 14.9 \text{ K.FT}$$

$$14.9 > 9.9 \text{ req'd OK}$$

$$\left\{ \begin{array}{l} f_c = 1,300 \text{ psi} \\ f_s = 24,000 \text{ psi} \\ b = 12" \\ d = 16 - 2.5 \\ = 13.5" \\ \text{Use } 13" \\ n = 9 \end{array} \right.$$

USE #7 @ 12" FOR 11' TO 6'-3"

HT STEM REINF

Size footing reinf for 11' to 6'-3" portion of wall:

Stem moment assumed to control.

Try # 7 @ 12"

$$A_s = 0.60 \text{ in}^2/\text{ft}$$

$$M_c = 27.9 \text{ K.FT}$$

$$M_s = 16.1 \text{ K.FT}$$

$$16.1 > 9.9 \text{ req'd OK}$$

$$\left\{ \begin{array}{l} f_c = 1,300 \text{ psi} \\ f_s = 24,000 \text{ psi} \\ b = 12" \quad 18-3.5" \\ d = 14.5" \\ n = 9 \end{array} \right.$$

USE #7 @ 12" FOR 11' TO 6'-3"

HT FOOTING REINF