

72W" GIRDER

A = 915 SQ. IN.
 $r^2 = 717.5 \text{ IN.}^2$
 $y_r = 37.13 \text{ IN.}$
 $y_b = -34.87 \text{ IN.}$
 $I = 656,426 \text{ IN.}^4$
 $S_r = 17,680 \text{ IN.}^3$
 $S_b = -18,825 \text{ IN.}^3$
 WT. = 953 #/FT

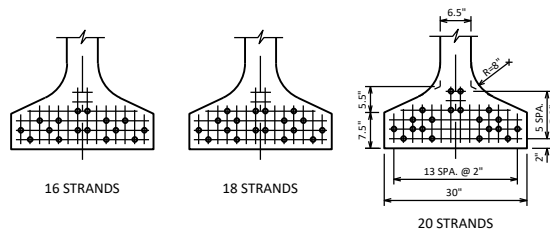
PRE-TENSION

$f_s = 270,000 \text{ P.S.I.}$
 $f_s = 0.75 \times 270,000 = 202,500 \text{ P.S.I.}$
 for low relaxation strands

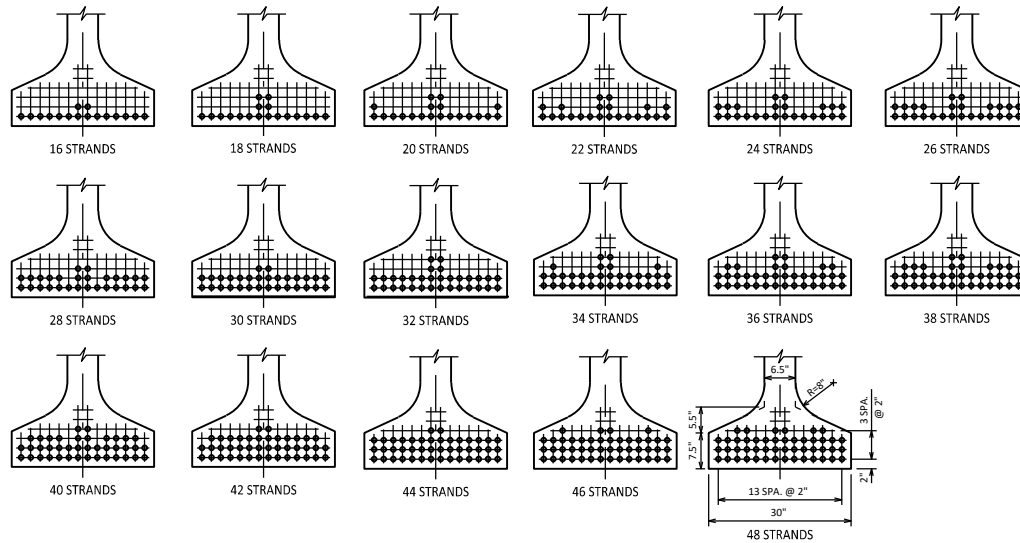
Pi PER 0.6" DIA. STRAND = $0.217 \times 202,500 = 43.94 \text{ KIPS}$

$$\frac{y_b}{r^2} = \frac{-34.87}{717.50} = -0.0486 \text{ in/in}^2$$

$$f_b(\text{init.}) = \frac{A_s f_s}{A} \left(1 + \frac{e_s y_b}{r^2} \right)$$



STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF 0.6" DIA. STRANDS



ARRANGEMENT AT C/L SPAN - FOR GIRDERS WITH DRAPED 0.6" DIA. STRANDS

DESIGNER NOTES

ON THE STRAND PATTERN SHEET, PLACE A BOX AROUND EACH STRAND PATTERN THAT APPLIES TO THE DESIGNED STRUCTURE AND LABEL THE SPAN IT IS USED IN.

(COMPRESSION IS POSITIVE)

NO. STRANDS	e_s (inches)	$P(\text{init.}) = A_s f_s$ (KIPS)	$f_b(\text{init.})$ (K/sq.in.)
STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS			
16	-30.37	703	1.902
18	-29.98	791	2.124
20	-29.27	879	2.328
STANDARD STRAND PATTERNS FOR DRAPED STRANDS			
16	-32.62	703	1.986
18	-32.20	791	2.217
20	-32.07	879	2.458
22	-31.96	967	2.698
24	-31.87	1055	2.939
26	-31.79	1143	3.179
28	-31.73	1230	3.417
30	-31.67	1318	3.657
32	-31.37	1406	3.880
34	-31.22	1494	4.110
36	-31.09	1582	4.341
38	-30.98	1670	4.574
40	-30.87	1758	4.803
42	-30.77	1846	5.034
44	-30.69	1933	5.265
46	-30.52	2021	5.484
48	-30.37	2109	5.707

72W" PRESTRESSED GIRDER DESIGN DATA

BUREAU OF STRUCTURES

APPROVED: *Laura Shadewald* DATE: 7-17