

**36W" GIRDER**

A = 632 SQ. IN.  
 $r^2 = 158.20 \text{ IN.}^2$   
 $y_T = 19.37 \text{ IN.}$   
 $y_B = -16.63 \text{ IN.}$   
 $I = 99,980 \text{ IN.}^4$   
 $S_T = 5,162 \text{ IN.}^3$   
 $S_B = -6,012 \text{ IN.}^3$   
 WT. = 658 #/FT

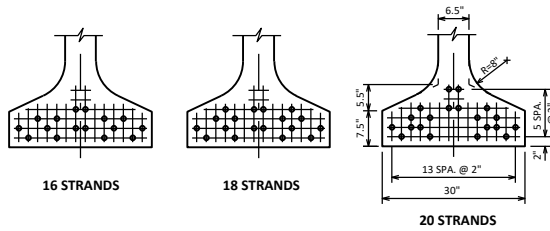
**PRE-TENSION**

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

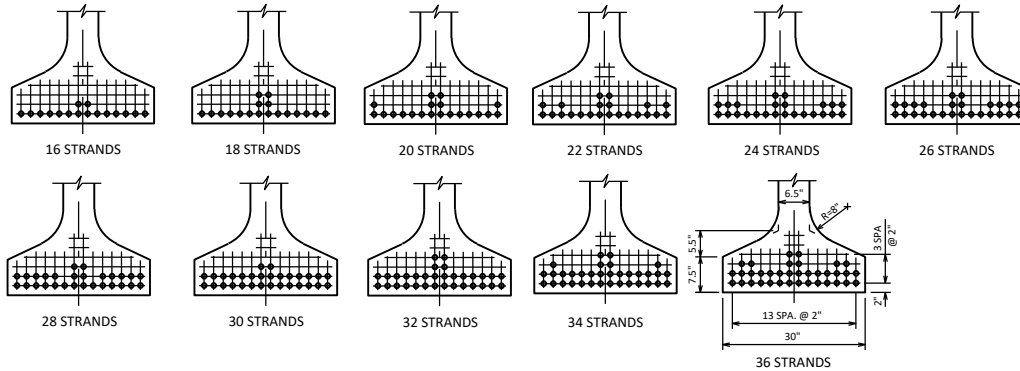
PI PER 0.6" DIA. STRAND =  $0.217 \times 202,500 = 43.94 \text{ KIPS}$

$$\frac{y_B}{r^2} = \frac{-16.63}{158.20} = -0.10512 \text{ in/in}^2$$

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



**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**

(COMPRESSION IS POSITIVE)

NO. STRANDS	$e_s$ (inches)	$P(\text{init.}) = A_s f_s$ (KIPS)	$f_b(\text{init.})$ (K/sq.in.)
<b>STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS</b>			
16	-12.13	703	2.531
18	-11.74	791	2.796
20	-11.03	879	3.003
<b>STANDARD STRAND PATTERNS FOR DRAPED STRANDS</b>			
16	-14.38	703	2.794
18	-13.96	791	3.088
20	-13.83	879	3.413
22	-13.72	967	3.737
24	-13.63	1055	4.061
26	-13.55	1143	4.385
28	-13.49	1230	4.706
30	-13.43	1318	5.030
32	-13.13	1406	5.295
34	-12.98	1494	5.589
36	-12.85	1582	5.885

**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.

**36W" PRESTRESSED GIRDER DESIGN DATA**

**BUREAU OF STRUCTURES**

APPROVED: *Laura Shadewald*      DATE: 7-17