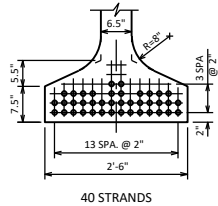
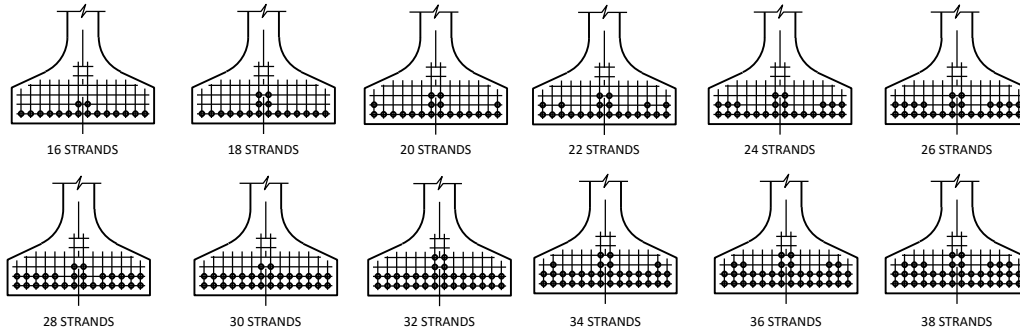


**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY  
TO AVOID DRAPING OF 0.6" DIA. STRANDS**



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

**45W" GIRDER**

A = 692 SQ. IN.  
 $r^2 = 258.70 \text{ IN.}^2$   
 $Y_1 = 24.26 \text{ IN.}^2$   
 $Y_6 = -20.74 \text{ IN.}$   
 $I = 178,971 \text{ IN.}^4$   
 $S_T = 7,377 \text{ IN.}^3$   
 $S_B = -8,629 \text{ IN.}^3$   
 WT. = 721 #/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 =  $0.217 \times 202,500 = 43.94 \text{ KIPS}$

$$\frac{Y_6}{r^2} = \frac{-20.74}{258.70} = -0.08017 \text{ IN/IN}^2$$

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

(COMPRESSION IS POSITIVE)

NO. STRANDS	$e_s$ (inches)	P(init.) = $A_s f_s$ (KIPS)	$f_b$ (init.) (K/sq.in.)
<b>STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS</b>			
16	-16.24	703	2.339
18	-15.85	791	2.596
20	-15.14	879	2.812
<b>STANDARD STRAND PATTERNS FOR DRAPED STRANDS</b>			
16	-18.49	703	2.521
18	-18.07	791	2.799
20	-17.94	879	3.097
22	-17.83	967	3.394
24	-17.74	1055	3.693
26	-17.66	1143	3.991
28	-17.60	1230	4.285
30	-17.54	1318	4.583
32	-17.24	1406	4.840
34	-17.09	1494	5.117
36	-16.96	1582	5.395
38	-16.85	1670	5.674
40	-16.74	1758	5.950

**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.

**45W" PRESTRESSED GIRDER DESIGN DATA**

**BUREAU OF STRUCTURES**

APPROVED: *Laura Shadewald*

DATE: 7-17