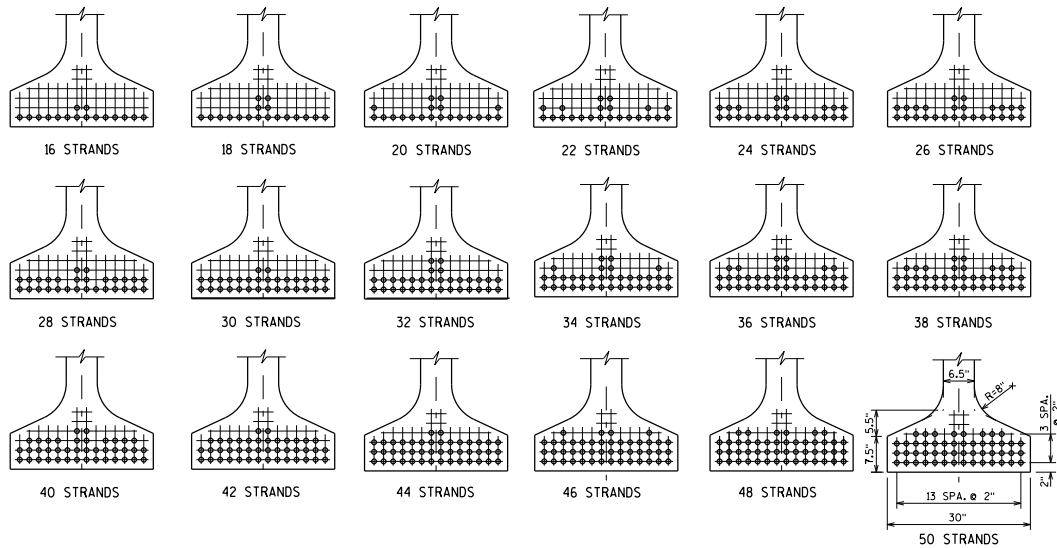


STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF 0.6" DIA. STRANDS



ARRANGEMENT AT $\frac{1}{4}$ SPAN - FOR GIRDERS WITH DRAPED 0.6" DIA. STRANDS

82W" GIRDER

A = 980 SQ. IN.
 $r^2 = 924.1 \text{ IN.}^2$
 $y_T = 42.32 \text{ IN.}$
 $y_B = -39.68 \text{ IN.}$
 $I = 905,453 \text{ IN.}^4$
 $S_T = 21,396 \text{ IN.}^3$
 $S_B = -22,819 \text{ IN.}^3$
 WT. = 1021 #/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 = $0.217 \times 202,500 = 43.94 \text{ KIPS}$

$$\frac{y_B}{r^2} = \frac{-39.68}{924.10} = -0.04294 \text{ in/in}^2$$

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

(COMPRESSION IS POSITIVE)			
NO. STRANDS	e_s (inches)	$P(\text{init.}) = A_s f_s$ (KIPS)	$f_B (\text{init.})$ (K/sq.in.)
STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS			
16	-35.18	703	1.801
18	-34.79	791	2.013
20	-34.08	879	2.209
STANDARD STRAND PATTERNS FOR DRAPED STRANDS			
16	-37.43	703	1.870
18	-37.01	791	2.090
20	-36.88	879	2.318
22	-36.77	967	2.545
24	-36.68	1055	2.772
26	-36.60	1143	3.000
28	-36.54	1230	3.224
30	-36.48	1318	3.451
32	-36.18	1406	3.664
34	-36.03	1494	3.883
36	-35.90	1582	4.104
38	-35.79	1670	4.323
40	-35.68	1758	4.542
42	-35.58	1846	4.762
44	-35.50	1933	4.978
46	-35.33	2021	5.191
48	-35.18	2109	5.404
50	-35.04	2197	5.616

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.

THERE IS CURRENTLY A MORATORIUM ON THE USE OF 82W" PRESTRESSED GIRDERS.

82W" PRESTRESSED GIRDER DESIGN DATA

BUREAU OF
STRUCTURES

DATE: _____

APPROVED: Bill Oliva