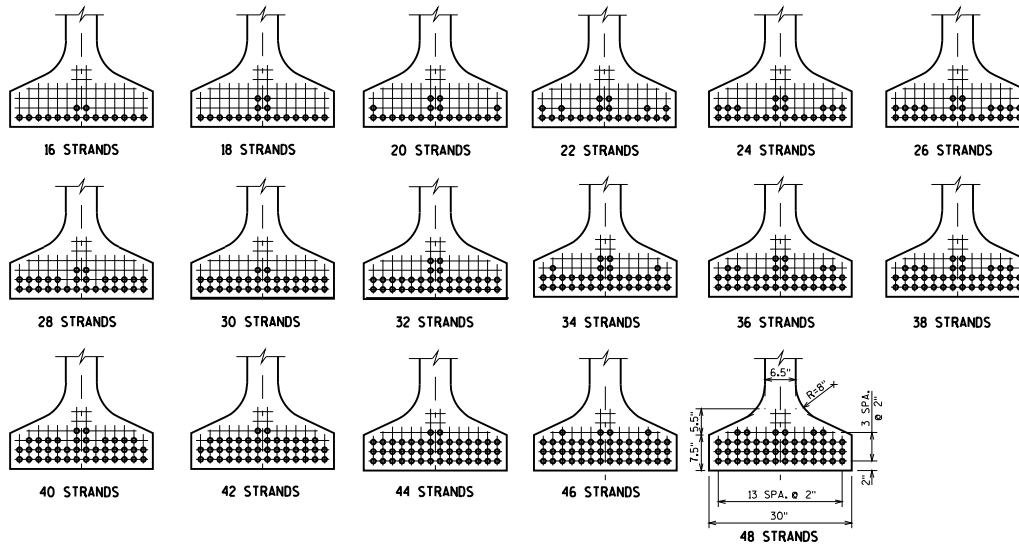


**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY  
TO AVOID DRAPING OF 0.6"Ø STRANDS**



**ARRANGEMENT AT ¼ SPAN - FOR GIRDERS WITH DRAPED 0.6"Ø STRANDS**

**72" GIRDER**

A = 915 SQ. IN.  
 $r^2 = 717.5 \text{ IN.}^2$   
 $y_T = 37.13 \text{ IN.}$   
 $y_B = -34.87 \text{ IN.}$   
 $I = 656,426 \text{ IN.}^4$   
 $S_T = 17,680 \text{ IN.}^3$   
 $S_B = -18,825 \text{ IN.}^3$   
 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" Ø STRAND =  $0.217 \times 202,500 = 43,94 \text{ KIPS}$

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

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

(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	-30.37	703	1.902
18	-29.98	791	2.124
20	-29.27	879	2.328
<b>STANDARD STRAND PATTERNS FOR DRAPED STRANDS</b>			
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

**72" PRESTRESSED GIRDER  
DESIGN DATA**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION  
 STRUCTURES DEVELOPMENT SECTION

APPROVED: Scot Becker DATE: 7-09