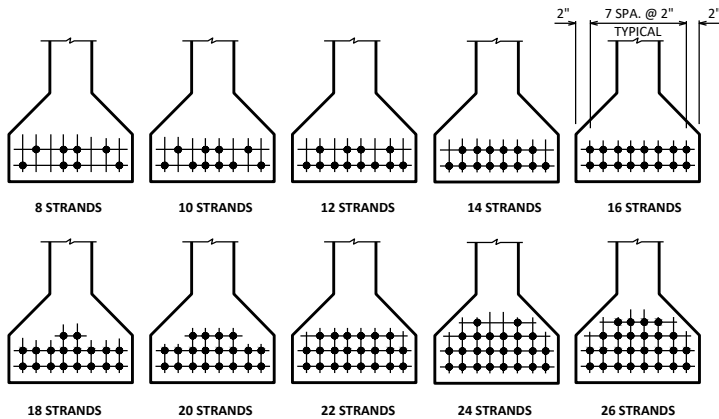


**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF 0.6" DIA. STRANDS**

(0.5" DIA. STRANDS MAY ALSO BE USED)



ARRANGEMENT AT C/L SPAN - FOR GIRDERS WITH DRAPED 0.5" DIA. STRANDS

36" GIRDER

$A = 369 \text{ SQ. IN.}$

$r^2 = 138.15 \text{ IN.}^2$

$y_T = 20.17 \text{ IN.}$

$y_B = -15.83 \text{ IN.}$

$I = 50,979 \text{ IN.}^4$

$S_T = 2,527 \text{ IN.}^3$

$S_B = -3,220 \text{ IN.}^3$

$WT. = 384 \text{ \#/FT.}$

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 0.5" DIA. STRAND = $0.1531 \times 202,500 = 31.00 \text{ KIPS}$

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

$\frac{y_B}{r^2} = \frac{-15.83}{138.15} = -0.1146 \text{ IN./IN.}^2$

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

(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 (0.6" DIA.)			
8	-11.33	352	2.192
10	-10.23	439	2.584
12	-9.83	527	3.036
14	-9.26	615	3.435
16	-9.08	703	3.887
STANDARD STRAND PATTERNS FOR DRAPED STRANDS (0.5" DIA.)			
8	-12.83	248	1.660
10	-13.03	310	2.094
12	-13.16	372	2.528
14	-12.97	434	2.924
16	-12.83	496	3.320
18	-12.50	558	3.678
20	-12.23	620	4.034
22	-12.01	682	4.392
24	-11.66	744	4.710
26	-11.37	806	5.030

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.

36" PRESTRESSED GIRDER DESIGN DATA



APPROVED: *Laura Shadewald* DATE: 7-21