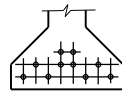
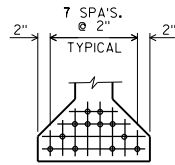


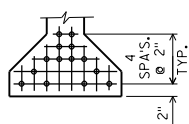
8 STRANDS



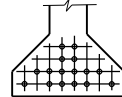
10 STRANDS



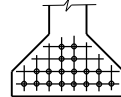
12 STRANDS



14 STRANDS



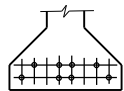
\*16 STRANDS



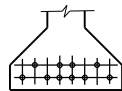
\*18 STRANDS

\* MAY REQUIRE DEBONDING AT ENDS, WHICH IS TO BE AVOIDED.

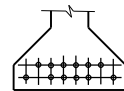
**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF 0.6" DIA. STRANDS**  
(0.5" DIA. STRANDS MAY ALSO BE USED)



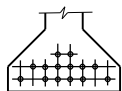
8 STRANDS



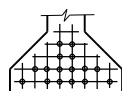
10 STRANDS



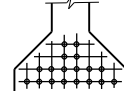
12 STRANDS



14 STRANDS



16 STRANDS



18 STRANDS

**ARRANGEMENT AT  $\frac{1}{4}$  SPAN - FOR GIRDERS WITH DRAPED 0.5" DIA. STRANDS**

**28" GIRDER**

A = 312 SQ. IN.  
 $r^2 = 91.95 \text{ IN.}^2$   
 $y_T = 14.58 \text{ IN.}$   
 $y_B = -13.42 \text{ IN.}$   
 $I = 28,687 \text{ IN.}^4$   
 $S_T = 1,968 \text{ IN.}^3$   
 $S_B = -2,138 \text{ IN.}^3$   
 WT. = 325 #/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  
 $P_i \text{ PER } 0.5" \text{ DIA. STRAND} = 0.1531 \times 202,500 = \underline{31,00 \text{ KIPS}}$   
 $P_i \text{ PER } 0.6" \text{ DIA. STRAND} = 0.217 \times 202,500 = \underline{43,94 \text{ KIPS}}$   
 $\frac{y_B}{r^2} = \frac{-13.42}{91.95} = -0.1459 \text{ IN./IN.}^2$   
 $f_B (\text{init.}) = \frac{A_s f_s}{A} \left( 1 + \frac{e_s y_B}{r^2} \right)$

(COMPRESSION IS POSITIVE)

NO. STRANDS	$e_s$ (inches)	$P(\text{init.}) = A_s f_s$ (KIPS)	$f_B (\text{init.})$ (K/sq.in.)
<b>STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS (0.6" DIA.)</b>			
8	-10.42	352	2,844
10	-9.82	439	3,424
12	-8.75	527	3,846
14	-7.99	615	4,269
*16	-9.42	703	5,351
*18	-9.64	791	6,102
<b>STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS (0.5" DIA.)</b>			
8	-10.42	248	2,004
10	-9.82	310	2,418
12	-8.75	372	2,715
14	-7.99	434	3,013
16	-9.42	496	3,775
18	-9.64	558	4,305

(COMPRESSION IS POSITIVE)

NO. STRANDS	$e$ (inches)	$P(\text{init.}) = A_s f_s$ (KIPS)	$f_B (\text{init.})$ (K/sq.in.)
<b>STANDARD STRAND PATTERNS FOR DRAPED STRANDS (0.5" DIA.)</b>			
8	-10.42	248	2,004
10	-10.62	310	2,534
12	-10.42	372	3,006
14	-10.0	434	3,421
16	-9.42	496	3,775
18	-9.64	558	4,305

**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.

**28" PRESTRESSED GIRDER DESIGN DATA**

**BUREAU OF**

**STRUCTURES**

APPROVED: Laura Shadewald

DATE: 1-22