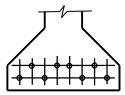
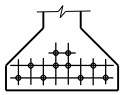
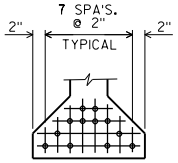


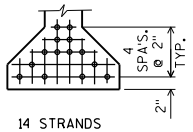
8 STRANDS



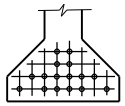
10 STRANDS



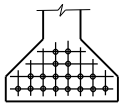
12 STRANDS



14 STRANDS



*16 STRANDS

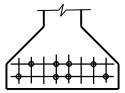


*18 STRANDS

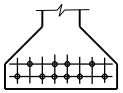
* MAY REQUIRE DEBONDING AT ENDS, WHICH IS TO BE AVOIDED.

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

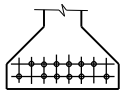
(0.5" DIA. STRANDS MAY ALSO BE USED)



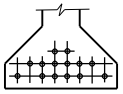
8 STRANDS



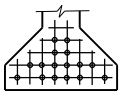
10 STRANDS



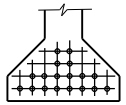
12 STRANDS



14 STRANDS



16 STRANDS



18 STRANDS

ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED 0.5" DIA. STRANDS

28" GIRDER

A = 312 SQ. IN.

r^2 = 91.95 IN.^{2}

y_T = 14.58 IN.

y_B = -13.42 IN.

I = 28,687 IN.^{4}

S_T = 1,968 IN.^{3}

S_B = -2,138 IN.^{3}

WT. = 325 #/FT.

PRE-TENSION

f_s' = 270,000 P.S.I

f_s = 0.75 x 270,000 = 202,500 P.S.I
for low relaxation strands

Pi PER 0.5" DIA. STRAND = 0.1531 X 202,500 = 31.00 KIPS

Pi PER 0.6" DIA. STRAND = 0.217 X 202,500 = 43.94 KIPS

$$\frac{y_B}{r^2} = \frac{-13.42}{91.95} = -0.1459 \text{ IN./IN.}^2$$

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

(COMPRESSION IS POSITIVE)

NO. STRANDS	e_s (inches)	$P(init.)=A_s f_s$ (KIPS)	f_B (init.) (K/sq.in.)
STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS (0.6" DIA.)			
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
STANDARD STRAND PATTERNS FOR UNDRAPED STRANDS (0.5" DIA.)			
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)	$P(init.)=A_s f_s$ (KIPS)	f_B (init.) (K/sq.in.)
STANDARD STRAND PATTERNS FOR DRAPED STRANDS (0.5" DIA.)			
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: Bill Oliva

DATE: 1-22