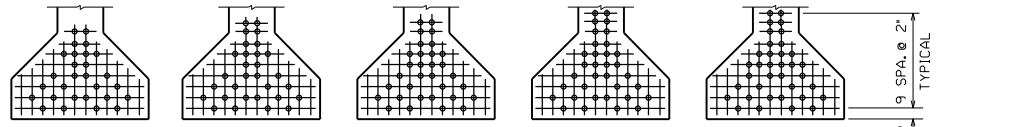
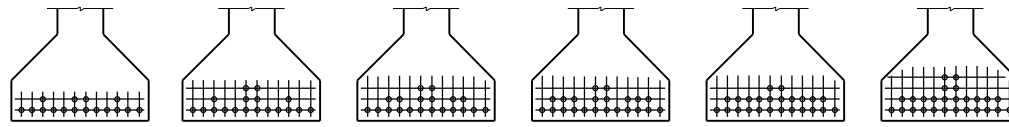


16 STRANDS 18 STRANDS 20 STRANDS 22 STRANDS 24 STRANDS 26 STRANDS

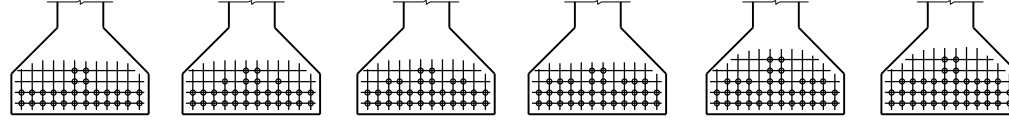


28 STRANDS 30 STRANDS 32 STRANDS 34 STRANDS 36 STRANDS

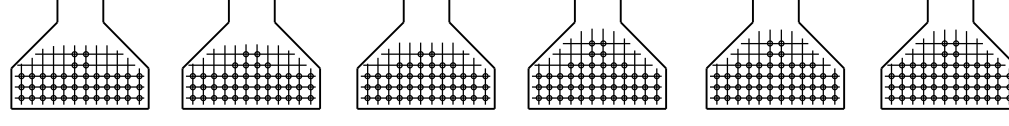
**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF 0.5" DIA. AND 0.6" DIA. STRANDS**



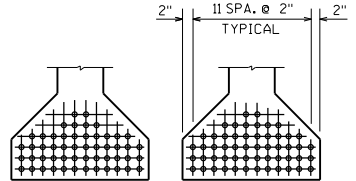
16 STRANDS 18 STRANDS 20 STRANDS 22 STRANDS 24 STRANDS 26 STRANDS



28 STRANDS 30 STRANDS 32 STRANDS 34 STRANDS 36 STRANDS 38 STRANDS



40 STRANDS 42 STRANDS 44 STRANDS *46 STRANDS *48 STRANDS *50 STRANDS



*52 STRANDS *54 STRANDS

ARRANGEMENT AT C_g SPAN - FOR GIRDERS WITH DRAPED 0.5" DIA. AND 0.6" DIA. STRANDS

*0.5" DIA. STRANDS ONLY

54" GIRDER

A = 789 SQ. IN.
 $r^2 = 330.46 \text{ IN.}^2$
 $y_T = 29.27 \text{ IN.}$
 $y_B = -24.73 \text{ IN.}$
 $I = 260,730 \text{ IN.}^4$
 $S_T = 8,908 \text{ IN.}^3$
 $S_B = -10,543 \text{ IN.}^3$
 WT. = 822 #/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.
 $P_i \text{ PER } 0.5" \text{ DIA. STRAND} = 0.1531 \times 202,500 = 31.00 \text{ KIPS}$
 $P_i \text{ PER } 0.6" \text{ DIA. STRAND} = 0.217 \times 202,500 = 43.94 \text{ KIPS}$
 (5)
 $f_B (ini+) = \frac{(4)}{(3)}$
 $\frac{y_B}{r^2} = \frac{-24.73}{330.46} = -0.07484 \text{ IN./IN.}^2$
 (K/Sq. In.)

(COMPRESSION IS POSITIVE)

N	(1)	(2)	(3)	(4)	(4)	(5)	(5)
NO. STRANDS	e_s (inches)	$(1 + \frac{e_s y_B}{r^2})$	$(A/(2))$ (sq. in.)	$P(ini+) = A_s f_s$ 0.5" DIA. STRANDS (KIPS)	$P(ini+) = A_s f_s$ 0.6" DIA. STRANDS (KIPS)	$f_B (ini+) = (4)/(3)$ (K/Sq. In.)	$f_B (ini+) = (4)/(3)$ (K/Sq. In.)

STANDARD PATTERNS FOR UNDRAPED STRANDS

16	-20.23	2.514	313.84	496	703	1.580	2.240
18	-19.84	2.485	317.51	558	791	1.757	2.491
20	-19.13	2.432	324.42	620	879	1.911	2.709
22	-18.37	2.375	332.21	682	967	2.053	2.911
24	-17.55	2.315	341.12	744	1055	2.181	3.093
26	-17.18	2.286	345.14	806	1143	2.335	3.312
28	-17.02	2.274	346.97	868	1230	2.502	3.545
30	-16.33	2.222	355.09	930	1318	2.619	3.712
32	-16.23	2.225	356.21	992	1406	2.785	3.947
34	-15.54	2.163	364.77	1054	1494	2.889	4.096
36	-15.50	2.160	365.28	1116	1582	3.055	4.331

STANDARD PATTERNS FOR DRAPED STRANDS

16	-22.23	2.664	296.17	496	703	1.675	2.374
18	-21.84	2.634	299.54	558	791	1.863	2.641
20	-21.73	2.626	300.46	620	879	2.064	2.926
22	-21.64	2.619	301.26	682	967	2.264	3.210
24	-21.57	2.614	301.84	744	1055	2.465	3.495
26	-21.19	2.586	305.10	806	1143	2.642	3.746
28	-21.16	2.584	305.34	868	1230	2.843	4.028
30	-20.99	2.571	306.88	930	1318	3.031	4.295
32	-20.85	2.560	308.20	992	1406	3.219	4.562
34	-20.73	2.551	309.29	1054	1494	3.408	4.830
36	-20.39	2.526	312.35	1116	1582	3.573	5.065
38	-20.31	2.520	313.10	1178	1670	3.762	5.334
40	-20.23	2.514	313.84	1240	1758	3.951	5.602
42	-20.06	2.501	315.47	1302	1846	4.127	5.852
44	-19.91	2.490	316.87	1364	1933	4.305	6.100
46	-19.60	2.467	319.82	1426		4.459	
48	-19.48	2.458	320.99	1488		4.636	
50	-19.37	2.450	322.04	1550		4.813	
52	-19.19	2.436	323.89	1612		4.977	
54	-19.03	2.424	325.50	1674		5.143	

54" PRETENSIONED GIRDER DESIGN DATA



APPROVED: Bill Oliva DATE: 7-16