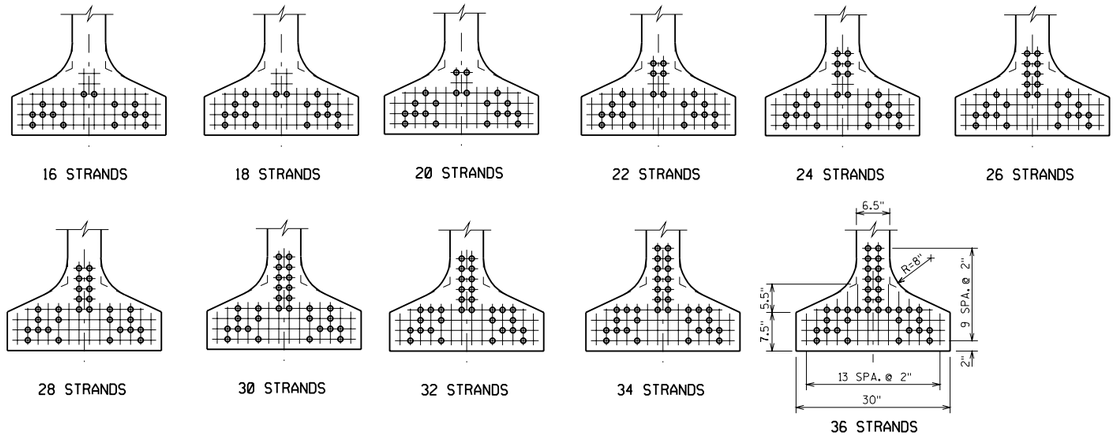
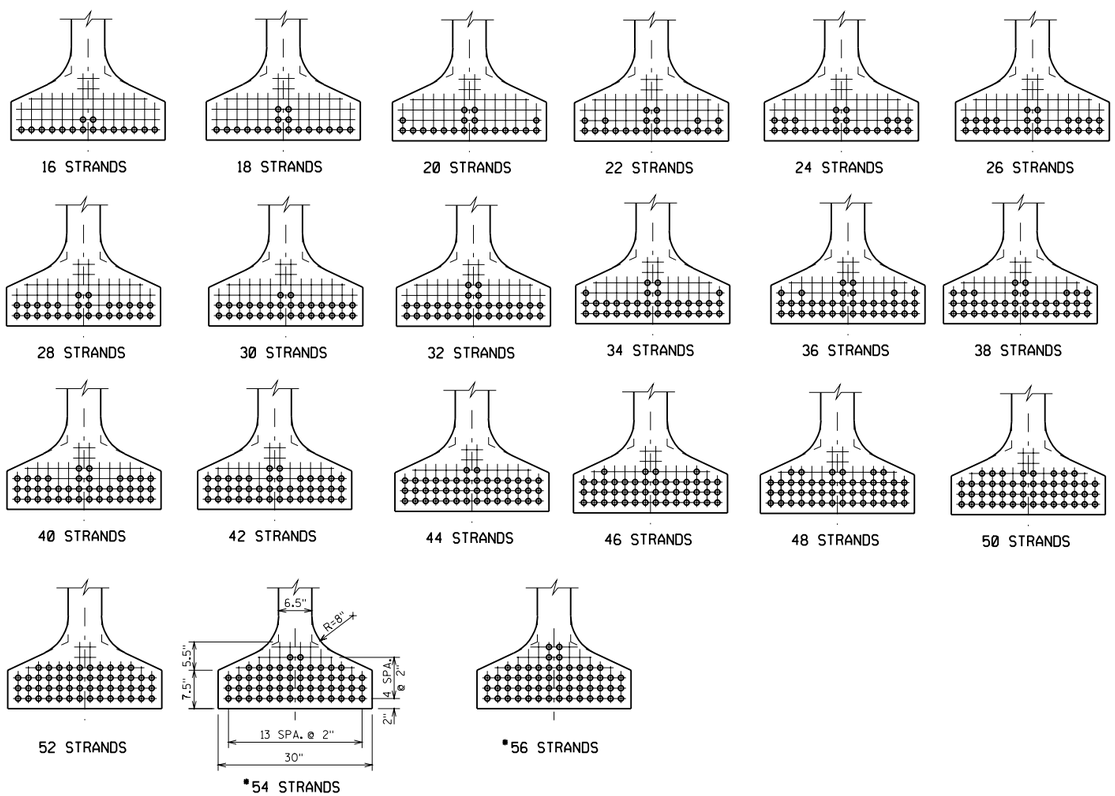


STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS



ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

• ½" ϕ STRANDS ONLY

54" GIRDER

A = 798 SQ. IN.

r^2 = 402.41 IN.^{2}

y_T = 27.70 IN.

y_B = 26.30 IN.

I = 321,049 IN.^{4}

S_T = 11,592 IN.^{3}

S_B = 12,205 IN.^{3}

WT. = 831 #/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 ½" ϕ STRAND= 0.1531 X 202,500 = 31.00 KIPS

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

(COMPRESSION IS NEGATIVE)

N NO. STRANDS	(1) e_S (inches)
STANDARD PATTERNS FOR UNDRAPED STRANDS	
16	21.80
18	21.41
20	20.70
22	19.94
24	19.12
26	18.92
28	18.87
30	18.17
32	18.18
34	17.48
36	17.52
STANDARD PATTERNS FOR DRAPED STRANDS	
16	24.05
18	23.63
20	23.50
22	23.39
24	23.30
26	23.22
28	23.16
30	23.10
32	22.80
34	22.65
36	22.52
38	22.41
40	22.30
42	22.20
44	22.12
46	21.95
48	21.80
50	21.66
52	21.53
54	21.34
56	21.09

54W" PRETENSIONED GIRDER DESIGN DATA

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____

DATE: 6/02