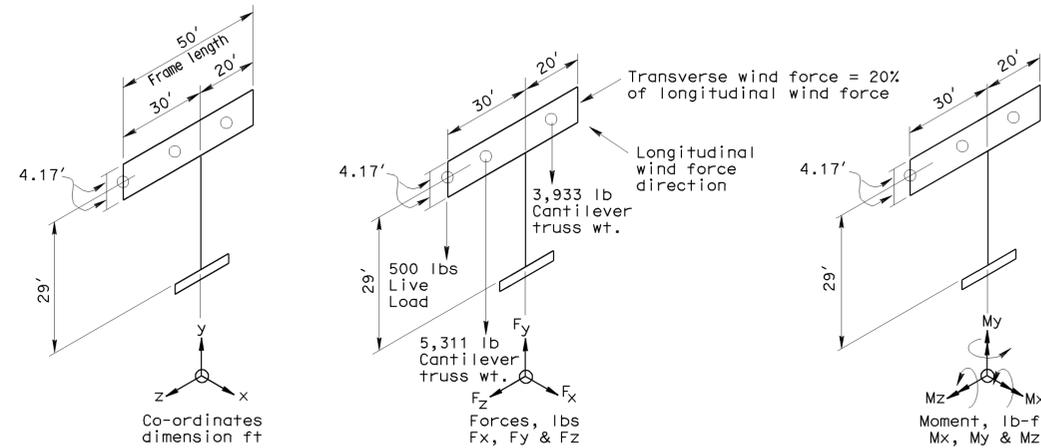
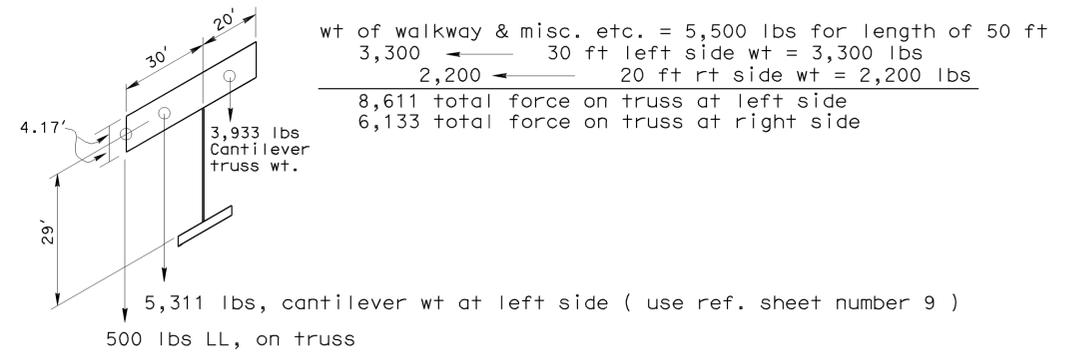
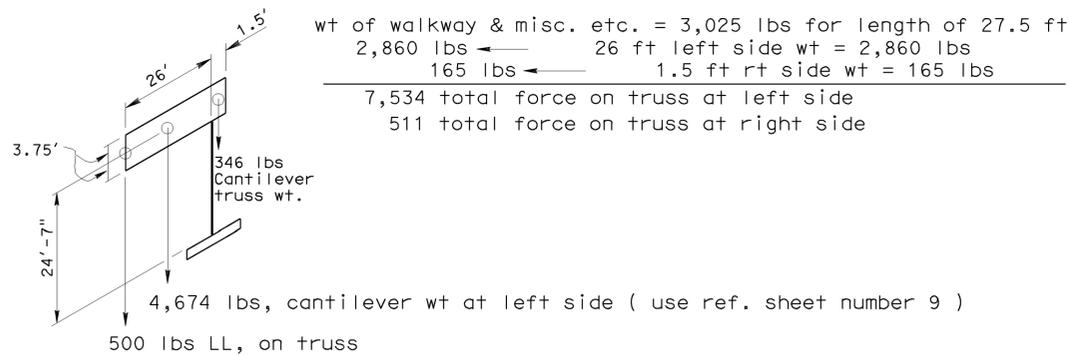


Walkway with platform & hand rail, panels approx. = 110 lb/ft  
Total weight, approx. = 110 lb/ft x 27.5' = 3,025 lbs



Walkway with platform & hand rail, panels approx. = 110 lb/ft  
Total weight, approx. = 110 lb/ft x 50' = 5,500 lbs



POST TYPE	SPECIFICATION OF PIPE POST	lb/ft
II	14" NPS x 1/2" TK	72
III	16" NPS x 1/2" TK	82.7
IV	18" NPS x 1/2" TK	93.3
V	20" NPS x 1/2" TK	104
VI	24" NPS x 1/2" TK	125.4
VII	24" NPS x 3/4" TK	186
VIII	24" NPS x 31/32" TK	237.9
IX	24" NPS x 31/32" TK	237.9

$$\text{Pseudo moment (lb-ft)} = \begin{cases} \textcircled{1} \text{Ht of col} \times \text{area} \times \text{wind pressure (40.3 psf)} \times 1 \text{ (longitudinal direction)} + \\ \textcircled{2} \text{Ht(col)} \times \text{area} \times \text{wind pressure} \times 0.2 \text{ (transverse direction)} + \\ \textcircled{3} \text{DL} \times \text{eccentricity} + \\ \textcircled{4} \text{LL(500)} \times \text{arm length} \end{cases}$$

$$\text{Pseudo moment (lb-ft)} = \begin{cases} \textcircled{1} \text{Ht of col} \times \text{area} \times \text{wind pressure (40.3)} \times 1 \text{ (longitudinal direction)} + \\ \textcircled{2} \text{Ht(col)} \times \text{area} \times \text{wind pressure} \times 0.2 \text{ (transverse direction)} + \\ \textcircled{3} \text{DL} \times \text{eccentricity} + \\ \textcircled{4} \text{LL(500)} \times \text{arm length} \end{cases}$$

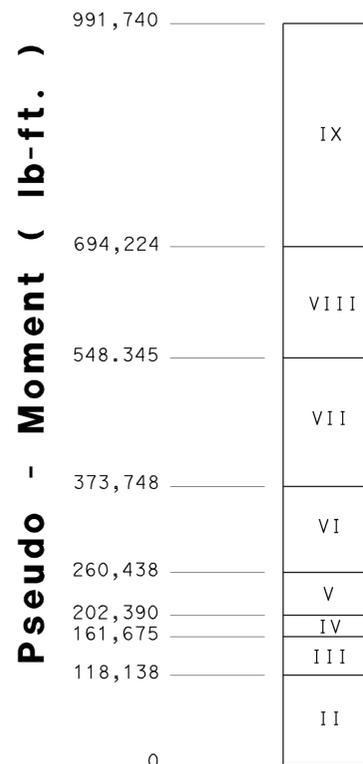
- ①  $M_z, 100\% = 24.58 \times 7.5 \times 27.5 \times 40.3 \times 1 = 204,306 \text{ lb-ft}$
- ②  $M_x, 20\% = 24.58 \times 7.5 \times 27.5 \times 40.3 \times 0.2 = 40,861 \text{ lb-ft}$
- ③  $+DL \times \text{ecc} = 7,534 \times 13 - 511 \times 0.75 = 97,559 \text{ lb-ft}$
- ④  $+LL \times \text{arm length} = 500 \text{ lbs} \times 26 = 13,000 \text{ lb-ft}$
- $\Sigma M = \textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4} = 355,726 \text{ lb-ft}$  use Post Type VI pipe 24 x 1/2" tk

### EXAMPLE NO. 1: Cantilever

Notes:

- Legend:  
DL = Dead Load  
LL = Live Load  
ecc = Eccentricity  
TK = Thickness
- Dimensions are ft (U.O.N.)
- Moments calculated or shown on this sheet are "pseudo-moments" intended for use with the chart on this sheet. They do not provide all the forces in the post that would result from detailed calculations. Use where post height from bottom of base plate to center of sign panel is between 21'-0" and 29'-0", and the details of the structure and sign panels conform to Standard Plans for single post truss (not for use with single post truss CMS). Center of the sign panel should be no higher than 43' above the surrounding terrain. Where the frame length is less than 12', use 12' for calculating post size.
- Post Type II through VIII using 2004 or 2006 Standard Plans: Structure may include an extra sign (such as a speed limit sign) strapped directly to a post designed using this sheet. The permissible area for the additional sign is the lesser of 50 sq feet or 10% of truss length times the overhead panel depth. This sign should be approximately centered on the post horizontally and should be below the truss.

### POST TYPE SELECTION BY CHART



- ①  $M_z, 100\% = 29 \times 8.34 \times 50 \times 40.3 \times 1 = 487,348 \text{ lb-ft}$
- ②  $M_x, 20\% = 29 \times 8.34 \times 50 \times 40.3 \times 0.2 = 97,470 \text{ lb-ft}$
- ③  $+DL \times \text{ecc} = 8611 \times 15 - 6133 \times 10 = 67,835 \text{ lb-ft}$
- ④  $+LL \times \text{arm length} = 500 \times 30 = 15,000 \text{ lb-ft}$
- $\Sigma M = \textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4} = 667,653 \text{ lb-ft}$  use Post Type VIII pipe 24 x 31/32" tk

### EXAMPLE NO. 2: Butterfly

Gather data from example no. 2 reactions at the bottom of post can be approx. as below:

- $F_y = 500 + 5,311 + 3,933 + 5,500 = 15,244 \text{ lbs}$
- $F_x = 8.34 \times 50 \times 40.3 \times 1 = 16,805 \text{ lbs}$  (neglecting area of post)
- $F_z = 8.34 \times 50 \times 40.3 \times 0.2 = 3,361 \text{ lbs}$  (neglecting area of post)
- $M_x = 97,470 + 67,835 + 15,000 = 180,305 \text{ lb-ft}$
- $M_y = 10,083 \times 15 - 6,722 \times 10 = 84,025 \text{ lb-ft}$
- $M_z = 487,348 \text{ lb-ft}$

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

NO SCALE

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**THIS SHEET NOT A PART OF CONTRACT PLANS**

**OVERHEAD SIGNS-TRUSS SINGLE POST TYPE POST TYPES II THROUGH IX**

**POST SELECTION CHART II**  
(Butterfly, cantilever and unbalanced butterfly)