DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

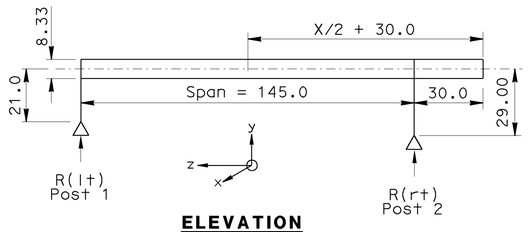
REGISTERED ENGINEER - CIVIL

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

EXAMPLE # 1:

To determine post type: 100% panel coverage dimensions feet (U.O.N.)



ELEVATION

The following method is for sizing of columns only. (Verified by GT-strudl computer runs). Use the right side to size the post, then check the left side

Panel depth	= 8.33′
Height from base plate to center of truss	= 29.0′
Span	= 145.0′
Cantilever	= 30.0′
Wind pressure	= 40.3 psf
* Force = area x pressure	= (X/2 + 30.0) x panel depth x pressure = (145.0/2 + 30.0) x 8.33 x 40.3 = 34,409 lbf
Actual M = Mx + Mz	= Wind load moment on base = height x area of sign x wind pressure(40.3 psf) x 1.05

(5% increase in the moment will take care of the 20% lateral wind forces, AASHTO spec. computer runs verify by GT-strudl)

M = force x height = 34,409 lbf x 29.00 ft x 1.05 = 1,047,754 lbf-ft
Read from post type selection chart, left side corresponding to moment = 1,047,754 lbf-ft.
Read column VI-S, which corresponds to the moment VI-S, 24" NPS x 31/32" tk, split 10".
Any moment bigger than 1,258,167 lbf-ft, requires special column design.
Use same column size for left-hand side, the above example is using 100% panel coverage

EXAMINE LEFT HAND SIDE COLUMN

Panel depth	= 8.33′
Height from base plate to center of truss	= 21.0′
Span	= 145.0′
Cantilever	= 0 ft
Wind pressure	= 40.3 psf
Force = area x pressure	= (X/2 + 0) x panel depth x pressure = (145.0/2 + 0) x 8.33 x 40.3 = 24,338 lbf
Pseudo - moment = Mx + Mz	= Wind load moment on base = height x area of sign x wind pressure(40.3 psf) x 1.05

(5% increase in the moment will take care of the 20% lateral wind forces, AASHTO spec. computer runs verify by GT-strudl)

M = force x height = 24,338 lbf x 21.0 x 1.05 = 536,653 lbf-ft
Read from post type selection chart, left side corresponding to moment = 536,653 lbf-ft.
Read column V-S, which corresponds to the moment V-S, 24" NPS x 1/2" tk, split 8".

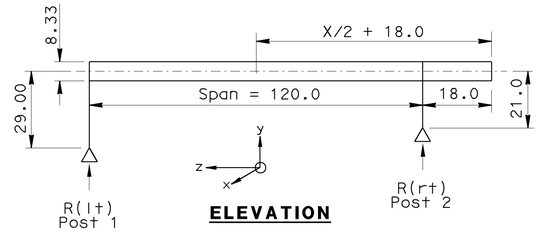
However, for both sides use column size VI-S, 24" NPS x 31/32" tk, split 10", the larger column section of the left & right side shall govern.

1. Legend:
   TK = Thickness
   X = span
2. Dimensions are in feet

3. 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 ℄ of sign panel is between 21′-0" and 31′-0", and the details of the structure and sign panels conform to Standard Plans for two post truss. Center of the sign panel should be no higher than 43′ above the surrounding terrain.

EXAMPLE # 2:

To determine post type: 100% panel coverage dimensions feet (U.O.N.)



ELEVATION

The following method is for sizing of columns only. (Verified by GT-strudl computer runs). Use the right side to size the post, then check the left side

Panel depth	= 8.33′
Height from base plate to center of truss	= 21.0′
Span	= 120.0′
Cantilever	= 18.0′
Wind pressure	= 40.3 psf
* Force = area x pressure	= (X/2 + 18.0) x panel depth x pressure = (120.0/2 + 18.0) x 8.33 x 40.3 = 26,185 lbf
Actual M = Mx + Mz	= Wind load moment on base = height x area of sign x wind pressure(40.3 psf) x 1.05

(5% increase in the moment will take care of the 20% lateral wind forces, AASHTO spec. computer runs verify by GT-strudl)

M = force x height = 26,185 x 21.0 x 1.05 = 577,379 lbf-ft
Read from post type selection chart, left side corresponding to moment = 577,379 lbf-ft
Read column VI-S, which corresponds to the moment VI-S, 24" NPS x 31/32" tk, split 8".
Any moment bigger than 1,258,167 lbf-ft, requires special column design.
Use same column size for left-hand side, the above example is using 100% panel coverage.

EXAMINE LEFT HAND SIDE COLUMN

Panel depth	= 8.33′
Height from base plate to center of truss	= 29.00′
Span	= 120.0′
Cantilever	= 0′
Wind pressure	= 40.3 psf
Force = area x pressure	= (X/2 + 0) x panel depth x pressure = (120.0/2 + 0) x 8.33 x 40.3 psf = 20,142 lbf
Pseudo - moment = Mx + Mz	= Wind load moment on base = height x area of sign x wind pressure(40.3 psf) x 1.05

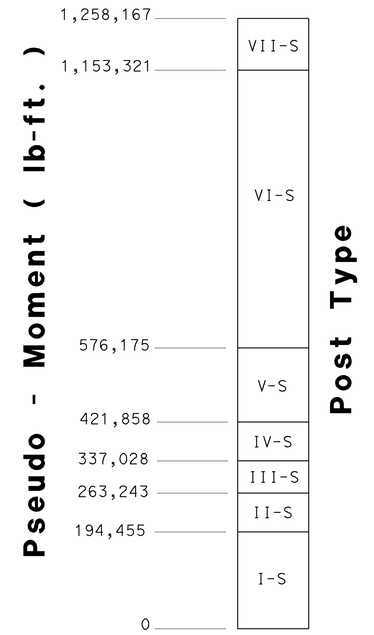
(5% increase in the moment will take care of the 20% lateral wind forces, AASHTO spec. computer runs verify by GT-strudl)

M = force x height = 20,142 x 29.00 x 1.05 = 613,324 lbf-ft
Read from post type selection chart, left side corresponding to moment = 613,324 lbf-ft.
Read column VI-S, which corresponds to the moment VI-S, 24" NPS x 31/32" tk, split 10"

However, for both sides use column size VI-S, 24" NPS x 31/32" tk, split 10", the larger column section of the left & right side shall govern.

4. Post Type I-S through VI-S 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 permissable area for the additional sign is the lesser of 50 sq feet or 5% of span 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



POST TYPE	SPECIFICATION OF PIPE POST	
		Split (in)
I-S	14" NPS x 1/2" TK	5
II-S	16" NPS x 1/2" TK	6
III-S	18" NPS x 1/2" TK	7
IV-S	20" NPS x 1/2" TK	8
V-S	24" NPS x 1/2" TK	8
VI-S	24" NPS x 31/32" TK	10
VII-S	24" NPS x 31/32" TK	10

* When cantilever is more than 25% of span, use more accurate method

$$\frac{0.5 \times (\text{span} + \text{cant}) \times (\text{span} + \text{cant})}{\text{span}} \times \text{panel depth} \times \text{pressure}$$

THIS SHEET NOT A PART OF CONTRACT PLANS

OVERHEAD SIGNS-TRUSS TWO POST TYPE POST TYPES I-S THROUGH VII-S

POST SELECTION CHART | **11**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

spec_des_br_prj/misc/ray/e_signrefsht_11.dgn

10/11/06