



**Caltrans** User Guide to Standard Plans Section S – OVERHEAD SIGNS – TRUSS

**Appendix B: Quantities – Single Post**

Introduction

Appendix B following provides quantity data for Single Post Truss Structures. The following outlines the typical breakdown.

Truss Frame (From Table 1)

\_\_\_\_\_

Sign Panel attachment system

Removable Sign Panel Frames (From Table 2)

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Sign 1                  Sign 2                  Sign 3                  Sign 4

Laminated Panel Mounting Beams (From Table 3)

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Sign 1                  Sign 2                  Sign 3                  Sign 4

Walkway assembly (assume 75 plf\*)    75 x ( \_\_\_\_\_ ) = \_\_\_\_\_

If walkway nominally stops at column add extra 2'

Post (From Table 4)

$$\underline{\hspace{2cm}} + ( \underline{\hspace{2cm}} - \underline{\hspace{2cm}} 18.75' ) \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Case for "h" = 18.75'    "h"                                  Column 'A'

Juncture Connection (From Table 5)

\_\_\_\_\_

Base Plate, Gussets at Base Plate, Anchor Bolts,

Nuts and Washers (From Table 6)

\_\_\_\_\_

Subtotal

\_\_\_\_\_

Add 3.5% for Galvanizing

\_\_\_\_\_

**Total**

\_\_\_\_\_

\* Walkway assembly includes grating, brackets, safety railing, safety cable, light fixture supports and all fittings.



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Table 1: Truss Quantity (pounds)\*

Truss Length	Panel Depth					
	50"	60"	70"	80"	90"	100", 110", or 120"
12'	2652	2687	2712	2736	2760	2833
13'	2782	2822	2848	2873	2897	2970
14'	2926	2954	2985	3009	3034	3106
15'	3060	3091	3120	3146	3170	3245
16'	3183	3232	3256	3280	3307	3382
17'	3331	3366	3393	3417	3444	3521
18'	3457	3510	3527	3554	3580	3657
19'	3591	3649	3664	3691	3717	3796
20'	3739	3781	3801	3827	3854	3933
21'	3865	3907	3935	3964	3990	4072
22'	4004	4048	4072	4098	4127	4209
23'	4140	4187	4209	4235	4264	4345
24'	4273	4321	4343	4372	4400	4484
25'	4425	4451	4480	4508	4537	4621
26'	4550	4601	4616	4645	4674	4760
27'	4698	4724	4753	4782	4810	4896
28'	4817	4872	4888	4918	4947	5035
29'	4958	5018	5024	5053	5084	5172
30'	5099	5130	5161	5190	5220	5311
31' & 32'	5888	5919	5948	5981	6012	6105
33' & 34'	6188	6221	6252	6288	6321	6411
35' & 36'	6479	6517	6556	6592	6629	6715
37' & 38'	6764	6801	6861	6898	6936	7022
39' & 40'	7079	7121	7163	7202	7244	7326
41' & 42'	7392	7434	7467	7509	7551	7632
43' & 44'	7657	7745	7771	7815	7859	7937
45' & 46'	7959	8005	8075	8120	8166	8243
47' & 48'	8256	8305	8377	8426	8474	8547
49' & 50'	8600	8651	8682	8732	8781	8854
51' & 52'	8891	8944	8986	9037	9090	9158
53' & 54'	9180	9235	9290	9343	9396	9464
55' & 56'	9464	9519	9592	9650	9705	9769
57' & 58'	9802	9859	9896	9954	10013	10075
59' & 60'	10079	10141	10201	10260	10320	10379

Notes:

Quantities are for truss frame only. For "Full Cantilever" configuration, add 2 feet to the cantilever span.



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Table 2: Removable Sign Panel Frame Weight (pounds)\*

Panel Length	Panel Depth							
	50"	60"	70"	80"	90"	100"	110"	120"
4'	82	88	95	101	108	115	119	126
6'	128	139	150	161	172	183	194	205
8'	141	152	163	174	187	198	209	220
10'	183	198	214	229	247	262	280	295
12'	196	214	229	245	260	278	293	311
14'	236	258	280	300	322	344	364	386
16'	251	271	293	315	335	357	379	399
18'	295	322	348	375	399	428	454	481
20'	311	335	364	388	414	443	467	494
22'	359	392	425	456	489	522	556	586
24'	375	408	439	472	505	538	571	602
26'	414	452	489	527	564	602	639	677
28'	432	472	507	547	582	622	659	697
30'	476	520	562	604	646	690	732	776
32'	518	564	613	659	708	754	802	851
34'	536	582	631	679	725	774	822	869
36'	575	628	681	734	791	840	893	946
38'	591	644	697	750	800	853	906	959
40'	604	657	712	763	816	869	922	974

Notes:

Used to attach Overhead Formed Panels to Overhead Truss

Includes frame and related hardware to fasten the frame to the truss

Table 3: Laminated Panel Mounting Beams on Overhead Sign Truss (pounds)\*

Panel Length	Panel Depth							
	50"	60"	70"	80"	90"	100"	110"	120"
4' to 15'	79	93	106	119	130	143	154	168
15'-5" to 24'	119	139	159	176	194	214	234	251
24'-3" to 32'-9"	161	185	209	236	260	284	311	335
33' to 40'	201	231	262	293	324	357	388	419

Notes:

Used to attach Overhead Laminated Panel Type A to Overhead Truss

Includes beams and related hardware to fasten the beams to the truss



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Table 4: Post Quantities (pounds)

Post Type	Panel Depth								Column "A" (lb/ft)
	50"	60"	70"	80"	90"	100"	110"	120"	
II	1,687	1,746	1,806	1,867	1,927	1,986	1,986	1,986	72.0
III	1,936	2,004	2,075	2,143	2,211	2,280	2,280	2,280	82.7
IV	2,187	2,264	2,341	2,418	2,498	2,575	2,575	2,575	93.3
V	2,436	2,522	2,608	2,696	2,782	2,868	2,868	2,868	104.0
VI	--	3,040	3,144	3,250	3,353	3,457	3,457	3,457	125.3
VII	--	--	4,665	4,821	4,976	5,130	5,130	5,130	186.0
VIII & XI	--	--	--	--	6,363	6,561	6,561	6,561	237.8

Notes:

Post quantities are based on "h" = 18.75 feet. Adjust for actual "h" by multiplying the difference by the value in Column "A" and adding to or subtracting from the shown quantity.

Table 5: Juncture Connections Quantity (pounds)

Post Type	For Chord Angle L5x5x½	For Chord Angle L6x6x½
II	686	783
III	785	888
IV	891	1,001
V	1,003	1,122
VI	1,250	1,382
VII	1,250	1,382
VIII & XI	1,250	1,382

Notes:

Quantities include upper and lower chord connections (Cap Plate & Ring, Lower Seat Plate, Post Plates & Post Gussets at Juncture).

Table 6: Quantities for Base Plates, Gussets at Base Plates, Anchor Bolts, and Nuts (pounds)

Post Type	Base Plate	Gussets at Base Plate	Anchor Bolts, Nuts, and Washers	Total
II	516	126	668	1310
III	516	126	668	1310
IV	516	126	668	1310
V	891	126	780	1797
VI	891	181	1,140	2,212
VII	891	181	1,140	2,212
VIII & XI	1284	181	1,140	2,605

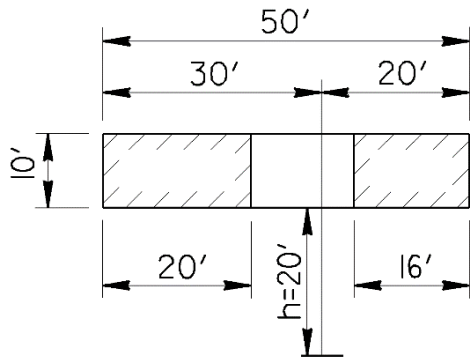


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**Appendix B: Quantities – Single Post**

Example 1

**EXAMPLE**



Given :

- Sign panel depth = 10'
- Length of frame = 50'
- Sign panel length = 20'
- Sign panel length = 16'
- Post = Type VIII
- Walkway assembly = 75 lb/ft
- Chord angles = L6" x 6" x 1/2"

Use Laminated Panels



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Example 1: Unbalanced Butterfly, Truss Length 50', Laminated Panels

Truss Frame (From Table 1) 8,854

Sign Panel attachment system

Removable Sign Panel Frames (From Table 2)

$$\frac{\quad}{\text{Sign 1}} + \frac{\quad}{\text{Sign 2}} + \frac{\quad}{\text{Sign 3}} + \frac{\quad}{\text{Sign 4}} = \frac{0}{\quad}$$

Laminated Panel Mounting Beams (From Table 3)

$$\frac{251}{\text{Sign 1}} + \frac{251}{\text{Sign 2}} + \frac{\quad}{\text{Sign 3}} + \frac{\quad}{\text{Sign 4}} = \frac{502}{\quad}$$

Walkway assembly (assume 75 plf\*)  $75 \times (\frac{30'+20'}{\quad}) = \frac{3,750}{\quad}$   
 If walkway nominally stops at column add extra 2 feet

Post (From Table 4)

$$\frac{6,561}{\quad} + (\frac{20'}{\quad} - \frac{18.75'}{\quad}) \times \frac{237.8}{\quad} = \frac{6,858}{\quad}$$

Case for "h" = 18.75' "h" Column 'A'  
 Juncture Connection (From Table 5) 1,382

Base Plate, Gussets at Base Plate,  
 Anchor Bolts, Nuts and Washers  
 (From Table 6) 2,605

Subtotal 23,951

Add 3.5% for Galvanizing 838

**Total** 24,789

\* Walkway assembly includes grating, brackets, safety railing, safety cable, light fixture supports and all fittings.

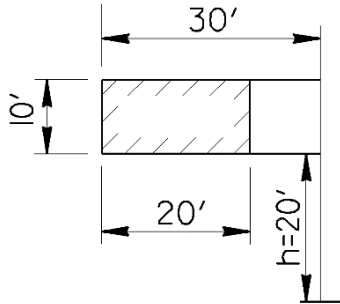


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**Appendix B: Quantities – Single Post**

Example 2

**EXAMPLE**



Given :

- Sign panel depth = 10'
  - Length of frame = 32'
  - Sign panel length = 20'
  - Post = Type VII
  - Walkway assembly = 75 lb/ft
  - Chord angles = L6" x 6" x 1/2"
- Use Formed Panels



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Example 2: Full Cantilever, Truss Length 32', Formed Panels

Truss Frame (From Table 1) 6,105

Sign Panel attachment system

Removable Sign Panel Frames (From Table 2)

$$\begin{array}{ccccccc} \underline{494} & + & \underline{\phantom{000}} & + & \underline{\phantom{000}} & + & \underline{\phantom{000}} & = & \underline{494} \\ \text{Sign 1} & & \text{Sign 2} & & \text{Sign 3} & & \text{Sign 4} & & \end{array}$$

Laminated Panel Mounting Beams (From Table 3)

$$\begin{array}{ccccccc} \underline{\phantom{000}} & + & \underline{\phantom{000}} & + & \underline{\phantom{000}} & + & \underline{\phantom{000}} & = & \underline{0} \\ \text{Sign 1} & & \text{Sign 2} & & \text{Sign 3} & & \text{Sign 4} & & \end{array}$$

Walkway assembly (assume 75 plf\*)  $75 \times (\underline{30'+2'}) = \underline{2,400}$   
 If walkway nominally stops at column add extra 2 feet

Post (From Table 4)

$$\underline{5,130} + (\underline{20'} - \underline{18.75'}) \times \underline{186.0} = \underline{5,363}$$

Case for "h" = 18.75 feet "h" Column 'A'

Juncture Connection (From Table 5) 1,382

Base Plate, Gussets at Base Plate, Anchor Bolts, Nuts and Washers (From Table 6) 2,212

Subtotal 17,956

Add 3.5% for Galvanizing 628

**Total** 18,584

\* Walkway assembly includes grating, brackets, safety railing, safety cable, light fixture supports and all fittings.