

SINGLE TEE

TYPE "A" LOAD TABLE

12LST 48

Table of safe superimposed live load (psf)

Lightweight Concrete

No Topping

12'-0" x 48" Single Tee

Strand Pattern	Span, ft																						
	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116
128-S	53*	48*	43*	38*	33*	29*	26*																
148-S	59*	53*	48*	43*	38*	34*	30*	26*															
128-D1	73*	67*	60*	55*	50*	45*	40*	36*	32*	29*	25*												
148-D1	92*	84*	77*	70*	64*	59*	54*	49*	44*	40*	36*	33*	29*	26*									
168-D1	108*	99*	91*	84*	78*	71*	66*	60*	55*	51*	46*	42*	38*	35*	31*	28*	25*						
188-D1			106*	98*	91*	84*	77*	72*	66*	61*	56*	52*	47*	43*	40*	36*	33*	30*	27*	24*			
208-D1					103*	96*	89*	83*	77*	71*	66*	61*	56*	52*	48*	44*	40*	37*	34*	31*			
228-D1									87*	81*	75*	70*	65*	60*	56	51	47	43	39	35	32	29	
248-D1													73	68	63	58	53	49	45	41	37	34	31

Dead Load	f_t																						
	f_b																						
	a																						
	357	378	398	420	441	464	487	510	534	559	584	610	636	663	690	718	746	775	805	835	865	896	928
	-1154	-1219	-1286	-1354	-1425	-1497	-1571	-1647	-1724	-1803	-1884	-1967	-2052	-2138	-2226	-2316	-2408	-2502	-2597	-2694	-2790	-2891	-2993
	1.018	1.135	1.263	1.402	1.551	1.712	1.885	2.071	2.271	2.484	2.713	2.956	3.216	3.493	3.787	4.099	4.430	4.780	5.152	5.544	5.952	6.389	6.849

100 plf Live Load	f_t																						
	f_b																						
	a																						
	48	51	54	57	60	63	66	69	73	76	79	83	86	90	94	98	102	105	110	114	118	122	126
	-157	-166	-175	-185	-194	-204	-214	-225	-235	-246	-257	-268	-280	-292	-304	-316	-329	-341	-354	-368	-381	-395	-409
	0.116	0.130	0.144	0.160	0.177	0.196	0.215	0.237	0.260	0.284	0.310	0.338	0.368	0.399	0.433	0.469	0.506	0.546	0.589	0.634	0.681	0.731	0.784

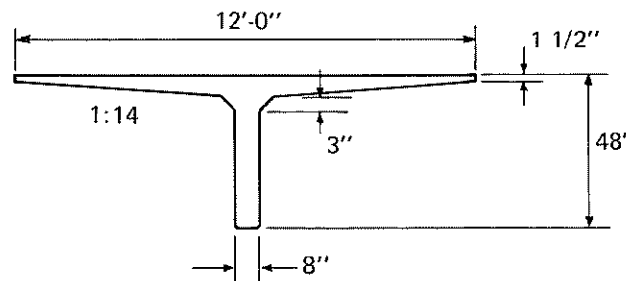
*Capacity governed by ultimate strength Values below heavy line require release strengths higher than 3500 psi $f'_c = 5000$ psi $f_{pu} = 270,000$ psi

Notation

- f_t = top fiber stress, psi (after assumed 25% loss)
- f_b = bottom fiber stress, psi (after assumed 25% loss)
- a = center deflection, in.
- $0.001 l^2 \alpha$ = initial center camber, in. (after assumed 10% loss)
- l = span (ft)
- M_u = ult. moment capacity, in.-kips

Strand Pattern Designation

- No. of strand (10)
- S = straight, D = depressed
- 108 - D1
- No. of depression points
- Diameter of strand in 16ths



Section Properties

- A = 916 in.²
- I = 180,639 in.⁴
- Y_b = 36.64 in.
- Y_t = 11.36 in.
- Z_b = 4930 in.³
- Z_t = 15,901 in.³
- wt = 732 plf
- 61 psf

Lightweight Concrete
No Topping
12'-0" x 48" Single Tee

12LST 48

Strand Pattern	Eccentricity in.		Prestress alone				α	M_u
			end		center			
	end	ctr	f_t	f_b	f_t	f_b		
128-S	26.31	26.31	-146	1673	-146	1673	0.340	16,484
148-S	22.93	22.93	-106	1744	-106	1744	0.346	17,407
128-D1	26.31	33.39	-152	1740	-273	2129	0.401	19,646
148-D1	22.93	33.14	-110	1814	-313	2468	0.449	22,565
168-D1	19.14	32.89	-40	1795	-352	2803	0.488	25,119
188-D1	16.64	32.64	18	1814	-390	3132	0.530	27,685
208-D1	14.44	32.39	82	1814	-426	3458	0.569	30,172
228-D1	12.64	32.14	141	1745	-443	3633	0.608	32,608
248-D1	10.97	31.89	209	1728	-475	3937	0.645	34,965