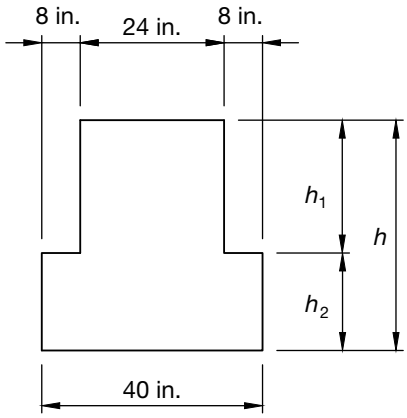
3.11 Inverted T Beam Load Tables (cont.)



f'_c = 5000 psi
f_{pu} = 270,000 psi
½ in. diameter,
low-relaxation strand

Normalweight concrete

Section Properties								
Designation	***h*** **in.**	***h*$_1$/*h*$_2$ in.**	***A*** **in.^{2}**	***I*** **in.^{4}**	***y*$_b$** **in.**	***S*$_b$** **in.^{3}**	***S*$_t$** **in.^{3}**	***wt*** **lb/ft**
40IT20	20	12/8	608	20,321	8.74	2325	1805	633
40IT24	24	12/12	768	35,136	10.5	3346	2603	800
40IT28	28	16/12	864	55,765	12.22	4563	3534	900
40IT32	32	20/12	960	83,200	14	5943	4622	1000
40IT36	36	24/12	1056	118,237	15.82	7474	5859	1100
40IT40	40	24/16	1216	162,564	17.47	9305	7215	1267
40IT44	44	28/16	1312	216,215	19.27	11,220	8743	1367
40IT48	48	32/16	1408	280,266	21.09	13,289	10,415	1467
40IT52	52	36/16	1504	355,503	22.94	15,497	12,233	1567

1. Check local area for availability of other sizes.
2. Loads shown include 50% superimposed dead load and 50% live load. Top tension stress at transfer has been allowed to exceed $6\sqrt{f'_c}$; therefore, top reinforcement is required.
3. Loads can be significantly increased by use of structural composite topping.

Key
8420 – Superimposed service load capacity, lb/ft
0.5 – Estimated camber at erection, in.
0.2 – Estimated long-time camber, in.

Table of superimposed service load capacity, lb/ft, and cambers, in.

Designation	Number strand	y_s in.	Span, ft															
			20	**22**	**24**	**26**	**28**	**30**	**32**	**34**	**36**	**38**	**40**	**42**	**44**	**46**	**48**	**50**
40IT20	18	2.22	8420 0.5 0.2	6870 0.6 0.2	5680 0.7 0.3	4760 0.8 0.3	4030 0.9 0.3	3440 1.0 0.3	2960 1.1 0.3	2560 1.2 0.3	2220 1.3 0.3	1940 1.3 0.3	1690 1.4 0.2	1490 1.4 0.2	1310 1.5 0.1	1150 1.5 0.0	1010 1.5 –0.1	
40IT24	22	2.67		9990 0.5 0.2	8280 0.6 0.2	6960 0.7 0.3	5900 0.8 0.3	5050 0.9 0.3	4360 1.0 0.3	3780 1.1 0.3	3300 1.2 0.3	2890 1.2 0.3	2540 1.3 0.3	2240 1.4 0.3	1980 1.4 0.3	1750 1.4 0.2	1550 1.5 0.1	1380 1.5 0.0
40IT28	26	3.08				9670 0.6 0.3	8230 0.7 0.3	7070 0.8 0.3	6120 0.9 0.3	5330 1.0 0.3	4670 1.1 0.4	4110 1.2 0.4	3640 1.2 0.4	3230 1.3 0.4	2870 1.4 0.3	2560 1.4 0.3	2290 1.5 0.3	2050 1.5 0.3
40IT32	30	3.33						9520 0.8 0.3	8260 0.8 0.3	7220 0.9 0.4	6350 1.0 0.4	5610 1.1 0.4	4980 1.2 0.4	4440 1.3 0.4	3970 1.3 0.4	3560 1.4 0.4	3190 1.5 0.4	2880 1.5 0.4
40IT36	32	3.50								9410 0.8 0.3	8290 0.9 0.3	7340 1.0 0.3	6530 1.1 0.3	5840 1.1 0.4	5230 1.2 0.4	4710 1.3 0.4	4250 1.4 0.3	3840 1.4 0.3
40IT40	38	4.32										8940 0.9 0.4	7960 1.0 0.4	7120 1.1 0.4	6390 1.2 0.4	5760 1.2 0.4	5200 1.3 0.4	4700 1.4 0.4
40IT44	40	4.40											9950 0.9 0.3	8910 1.0 0.4	8020 1.1 0.4	7230 1.1 0.4	6550 1.2 0.4	5940 1.3 0.4
40IT48	44	4.87													9650 1.0 0.4	8720 1.1 0.4	7910 1.2 0.4	7190 1.2 0.4
40IT52	46	5.05															9490 1.1 0.4	8640 1.1 0.4

Strength is based on strain compatibility; bottom tension is limited to $12\sqrt{f'_c}$; see pages 3–8 through 3–11 for explanation.