

TABLE OF BEAM SIZES AND DESIGN DATA (6 FT. MAX. BEAM SPACING WITH 3 FT. MAX. OVERHANG)

BEAM SPAN	ROLLED BEAM		DEFLECTION IN INCHES		SHEAR CONNECTORS				UNFACTORED BEAM END REACTION			LL DIST. FACT. (LANES)	
	BEAM MEMBER	BEAM DEPTH (IN.)	STEEL ONLY	TOTAL DL	#Per Row	Spa. @ Ea. End of Beam	Middle Spacing	ADTT	DC (kips)	DW (kips)	LL+I (kips)	LLDFM	LLDFV
20' Max.	W18x55	18.1	0.00	0.11	2	10 Spa. @ 5¼"	5¾" Spa.	300	11.85	0.90	72.65	0.65	.877
	W16x77	16.5	0.00	0.09	3	5 Spa. @ 5¼"	6" Spa.	Inf.	12.10		71.61		.865
	W14x82	14.3	0.00	0.11	3	14 Spa. @ 5¼"	6" Spa.	450	12.14		72.36		.874
	W12x106	12.9	0.00	0.11	3	14 Spa. @ 5¼"	6" Spa.	400	12.40		71.78		.867
25' Max.	W24x62	23.7	0.02	0.17	2	23 Spa. @ 5¼"	6" Spa.	400	14.75	1.13	74.47		.860
	W21x62	21.0	0.03	0.21	2	23 Spa. @ 5¼"	6" Spa.	350	14.75		75.31		.870
	W18x71	18.5	0.03	0.24	2	23 Spa. @ 5¼"	6" Spa.	290	14.86		75.67		.874
	W16x77	16.5	0.04	0.25	3	11 Spa. @ 5½"	6" Spa.	Inf.	14.96		76.05		.878
	W14x82	14.3	0.05	0.31	3	23 Spa. @ 5¼"	6" Spa.	425	15.01		76.89		.888
	W12x106	12.9	0.05	0.31	3	23 Spa. @ 5¼"	6" Spa.	385	15.33		76.25		.880
	W24x76	23.9	0.04	0.28	2	28 Spa. @ 5¼"	6" Spa.	415	17.78	1.35	80.90		.856
30' Max.	W21x83	21.4	0.05	0.32	2	28 Spa. @ 5¼"	6" Spa.	350	17.89		81.41		.862
	W18x86	18.4	0.06	0.39	3	7 Spa. @ 5¾"	6" Spa.	Inf.	17.94		82.40		.872
	W16x100	17.0	0.06	0.40	3	14 Spa. @ 5½"	6" Spa.	Inf.	18.18		82.26		.871
	W14x120	14.5	0.08	0.45	3	28 Spa. @ 5¼"	6" Spa.	440	18.48		82.48		.873
	W12x120	13.1	0.10	0.57	3	28 Spa. @ 5¼"	6" Spa.	375	18.48		83.41		.883
	W27x84	26.7	0.06	0.39	3	6 Spa. @ 7¾"	8" Spa.	Inf.	20.79	1.58	86.49		.850
35' Max.	W24x94	24.3	0.06	0.41	2	24 Spa. @ 5¼"	6" Spa.	420	20.97		86.69		.852
	W21x101	21.4	0.07	0.47	3	7 Spa. @ 6½"	7" Spa.	Inf.	21.10		87.33		.858
	W18x119	19.0	0.09	0.52	3	7 Spa. @ 6"	6½" Spa.	Inf.	21.43		87.50		.860
	W14x132	14.7	0.14	0.76	3	24 Spa. @ 5½"	6" Spa.	425	21.66		89.15		.876
	W12x152	13.7	0.17	0.82	3	24 Spa. @ 5¾"	6" Spa.	375	22.03		89.00		.874
	W30x99	29.7	0.07	0.48	3	12 Spa. @ 8"	9" Spa.	Inf.	23.97	1.80	90.47		.840
40' Max.	W27x102	27.1	0.08	0.53	3	20 Spa. @ 7½"	9" Spa.	Inf.	24.03		91.07		.845
	W24x117	24.3	0.09	0.56	3	14 Spa. @ 7"	8" Spa.	Inf.	24.35		91.22		.846
	W21x122	21.7	0.12	0.67	3	16 Spa. @ 6"	7" Spa.	Inf.	24.45		92.04		.854
	W18x130	19.3	0.15	0.81	3	9 Spa. @ 5½"	6" Spa.	Inf.	24.62		92.79		.861
	W14x176	15.2	0.21	0.98	3	19 Spa. @ 5¼"	6" Spa.	425	25.58		93.11		.864
	W12x190	14.4	0.25	1.12	3	19 Spa. @ 5¼"	6" Spa.	375	25.86		93.25		.865
	W33x118	32.9	0.09	0.54	3	12 Spa. @ 9"	10" Spa.	Inf.	27.33	2.03	93.45		.828
45' Max.	W30x116	30.0	0.11	0.64	3	21 Spa. @ 8"	10" Spa.	Inf.	27.29		94.36		.836
	W27x129	27.6	0.12	0.68	3	15 Spa. @ 7½"	9" Spa.	Inf.	27.57		94.53		.838
	W24x131	24.5	0.14	0.80	3	16 Spa. @ 7"	8" Spa.	Inf.	27.63		95.48		.846
	W21x147	22.1	0.17	0.91	3	17 Spa. @ 6½"	7" Spa.	Inf.	28.00		95.83		.849
	W18x158	19.7	0.22	1.08	3	10 Spa. @ 5½"	6" Spa.	Inf.	28.25		96.54		.855
	W33x130	33.1	0.13	0.74	3	23 Spa. @ 8"	10" Spa.	Inf.	30.60	2.25	97.11		.828
	W30x132	30.3	0.15	0.86	3	24 Spa. @ 7½"	9" Spa.	Inf.	30.65		97.86		.834
50' Max.	W27x146	27.4	0.17	0.89	3	18 Spa. @ 7"	8" Spa.	Inf.	31.02		98.11		.836
	W24x162	25.0	0.20	0.99	3	28 Spa. @ 6½"	8" Spa.	Inf.	31.43		98.43		.839
	W21x182	22.7	0.24	1.11	3	20 Spa. @ 6"	7" Spa.	Inf.	31.95		98.70		.841
	W18x192	20.4	0.30	1.36	3	35 Spa. @ 5¼"	7" Spa.	Inf.	32.19		99.51		.848
	W36x135	35.6	0.17	0.93	3	16 Spa. @ 8¼"	10" Spa.	Inf.	33.73	2.48	100.10		.825
	W33x141	33.3	0.18	0.99	3	25 Spa. @ 8"	10" Spa.	Inf.	33.91		100.45		.828
	W30x148	30.7	0.21	1.11	3	28 Spa. @ 7¼"	9" Spa.	Inf.	34.09		100.97		.832
55' Max.	W27x178	27.8	0.23	1.10	3	19 Spa. @ 7"	8" Spa.	Inf.	34.96		100.75		.830
	W24x192	25.5	0.27	1.25	3	31 Spa. @ 6½"	8" Spa.	Inf.	35.33		101.20		.834
	W21x223	23.4	0.33	1.35	3	33 Spa. @ 6"	8" Spa.	Inf.	36.21		101.10		.833
	W18x258	21.5	0.40	1.51	3	35 Spa. @ 5¾"	7" Spa.	Inf.	37.22		101.21		.834
	W36x150	35.9	0.22	1.17	3	27 Spa. @ 8¼"	10" Spa.	Inf.	37.20	2.70	102.92		.823
	W33x169	33.8	0.24	1.16	3	18 Spa. @ 8"	9" Spa.	Inf.	37.76		102.82		.822
	W30x173	30.4	0.27	1.32	3	30 Spa. @ 7¼"	9" Spa.	Inf.	37.91		103.60		.828
60' Max.	W27x194	28.1	0.31	1.42	3	21 Spa. @ 7"	8" Spa.	Inf.	38.56		103.72		.829
	W24x229	26.0	0.37	1.51	3	34 Spa. @ 6½"	8" Spa.	Inf.	39.61		103.58		.828

KENTUCKY DEPARTMENT OF HIGHWAYS	
COMPOSITE STEEL BEAM SUPERSTRUCTURES BEAM TABLES	
STANDARD DRAWING NO. BSB-102	DATE 02-26-20
SUBMITTED <i>Est. Ahn</i> DIRECTOR DIVISION OF STRUCTURAL DESIGN	DATE
APPROVED <i>SP</i> STATE HIGHWAY ENGINEER	DATE 02-26-20