The following pages of *Bridge Design Aids*, Section 9, have been reviewed in May 1989 and found to be valid and appropriate for continued use:

Page	Date	Title
9-1	May 1962	HS20-44 Loading
9-10	May 1962	Simple Beam Shear One Lane
9-10A	Apr 1979	Simple Span Shear (Kips) - One Lane
9-11 thru 9-16	Apr 1963	Bending Moments-Simple Beam
9-20 thru 9-30	May 1962	Moments, Shears and Reactions for Continuous Spans, One Lane Live Load
9-31 thru 9-36	Aug 1962	One Lane Live Load-Hinge at 1/5 Point
9-37 thru 9-42	Aug 1962	One Lane Live Load-Hinge at 1/6 Point
9-43-thru 9-48	Aug 1962	One Lane Live Load-Hinge at 1/7 Point
9-49 thru 9-54	Feb 1965	One Lane Live Load-Hinge at 1/8 Point
9-55 thru 9-60	Aug 1967	One Lane Live Load-Hinge at 1/9 Point
9-61 thru 9-66	Aug 1967	One Lane Live Load-Hinge at 1/10 Point
9-67 thru 9-72	Aug 1967	One Lane Live Load-Hinge at 1/11 Point
9-73 thru 9-78	Aug 1967	One Lane Live Load-Hinge at 1/12 Point
9-81 thru 9-81.5	Mar 1986	Table of Maximum Moments for Permit Load
9-95	Aug 1967	Steam Railroad Loading E-10
9-96	Aug 1967	Steam Railroad Loading E-10

These pages will be updated from time-to-time when significant changes in the technology occur.

Philip C Warriner

Guy D. Mancarti

GDM:mkp

H20-S16(44) Loading

TABLE OF MAXIMUM MOMENTS, SHEARS AND REACTIONS
SIMPLE SPANS, ONE LANE

Spans in feet; moments in thousands of foot-pounds; shears and reactions in thousands of pounds.

These values are subject to specification reduction for loading of multiple lanes.

Impact is not included.

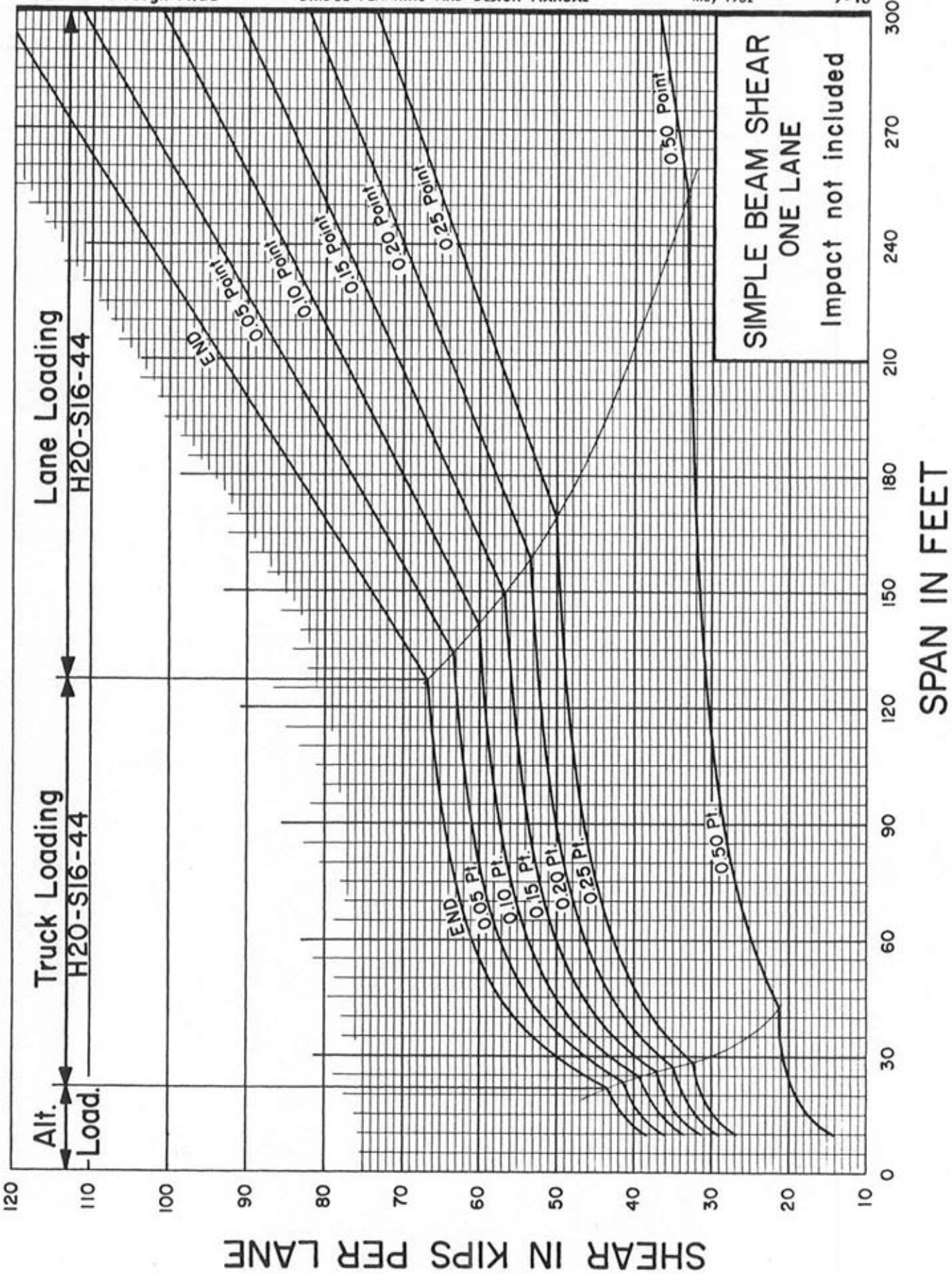
Span	Moment	End Shear and End Reaction [a]	Span	Moment	End Shear and End Reaction [a]
1	8.0[b]	32.0[b]	39	432.1[b]	54.8[b]
2	16.0[b]	32.0[b]	40	449.8[b]	55.2[b]
3	24.0[b]	32.0[b]	42	485.3[b]	56.0[b]
4	32.0[b]	32.0[b]	44	520.9[b]	56.7[b]
5	40.0[b]	32.0[b]	46	556.5[b]	57.3[b]
6	48.0[b]	32.0[b]	48	592.1[b]	58.0[b]
7	56.0[b]	34.3[c]	50	627.9[b]	58.5[b]
8	64.0[b]	36.0[c]	52	663.6[b]	59.1[b]
9	72.0[b]	37.3[c]	54	699.3[b]	59.6[b]
10	80.0[b]	38.4[c]	56	735.1[b]	60.0[b]
11	88.4[c]	39.3[c]	58	770.8[b]	60.4[b]
12	100.0[c]	40.0[c]	60	806.5[b]	60.8[b]
13	111.7[c]	40.6[c]	62	842.4[b]	61.2[b]
14	123.4[c]	41.1[c]	64	878.1[b]	61.5[b]
15	135.2[c]	41.6[c]	66	914.0[b]	61.9[b]
16	147.0[c]	42.0[c]	68	949.7[b]	62.1[b]
17	158.8[c]	42.4[c]	70	985.6[b]	62.4[b]
18	170.7[c]	42.7[c]	75	1,075.1[b]	63.1[b]
19	182.5[c]	42.9[c]	80	1,164.0[b]	63.6[b]
20	194.4[c]	43.2[c]	85	1,254.7[b]	64.1[b]
21	206.3[c]	43.4[c]	90	1,344.4[b]	64.5[b]
22	218.2[c]	43.6[b]	95	1,433.2[b]	64.9[b]
23	230.1[c]	44.5[b]	100	1,524.0[b]	65.3[b]
24	242.0[c]	45.3[b]	110	1,703.6[b]	65.9[b]
25	253.9[c]	46.1[b]	120	1,883.3[b]	66.4[b]
26	265.8[c]	46.8[b]	130	2,063.1[b]	67.6
27	277.8[c]	47.4[b]	140	2,242.8[b]	70.8
28	289.7[c]	48.0[b]	150	2,475.1	74.0
29	301.7[c]	48.8[b]	160	2,768.0	77.2
30	313.6[c]	49.6[b]	170	3,077.1	80.4
31	325.5[c]	50.3[b]	180	3,402.0	83.6
32	337.5[c]	51.0[b]	190	3,743.1	86.8
33	349.5[c]	51.6[b]	200	4,100.0	90.0
34	361.4[c]	52.2[b]	220	4,862.0	96.4
35	373.4[c]	52.8[b]	240	5,688.0	102.8
36	385.3[c]	53.3[b]	260	6,578.0	109.2
37	397.3[c]	53.8[b]	280	7,532.0	115.6
38	414.3[b]	54.3[b]	300	8,550.0	122.0

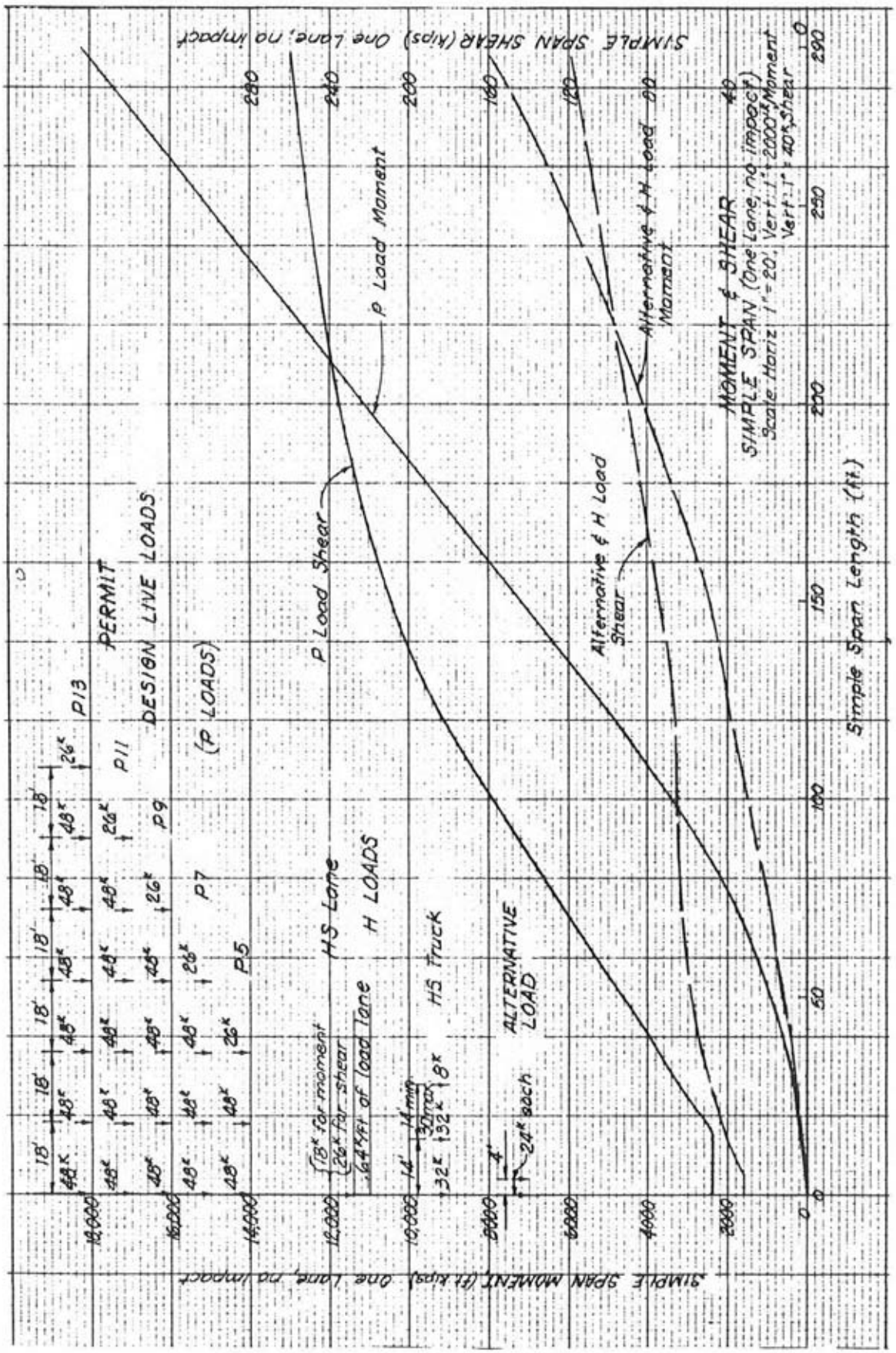
[a] The concentrated load is considered placed at the support. Loads used are those stipulated for shear.

[b] Maximum value determined by Standard Truck Loading (one H-S truck).

[c] Maximum value determined by Special Loading (24,000 lb. dual axles spaced 4'-0" c. to c.).

Unless otherwise indicated, the maximum values are determined by the Standard Lane Loading.


SIMPLE BEAM SHEAR
ONE LANE
Impact not included
Lane Loading
H20-S16-44
Truck Loading
H20-S16-44
Alt. Load.
END
0.05 Point
0.10 Point
0.15 Point
0.20 Point
0.25 Point
0.50 Point
END
0.05 Pt.
0.10 Pt.
0.15 Pt.
0.20 Pt.
0.25 Pt.
0.50 Pt.
SPAN IN FEET
SHEAR IN KIPS PER LANE
0
30
60
90
120
150
180
210
240
270
300
10
20
30
40
50
60
70
80
90
100
110
120


SIMPLE SPAN SHEAR (kips) One Lane, no impact
SIMPLE SPAN MOMENT (ft kips) One Lane, no impact
MOMENT & SHEAR
SIMPLE SPAN (One Lane, no impact)
Scale Horiz 1" = 20', Vert 1" = 2000'k Moment
Vert 1" = 40k Shear
Simple Span Length (ft)
P Load Moment
P Load Shear
Alternative & H Load Moment
Alternative & H Load Shear
PERMIT
DESIGN LIVE LOADS
(P LOADS)
P13
P11
P9
P7
P5
HS Lane
H LOADS
HS Truck
ALTERNATIVE LOAD
18k for moment
26k for shear
64k/ft of load lane
24k each

BENDING MOMENTS IN BEAMS DUE TO A UNIFORM LOAD OF 1 KIP PER FT.

SPAN	WL^2	SIMPLE BEAM MOMENT AT GIVEN POINT					
		.1 & .9	.2 & .8	.3 & .7	.4 & .6	.5	
						F.E.M.	
						ONE END FIXED	BOTH ENDS FIXED
11	121	5.4	9.7	12.7	14.5	15.1	10.1
12	144	6.5	11.5	15.1	17.3	18.0	12.0
13	169	7.6	13.5	17.7	20.3	21.1	14.1
14	196	8.8	15.7	20.6	23.5	24.5	16.3
15	225	10.1	18.0	23.6	27.0	28.1	18.7
16	256	11.5	20.5	26.9	30.7	32.0	21.3
17	289	13.0	23.1	30.3	34.7	36.1	24.1
18	324	14.6	25.9	34.0	38.9	40.5	27.0
19	361	16.2	28.9	37.9	43.3	45.1	30.1
20	400	18.0	32.0	42.0	48.0	50.0	33.3
21	441	19.8	35.3	46.3	52.9	55.1	36.7
22	484	21.8	38.7	50.8	58.1	60.5	40.3
23	529	23.8	42.3	55.5	63.5	66.1	44.1
24	576	25.9	46.1	60.5	69.1	72.0	48.0
25	625	28.1	50.0	65.6	75.0	78.1	52.1
26	676	30.4	54.1	71.0	81.1	84.5	56.3
27	729	32.8	58.3	76.5	87.5	91.1	60.7
28	784	35.3	62.7	82.3	94.1	98.0	65.3
29	841	37.8	67.3	88.3	100.9	105.1	70.1
30	900	40.5	72.0	94.5	108.0	112.5	75.0
31	961	43.2	76.9	100.9	115.3	120.1	80.1
32	1024	46.1	81.9	107.5	122.9	128.0	85.3
33	1089	49.0	87.1	114.3	130.7	136.1	90.7
34	1156	52.0	92.5	121.4	138.7	144.5	96.3
35	1225	55.1	98.0	128.6	147.0	153.1	102.0
36	1296	58.3	103.7	136.1	155.5	162.0	108.0
37	1369	61.6	109.5	143.7	164.3	171.1	114.0
38	1444	65.0	115.5	151.6	173.3	180.5	120.3
39	1521	68.4	121.7	159.7	182.5	190.1	126.7
40	1600	72.0	128.0	168.0	192.0	200.0	133.3
41	1681	75.6	134.5	176.5	201.7	210.1	140.0

BENDING MOMENTS IN BEAMS DUE TO A UNIFORM LOAD OF I KIP PER FT.

SPAN	WL^2	SIMPLE BEAM MOMENT AT GIVEN POINT					
		.1 & .9	.2 & .8	.3 & .7	.4 & .6	.5	
						F.E.M.	
						ONE END FIXED	BOTH ENDS FIXED
42	1764	794	1411	1852	2117	2205	1469
43	1849	832	1479	1941	2219	2311	1540
44	1936	871	1549	2033	2323	2420	1613
45	2025	911	1620	2126	2430	2531	1687
46	2116	952	1693	2222	2539	2645	1763
47	2209	994	1767	2319	2651	2761	1840
48	2304	1037	1843	2419	2765	2880	1919
49	2401	1080	1921	2521	2881	3001	2000
50	2500	1125	2000	2625	3000	3125	2083
51	2601	1170	2081	2731	3121	3251	2167
52	2704	1217	2163	2839	3245	3380	2252
53	2809	1264	2247	2949	3371	3511	2340
54	2916	1312	2333	3062	3499	3645	2429
55	3025	1361	2420	3176	3630	3781	2520
56	3136	1411	2509	3293	3763	3920	2612
57	3249	1462	2599	3411	3899	4061	2706
58	3364	1514	2691	3532	4037	4205	2802
59	3481	1566	2785	3655	4177	4351	2900
60	3600	1620	2880	3780	4320	4500	2999
61	3721	1674	2977	3907	4465	4651	3100
62	3844	1730	3075	4036	4613	4805	3202
63	3969	1786	3175	4167	4763	4961	3306
64	4096	1843	3277	4301	4915	5120	3412
65	4225	1901	3380	4436	5070	5281	3519
66	4356	1960	3485	4574	5227	5445	3629
67	4489	2020	3591	4713	5387	5611	3739
68	4624	2081	3699	4855	5549	5780	3852
69	4761	2142	3809	4999	5713	5951	3966
70	4900	2205	3920	5145	5880	6125	4082
71	5041	2268	4033	5293	6049	6301	4199
72	5184	2333	4147	5443	6221	6480	4318
73	5329	2398	4263	5595	6395	6661	4439
74	5476	2464	4381	5750	6571	6845	4562
75	5625	2531	4500	5906	6750	7031	4686
76	5776	2599	4621	6065	6931	7220	4811
77	5929	2668	4743	6225	7115	7411	4939
78	6084	2738	4867	6388	7301	7605	5068

BENDING MOMENTS IN BEAMS DUE TO A UNIFORM LOAD OF 1 KIP PER FT.

SPAN	WL^2	SIMPLE BEAM MOMENT AT GIVEN POINT					
		.1 & .9	.2 & .8	.3 & .7	.4 & .6	.5	
						F.E.M.	
						ONE END FIXED	BOTH ENDS FIXED
79	6241	2808	4993	6553	7489	7801	5199
80	6400	2880	5120	6720	7680	8000	5331
81	6561	2952	5249	6889	7873	8201	5465
82	6724	3026	5379	7060	8069	8405	5601
83	6889	3100	5511	7233	8267	8611	5739
84	7056	3175	5645	7409	8467	8820	5878
85	7225	3251	5780	7586	8670	9031	6018
86	7396	3328	5917	7766	8875	9245	6161
87	7569	3406	6055	7947	9083	9461	6305
88	7744	3485	6195	8131	9293	9680	6451
89	7921	3564	6337	8317	9505	9901	6598
90	8100	3645	6480	8505	9720	10125	6747
91	8281	3726	6625	8695	9937	10351	6898
92	8464	3809	6771	8887	10157	10580	7051
93	8649	3892	6919	9081	10379	10811	7205
94	8836	3976	7069	9278	10603	11045	7360
95	9025	4061	7220	9476	10830	11281	7518
96	9216	4147	7373	9677	11059	11520	7677
97	9409	4234	7527	9879	11291	11761	7838
98	9604	4322	7683	10084	11525	12005	8000
99	9801	4410	7841	10291	11761	12251	8164
100	10000	4500	8000	10500	12000	12500	8330
101	10201	4590	8161	10711	12241	12751	8497
102	10404	4682	8323	10924	12485	13005	8667
103	10609	4774	8487	11139	12731	13261	8837
104	10816	4867	8653	11357	12979	13520	9010
105	11025	4961	8820	11576	13230	13781	9184
106	11236	5056	8989	11798	13483	14045	9360
107	11449	5152	9159	12021	13739	14311	9537
108	11664	5249	9331	12247	13997	14580	9716
109	11881	5346	9505	12475	14257	14851	9897
110	12100	5445	9680	12705	14520	15125	10079
111	12321	5544	9857	12937	14785	15401	10263
112	12544	5645	10035	13171	15053	15680	10449
113	12769	5746	10215	13407	15323	15961	10637
114	12996	5848	10397	13646	15595	16245	10826
115	13225	5951	10580	13886	15870	16531	11016

BENDING MOMENTS IN BEAMS DUE TO A UNIFORM LOAD OF 1 KIP PER FT.

SPAN	WL^2	SIMPLE BEAM MOMENT AT GIVEN POINT					
		.1 & .9	.2 & .8	.3 & .7	.4 & .6	.5	
						F.E.M.	
						ONE END FIXED	BOTH ENDS FIXED
116	13456	6055	10765	14129	16147	16820	11209
117	13689	6160	10951	14373	16427	17111	11403
118	13924	6266	11139	14620	16709	17405	11599
119	14161	6372	11329	14869	16993	17701	11796
120	14400	6480	11520	15120	17280	18000	11995
121	14641	6588	11713	15373	17569	18301	12196
122	14884	6698	11907	15628	17861	18605	12398
123	15129	6808	12103	15885	18155	18911	12603
124	15376	6919	12301	16145	18451	19220	12808
125	15625	7031	12500	16406	18750	19531	13016
126	15876	7144	12701	16670	19051	19845	13225
127	16129	7258	12903	16935	19355	20161	13436
128	16384	7373	13107	17203	19661	20480	13648
129	16641	7488	13313	17473	19969	20801	13862
130	16900	7605	13520	17745	20280	21125	14078
131	17161	7722	13729	18019	20593	21451	14295
132	17424	7841	13939	18295	20909	21780	14514
133	17689	7960	14151	18573	21227	22111	14735
134	17956	8080	14365	18854	21547	22445	14957
135	18225	8201	14580	19136	21870	22781	15181
136	18496	8323	14797	19421	22195	23120	15407
137	18769	8446	15015	19707	22523	23461	15635
138	19044	8570	15235	19996	22853	23805	15864
139	19321	8694	15457	20287	23185	24151	16094
140	19600	8820	15680	20580	23520	24500	16327
141	19881	8946	15905	20875	23857	24851	16561
142	20164	9074	16131	21172	24197	25205	16797
143	20449	9202	16359	21471	24539	25561	17034
144	20736	9331	16589	21773	24883	25920	17273
145	21025	9461	16820	22076	25230	26281	17514
146	21316	9592	17053	22382	25579	26645	17756
147	21609	9724	17287	22689	25931	27011	18000
148	21904	9857	17523	22999	26285	27380	18246
149	22201	9990	17761	23311	26641	27751	18493
150	22500	10125	18000	23625	27000	28125	18743
151	22801	10260	18241	23941	27361	28501	18993
152	23104	10397	18483	24259	27725	28880	19246

BENDING MOMENTS IN BEAMS DUE TO A UNIFORM LOAD OF 1 KIP PER FT.

SPAN	WL^2	SIMPLE BEAM MOMENT AT GIVEN POINT					
		.1 & .9	.2 & .8	.3 & .7	.4 & .6	.5	
						F.E.M.	
						ONE END FIXED	BOTH ENDS FIXED
153	23409	10534	18727	24579	28091	29261	19500
154	23716	10672	18973	24902	28459	29645	19755
155	24025	10811	19220	25226	28830	30031	20013
156	24336	10951	19469	25553	29203	30420	20272
157	24649	11092	19719	25881	29579	30811	20533
158	24964	11234	19971	26212	29957	31205	20795
159	25281	11376	20225	26545	30337	31601	21059
160	25600	11520	20480	26880	30720	32000	21325
161	25921	11664	20737	27217	31105	32401	21592
162	26244	11810	20995	27556	31493	32805	21861
163	26569	11956	21255	27897	31883	33211	22132
164	26896	12103	21517	28241	32275	33620	22404
165	27225	12251	21780	28586	32670	34031	22678
166	27556	12400	22045	28934	33067	34445	22954
167	27889	12550	22311	29283	33467	34861	23232
168	28224	12701	22579	29635	33869	35280	23511
169	28561	12852	22849	29989	34273	35701	23791
170	28900	13005	23120	30345	34680	36125	24074
171	29241	13158	23393	30703	35089	36551	24358
172	29584	13313	23667	31063	35501	36980	24644
173	29929	13468	23943	31425	35915	37411	24931
174	30276	13624	24221	31790	36331	37845	25220
175	30625	13781	24500	32156	36750	38281	25511
176	30976	13939	24781	32525	37171	38720	25803
177	31329	14098	25063	32895	37595	39161	26097
178	31684	14258	25347	33268	38021	39605	26393
179	32041	14418	25633	33643	38449	40051	26690
180	32400	14580	25920	34020	38880	40500	26989
181	32761	14742	26209	34399	39313	40951	27290
182	33124	14906	26499	34780	39749	41405	27592
183	33489	15070	26791	35163	40187	41861	27896
184	33856	15235	27085	35549	40627	42320	28202
185	34225	15401	27380	35936	41070	42781	28509
186	34596	15568	27677	36326	41515	43245	28819
187	34969	15736	27975	36717	41963	43711	29129
188	35344	15905	28275	37111	42413	44180	29442
189	35721	16074	28577	37507	42865	44651	29756

BENDING MOMENTS IN BEAMS DUE TO A UNIFORM LOAD OF 1 KIP PER FT.

SPAN	WL^2	SIMPLE BEAM MOMENT AT GIVEN POINT					
		.1 & .9	.2 & .8	.3 & .7	.4 & .6	.5	
						F.E.M.	
						ONE END FIXED	BOTH ENDS FIXED
190	36100	16245	28880	37905	43320	45125	30071
191	36481	16416	29185	38305	43777	45601	30389
192	36864	16589	29491	38707	44237	46080	30708
193	37249	16762	29799	39111	44699	46561	31028
194	37636	16936	30109	39518	45163	47045	31351
195	38025	17111	30420	39926	45630	47531	31675
196	38416	17287	30733	40337	46099	48020	32001
197	38809	17464	31047	40749	46571	48511	32328
198	39204	17642	31363	41164	47045	49005	32657
199	39601	17820	31681	41581	47521	49501	32988
200	40000	18000	32000	42000	48000	50000	33320

Moments, Shears, and Reactions for Continuous Spans Live Loading H20-S16-44

(a) General

The following live load tables may be used for most designs. The left side of the table lists maximum simple beam moments and fixed end moments that result from the loading that produces that simple beam moment. The right side of the table lists maximum fixed end moments and the simple beam moments that result from the loading that produces that fixed end moment. The center of the table lists maximum shears and reactions. Accuracy is within 2% for members with uniform or nearly uniform moment of inertia.

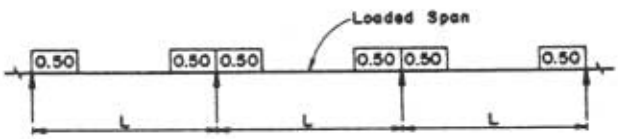
For extremely unbalanced spans or for spans adjacent to hinges. The designer will have to determine the loading which will produce maximum moments.

The values for moments, shears, and reactions are for one lane of H20-S16-44 loading without impact. Either alternative loading or lane loading has been used where these loadings produce more critical stresses than the Standard H-S Truck.

The following discussion summarizes the assumptions and decisions made in the development of these live load tables.

(b) Moment at Midspan

To obtain the maximum positive moment at midspan, the span was loaded to obtain the maximum SBM. Although the assumption that the maximum SBM occurs at midspan is not strictly correct except where only one axle of the truck is on the span or where the lane loading is used, the error introduced is considered to be insignificant. The decision to change loading was made on the basis of the positive moment after the FEM's were distributed, assuming distribution factors of 0.50 at the joints. The figure used in this calculation is shown below.



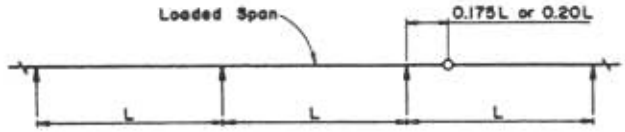
The spans on which the loadings are changed in this section of the table will not be the same as the spans shown in the table on page 4 D.2.7-1 because the table shown on page 4 D.2.7-1 is for simply supported spans.

When the adjacent spans are between 0.75 L and 1.33 L in length, assuming the loaded span to be of "L" length, the maximum resulting error in positive moment at midspan is 1.35%.

There is no significant error if an adjacent span is "L" in length and has a hinge located between 0.175 L and 0.20 L from the far end of the span being designed.

For the case where the hinge is located between 0.175 L and 0.20 L from the near end, adjacent to the loaded span, the maximum error is slightly less than 5%. Since this maximum error occurs at a span of 14' it is recommended it be ignored.

For your information, the tabulation below shows the limits for each loading for this particular case.

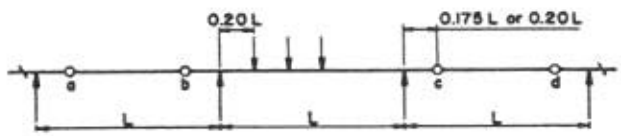


Loading	Span in feet
Truck	1 to 12
Alternative	13 to 39
Truck	40 to 155
Lane	156 on up

(c) Moments for 0.2 or 0.8 points

Since the LL positive envelop curve is not an exact parabola, the SBM's and the FEM's are given for the loadings at the 0.2 point of a span fixed at both ends. The change in type of loading was determined on the basis of the positive moment at the 0.2 point after the FEM's were distributed, assuming distribution factors of 0.50 at the joints.

If the adjacent spans are between 0.75 L and 1.33 L in length, assuming the loaded span to be of "L" length, the values in the table may be used up to a span length of 225' with a maximum error of 5%. Beyond a span length of 225' the designer should determine whether the Truck or the Lane Loading is the critical loading if the adjacent spans are not the same length as the loaded span.



When one of the adjacent spans has a hinge located 0.175 L or 0.20 L from the far end, locations "a" and and "d" in the figure above, the table values may be used without any error. For the hinge located at "c", the maximum error is 1%. In case the hinge is placed at "b", the tabulation shown below is to be used to determine whether a loading different from that in the table should be used for a particular span length.

Loading	Span in feet
Truck	1 to 9
Alternative	10 to 32
Truck	33 to 168
Lane	169 on up

(d) Spans Simply Supported at One End

The FEM's and the SBM's for spans simply supported at one end have been given at the 0.2, 0.4, 0.6, and 0.8 points of the span. The change in loading was made on the basis of the positive moment at the point under consideration, assuming that the distributed LL moment at the first interior support is equal to 46.42 percent of the FEM. This percentage is based on distribution factors of 0.50 at the joints, the end span being ¾ the length of the interior spans.

No significant error, 1% or less, is introduced even if the end span is the same length as the interior spans except for the loadings at the 0.8 point where the error may be as high as 10%. Therefore, when the end span is approximately the same length as the interior span, it may be necessary for the designer to use a loading other than that shown in the table for the 0.8 point. To help in determining when this is the case, the tabulation below shows the limits of each loading for the case where the end span and interior spans are of length "L".

Loading	Span in feet
Truck	1 to 17
Alternative	18 to 59
Truck	60 to 262
Lane	263 on up

If the end span is one-half the length of the interior spans, a maximum error of 1% may result except for the loadings at the 0.8 point where the error may be as high as 9%. To help in determining whether another loading should be used for the 0.8 point when the end span is approximately one-half the length of the interior spans, the tabulation below shows the limits for each loading when the end span length is one-half "L".

Loading	Span in feet
Truck	1 to 11
Alternative	12 to 37
Truck	38 to 190
Lane	191 on up

(e) Maximum Shears and Reactions

To help in plotting the shear diagram, the LL shear at midspan is given. The designer should note that the LL values given in this table may have to be increased for moment shear.

(f) Negative Moments

In calculating the FEM's for the negative moments, the loadings were placed so as to obtain a maximum FEM at joint B. The assumption that the maximum final distributed moment will result from the maximum FEM @ B is in error in the order of 0.3% for a span continuous at both ends.

To calculate the maximum negative moment at a joint, the Lane Loading is usually the governing loading except for spans 45 feet or less in length where the Truck Loading with its 32 kips axles variably spaced from 14 feet to 30 feet inclusive may govern. A separate table will be issued to handle this case.

For very short spans adjacent to relatively long spans, the Truck Loading placed in the long span may give higher negative moment at the joint under consideration than if the Lane Loading was placed on both the short and long spans. Therefore, the SBM's, FEM's, and location of the rear axle of the Truck have been given for this case up to 125 feet for the span simply supported at one end and 144 feet for the span fixed at both ends. Beyond these span lengths, the Lane Loading will give a higher FEM @ B.

Where the Truck Loading is used to obtain the maximum longitudinal moment for the design of columns, the simple beam reaction at the bent may be obtained by dividing the "SBM" by "aL".

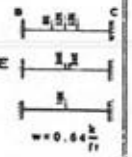
(g) Spans with Hinge Points

Tables for One Lane Live Load for span in which a hinge occurs at 1/5, 1/6, 1/7, 1/8, 1/9, 1/10, 1/11 and 1/12 points are also included.

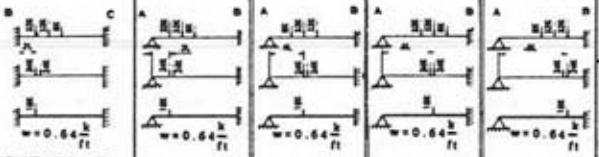
ONE LANE LIVE LOAD (H20-S16-44)

(Impact not included)

LOADING: TRUCK (T), ALTERNATIVE (A), LANE (L)



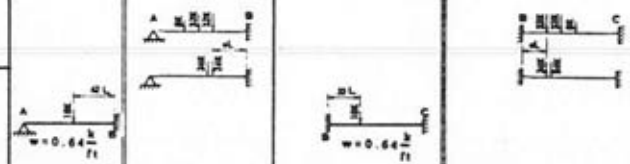
POSITIVE MOMENTS (kip feet)



MOMENTS AT 0.2 or 0.8 POINTS

SIMPLE SPAN SHEARS & REACTIONS (kips)

NEGATIVE MOMENTS (kip feet)



SPAN IN FT.	IMPACT	SBM @CTR	FEM @B	FEM @C	SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B	END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	SBM @.42L	FEM @B	OL FT	SBM @oL	FEM @B	SBM @.33L	FEM @B	FEM @C	OL FT	SBM @oL	FEM @B	FEM @C	SPAN IN FT.
1	.300	8.0T	4.0	4.0	5.1T	4.1	1.0	5.1T	3.1	7.7T	5.4	7.7T	6.1	5.1T	4.6	32.0T	16.0T	32.0T	4.5L	3.5	0.4	7.8T	6.2	4.1L	2.7	1.4	0.3	7.1T	4.7	2.4	1
2	.300	16.0	8.0	8.0	10.2	8.2	2.0	10.2	6.1	15.4	10.8	15.4	12.3	10.2	9.2	32.0	16.0	32.0	9.1	7.2	0.8	15.6	12.3	8.3	5.5	2.9	0.7	14.2	9.5	4.7	2
3	.300	24.0	12.0	12.0	15.4	12.3	3.1	15.4	9.2	23.0	16.1	23.0	18.4	15.4	13.8	32.0	16.0	32.0	13.9	11.1	1.3	23.4	18.5	12.6	8.5	4.5	1.0	21.3	14.2	7.1	3
4	.300	32.0	16.0	16.0	20.5	16.4	4.1	20.5	12.3	30.7	21.5	30.7	24.6	20.5	18.4	32.0	16.0	32.0	18.8	15.1	1.7	31.2	24.6	17.1	11.5	6.2	1.3	28.4	19.0	9.5	4
5	.300	40.0	20.0	20.0	25.6	20.5	5.1	25.6	15.4	38.4	26.9	38.4	30.7	25.6	23.0	32.0	16.0	32.0	23.9	19.3	2.1	39.1	30.8	21.8	14.7	8.0	1.7	35.6	23.7	11.9	5
6	.300	48.0	24.0	24.0	30.7	24.6	6.1	30.7	18.4	46.1	32.3	46.1	36.9	30.7	27.6	32.0T	16.0	32.0T	29.2	23.7	2.5	46.9	37.0	26.6	17.9	9.9	2.0	42.7	28.4	14.2	6
7	.300	56.0	28.0	28.0	35.8	28.7	7.2	35.8	21.5	53.8	37.6	53.8	43.0	35.8	32.3	34.3A	16.0	34.3A	34.6	28.2	3.0	54.7T	43.1	31.5	21.3	11.9	2.3	49.8	33.2	16.6	7
8	.300	64.0	32.0	32.0	41.0	32.8	8.2	41.0T	24.6	61.4	43.0	61.4	49.2	41.0	36.9	36.0	16.0	36.0	40.1	32.8	1.8	45.9A	54.1	36.6	24.7	14.1	2.7	56.9T	37.9	19.0	8
9	.300	72.0	36.0	36.0	46.1	36.9	9.2	49.9A	61.4	69.1	48.4	69.1	55.3	46.1	41.5	37.3	16.0	37.3	45.9	37.7	2.2	56.4	65.4	41.8	28.3	16.3	1.8	49.3A	45.3	38.5	9
10	.300	80.0	40.0	40.0	51.2	41.0	10.2	57.6	69.1	76.8	53.8	76.8T	61.4	51.2	46.1	38.4	16.0	38.4	51.7	42.6	2.6	67.2	76.3	47.1	32.0	18.7	2.0	57.6	53.8	42.2	10
11	.300	88.0	44.0	44.0	56.3	45.1	11.3	65.3	76.1	84.5T	59.1	88.3A	80.1	56.3	50.7	39.3	16.0	39.3	57.8	47.8	3.0	78.2	86.9	52.6	35.8	21.1	2.3	66.5	62.1	48.7	11
12	.300	96.0	48.0	48.0	61.4	49.2	12.3	73.0	82.6	99.8A	97.2	99.8	91.0	61.4	55.3	40.0	16.0T	40.0	64.0	53.1	3.4	89.3	97.3	58.2	39.7	23.7	2.5	75.7	70.4	49.0	12
13	.300	104.0	52.0	52.0	66.6	53.2	13.3	80.6	88.7	111.4	107.5	111.4	101.6	66.6	59.9	40.6	16.6A	40.6A	70.3	58.6	3.8	100.6	107.5	64.0	43.7	26.3	2.8	85.2	78.5	52.3	13
14	.300	112.0T	56.0	56.0	71.7	57.3	14.3	88.3	94.6	122.9	117.5	122.9	112.1	71.7T	64.5	41.1	17.1	41.1	76.8	64.2	4.2	111.9	117.6	69.9	47.8	29.1	3.1	94.9	86.5	55.6	14
15	.300	135.2A	72.8	91.2	76.8	61.4	15.4	96.0	100.3	134.4	127.1	134.4	122.5	96.0A	120.5	41.6	17.6	41.6	83.5	70.0	4.6	123.3	127.6	76.0	52.0	32.0	3.4	104.8	94.4	58.9	15
16	.300	147.0	78.9	98.1	81.9	65.5	16.4	103.7	105.8	145.9	136.6	145.9	132.7	103.7	129.0	42.0	18.0	42.0	90.3	75.7	5.0	134.8	137.5	82.2	56.3	35.0	3.7	114.8	102.2	62.2	16
17	.300	158.8	85.1	104.8	87.0T	69.6	17.4	111.4	111.1	157.4	145.8	157.4	142.8	111.4	137.2	42.4	18.4	42.4	97.3	82.0	5.4	146.3	147.4	88.6	60.7	38.1	4.0	124.9	110.0	65.5	17
18	.300	170.7	91.3	111.4	119.0A	116.2	58.3	119.0	116.4	169.0	154.9	169.0	152.9	119.0	145.3	42.7	18.7	42.7	104.4	88.3	5.8	157.8	157.1	95.0	65.3	41.3	4.3	135.0	117.6	68.9	18
19	.300	182.5	97.4	118.0	126.7	123.4	59.9	126.7	121.6	180.5	163.9	180.5	162.9	126.7	153.4	42.9	18.9	42.9A	111.7	94.7	6.2	169.3	166.8	101.7	69.9	44.6	4.7	145.2	125.3	72.2	19
20	.300	194.4	103.6	124.4	134.4	130.6	61.4	134.4	126.7	192.0	172.8	192.0	172.8	134.4	161.3	43.2	19.2	44.0T	119.1	101.3	6.6	180.9	176.5	108.4	74.7	48.0	5.0	155.5	132.8	75.6	20
21	.300	206.3	109.7	130.9	142.1	137.6	63.0	142.1	131.8	203.5	181.6	203.5	182.7	142.1	169.1	43.4	19.4	45.3	126.7	108.0	7.0	192.5	186.1	115.4	79.5	51.5	5.3	165.8	140.4	79.0	21
22	.300	218.2	115.8	137.3	149.8	144.6	64.5	149.8	136.8	215.0	190.3	215.0	192.5	149.8	176.9	43.6A	19.6	46.5	134.5	114.9	7.5	204.1	195.7	122.4	84.5	55.1	5.6	176.2	147.9	82.3	22
23	.300	230.1	122.0	143.6	157.4	151.6	66.0	157.4	141.8	226.6	199.0	226.6	202.2	157.4	186.6	44.5T	19.8	47.7	142.4	122.0	7.9	215.7	205.3	129.6	89.5	58.9	5.9	186.5	155.4	85.7	23
24	.300	242.0	128.1	149.9	165.1	158.4	67.5	165.1	146.7	238.1	207.6	238.1	212.0	165.1	192.2	45.3	20.0	48.7	150.4	129.2	8.3	227.3	214.8	137.0	94.7	62.7	6.3	197.0	162.8	89.1	24
25	.300	253.9	134.2	156.2	172.8	165.3	69.0	172.8	151.6	249.6	216.1	249.6	221.6	172.8	199.8	46.1	20.2	49.6	158.6	136.6	8.7	238.9	224.3	144.4	100.0	66.7	6.6	207.4	170.2	92.6	25
26	.300	265.8	140.3	162.5	180.5	172.1	70.5	180.5	156.5	261.1	224.6	261.1	231.3	180.5	207.3	46.8	20.3	50.5	167.0	144.1	9.1	250.6	233.8	152.	105.4	70.7	6.9	217.8	177.6	96.0	26
27	.300	277.8	146.4	168.7	188.2	178.8	71.9	188.2	161.3	272.6	233.1	272.6	240.9	188.2	214.8	47.4	20.4	51.3	175.6	151.9	9.5	262.2	243.3	159.8	110.9	74.9	7.2	228.3	185.0	99.4	27
28	.300	289.7	152.5	174.9	195.8	185.5	73.4	195.8	166.2	284.2	241.5	284.2	250.5	195.8	222.2	48.0	20.6	52.0	184.2	159.7	10.0	273.9A	252.7	167.8	116.5	79.1	7.6	238.8	192.3	102.9	28
29	.300	301.7	158.6	181.1	203.5	192.2	74.9	203.5	171.0	295.7	250.0	295.7	260.1	203.5	229.6	48.8	20.7	52.7	193.1	167.7	6.8	227.9T	267.8	175.8	122.2	83.5	7.9	249.3	199.7	106.3	29
30	.300	313.6A	164.7	187.3	211.2A	198.8	76.4	211.2A	175.8	307.2A	258.3	307.2A	269.7	211.2A	237.0	49.6T	20.8A	53.3T	202.1L	175.9	7.2	241.9T	282.8	184.0L	128.0	88.0	8.2	259.8A	207.0	109.8	30

ONE LANE LIVE LOAD (H20-S16-44)

(Impact not included)

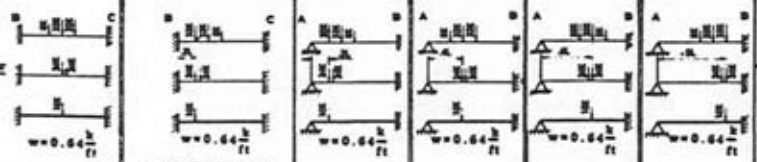
LOADING: TRUCK (T) / ALTERNATIVE (A) / LANE (L) — w = 0.64 k/ft

SPAN IN FT.	IMPACT	POSITIVE MOMENTS (kip feet) SBM @CTR	FEM @ B	FEM @ C	MOMENTS AT 0.2 or 0.8 POINTS SBM @.2L	FEM @ B	FEM @ C	SBM @.2L	FEM @B	SBM @.4L	FEM @ B	SBM @.6L	FEM @B	SBM @.8L	FEM @ B	SIMPLE SPAN SHEARS & REACTIONS (kips) END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	NEGATIVE MOMENTS (kip feet) SBM @.42L	FEM @B	dL FT	SBM @dL	FEM @ B	SBM @.33L	FEM @ B	FEM @ C	dL FT	SBM @ dL	FEM @B	FEM @C	SPAN IN FT.
31	.300	325.5A	170.6	193.5	218.9A	205.4	77.9	218.9A	180.6	318.7A	266.7	318.7A	279.2	218.9A	244.4	50.3T	20.9A	53.9T	211.2L	184.3	7.5	256.0T	297.7	192.3L	133.9	92.6	8.5	270.3A	214.3	113.2	31
32	.300	337.5	176.9	199.6	226.6	212.0	79.3	238.1T	292.1	330.2	275.1	330.2	288.7	226.6	251.7	51.0	21.0	54.5	220.6	192.8	7.9	270.2	312.4	200.8	139.9	97.3	8.9	280.9	221.6	116.7	32
33	.300	349.5	182.9	205.8	234.2	218.6	80.8	248.3	302.5	341.8	283.4	341.8	298.2	234.2	259.0	51.6	21.1	55.0	230.0	201.4	8.3	284.6	327.0	209.4	146.1	102.1	9.2	291.4A	228.9	120.2	33
34	.300	361.4	189.0	211.9	241.9	225.1	82.3	258.6	312.7	353.3	291.7	353.3	307.7	241.9	266.3	52.2	21.2	55.5	239.7	210.3	8.7	299.0	341.5	218.2	152.3	107.0	6.8	257.4T	239.6	192.3	34
35	.300	373.4	195.1	218.1	249.6	231.7	83.8	268.8	322.6	364.8	300.0	364.8	317.2	249.6	273.5	52.8	21.3	56.0	249.4	219.2	9.0	313.5	355.9	227.1	158.7	112.0	7.0	268.8	250.9	197.1	35
36	.300	385.3	201.1	224.2	257.3	238.2	85.3	280.3	338.3	376.3	308.3	376.3	326.6	257.3	280.8	53.3	21.3	56.4	259.4	228.4	9.4	328.1	370.1	236.2	165.1	117.1	7.1	278.4	262.3	206.8	36
37	.300	397.3	207.2	230.3	265.0	244.6	86.7	291.8	353.5	387.8	316.5	387.8A	336.1	265.0	288.0	53.8	21.4	56.9	269.5	237.7	9.8	342.7	384.3	245.4	171.7	122.3	7.3	288.6	273.8	215.7	37
38	.300	409.3	213.3	236.4	272.6	251.1	88.2	303.4	368.1	399.4A	324.8	410.2T	375.9	272.6	295.2	54.3	21.5	57.3	279.7	247.2	8.8	331.5	400.4	254.7	178.3	127.7	7.4	299.1	285.6	224.0	38
39	.300	421.2	219.3	242.5	280.3	257.6	89.7	314.9	382.2	427.5T	416.8	427.5	393.3	280.3	302.4	54.8	21.5	57.6	290.1	256.8	9.2	347.1	416.9	264.2	185.1	133.1	7.6	310.1	297.4	231.8	39
40	.300	433.2	225.4	248.6	288.0	264.0	91.2	326.4	395.8	444.8	433.0	444.8	410.6	288.0	309.6	55.2	21.6	58.0	300.7	266.6	9.5	362.8	433.3	273.8	192.0	138.7	7.8	321.4	309.3	239.2	40
41	.300	445.2	231.4	254.7	295.7	270.4	92.7	337.9	408.9	462.1	449.0	462.1	427.7	295.7	316.8	55.6	21.7	58.3	311.4	276.5	9.9	378.7	449.6	283.5	199.0	144.3	8.0	332.9	321.3	248.3	41
42	.299	457.1	237.5	260.8	303.4	276.8	94.2	349.4	421.7	479.4	464.7	479.4	444.7	303.4	323.9	56.0	21.7	58.7	322.3	286.6	10.3	394.6	465.9	293.4	206.1	150.1	8.2	344.8	333.3	253.1	42
43	.298	469.1A	243.5	266.9	311.0	283.2	95.7	361.0	434.1	496.6	480.3	496.6	461.6	311.0	331.1	56.4	21.8	59.0	333.3	296.9	10.7	410.7	482.0	303.5	213.3	155.9	8.5	356.9	345.4	259.7	43
44	.296	520.9T	286.3	354.2	318.7	289.6	97.2	372.5	446.2	513.9	495.7	513.9	478.3	318.7	338.2	56.7	21.8A	59.3	344.5	307.3	11.0	426.8	498.1	313.7	220.6	161.9	8.7	369.3	357.5	266.0	44
45	.294	538.7	296.6	365.3	326.4	296.0	98.7	384.0	458.1	531.2	510.9	531.2	495.0	326.4	345.3	57.1	22.0T	59.6	355.9	317.9	11.4	443.0	514.0	324.0	228.0	168.0	8.9	381.8	369.6	272.2	45
46	.292	556.5	306.9	376.2	334.1	302.4	100.1	395.5	469.6	548.5	526.0	548.5	511.5	334.1	352.5	57.4	22.3	59.8	367.4	328.6	11.8	459.3	530.0	334.5	235.5	174.2	9.2	394.6	381.7	278.3	46
47	.291	574.3	317.1	387.1	341.8	308.7	101.6	407.0	480.9	565.8	540.9	565.8	527.9	341.8A	359.6	57.7	22.5	60.1	379.0	339.5	12.2	475.7	545.8	345.1	243.1	180.5	9.4	407.5	393.8	284.2	47
48	.289	592.2	327.3	397.8	349.4	315.1	103.1	418.6	491.9	583.0	555.7	583.0	544.3	418.6T	550.4	58.0	22.7	60.3	390.8	350.6	12.6	492.1	561.6	355.8	250.9	186.9	9.7	420.6	405.9	290.0	48
49	.287	610.0	337.5	408.5	357.1	321.4	104.6	430.1	502.7	600.3	570.3	600.3	560.5	430.1	564.6	58.3	22.9	60.6	402.8	361.8	13.0	508.6	577.3	366.7	258.7	193.4	9.9	433.9	418.0	295.7	49
50	.286	627.8	347.6	419.1	364.8	327.8	106.1	441.6	513.3	617.6	584.9	617.6	576.7	441.6	579.1	58.6	23.0	60.8	414.9	373.2	13.3	525.1	592.9	377.8	266.7	200.0	10.2	447.3	430.0	301.4	50
51	.284	645.7	357.6	429.7	372.5	334.1	107.6	453.1	523.8	634.9	599.4	634.9	592.8	453.1	593.4	58.8	23.2	61.0	427.2	384.7	13.7	541.7	608.5	389.0	274.7	206.7	10.5	460.8	442.1	306.9	51
52	.282	663.5	367.7	440.2	380.2	340.4	109.1	464.6	534.0	652.2	613.7	652.2	608.8	464.6	607.5	59.1	23.4	61.2	439.6	396.5	14.1	558.4	624.1	400.3	282.9	213.5	10.7	474.4	454.1	312.4	52
53	.281	681.4	377.7	450.6	387.8	346.8	110.6	476.2	544.1	669.4	628.0	669.4	624.7	476.2	621.5	59.3	23.5	61.4	452.2	408.3	14.5	575.0	639.5	411.8	291.1	220.5	11.0	488.2	466.1	317.9	53
54	.279	699.3	387.6	461.0	395.5	353.1	112.1	487.7	554.1	686.7	642.1	686.7	640.6	487.7	635.4	59.6	23.7	61.6	465.0	420.3	14.9	591.8	655.0	423.4	299.5	227.5	11.3	502.0	478.1	323.3	54
55	.278	717.1	397.6	471.3	403.2	359.4	113.6	499.2	563.9	704.0	656.2	704.0	656.4	499.2	649.2	59.8	23.9	61.8	477.9	432.5	15.3	608.5	670.3	435.1	308.0	234.7	11.6	516.0	490.0	328.7	55
56	.276	735.0	407.5	481.5	410.9	365.7	115.1	510.7	573.6	721.3	670.3	721.3	672.1	510.7	662.9	60.0	24.0	62.0T	491.0	444.9	15.7	625.3	685.7	447.0	316.6	241.9	11.8	530.0	502.0	334.0	56
57	.275	752.9	417.3	491.8	418.6A	372.0	116.1	522.2	583.1	738.6	684.2	738.6	687.8	522.2	676.6	60.2	24.2	62.5L	504.2	457.4	16.1	642.1	701.0	459.0	325.3	249.3	12.1	544.1	513.9	339.3	57
58	.273	770.8	427.2	501.9	533.8T	525.1	330.0	533.8	592.5	755.8	698.0	755.8	703.4	533.8	690.1	60.4	24.4	63.1	517.5	470.0	16.5	659.0	716.2	471.2	334.1	256.7	12.4	558.3	525.8	344.6	58
59	.272	788.6	437.0	512.1	545.3	536.8	333.5	545.3	601.9	773.1	711.8	773.1	718.9	545.3	703.5	60.6	24.6	63.8	531.1	482.9	16.9	675.9	731.4	483.5	343.0	264.3	12.7	572.6	537.7	349.8	59
60	.270	806.5T	446.8	522.1	556.8T	548.5	336.9	556.8T	611.1	790.4T	725.6	790.4T	734.4	556.8T	715.9	60.8T	24.8T	64.4L	544.8L	495.8	17.3	692.8T	746.6	496.0L	352.0	272.0	13.0	586.9T	549.5	355.0	60

ONE LANE LIVE LOAD (H20-S16-44)

(Impact not included)

LOADING: TRUCK (T) ALTERNATIVE (A) LANE (L)



POSITIVE MOMENTS (kip foot)

MOMENTS AT 0.2 or 0.8 POINTS

SPAN IN FT.	IMPACT	SBM @CTR	FEM @B	FEM @C	SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B
61	.269	824.4T	456.6	532.2	568.3T	560.1	340.2	568.3T	620.2	807.7T	739.3	807.7T	749.9	568.3T	730.2
62	.267	842.3	466.3	542.2	579.8	571.7	343.4	579.8	629.3	825.0	752.9	825.0	765.3	579.8	743.4
63	.266	860.2	476.0	552.2	591.4	583.3	346.6	591.4	638.2	842.2	766.4	842.2	780.6	591.4	756.6
64	.265	878.1	485.7	562.1	602.9	594.8	349.7	602.9	647.1	859.5	780.0	859.5	795.0	602.9	769.6
65	.263	896.0	495.4	572.1	614.4	606.3	352.8	614.4	655.9	876.8	793.4	876.8	811.2	614.4	782.6
66	.262	913.9	505.1	581.9	625.9	617.7	355.8	625.9	664.6	894.1	806.9	894.1	826.5	625.9	795.6
67	.260	931.9	514.7	591.8	637.4	629.1	358.7	637.4	673.3	911.4	820.2	911.4	841.7	637.4	808.4
68	.259	949.8	524.4	601.6	649.0	640.4	361.7	649.0	681.9	928.6	833.6	928.6	856.8	649.0	821.3
69	.258	967.7	534.0	611.4	660.5	651.8	364.5	660.5	690.4	945.9	846.9	945.9	872.0	660.5	834.0
70	.256	985.6	543.6	621.2	672.0	663.0	367.4	672.0	698.9	963.2	860.2	963.2	887.0	672.0	846.7
71	.255	1004	553	631	684	674	370	684	707	980	873	980	902	684	859
72	.254	1021	563	641	695	685	373	695	716	998	887	998	917	695	872
73	.253	1039	572	650	707	697	376	707	724	1015	900	1015	932	707	884
74	.251	1057	582	660	718	708	378	718	732	1032	913	1032	947	718	897
75	.250	1075	591	670	730	719	381	730	740	1050	926	1050	962	730	909
76	.249	1093	601	679	741	730	384	741	749	1067	939	1067	977	741	922
77	.248	1111	610	689	753	741	386	753	757	1084	952	1084	992	753	934
78	.246	1129	620	699	764	752	389	764	765	1101	965	1101	1007	764	946
79	.245	1147	629	708	776	763	391	776	773	1119	978	1119	1021	776	959
80	.244	1165	639	718	787	774	394	787	781	1136	991	1136	1036	787	971
81	.243	1183	648	727	799	785	397	799	789	1153	1004	1153	1051	799	983
82	.241	1201	658	737	810	796	399	810	797	1171	1017	1171	1066	810	995
83	.240	1219	667	747	822	807	402	822	805	1188	1030	1188	1081	822	1007
84	.239	1237	677	756	833	817	404	833	813	1205	1043	1205	1095	833	1019
85	.238	1255	686	766	845	828	407	845	821	1222	1056	1222	1110	845	1032
86	.237	1273	695	775	856	839	409	856	829	1240	1068	1240	1125	856	1044
87	.235	1291	705	785	868	850	411	868	836	1257	1081	1257	1139	868	1056
88	.233	1308	714	794	879	861	414	879	844	1274	1094	1274	1154	879	1067
89	.234	1326	724	804	891	871	416	891	852	1292	1107	1292	1169	891	1079
90	.233	1344T	733	813	902T	882	419	902T	860	1309T	1120	1309T	1183	902T	1091

SIMPLE SPAN SHEARS & REACTIONS (kips)

SPAN IN FT.	END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS
61	61.0T	28.0T	65.0L
62	61.2	28.2	65.7
63	61.3	28.3	66.3
64	61.5	28.5	67.0
65	61.7	28.7	67.6
66	61.8	28.8	68.2
67	62.0	29.0	68.9
68	62.1	29.1	69.5
69	62.3	29.3	70.2
70	62.4	29.4	70.8
71	62.5	29.5	71.4
72	62.7	29.7	72.1
73	62.8	29.8	72.7
74	62.9	29.9	73.4
75	63.0	27.0	74.0
76	63.2	27.2	74.6
77	63.3	27.3	75.3
78	63.4	27.4	75.9
79	63.5	27.5	76.6
80	63.6	27.6	77.2
81	63.7	27.7	77.8
82	63.8	27.8	78.5
83	63.9	27.9	79.1
84	64.0	28.0	79.8
85	64.1	28.1	80.4
86	64.2	28.2	81.0
87	64.3	28.3	81.7
88	64.4	28.4	82.3
89	64.4	28.4	83.0
90	64.5T	28.5T	83.6L

NEGATIVE MOMENTS (kip foot)

SPAN IN FT.	SBM @.42L	FEM @B	CL FT	SBM @CL	FEM @B	SBM @.33L	FEM @B	FEM @C	CL FT	SBM @CL	FEM @B	FEM @C
61	558.6L	509.0	17.7	709.8T	761.7	508.6L	361.1	279.8	13.3	601.4T	561.3	360.2
62	572.6	522.3	18.1	726.7	776.8	521.4	370.3	287.7	13.6	615.8	573.1	365.4
63	586.5	535.6	18.5	743.7	791.9	534.2	379.7	295.7	13.9	630.4	584.9	370.6
64	601.1	549.4	18.9	760.8	806.9	547.3	389.1	303.8	14.2	645.0	596.7	375.7
65	615.5	563.2	19.3	777.8	821.9	560.4	398.7	312.0	14.4	659.6	608.4	380.9
66	630.2	577.1	19.7	794.9	836.8	573.6	408.3	320.3	14.7	674.3	620.1	386.0
67	645.0	591.2	20.1	811.9	851.8	587.2	418.1	328.7	15.0	689.1	631.8	391.2
68	659.9	605.5	20.5	829.0	866.7	600.8	427.9	337.3	15.3	703.8	643.5	396.3
69	675.0	619.9	20.9	846.2	881.5	614.6	437.9	345.9	15.6	718.7	655.1	401.4
70	690.2	634.5	21.3	863.3	896.4	628.4	448.0	354.7	15.9	733.5	666.7	406.5
71	706	649	21.6	880	911	642	458	364	16.3	748	678	412
72	721	664	22.2	898	926	657	468	372	16.6	763	690	417
73	737	679	22.6	915	941	671	479	382	16.9	778	701	422
74	753	694	23.0	932	956	685	489	394	17.2	793	713	427
75	769	710	23.4	949	970	700	500	400	17.5	808	725	432
76	785	725	23.8	966	985	715	511	409	17.8	824	736	437
77	801	741	24.2	984	1000	730	522	419	18.1	839	748	442
78	818	757	24.6	1001	1014	745	532	428	18.4	854	759	447
79	835	773	25.0	1018	1029	760	544	438	18.7	869	771	452
80	851	789	25.4	1035	1044	775	555	448	19.0	884	782	456
81	868	805	25.8	1053	1058	791	566	458	19.3	899	793	463
82	885	822	26.2	1070	1073	806	577	468	19.6	915	805	468
83	903	839	26.7	1087	1087	822	589	478	20.0	930	816	473
84	920	855	27.1	1104	1102	838	600	488	20.3	945	826	478
85	938	872	27.5	1116	1116	854	612	499	20.6	960	839	483
86	955	890	27.9	1139	1131	870	624	509	20.9	976	850	488
87	973	907	28.3	1156	1146	886	636	520	21.2	991	862	493
88	991	924	28.7	1174	1160	903	648	530	21.5	1006	873	498
89	1010	942	29.1	1191	1175	919	660	541	21.8	1022	884	504
90	1028L	960	29.6	1208T	1189	936L	672	552	22.2	1037T	896	509

ONE LANE LIVE LOAD (H20–S16–44)

(Impact not included)

LOADING: TRUCK (T), ALTERNATIVE (A), LANE (L)

SPAN IN FT.	IMPACT	POSITIVE MOMENTS (kip feet) SBM @CTR	FEM @B	FEM @C	MOMENTS AT 0.2 or 0.8 POINTS SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B	SIMPLE SPAN SHEARS & REACTIONS (kips) END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	NEGATIVE MOMENTS (kip feet) SBM @.42L	FEM @B	℄L FT	SBM @℄L	FEM @B	SBM @.33L	FEM @B	FEM @C	℄L FT	SBM @℄L	FEM @B	FEM @C	SPAN IN FT.
91	.231	1362T	742	823	914T	893	421	914T	867	1326T	1132	1326T	1198	914T	1103	64.6T	28.6T	84.2L	1047L	978	30.0	1226T	1203	953L	684	563	22.5	1052T	907	514	91
92	.230	1380	752	832	925	903	424	925	875	1343	1145	1343	1212	925	1115	64.7	28.7	84.9	1065	996	30.4	1243	1218	970	697	574	22.8	1068	918	519	92
93	.229	1398	761	841	937	914	426	937	883	1361	1158	1361	1227	937	1127	64.8	28.8	85.5	1084	1014	30.8	1260	1232	987	709	585	23.1	1083	929	524	93
94	.228	1416	770	851	948	924	428	948	890	1378	1171	1378	1242	948	1138	64.9	28.9	86.2	1103	1033	31.2	1278	1247	1004	722	597	23.4	1099	941	529	94
95	.227	1434	780	860	960	935	431	960	898	1395	1183	1395	1256	960	1150	64.9	28.9	86.8	1122	1051	31.6	1295	1261	1022	735	608	23.7	1114	952	534	95
96	.226	1452	789	870	972	945	433	972	906	1412	1196	1412	1271	972	1162	65.0	29.0	87.4	1142	1070	32.0	1313	1276	1039	748	620	24.1	1130	963	539	96
97	.225	1470	798	879	983	956	435	983	913	1430	1209	1430	1285	983	1174	65.1	29.1	88.1	1161	1089	32.4	1330	1290	1057	760	631	24.4	1145	974	544	97
98	.224	1488	808	888	995	966	438	995	921	1447	1221	1447	1300	995	1185	65.1	29.1	88.7	1181	1108	32.9	1347	1304	1075	774	643	24.7	1161	986	550	98
99	.223	1506	817	898	1006	977	440	1006	929	1464	1234	1464	1314	1006	1197	65.2	29.2	89.4	1200	1127	33.3	1365	1319	1093	787	655	25.0	1176	997	555	99
100	.222	1524	826	907	1018	987	442	1018	936	1482	1247	1482	1329	1018	1209	65.3	29.3	90.0	1220	1146	33.7	1382	1333	1111	800	667	25.3	1192	1008	560	100
101	.221	1542	836	916	1029	998	445	1029	944	1499	1259	1499	1343	1029	1220	65.3	29.3	90.6	1240	1166	34.1	1399	1347	1129	813	679	25.7	1207	1019	565	101
102	.220	1560	845	926	1041	1008	447	1041	951	1516	1272	1516	1357	1041	1232	65.4	29.4	91.3	1261	1186	34.5	1417	1362	1148	827	691	26.0	1223	1030	570	102
103	.219	1578	854	935	1052	1019	449	1052	959	1533	1284	1533	1372	1052	1243	65.5	29.5	91.9	1281	1206	34.9	1434	1376	1166	840	703	26.3	1238	1042	575	103
104	.218	1596	863	945	1064	1029	452	1064	966	1551	1297	1551	1386	1064	1255	65.5	29.5	92.6	1302	1226	35.4	1452	1391	1185	854	716	26.6	1254	1053	580	104
105	.217	1614	873	954	1075	1039	454	1075	974	1568	1310	1568	1401	1075	1266	65.6	29.6	93.2	1322	1245	35.8	1469	1405	1204	868	728	26.9	1269	1064	586	105
106	.216	1632	882	963	1087	1050	456	1087	981	1585	1322	1585	1415	1087	1278	65.7	29.7	93.8	1343	1266	36.2	1487	1419	1223	882	741	27.3	1285	1075	591	106
107	.216	1650	891	973	1098	1060	459	1098	989	1603	1335	1603	1430	1098	1289	65.7	29.7	94.5	1364	1287	36.6	1504	1433	1242	896	753	27.6	1301	1086	596	107
108	.215	1668	900	982	1110	1070	461	1110	996	1620	1347	1620	1444	1110	1301	65.8	29.8	95.1	1386	1307	37.0	1521	1448	1261	910	766	27.9	1316	1097	601	108
109	.214	1686	910	991	1121	1081	463	1121	1003	1637	1360	1637	1458	1121	1312	65.8	29.8	95.8	1407	1328	37.4	1539	1462	1281	924	779	28.2	1332	1109	606	109
110	.213	1704	919	1000	1133	1091	465	1133	1011	1654	1372	1654	1473	1133	1324	65.9	29.9	96.4	1428	1349	37.8	1556	1476	1300	939	792	28.5	1347	1120	611	110
111	.212	1722	928	1010	1144	1101	468	1144	1018	1672	1385	1672	1487	1144	1335	65.9	29.9	97.0	1450	1370	38.3	1574	1491	1320	953	805	28.9	1363	1131	617	111
112	.211	1740	937	1019	1156	1111	470	1156	1026	1689	1397	1689	1501	1156	1346	66.0	30.0	97.7	1472	1391	38.7	1591	1505	1340	968	818	29.2	1379	1142	622	112
113	.210	1757	947	1028	1167	1122	472	1167	1033	1706	1410	1706	1516	1167	1358	66.1	30.1	98.3	1494	1413	39.1	1609	1519	1360	982	832	29.5	1394	1153	627	113
114	.209	1775	956	1038	1179	1132	475	1179	1041	1724	1423	1724	1530	1179	1369	66.1	30.1	99.0	1516	1435	39.5	1626	1533	1380	997	845	29.8	1410	1164	632	114
115	.208	1793	965	1047	1190	1142	477	1190	1048	1741	1435	1741	1544	1190	1381	66.2	30.2	99.6	1538	1456	39.9	1643	1548	1400	1012	859	30.2	1426	1175	637	115
116	.207	1811	974	1056	1202	1152	479	1202	1055	1758	1447	1758	1559	1202	1392	66.2	30.2	100.2	1561	1478	40.3	1661	1562	1421	1027	872	30.5	1441	1186	642	116
117	.207	1829	984	1065	1213	1162	481	1213	1063	1775	1460	1775	1573	1213	1403	66.3	30.3	100.9	1583	1500	40.8	1678	1576	1441	1042	886	30.8	1457	1197	647	117
118	.206	1847	993	1075	1225	1173	484	1225	1070	1793	1472	1793	1587	1225	1414	66.3	30.3	101.5	1606	1523	41.2	1696	1590	1462	1057	900	31.1	1473	1208	653	118
119	.205	1865	1002	1084	1236	1183	486	1236	1077	1810	1485	1810	1602	1236	1426	66.4	30.4	102.2	1629	1545	41.6	1713	1605	1483	1073	914	31.4	1488	1219	658	119
120	.204	1883T	1011	1093	1248T	1193	488	1248T	1085	1827T	1497	1827T	1616	1248T	1437	66.4T	30.4T	102.8L	1652L	1568	42.0	1731T	1619	1504L	1088	928	31.8	1504T	1230	663	120

ONE LANE LIVE LOAD (H20-S16-44)

(Impact not included)

LOADING: TRUCK (T) ALTERNATIVE (A) LANE (L) — w = 0.64 k/ft

SPAN IN FT.	IMPACT	POSITIVE MOMENTS (kip feet) SBM @CTR	FEM @B	FEM @C	MOMENTS AT 0.2 or 0.8 POINTS SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B	SIMPLE SPAN SHEARS & REACTIONS (kips) END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	NEGATIVE MOMENTS (kip feet) SBM @.42L	FEM @B	oL FT	SBM @oL	FEM @B	SBM @.33L	FEM @B	FEM @C	oL FT	SBM @oL	FEM @B	FEM @C	SPAN IN FT.
121	.203	1901T	1021	1102	1260T	1203	490	1260T	1092	1844T	1510	1844T	1630	1260T	1448	66.4T	30.4T	103.4L	1675L	1590	42.4	1748T	1633	1525L	1104	942	32.1	1520T	1242	668	121
122	.202	1919	1030	1112	1271	1213	493	1271	1099	1862	1522	1862	1644	1271	1459	66.5	30.5	104.1	1698	1613	42.9	1766	1647	1546	1119	956	32.4	1535	1253	673	122
123	.202	1937	1039	1121	1283	1223	495	1283	1107	1879	1535	1879	1659	1283	1471	66.5	30.5	104.7	1722	1636	43.3	1783	1661	1568	1135	971	32.7	1551	1264	679	123
124	.201	1955	1048	1130	1294	1233	497	1294	1114	1896	1547	1896	1673	1294	1482	66.6	30.6	105.3	1746	1660	43.7	1801	1676	1589	1151	985	33.1	1567	1275	684	124
125	.200	1973	1057	1139	1306	1243	499	1306	1121	1914	1560	1914	1687	1306	1493	66.6	30.6	106.0	1770	1683	44.1	1818T	1690	1611	1167	1000	33.4	1582	1286	689	125
126	.199	1991	1067	1149	1317	1253	502	1317	1128	1931	1572	1931	1701	1317	1504	66.7	30.7	106.6	1794	1707				1633	1183	1015	33.7	1598	1297	694	126
127	.198	2009	1076	1158	1329	1264	504	1329	1136	1948	1584	1948	1716	1329	1515	66.7T	30.7	107.3	1818	1730				1655	1199	1030	34.0	1614	1308	699	127
128	.198	2027	1085	1167	1340	1274	506	1340	1143	1965	1597	1965	1730	1340	1527	67.0L	30.8	107.9	1842	1754				1677	1215	1044	34.4	1630	1319	704	128
129	.197	2045	1094	1176	1352	1284	508	1352	1150	1983	1609	1983	1744	1352	1538	67.3	30.8	108.6	1866	1778				1699	1232	1060	34.7	1645	1330	710	129
130	.196	2063	1103	1185	1363	1294	511	1363	1157	2000	1622	2000	1758	1363	1549	67.6	30.8	109.2	1891	1802				1722	1248	1075	35.0	1661	1341	715	130
131	.195	2081	1112	1195	1375	1304	513	1375	1165	2017	1634	2017	1772	1375	1560	67.9	30.9	109.8	1916	1827				1744	1265	1090	35.3	1677	1352	720	131
132	.195	2099	1122	1204	1386	1314	515	1386	1172	2035	1647	2035	1787	1386	1571	68.2	30.9	110.5	1941	1851				1767	1281	1105	35.7	1693	1363	725	132
133	.194	2117	1131	1213	1398	1324	517	1398	1179	2052	1659	2052	1801	1398	1582	68.6	30.9	111.1	1966	1876				1790	1298	1121	36.0	1708	1374	730	133
134	.193	2135	1140	1222	1409	1334	520	1409	1186	2069	1671	2069	1815	1409	1593	68.9	31.0	111.8	1991	1901				1813	1315	1136	36.3	1724	1385	736	134
135	.192	2153	1149	1231	1421	1344	522	1421	1194	2086	1684	2086	1829	1421	1605	69.2	31.0	112.4	2017	1926				1836	1332	1152	36.6	1740	1396	741	135
136	.192	2171	1158	1241	1432	1354	524	1432	1201	2104	1696	2104	1843	1432	1616	69.5	31.1	113.0	2042	1951				1859	1349	1168	37.0	1756	1407	746	136
137	.191	2189	1168	1250	1444	1363	526	1444	1208	2121	1708	2121	1858	1444	1627	69.8	31.1	113.7	2068	1976				1883	1366	1184	37.3	1771	1418	751	137
138	.190	2207	1177	1259	1455	1373	529	1455	1215	2138	1721	2138	1872	1455	1638	70.2	31.1	114.3	2094	2002				1906	1384	1200	37.6	1787	1429	756	138
139	.189	2225	1186	1268	1467	1383	531	1467	1223	2156	1733	2156	1886	1467	1649	70.5	31.2	115.0	2120	2027				1930	1401	1216	38.0	1803	1440	762	139
140	.189	2243	1195	1277	1478	1393	533	1478	1230	2173	1746	2173	1900	1478	1660	70.8	31.2	115.6	2146	2053				1954	1419	1232	38.3	1819	1450	767	140
141	.188	2261	1204	1287	1490	1403	535	1490	1237	2190	1758	2190	1914	1490	1671	71.1	31.2	116.2	2172	2079				1978	1436	1248	38.6	1834	1461	772	141
142	.187	2279	1213	1296	1501	1413	538	1501	1244	2207	1770	2207	1928	1501	1682	71.4	31.3	116.9	2199	2105				2002	1454	1265	38.9	1850	1472	777	142
143	.187	2297	1222	1305	1513	1423	540	1513	1251	2225	1783	2225	1943	1513	1693	71.8	31.3	117.5	2225	2131				2026	1472	1281	39.3	1866	1483	783	143
144	.186	2315	1232	1314	1524	1433	542	1524	1259	2242	1795	2242	1957	1524	1704	72.1	31.3	118.2	2252	2158				2051	1490	1298	39.6	1882T	1494	787	144
145	.185	2333	1241	1323	1536	1443	544	1536	1266	2259	1807	2259	1971	1536	1715	72.4	31.4	118.8	2279	2184				2075	1508	1315					145
146	.185	2351	1250	1332	1548	1453	547	1548	1273	2276	1820	2276	1985	1548	1726	72.7	31.4	119.4	2306	2211				2100	1526	1332					146
147	.184	2369	1259	1342	1559	1463	549	1559	1280	2294	1832	2294	1999	1559	1737	73.0	31.4	120.1	2334	2238				2125	1544	1348					147
148	.183	2387	1268	1351	1571	1472	551	1571	1287	2311	1844	2311	2013	1571	1748	73.4	31.5	120.7	2361	2265				2150	1563	1366					148
149	.182	2405	1277	1360	1582	1482	553	1582	1294	2328	1857	2328	2027	1582	1759	73.7	31.5	121.4	2389	2292				2175	1581	1383					149
150	.182	2423T	1286	1369	1594T	1492	556	1594T	1302	2346T	1869	2346T	2041	1594T	1770	74.0L	31.5T	122.0L	2416L	2320				2200L	1600	1400					150

ONE LANE LIVE LOAD (H20-S16-44)

(Impact not included)

LOADING: TRUCK (T) / ALTERNATIVE (A) / LANE (L) — w = 0.64 k/ft

POSITIVE MOMENTS (kip feet)

MOMENTS AT 0.2 or 0.8 POINTS

SPAN IN FT.	IMPACT	SBM @CTR	FEM @B	FEM @C	SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B
151	.181	2441T	1296	1378	1605T	1502	559	1605T	1309	2363T	1881	2363T	2056	1605T	1781
152	.181	2459	1305	1387	1617	1512	560	1617	1316	2380	1894	2380	2070	1617	1792
153	.180	2477	1314	1397	1628	1522	562	1628	1323	2397	1906	2397	2084	1628	1803
154	.179	2495	1323	1406	1640	1531	564	1640	1330	2415	1918	2415	2098	1640	1814
155	.179	2513	1332	1415	1651	1541	567	1651	1337	2432T	1931	2432	2112	1651	1825
156	.178	2531	1341	1424	1663	1551	569	1663	1344	2543L	2419	2449T	2126	1663	1835
157	.177	2548	1350	1433	1674	1561	571	1674	1352	2571	2447	2571L	2515	1674	1846
158	.177	2566	1360	1442	1686	1571	573	1686	1359	2600	2475	2600	2543	1686	1857
159	.176	2584	1369	1451	1697	1580	576	1697	1366	2628	2503	2628	2572	1697	1868
160	.175	2602	1378	1461	1709	1590	578	1709	1373	2657	2532	2657	2601	1709	1879
161	.175	2620	1387	1470	1720	1600	580	1720	1380	2686	2561	2686	2630	1720	1890
162	.174	2638	1396	1479	1732	1610	582	1732	1387	2715	2589	2715	2659	1732	1901
163	.174	2656	1405	1488	1743	1619	585	1743	1394	2745	2618	2745	2689	1743	1912
164	.173	2674T	1414	1497	1755	1629	587	1755T	1401	2774	2648	2774	2718	1755	1923
165	.172	2921L	1823	1823	1766	1639	589	1869L	2463	2804	2677	2804	2748	1766	1933
166	.172	2951	1843	1843	1778	1649	591	1889	2491	2833	2706	2833	2776	1778	1944
167	.171	2983	1863	1863	1789	1658	594	1909	2520	2863	2736	2863	2808	1789	1955
168	.171	3014	1883	1883	1801	1668	596	1929	2548	2893	2766	2893	2839	1801	1966
169	.170	3045	1904	1904	1812	1678	598	1949	2577	2924	2796	2924	2869	1812	1977
170	.169	3077	1924	1924	1824	1688	600	1969	2606	2954	2826	2954	2900	1824	1988
171	.169	3109	1944	1944	1836	1697	602	1990	2635	2984	2856	2984	2930	1836	1999
172	.168	3141	1965	1965	1847	1707	605	2010	2664	3015	2887	3015	2961	1847	2009
173	.168	3173	1985	1985	1859	1717	607	2031	2693	3046	2917	3046	2992	1859	2020
174	.167	3205	2006	2006	1870	1726	609	2051	2723	3077	2948	3077	3023	1870	2031
175	.167	3238	2027	2027	1882	1736	611	2072	2752	3108	2979	3108	3055	1882	2042
176	.166	3270	2048	2048	1893	1746	614	2093	2782	3139	3010	3139	3086	1893	2053
177	.166	3303	2069	2069	1905	1755	616	2114	2812	3171	3042	3171	3118	1905	2063
178	.165	3336	2090	2090	1916	1765	618	2135	2842	3202	3073	3202	3150	1916	2074
179	.164	3369	2112	2112	1928	1775	620	2156	2873	3234	3105	3234	3182	1928	2085
180	.164	3402L	2133	2133	1939T	1784	623	2177L	2903	3266L	3136	3266L	3214	1939T	2096

SIMPLE SPAN SHEARS & REACTIONS (kips)

SPAN IN FT.	END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS
151	74.3L	31.5T	122.6L
152	74.6	31.6	123.3
153	75.0	31.6	123.9
154	75.3	31.6	124.6
155	75.6	31.7	125.2
156	75.9	31.7	125.8
157	76.2	31.7	126.5
158	76.6	31.7	127.1
159	76.9	31.8	127.8
160	77.2	31.8	128.4
161	77.5	31.8	129.0
162	77.8	31.9	129.7
163	78.2	31.9	130.3
164	78.5	31.9	131.0
165	78.8	31.9	131.6
166	79.1	32.0	132.2
167	79.4	32.0	132.9
168	79.8	32.0	133.5
169	80.1	32.0	134.2
170	80.4	32.0	134.8
171	80.7	32.1	135.4
172	81.0	32.1	136.1
173	81.4	32.1	136.7
174	81.7	32.1	137.4
175	82.0	32.2	138.0
176	82.3	32.2	138.6
177	82.6	32.2	139.3
178	83.0	32.2	139.9
179	83.3	32.2	140.6
180	83.6L	32.3T	141.2L

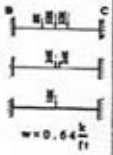
NEGATIVE MOMENTS (kip feet)

SPAN IN FT.	SBM @.42L	FEM @B	dL FT	SBM @dL	FEM @B	SBM @.33L	FEM @B	FEM @C	dL FT	SBM @dL	FEM @B	FEM @C
151	2444L	2347				2225L	1619	1417				
152	2472	2375				2251	1638	1435				
153	2500	2403				2277	1656	1452				
154	2529	2431				2302	1676	1470				
155	2557	2459				2328	1695	1488				
156	2586	2487				2353	1714	1506				
157	2615	2516				2381	1733	1524				
158	2644	2544				2407	1753	1542				
159	2673	2573				2434	1772	1560				
160	2702	2602				2460	1792	1579				
161	2732	2631				2487	1812	1597				
162	2761	2661				2514	1832	1616				
163	2791	2690				2541	1852	1634				
164	2821	2720				2569	1872	1653				
165	2851	2750				2596	1892	1672				
166	2881	2780				2624	1912	1691				
167	2912	2810				2651	1933	1710				
168	2942	2840				2679	1953	1729				
169	2973	2870				2707	1974	1749				
170	3004	2901				2735	1995	1768				
171	3035	2932				2763	2016	1788				
172	3066	2963				2792	2036	1807				
173	3098	2994				2820	2058	1827				
174	3129	3025				2849	2079	1847				
175	3161	3056				2878	2100	1867				
176	3193	3088				2907	2121	1887				
177	3224	3119				2936	2143	1907				
178	3257	3151				2965	2164	1927				
179	3289	3183				2994	2186	1948				
180	3321L	3216				3024L	2208	1968				

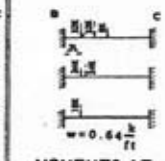
ONE LANE LIVE LOAD (H20–S16–44)

(Impact not included)

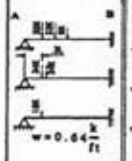
LOADING: TRUCK (T) ALTERNATIVE (A) LANE (L)

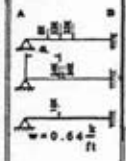


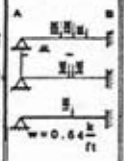
POSITIVE MOMENTS (kip feet)

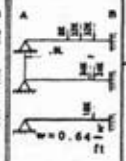


MOMENTS AT 0.2 or 0.8 POINTS



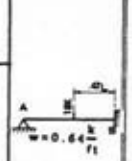


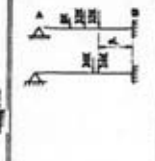


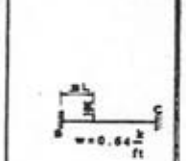


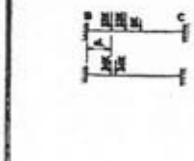
SIMPLE SPAN SHEARS & REACTIONS (kips)

NEGATIVE MOMENTS (kip feet)







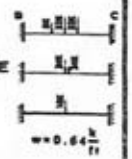


SPAN IN FT.	IMPACT	SBM @CTR	FEM @B	FEM @C	SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B	END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	SBM @.42L	FEM @B	oL FT	SBM @oL	FEM @B	SBM @.33L	FEM @B	FEM @C	oL FT	SBM @oL	FEM @B	FEM @C	SPAN IN FT.
181	.163	3435L	2155	2155	1951T	1794	625	2199L	2934	3298L	3168	3298L	3246	1951T	2107	83.9L	32.3T	141.8L	3354L	3248				3054L	2230	1989					181
182	.163	3469	2176	2176	1962	1804	627	2220	2964	3330	3200	3330	3279	1962	2117	84.3	32.3	142.5	3387	3280				3083	2252	2009					182
183	.162	3503	2198	2198	1974	1813	629	2242	2995	3363	3233	3363	3312	1974	2128	84.6	32.3	143.1	3420	3313				3113	2274	2030					183
184	.162	3536	2220	2220	1985	1823	632	2263	3026	3395	3265	3395	3344	1985	2139	84.9	32.3	143.8	3453	3346				3144	2296	2051					184
185	.161	3571	2242	2242	1997	1833	634	2285	3058	3428	3297	3428	3377	1997	2150	85.2	32.4	144.4	3486	3379				3174	2319	2072					185
186	.161	3605	2264	2264	2008	1842	636	2307	3089	3460	3330	3460	3410	2008	2160	85.5	32.4	145.0	3519	3412				3204	2341	2093					186
187	.160	3639	2286	2286	2020	1852	638	2329	3121	3493	3363	3493	3444	2020	2171	85.8	32.4	145.7	3553	3445				3235	2364	2114					187
188	.160	3674	2308	2308	2031	1862	641	2351	3152	3527	3396	3527	3477	2031	2182	86.2	32.4	146.3	3586	3479				3265	2386	2136					188
189	.159	3708	2330	2330	2043	1871	643	2373	3184	3560	3429	3560	3511	2043	2193	86.5	32.4	147.0	3620	3512				3296	2409	2157					189
190	.159	3743	2353	2353	2054	1881	645	2396	3216	3593	3463	3593	3545	2054	2203	86.8	32.5	147.6	3654	3546				3327	2432	2179					190
191	.158	3778	2375	2375	2066	1891	647	2418	3249	3627	3496	3627	3579	2066	2214	87.1	32.5	148.2	3688	3580				3358	2455	2200					191
192	.158	3813	2398	2398	2077	1900	650	2440	3281	3661	3530	3661	3613	2077	2225	87.4	32.5	148.9	3723	3614				3389	2478	2222					192
193	.157	3848	2421	2421	2089	1910	652	2463	3313	3694	3564	3694	3647	2089	2236	87.8	32.5	149.5	3757	3648				3421	2501	2244					193
194	.157	3884	2444	2444	2100	1919	654	2486	3346	3729	3598	3729	3681	2100	2246	88.1	32.5	150.2	3792	3683				3452	2525	2266					194
195	.156	3920	2467	2467	2112	1929	656	2508	3379	3763	3632	3763	3716	2112	2257	88.4	32.6	150.8	3827	3717				3484	2548	2288					195
196	.156	3955	2490	2490	2124	1939	658	2531	3412	3797	3666	3797	3751	2124	2268	88.7	32.6	151.4	3861	3752				3516	2572	2310					196
197	.155	3991	2513	2513	2135	1948	661	2554	3445	3832	3700	3832	3786	2135	2279	89.0	32.6	152.1	3897	3787				3548	2595	2332					197
198	.155	4027	2536	2536	2147	1958	663	2577	3478	3866	3735	3866	3821	2147	2289	89.4	32.6	152.7	3932	3822				3580	2619	2355					198
199	.154	4064	2560	2560	2158	1967	665	2601	3512	3901	3770	3901	3856	2158	2300	89.7	32.6	153.4	3967	3857				3612	2643	2377					199
200	.154	4100	2583	2583	2170	1977	667	2624	3546	3936	3805	3936	3891	2170	2311	90.0	32.6	154.0	4003	3893				3644	2667	2400					200
201	.153	4137	2607	2607	2181	1987	670	2647	3579	3971	3840	3971	3927	2181	2321	90.3	32.7	154.6	4038	3928				3677	2691	2423					201
202	.153	4173	2631	2631	2193	1996	672	2671	3613	4006	3875	4006	3962	2193	2332	90.6	32.7	155.3	4074	3964				3710	2715	2446					202
203	.152	4210	2655	2655	2204	2006	674	2695	3646	4042	3911	4042	3998	2204	2343	91.0	32.7	155.9	4110	4000				3742	2739	2468					203
204	.152	4247	2679	2679	2216	2015	676	2718	3682	4077	3946	4077	4034	2216	2354	91.3	32.7	156.6	4147	4036				3775	2764	2492					204
205	.152	4285	2703	2703	2227	2025	679	2742	3716	4113	3982	4113	4070	2227	2364	91.6	32.7	157.2	4183	4072				3808	2788	2515					205
206	.151	4322	2727	2727	2239	2034	681	2766	3751	4149	4018	4149	4107	2239	2375	91.9	32.7	157.8	4219	4108				3842	2813	2538					206
207	.151	4359	2751	2751	2250	2044	683	2790	3786	4185	4054	4185	4143	2250	2386	92.3	32.8	158.5	4256	4145				3875	2837	2561					207
208	.150	4397	2775	2775	2262	2054	685	2814	3821	4221	4090	4221	4180	2262	2396	92.6	32.8	159.1	4293	4182				3909	2862	2585					208
209	.150	4435	2800	2800	2273	2063	688	2838	3856	4258	4126	4258	4217	2273	2407	92.9	32.8	159.8	4330	4218				3942	2887	2608					209
210	.149	4473L	2824	2824	2285T	2073	690	2863L	3891	4294L	4163	4294L	4254	2285T	2418	93.2L	32.8T	160.4L	4367L	4255				3976L	2912	2632					210

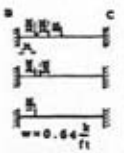
ONE LANE LIVE LOAD (H20–S16–44)

(Impact not included)

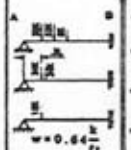
LOADING: TRUCK (T) ALTERNATIVE (A) LANE (L)

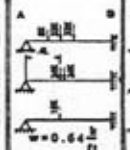


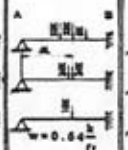
POSITIVE MOMENTS (kip foot)

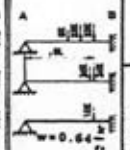


MOMENTS AT 0.2 or 0.8 POINTS



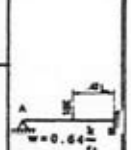


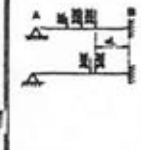


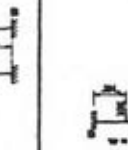


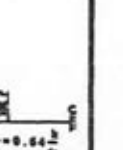
SIMPLE SPAN SHEARS & REACTIONS (kips)

NEGATIVE MOMENTS (kip foot)







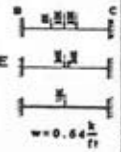


SPAN IN FT.	IMPACT	SBM @CTR	FEM @B	FEM @C	SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B	END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	SBM @.42L	FEM @B	aL FT	SBM @aL	FEM @B	SBM @.33L	FEM @B	FEM @C	aL FT	SBM @aL	FEM @B	FEM @C	SPAN IN FT.
211	.149	4811L	2849	2849	2296T	2062	692	2887L	3926	4331L	4200	4331L	4291	2296T	2428	93.8L	32.8T	161.0L	4404L	4293				4010L	2937	2656					211
212	.148	4850	2874	2874	2308	2092	694	2912	3962	4368	4237	4368	4328	2306	2439	93.8	32.8	161.7	4442	4330				4044	2962	2680					212
213	.148	4888	2899	2899	2319	2101	697	2936	3998	4404	4274	4404	4366	2319	2450	94.2	32.8	162.3	4479	4367				4078	2988	2704					213
214	.147	4927	2924	2924	2331	2111	699	2961	4033	4442	4311	4442	4403	2331	2460	94.6	32.9	163.0	4517	4406				4113	3013	2728					214
215	.147	4966	2949	2949	2342	2120	701	2986	4070	4479	4348	4479	4441	2342	2471	94.8	32.9	163.6	4555	4443				4147	3039	2752					215
216	.147	4704	2974	2974	2354	2130	703	3011	4106	4516	4386	4516	4479	2354	2482	95.1	32.9	164.2	4593	4481				4182	3064	2776					216
217	.146	4744	3000	3000	2365	2140	706	3036	4142	4554	4423	4554	4517	2365	2492	95.4	32.9	164.9	4631	4519				4217	3090	2801					217
218	.146	4783	3025	3025	2377	2149	708	3061	4179	4592	4461	4592	4555	2377	2503	95.8	32.9	165.5	4669	4557				4251	3116	2825					218
219	.145	4822	3051	3051	2388	2159	710	3086	4215	4629	4499	4629	4594	2388	2514	96.1	32.9	166.2	4708	4596				4287	3142	2850					219
220	.145	4862	3076	3076	2400	2168	712	3112	4252	4668	4537	4668	4632	2400T	2524	96.4	32.9	166.8	4747	4634				4322	3168	2875					220
221	.145	4902	3102	3102	2412	2178	715	3137	4289	4706	4576	4706	4671	3137L	4480	96.7	33.0	167.4	4786	4673				4357	3194	2900					221
222	.144	4942	3128	3128	2423	2187	717	3163	4326	4744	4614	4744	4710	3163	4518	97.0	33.0	168.1	4825	4712				4393	3220	2924					222
223	.144	4982	3154	3154	2435	2197	719	3188	4364	4783	4653	4783	4749	3188	4556	97.4	33.0	168.7	4864	4751				4428	3247	2950					223
224	.143	5022	3180	3180	2446	2206	721	3214	4401	4821	4691	4821	4788	3214	4595	97.7	33.0	169.4	4903	4790				4464	3273	2975					224
225	.143	5063	3206	3206	2458	2216	724	3240	4439	4860	4730	4860	4828	3240	4633	98.0	33.0	170.0	4942	4829				4500	3300	3000					225
226	.142	5103	3233	3233	2469	2225	726	3266	4477	4899	4770	4899	4867	3266	4672	98.3	33.0	170.6	4982	4869				4536	3327	3025					226
227	.142	5144	3259	3259	2481	2235	728	3292	4515	4938	4809	4938	4907	3292	4711	98.6	33.0	171.3	5022	4909				4572	3354	3051					227
228	.142	5185	3285	3285	2492	2244	730	3318	4553	4977	4848	4977	4947	3318	4750	99.0	33.1	171.9	5062	4949				4609	3380	3076					228
229	.141	5226	3312	3312	2504	2254	733	3344	4591	5017	4888	5017	4987	3344	4789	99.3	33.1	172.6	5102	4989				4645	3408	3102					229
230	.141	5267	3339	3339	2515	2263	735	3371	4629	5056	4928	5056	5027	3371	4828	99.6	33.1	173.2	5142	5029				4682	3435	3128					230
231	.140	5308	3366	3366	2527	2273	737	3397	4668	5096	4967	5096	5067	3397	4868	99.9	33.1	173.8	5182	5069				4719	3462	3154					231
232	.140	5350	3393	3393	2538	2282	739	3424	4707	5136	5007	5136	5108	3424	4907	100.2	33.1	174.5	5223	5110				4755	3489	3180					232
233	.140	5392	3420	3420	2550	2292	742	3451	4746	5176	5048	5176	5148	3451	4947	100.5	33.1	175.1	5264	5150				4793	3517	3206					233
234	.139	5433	3447	3447	2561	2301	744	3477	4785	5216	5088	5216	5189	3477	4987	100.9	33.1	175.8	5305	5191				4830	3544	3232					234
235	.139	5476	3474	3474	2573	2311	746	3504	4824	5256	5129	5256	5230	3504	5027	101.2	33.1	176.4	5346	5232				4867	3572	3259					235
236	.139	5518	3501	3501	2584	2320	748	3531	4863	5297	5169	5297	5271	3531	5067	101.5	33.2	177.0	5387	5273				4905	3600	3285					236
237	.138	5560	3529	3529	2596	2330	751	3558	4903	5338	5210	5338	5313	3558	5108	101.8	33.2	177.7	5428	5315				4942	3628	3312					237
238	.138	5603	3557	3557	2607	2339	753	3586	4943	5378	5251	5378	5354	3586	5148	102.2	33.2	178.3	5470	5358				4980	3656	3338					238
239	.137	5645	3584	3584	2619	2349	755	3613	4983	5419	5292	5419	5396	3613	5189	102.5	33.2	179.0	5511	5399				5018	3684	3365					239
240	.137	5688L	3612	3612	2630T	2358	757	3640L	5023	5460L	5334	5460L	5437	3640L	5230	102.8L	33.2T	179.6L	5553L	5439				5056L	3712	3392					240

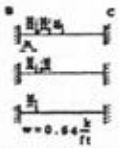
ONE LANE LIVE LOAD (H20–S16–44)

(Impact not included)

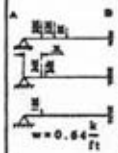
LOADING: TRUCK (T) ALTERNATIVE (A) LANE (L)

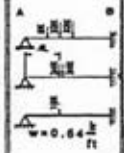


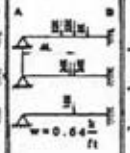
POSITIVE MOMENTS (kip feet)

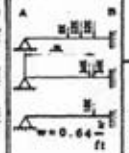


MOMENTS AT 0.2 or 0.8 POINTS



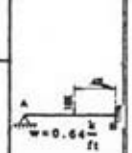


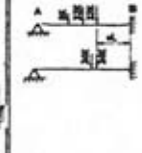


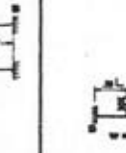


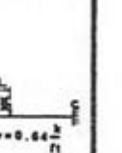
SIMPLE SPAN SHEARS & REACTIONS (kips)

NEGATIVE MOMENTS (kip feet)









SPAN IN FT.	IMPACT	SBM @CTR	FEM @B	FEM @C	SBM @.2L	FEM @B	FEM @C	SBM @.2L	FEM @B	SBM @.4L	FEM @B	SBM @.6L	FEM @B	SBM @.8L	FEM @B	END REACTION OR SHEAR	SHEAR AT MIDSPAN	CENTER REACTION 2 EQUAL SIMPLE SPANS	SBM @.42L	FEM @B	cL FT	SBM @cL	FEM @B	SBM @.93L	FEM @B	FEM @C	cL FT	SBM @cL	FEM @B	FEM @C	SPAN IN FT.
241	.137	5731L	3640	3640	2624T	2368	760	3668L	5063	5502L	5375	5502L	5479	3668L	5271	103.1L	33.2T	180.2L	5595L	5481				5094L	3740	3419					241
242	.136	5774	3668	3668	2653	2377	762	3695	5103	5543	5417	5543	5521	3695	5312	103.4	33.2	180.9	5637	5523				5133	3769	3446					242
243	.136	5817	3696	3696	2665	2387	764	3723	5144	5585	5459	5585	5564	3723	5354	103.8	33.2	181.5	5679	5566				5171	3797	3473					243
244	.136	5861	3724	3724	2676	2396	766	3751	5185	5626	5501	5626	5606	3751	5395	104.1	33.2	182.2	5722	5608				5210	3826	3501					244
245	.135	5905	3753	3753	2688	2406	769	3779	5225	5668	5543	5668	5649	3779	5437	104.4	33.3	182.8	5764	5651				5248	3855	3528					245
246	.135	5948	3781	3781	2700	2415	771	3807	5266	5710	5585	5710	5691	3807	5479	104.7	33.3	183.4	5807	5693				5287	3884	3556					246
247	.134	5992	3810	3810	2711	2425	773	3835	5308	5753	5628	5753	5734	3835	5521	105.0	33.3	184.1	5850	5736				5326	3912	3583					247
248	.134	6036	3838	3838	2723	2434	776	3863	5349	5795	5670	5795	5777	3863	5563	105.4	33.3	184.7	5893	5779				5366	3942	3611					248
249	.134	6081	3867	3867	2734	2444	778	3892	5390	5837	5713	5837	5821	3892	5605	105.7	33.3	185.4	5936	5823				5405	3971	3639					249
250	.133	6125	3896	3896	2746	2453	780	3920	5432	5880	5756	5880	5864	3920	5646	106.0	33.3	186.0	5980	5866				5444	4000	3667					250
251	.133	6170	3925	3925	2757	2463	782	3949	5474	5923	5799	5923	5906	3949	5691	106.3	33.3	186.6	6023	5910				5484	4029	3695					251
252	.133	6214	3954	3954	2769T	2472	785	3977	5516	5966	5842	5966	5951	3977	5734	106.6	33.3	187.3	6067	5953				5524	4059	3723					252
253	.132	6259	3983	3983	4006L	3997	3560	4006	5558	6009	5885	6009	5995	4006	5776	107.0	33.3	187.9	6111	5997				5564	4088	3751					253
254	.132	6304	4012	4012	4035	4026	3587	4035	5600	6052	5929	6052	6039	4035	5820	107.3	33.4T	188.6	6155	6041				5604	4118	3780					254
255	.132	6350	4042	4042	4064	4056	3615	4064	5643	6096	5973	6096	6083	4064	5863	107.6	33.4L	189.2	6199	6085				5644	4148	3806					255
256	.131	6395	4071	4071	4093	4085	3643	4093	5685	6139	6017	6139	6128	4093	5906	107.9	33.5	189.8	6243	6130				5684	4178	3837					256
257	.131	6440	4101	4101	4122	4115	3621	4122	5728	6183	6061	6183	6172	4122	5950	108.2	33.6	190.5	6288	6174				5725	4206	3865					257
258	.131	6486	4131	4131	4151	4145	3699	4151	5771	6227	6105	6227	6217	4151	5994	108.6	33.6	191.1	6332	6219				5765	4236	3894					258
259	.130	6532	4160	4160	4180	4174	3727	4180	5814	6271	6150	6271	6262	4180	6038	108.9	33.7	191.8	6377	6264				5806	4266	3923					259
260	.130	6578	4190	4190	4210	4204	3755	4210	5857	6315	6194	6315	6307	4210	6082	109.2	33.8	192.4	6422	6309				5847	4299	3952					260
261	.130	6624	4220	4220	4239	4234	3783	4239	5901	6359	6239	6359	6352	4239	6126	109.5	33.9	193.0	6467	6354				5888	4329	3981					261
262	.129	6671	4251	4251	4269	4265	3812	4269	5944	6404	6284	6404	6397	4269	6171	109.8	34.0	193.7	6512	6399				5929	4360	4010					262
263	.129	6717	4281	4281	4299	4295	3840	4299	5988	6448	6329	6448	6442	4299	6215	110.2	34.0	194.3	6558	6445				5971	4390	4040					263
264	.129	6764	4311	4311	4329	4325	3869	4329	6032	6493	6374	6493	6488	4329	6260	110.5	34.1	195.0	6603	6490				6012	4421	4069					264
265	.128	6811	4342	4342	4359	4356	3898	4359	6076	6538	6419	6538	6534	4359	6305	110.8	34.2	195.6	6649	6536				6054	4452	4099					265
266	.128	6857	4372	4372	4389	4387	3927	4389	6120	6583	6465	6583	6580	4389	6350	111.1	34.3	196.3	6695	6582				6096	4483	4128					266
267	.128	6905	4403	4403	4419	4417	3956	4419	6164	6628	6511	6628	6626	4419	6395	111.4	34.4	196.9	6741	6628				6137	4514	4158					267
268	.127	6952	4434	4434	4449	4448	3985	4449	6209	6674	6556	6674	6672	4449	6441	111.8	34.4	197.5	6787	6674				6179	4545	4188					268
269	.127	6999	4465	4465	4480	4479	4014	4480	6254	6719	6602	6719	6719	4480	6486	112.1	34.5	198.2	6833	6721				6222	4577	4218					269
270	.127	7047L	4495	4495	4510L	4510	4044	4510L	6299	6765L	6648	6765L	6765	4510L	6532	112.4L	34.6L	198.8L	6880L	6767				6264L	4608	4248					270

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/5 POINT (0.200L)

$K_{AB} = 0.231$ $C_{AB} = 4.00$
$K_{BA} = 3.692$ $C_{BA} = 0.250$

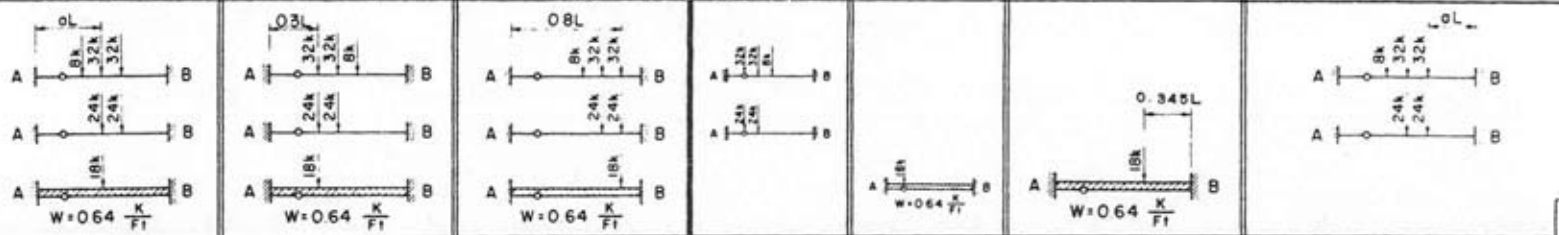
POSITIVE MOMENTS (kip feet) NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.345L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
30	.300	15.6	309A	95A	214A	274A	197A	125A	211A	44A	208A	248A	62A	151L	55L	187L	71L	133L	8.5	266A	71A	219A	30
31	.300	16.2	321	99	221	284	204	128	219	45	215	258	63	158	58	196	75	140	8.8	276	73	227	31
32	.300	16.7	333	102	228	294	212	131	227	45	222	267	64	165	62	204	79	146	9.2	287	76	235	32
33	.300	17.3	345	106	236	304	220	134	234	46	229	277	64	171	66	213	83	152	9.5	298A	78A	242A	33
34	.300	17.8	357	110	243	314	227	137	242	47	235	286	65	178	70	222	87	159	6.43	249T	152T	250T	34
35	.300	18.4	369	113	250	324	235	140	250	47	242	296	65	185	74	231	91	165	6.68	261	156	262	35
36	.300	18.9	381	117	257	334A	243A	143A	257	48	249	305	66	193	76	240	96	172	6.95	274	163	274	36
37	.300	19.5	392	120	264	363T	239T	255T	265	49	255	315A	67A	200	82	249	100	179	7.21	287	170	287	37
38	.300	20.0	404	124	271	376	248	263	273	50	262	326T	214T	207	86	259	105	185	7.49	300	177	299	38
39	.300	20.6	416	128	279	390	257	270	280	50	269	338	222	214	91	269	110	192	7.76	314	184	311	39
40	.300	21.1	428	132	286	403	267	277	288	51	275	351	229	222	95	278	115	200	8.04	327	191	324	40
41	.300	21.6	440	135	293	418	276	289	296	52	282	363	236	230	100	288	120	207	8.32	341	199	336	41
42	.299	22.2	452	139	300	433	286	300	303	53	289	376	243	237	104	298	125	214	8.61	355	206	348	42
43	.298	22.7	463	142	307	449	296	311	311	53	295	389	249	245	109	309	130	222	8.90	369	213	360	43
44	.296	23.3	475	146	314	464	306	322	319	54	302	402	255	253	114	319	135	229	9.24	384	221	372	44
45	.294	23.8	487	149	321	479	316	332	326	55	309	415	260	261	119	329	140	237	9.54	399	228	384	45
46	.292	24.4	499A	153A	328A	494	326	342	334	56	315	428	265	269	124	340	146	244	8.74	382	227	394	46
47	.291	23.0	569T	242T	408T	509	336	352	342	56	322	441	270	278	130	351	151	252	9.02	396	228	408	47
48	.289	25.1	574	223	421	524	346	361	349	57	328	454	275	286	135	362	157	260	9.36	411	231	421	48
49	.287	25.6	592	228	434	539	357	370	357	58	335	468	280	294	140	373	163	268	9.65	426	233	435	49
50	.286	26.2	610	232	448	554	367	379	365	59	341	481	284	303	146	384	168	277	9.95	440	235	448	50
51	.284	26.7	628	238	461	570	378	388	372	59	348	494	288	312	152	396	174	285	10.25	455	237	461	51
52	.282	27.2	646	243	474	585	388	396	380	60	354	508	292	320	157	407	180	293	10.56	469	239	474	52
53	.281	27.8	664	248	487	600	399	404	388	61	361	521	295	329	163	419	187	302	10.86	484	242	487	53
54	.279	28.3	682	254	500	615	409	412	396	62	367	535	299	338	169	431	193	310	11.18	499	244	500	54
55	.278	28.8	700	259	513	630	420	420	403	63	374	548	302	347	176	442	199	319	11.49	514	247	513	55
56	.276	29.3	718	265	525	645	431	427	411	63	380	562	306	356	182	455	206	328	11.76	528	249	526	56
57	.275	29.9	735	269	538	660	441	435	419	64	387	576	309	365	188	467	212	337	12.08	543	251	539	57
58	.273	30.4	753	274	550	675	452	442	426	65	393	589	312	375	195	479	219	346	12.41	559	253	552	58
59	.272	31.0	771T	280T	563T	690T	463T	449T	434A	66A	400A	603T	315T	384L	201L	492L	226L	355L	12.74	574T	256T	565T	59

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/5 POINT (0.200L)

$K_{AB} = 0.231$ $C_{AB} = 4.00$
$K_{BA} = 3.692$ $C_{BA} = 0.250$

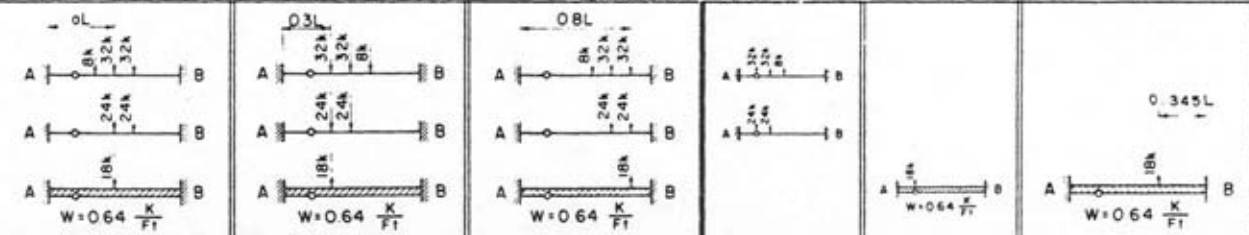
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @ 0L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.345L	FEM @ A	FEM @ B	0L FT	SBM @ 0L	FEM @ A	FEM @ B	
60	.270	31.5	789T	285T	575T	706T	474T	456T	557T	240T	576T	617T	317T	394L	208L	504L	232L	364L	13.02	588T	258T	577T	60
61	.269	32.0	807	291	587	721	485	463	568	240	589	630	320	403	215	517	239	374	13.36	604	261	590	61
62	.267	32.6	824	295	600	736	496	470	580	241	601	644	323	413	221	530	246	383	13.70	620	264	603	62
63	.266	33.1	842	301	612	751	507	477	591	241	613	658	325	423	228	543	254	393	13.99	634	266	616	63
64	.265	33.7	860	306	624	766	518	483	603	242	626	672	328	433	235	557	261	403	14.34	650	269	628	64
65	.263	34.2	878	312	636	781	529	490	614	243	638	685	330	443	243	570	268	412	14.62	665	271	641	65
66	.262	34.7	896	317	648	796	540	496	626	243	650	699	332	453	250	583	276	422	14.98	681	274	653	66
67	.260	35.2	914	323	659	811	551	502	637	244	662	713	335	464	257	597	283	432	15.28	696	277	666	67
68	.259	35.8	931	327	671	827	562	509	649	244	674	727	337	474	265	611	291	442	15.57	711	279	678	68
69	.258	36.4	949	333	683	842	573	515	660	245	686	741	339	484	273	625	299	453	15.94	727	282	691	69
70	.256	36.9	967	338	695	857	584	521	672	246	698	755	341	495	280	639	307	463	16.24	742	285	703	70
71	.255	37.4	985	344	707	872	595	527	684	246	710	769	343	506	288	653	314	473	16.54	757	287	716	71
72	.254	37.9	1003	349	718	887	606	533	695	247	722	782	345	516	296	668	323	484	16.92	774	291	728	72
73	.253	38.5	1021	355	730	902	617	539	707	247	733	796	347	527	304	682	331	495	17.23	789	293	740	73
74	.251	39.1	1038	359	742	917	628	544	718	248	745	810	349	538	312	697	339	505	17.54	804	296	753	74
75	.250	39.6	1056	365	753	932	639	550	730	249	757	824	351	549	321	712	347	516	17.85	819	298	765	75
76	.249	40.1	1074	371	765	948	651	556	741	250	768	838	353	560	329	727	356	527	18.16	835	301	777	76
77	.248	40.7	1092	376	776	963	662	562	753	250	780	852	355	572	338	742	364	538	18.56	852	305	789	77
78	.246	41.2	1110	382	788	978	673	567	764	251	791	866	356	583	346	757	373	550	18.88	868	307	802	78
79	.245	41.7	1128	387	799	993	684	573	776	252	803	880	358	594	355	773	382	561	19.20	883	310	814	79
80	.244	42.3	1145	392	811	1008	695	578	787	252	814	894	360	606	364	788	391	572	19.52	899	313	826	80
81	.243	42.8	1163	397	822	1023	707	584	799	253	826	908	361	618	373	804	400	584	19.84	914	316	838	81
82	.241	43.4	1181	403	834	1038	718	589	810	254	837	922	363	629	382	820	409	596	20.17	930	318	850	82
83	.240	43.9	1199	408	845	1053	729	595	822	255	849	936	365	641	391	836	418	607	20.50	945	321	863	83
84	.239	44.4	1217	414	856	1068	740	600	833	255	860	950	366	653	400	852	427	619	20.83	961	324	875	84
85	.238	45.0	1235	420	867	1084	752	605	845	256	871	964	368	665	410	868	437	631	21.16	977	327	887	85
86	.237	45.6	1252	424	879	1099	763	611	856	257	882	978	369	678	419	885	446	643	21.50	993	330	899	86
87	.236	46.1	1270	429	890	1114	774	616	868	258	894	992	371	690	429	901	456	656	21.84	1009	333	911	87
88	.235	46.6	1288	435	901	1129	785	621	879	259	905	1006	372	702	438	918	465	668	22.18	1025	336	923	88
89	.234	47.2	1306T	441T	913T	1144T	797T	626T	891T	259T	916T	1020T	374T	715L	448L	935L	475L	680L	22.52	1041T	340T	935T	89

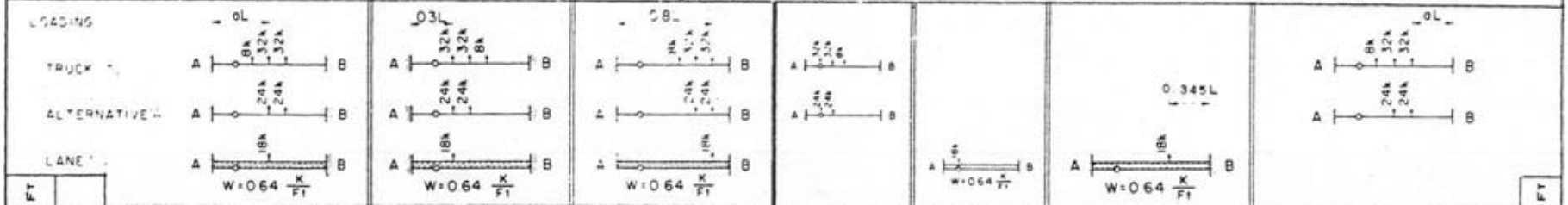
ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/5 POINT (0.200L)

$K_{AB} = 0.231$ $C_{AB} = 4.00$
$K_{BA} = 3.692$ $C_{BA} = 0.250$

POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)



SPAN IN FT	IMPACT	Maximum Positive Moments: 0L FT	SBM @ 0L	FEM @ A	FEM @ B	Moments at 0.3 Point: SBM @ 0.3L	FEM @ A	FEM @ B	Moments at 0.8 Point: SBM @ 0.8L	FEM @ A	FEM @ B	Maximum Negative Moments @ A: FEM @ A	FEM @ B	FEM @ A	FEM @ B	Maximum Negative Moments at B: SBM 0.345L	FEM @ A	FEM @ B	0L FT	SBM @ 0L	FEM @ A	FEM @ B	SPAN IN FT
90	.233	47.7	1324T	446T	924T	1159T	808T	632T	902T	260T	927T	1034T	375T	727L	458L	952L	485L	693L	22.86	1057T	343T	947T	90
91	.231	48.2	1342	452	935	1174	819	637	914	261	938	1048	377	740	468	969	495	705	23.20	1073	346	959	91
92	.230	48.8	1360	458	946	1189	831	642	925	262	949	1062	378	753	478	986	505	718	23.46	1087	348	971	92
93	.229	49.4	1377	462	958	1205	842	647	937	263	960	1076	379	766	488	1004	515	731	23.81	1103	351	983	93
94	.228	49.9	1395	467	969	1220	853	652	948	264	971	1090	381	779	499	1021	525	744	24.16	1120	354	995	94
95	.227	50.4	1413	473	980	1235	865	657	960	264	982	1104	382	792	509	1039	536	757	24.51	1136	357	1007	95
96	.226	51.0	1431	479	991	1250	876	662	972	265	993	1119	384	805	520	1057	546	770	24.86	1152	361	1019	96
97	.225	51.5	1449	484	1002	1265	887	667	983	266	1004	1133	385	818	531	1075	557	783	25.12	1166	363	1031	97
98	.224	52.0	1467	490	1013	1280	899	672	995	267	1015	1147	386	832	541	1093	568	797	25.48	1183	366	1043	98
99	.223	52.6	1485	496	1024	1295	910	677	1006	268	1026	1161	388	845	552	1111	578	810	25.84	1199	369	1055	99
100	.222	53.1	1503	502	1035	1310	921	682	1018	269	1037	1175	389	859	563	1130	589	824	26.20	1216	373	1066	100
101	.221	53.7	1520	505	1047	1326	933	687	1029	270	1048	1189	390	872	574	1148	600	838	26.46	1230	375	1078	101
102	.220	54.3	1538	511	1058	1341	944	692	1041	271	1059	1203	391	886	586	1167	611	851	26.83	1247	378	1090	102
103	.219	54.8	1556	517	1068	1356	956	597	1052	271	1069	1217	393	900	597	1186	623	865	27.19	1264	382	1102	103
104	.218	55.3	1574	522	1079	1371	967	702	1064	272	1080	1231	394	914	608	1205	634	879	27.56	1280	386	1114	104
105	.217	55.9	1592	528	1090	1386	978	707	1075	273	1091	1245	395	928	620	1224	645	893	27.82	1294	387	1126	105
106	.216	56.4	1609	534	1101	1401	990	712	1087	274	1102	1259	396	942	631	1244	657	908	28.20	1311	391	1138	106
107	.216	56.9	1627	539	1112	1416	1001	717	1098	275	1112	1273	398	957	643	1263	668	922	28.57	1328	395	1149	107
108	.215	57.5	1645	545	1123	1431	1012	721	1110	276	1123	1287	399	971	655	1283	680	937	28.84	1342	397	1161	108
109	.214	58.1	1662	549	1135	1446	1024	726	1121	277	1134	1302	400	985	667	1303	692	951	29.21	1359	401	1173	109
110	.213	58.6	1680	554	1146	1462	1035	731	1133	278	1145	1316	401	1000	679	1322	704	966	29.59	1377	404	1185	110
111	.212	59.2	1698	560	1156	1477	1047	736	1144	279	1155	1330	402	1015	691	1342	716	981	29.86	1391	406	1197	111
112	.211	59.7	1716	566	1167	1492	1058	741	1156	280	1166	1344	404	1029	704	1363	728	996	30.24	1408	410	1208	112
113	.210	60.2	1734	571	1178	1507	1069	745	1167	281	1176	1358	405	1044	716	1383	740	1011	30.51	1422	412	1220	113
114	.209	60.8	1752	577	1189	1522	1081	750	1179	282	1187	1372	406	1059	729	1403	752	1026	30.89	1439	416	1232	114
115	.208	61.3	1770	583	1200	1537	1092	755	1190	283	1198	1386	407	1074	741	1424	765	1041	31.28	1457	420	1244	115
116	.207	61.8	1788	588	1211	1552	1104	760	1202	284	1208	1400	408	1090	754	1445	777	1056	31.55	1471	422	1255	116
117	.207	62.4	1806	594	1221	1567	1115	764	1213	285	1219	1414	409	1105	767	1466	790	1072	31.94	1488	426	1267	117
118	.206	62.9	1824	600	1232	1583	1127	769	1225	285	1229	1429	411	1120	780	1487	803	1087	32.21	1503	428	1279	118
119	.205	63.5	1841T	603T	1244T	1598T	1138T	774T	1236T	286T	1240T	1443T	412T	1136L	793L	1508L	815L	1103L	32.61	1520T	432T	1291T	119

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/5 POINT (0.200L)

$K_{AB} = 0.231$ $K_{BA} = 3.692$ $C_{AB} = 4.00$ $C_{BA} = 0.250$

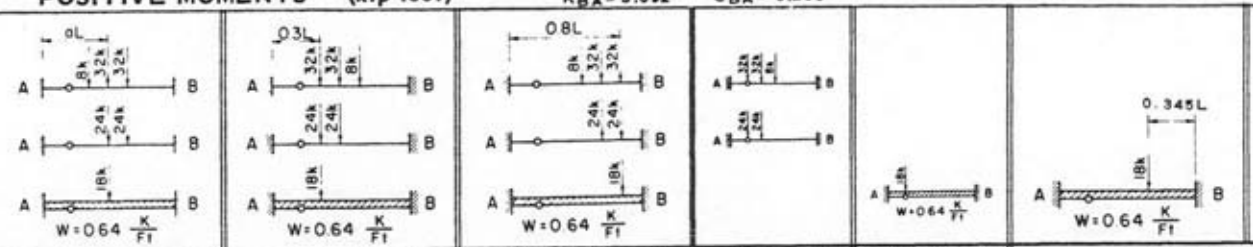
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @ 0L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.345L	FEM @ A	FEM @ B	0L FT	SBM @ 0L	FEM @ A	FEM @ B	
120	.204	64.1	1859T	609T	1255T	1613T	1149T	779T	1248T	287T	1250T	1457T	413T	1151L	806L	1529L	828L	1119L	32.88	1535T	434T	1302T	120
121	.203	64.6	1877	615	1266	1628	1161	783	1260	288	1261	1471	414	1167	819	1551	841	1134	33.27	1552	438	1314	121
122	.202	65.1	1894	620	1276	1643	1172	788	1271	289	1271	1485	415	1183	833	1573	854	1150	33.55	1567	440	1326	122
123	.202	65.7	1912	626	1287	1658	1184	793	1283	290	1282	1499	416	1199	846	1594	868	1167	33.95	1584	445	1337	123
124	.201	66.2	1930	632	1298	1673	1195	797	1294	291	1292	1513	417	1215	860	1616	881	1183	34.22	1599	447	1349	124
125	.200	66.7	1948	637	1309	1688	1207	802	1306	292	1303	1527	418	1231	873	1638	894	1199	34.62	1616	451	1361	125
126	.199	67.3	1966	643	1319	1704	1218	807	1317	293	1313	1542	419	1247	887	1661	908	1215	34.90	1631	453	1372	126
127	.198	67.8	1984	649	1330	1719	1229	811	1329	294	1323	1556	420	1264	901	1683	921	1232	35.31	1649	457	1384	127
128	.198	68.4	2002	654	1341	1734	1241	816	1340	295	1334	1570	422	1280	915	1705	935	1249	35.58	1663	460	1396	128
129	.197	68.9	2020	660	1351	1749	1252	821	1352	296	1344	1584	423	1296	929	1728	949	1265	35.99	1681	464	1407	129
130	.196	69.5	2037	663	1364	1764	1264	825	1363	297	1355	1598	424	1313	944	1751	963	1282	36.27	1695	466	1419	130
131	.195	70.1	2055	669	1374	1779	1275	830	1375	298	1365	1612	425	1330	958	1774	977	1299	36.68	1713	471	1431	131
132	.195	70.6	2073	675	1385	1794	1287	834	1386	299	1375	1626	426	1347	972	1797	991	1316	36.96	1728	473	1442	132
133	.194	71.2	2091	680	1396	1809	1298	839	1398	300	1386	1640	427	1364	987	1820	1005	1333	37.37	1746	477	1454	133
134	.193	71.7	2108	686	1406	1824	1310	844	1409	301	1396	1655	428	1381	1002	1843	1020	1351	37.65	1760	479	1466	134
135	.192	72.2	2126	692	1417	1840	1321	848	1421	302	1406	1669	429	1398	1016	1867	1034	1368	38.07	1779	484	1477	135
136	.192	72.8	2144	697	1428	1855	1332	853	1432	303	1417	1683	430	1415	1031	1891	1048	1386	38.35	1793	486	1489	136
137	.191	73.3	2162	703	1438	1870	1344	857	1444	304	1427	1697	431	1432	1046	1914	1063	1403	38.63	1808	488	1501	137
138	.190	73.8	2180	709	1449	1885	1355	862	1455	306	1437	1711	432	1450	1061	1938	1078	1421	39.05	1826	493	1512	138
139	.189	74.4	2198	714	1460	1900	1367	866	1467	307	1447	1725	433	1467	1077	1963	1093	1439	39.34	1841	495	1524	139
140	.189	74.9	2216	720	1470	1915	1378	871	1478	308	1458	1739	434	1485	1092	1987	1108	1457	39.76	1859	500	1535	140
141	.188	75.4	2234	726	1481	1930	1390	876	1490	309	1468	1754	435	1503	1107	2011	1123	1475	40.04	1874	502	1547	141
142	.187	76.1	2251	729	1493	1945	1401	880	1501	310	1478	1768	436	1520	1123	2036	1138	1493	40.33	1888	504	1559	142
143	.187	76.6	2269	734	1504	1961	1413	885	1513	311	1488	1782	437	1538	1139	2060	1153	1511	40.75	1907	509	1570	143
144	.186	77.2	2286	740	1515	1976	1424	889	1524	312	1499	1796	438	1556	1154	2085	1168	1529	41.04	1921	511	1582	144
145	.185	77.7	2304	746	1525	1991	1436	894	1536	313	1509	1810	439	1574	1170	2110	1184	1548	41.47	1940	516	1593	145
146	.185	78.3	2322	751	1536	2006	1447	898	1546	314	1519	1824	440	1593	1186	2135	1199	1567	41.76	1954	518	1605	146
147	.184	78.8	2340	757	1546	2021	1458	903	1559	315	1529	1838	441	1611	1202	2161	1215	1585	42.04	1969	521	1617	147
148	.183	79.3	2358	763	1557	2036	1470	907	1571	316	1540	1853	442	1629	1218	2186	1231	1604	42.48	1988	526	1628	148
149	.182	79.9	2376T	769T	1568T	2051T	1481T	912T	1582T	317T	1550T	1867T	443T	1648L	1235L	2211L	1246L	1623L	42.76	2002T	528T	1640T	149

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/5 POINT (0.200L)

$K_{AB} = 0.231$ $K_{BA} = 3.692$ $C_{AB} = 4.00$ $C_{BA} = 0.250$

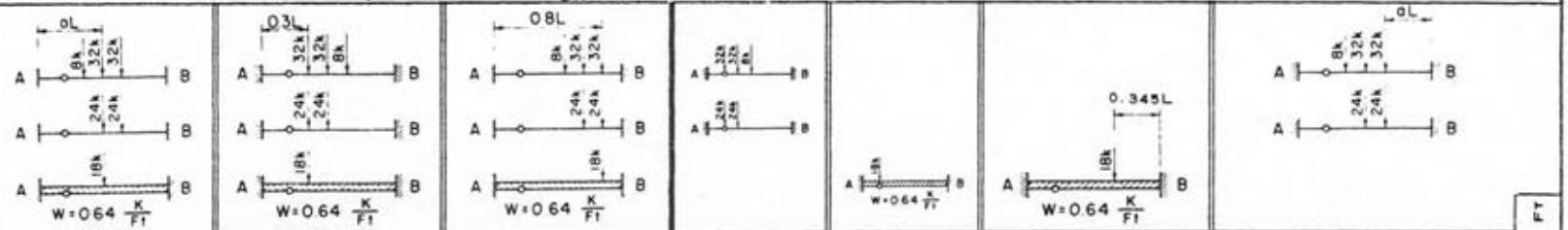
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.345L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
150	.182	80.4	2394T	774T	1578T	2066T	1493T	916T	1594T	318T	1560T	1881T	444T	1667L	1251L	2237L	1262L	1642L	43.05	2017T	530T	1651T	150
151	.181	80.9	2412	780	1589	2082	1504	921	1605	319	1570	1895	445	1685	1268	2263	1278	1661	43.49	2036	535	1663	151
152	.181	81.5	2430	786	1600	2097	1516	925	1617	320	1580	1909	446	1704	1284	2289	1295	1680	43.78	2051	537	1674	152
153	.180	82.0	2448	791	1610	2112	1527	930	1628	321	1590	1923	447	1723	1301	2315	1311	1700	44.22	2069	542	1686	153
154	.179	82.5	2466	797	1621	2127	1539	934	1640	322	1601	1937	448	1742	1318	2341	1327	1719	44.51	2084	545	1698	154
155	.179	83.1	2483	803	1631	2142	1550	939	1651	323	1611	1952	449	1761	1335	2366	1344	1739	44.79	2099	547	1709	155
156	.178	83.6	2501	808	1642	2157	1562	943	1663	324	1621	1966	450	1780	1352	2394	1360	1758	45.24	2118	552	1721	156
157	.177	84.3	2518	811	1654	2172	1573	948	1674	325	1631	1980	451	1800	1369	2421	1377	1778	45.53	2133	554	1732	157
158	.177	84.8	2536	817	1665	2187	1585	952	1686	327	1641	1994	452	1819	1386	2448	1393	1798	45.82	2147	557	1744	158
159	.176	85.4	2554	822	1676	2202	1596	957	1697	328	1651	2008	453	1839	1404	2475	1410	1818	46.27	2166	562	1755	159
160	.175	85.9	2572	828	1686	2218	1608	961	1709	329	1661	2022	454	1858	1421	2502	1427	1838	46.56	2181	564	1767	160
161	.175	86.5	2590	834	1697	2233	1619	966	1720	330	1671	2037	455	1878	1439	2529	1444	1858	46.85	2196	567	1778	161
162	.174	87.0	2608	839	1707	2248	1631	970	1732	331	1682	2051	456	1898	1457	2557	1461	1879	47.14	2211	569	1790	162
163	.176	87.5	2626	845	1718	2263	1642	975	1743	332	1692	2065	457	1918	1474	2584	1479	1899	47.60	2230	574	1801	163
164	.173	88.1	2643	851	1729	2278	1654	979	1755	333	1702	2079	458	1938	1492	2612	1496	1920	47.89	2245	577	1813	164
165	.172	88.6	2661	856	1739	2293	1665	984	1766	334	1712	2093	459	1958	1510	2640	1514	1940	48.18	2260	579	1824	165
166	.172	89.1	2679	862	1750	2308	1677	988	1778	335	1722	2107	460	1978	1529	2668	1531	1961	48.64	2279	584	1836	166
167	.171	89.7	2697	868	1760	2323	1688	993	1789	336	1732	2121	461	1999	1547	2696	1549	1982	48.93	2294	587	1848	167
168	.171	90.2	2715	873	1771	2339	1700	997	1801	337	1742	2136	462	2019	1565	2724	1566	2003	49.22	2309	589	1859	168
169	.170	90.8	2733	879	1782	2354	1711	1001	1812	338	1752	2150	463	2040	1584	2753	1584	2024	49.69	2328	595	1871	169
170	.169	91.3	2751	885	1792	2369	1723	1006	1824	339	1762	2164	464	2060	1602	2781	1602	2045	49.98	2343	597	1882	170
171	.169	91.8	2769	890	1803	2384	1734	1010	1836	341	1772	2178	465	2081	1621	2810	1620	2066	50.27	2358	600	1894	171
172	.168	92.4	2787	896	1813	2399	1745	1015	1847	342	1782	2192	466	2102	1640	2839	1638	2088	50.57	2373	602	1905	172
173	.168	92.9	2805	902	1824	2414	1757	1019	1859	343	1792	2206	467	2123	1659	2868	1657	2109	51.03	2392	607	1917	173
174	.167	93.4	2822	908	1834	2429	1768	1024	1870	344	1802	2221	468	2144	1678	2897	1675	2131	51.33	2407	610	1928	174
175	.167	94.1	2839	910	1847	2444	1780	1028	1882	345	1812	2235	469	2165	1697	2926	1694	2153	51.62	2422	612	1940	175
176	.166	94.7	2857	915	1858	2460	1791	1033	1893	346	1822	2249	470	2186	1716	2956	1712	2174	51.92	2437	615	1951	176
177	.166	95.2	2875	921	1868	2475	1803	1037	1905	347	1832	2263	471	2208	1735	2985	1731	2196	52.39	2457	620	1963	177
178	.165	95.8	2893	927	1879	2490	1814	1041	1916	348	1842	2277	472	2229	1755	3015	1750	2218	52.69	2472	623	1974	178
179	.164	96.3	2911T	932T	1889T	2505T	1826T	1046T	1928T	349T	1852T	2291T	473T	2251L	1774L	3045L	1768L	2241L	52.98	2487T	625T	1986T	179

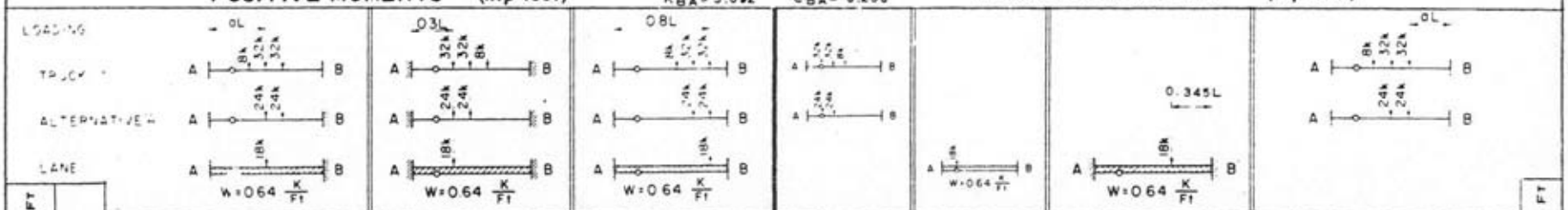
ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/5 POINT (0.200L)

$K_{AB} = 0.231$ $C_{AB} = 4.00$
$K_{BA} = 3.692$ $C_{BA} = 0.250$

POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.345L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
180	.164	96.8	2929T	938T	1900T	2520T	1837T	1050T	1939T	350T	1862T	2306T	474T	2272L	1794L	3075L	1787L	2263L	53.46	2506T	631T	1997T	180
181	.163	97.4	2946	944	1910	2535	1849	1055	1951	352	1872	2320	475	2294	1814	3105	1806	2285	53.76	2521	633	2009	181
182	.163	97.9	2964	949	1921	2550	1860	1059	1962	353	1882	2334	476	2316	1834	3136	1826	2308	54.05	2536	636	2020	182
183	.162	98.5	2982	955	1931	2565	1872	1064	1974	354	1892	2348	477	2338	1854	3166	1845	2330	54.35	2551	638	2031	183
184	.162	99.0	3000	961	1942	2580	1883	1068	1985	355	1902	2362	478	2360	1874	3197	1864	2353	54.83	2571	644	2043	184
185	.161	99.5	3018	966	1953	2596	1895	1072	1997	356	1912	2376	479	2382	1894	3227	1884	2376	55.13	2586	647	2054	185
186	.161	100.1	3036	972	1963	2611	1906	1077	2008	357	1922	2391	479	2405	1914	3258	1903	2399	55.43	2601	649	2066	186
187	.160	100.6	3054	978	1974	2626	1918	1081	2020	358	1932	2405	480	2427	1935	3289	1923	2422	55.73	2616	652	2077	187
188	.160	101.1	3072	983	1984	2641	1929	1086	2031	359	1942	2419	481	2449	1955	3320	1943	2445	56.02	2631	654	2089	188
189	.159	101.7	3090	989	1995	2656	1941	1090	2043	360	1952	2433	482	2472	1976	3352	1963	2468	56.51	2651	660	2100	189
190	.159	102.2	3107	995	2005	2671	1952	1094	2054	362	1962	2447	483	2495	1997	3383	1983	2491	56.81	2666	663	2112	190
191	.158	102.8	3125	1000	2016	2686	1964	1099	2066	363	1972	2461	484	2517	2017	3415	2003	2515	57.11	2681	665	2123	191
192	.158	103.3	3143	1006	2026	2701	1975	1103	2077	364	1982	2476	485	2540	2038	3447	2023	2538	57.41	2697	668	2135	192
193	.157	103.8	3161	1012	2037	2717	1987	1108	2089	365	1992	2490	486	2563	2059	3479	2043	2562	57.90	2717	674	2146	193
194	.157	104.4	3179	1017	2047	2732	1998	1112	2100	366	2002	2504	487	2586	2081	3511	2063	2586	58.20	2732	676	2158	194
195	.156	104.9	3197	1023	2058	2747	2010	1116	2112	367	2012	2518	488	2609	2102	3543	2084	2610	58.50	2747	679	2169	195
196	.156	105.6	3213	1025	2071	2762	2021	1121	2124	368	2022	2532	489	2633	2123	3575	2104	2634	58.80	2762	681	2181	196
197	.155	106.2	3231	1030	2081	2777	2033	1125	2135	369	2031	2546	490	2656	2145	3608	2125	2658	59.10	2777	684	2192	197
198	.155	106.7	3249	1036	2092	2792	2044	1130	2147	370	2041	2561	491	2680	2166	3640	2146	2682	59.60	2797	690	2203	198
199	.154	107.3	3267	1042	2103	2807	2056	1134	2158	372	2051	2575	492	2703	2188	3673	2167	2706	59.90	2812	692	2215	199
200	.154	107.8	3285	1047	2113	2822	2067	1138	2170	373	2061	2589	493	2727	2210	3706	2188	2731	60.20	2827	695	2226	200
201	.153	108.3	3303	1053	2124	2838	2079	1143	2181	374	2071	2603	494	2751	2232	3739	2209	2755	60.50	2843	698	2238	201
202	.153	108.9	3321	1059	2134	2853	2090	1147	2193	375	2081	2617	495	2775	2254	3772	2230	2780	61.00	2863	704	2249	202
203	.152	109.4	3339	1064	2145	2868	2102	1152	2204	376	2091	2631	495	2799	2276	3806	2251	2805	61.31	2878	706	2261	203
204	.152	110.0	3357	1070	2155	2883	2113	1156	2216	377	2101	2646	496	2823	2298	3839	2273	2830	61.61	2893	709	2272	204
205	.152	110.5	3374T	1076T	2166T	2898	2125	1160	2227	378	2111	2660	497	2847	2321	3873	2294	2855	61.91	2908	711	2284	205
206	.151	112.0	4288L	2430L	2836L	2913	2136	1165	2239	379	2121	2674	498	2871	2343	3907	2316	2880	62.21	2924	714	2295	206
207	.151	112.6	4326	2452	2861	2928	2148	1169	2250	381	2131	2688	499	2895	2366	3940	2337	2905	62.72	2944	720	2306	207
208	.150	113.2	4363	2474	2886	2943	2159	1173	2262	382	2140	2702	500	2920	2388	3975	2359	2930	63.02	2959	723	2318	208
209	.150	113.7	4401L	2497L	2911L	2958T	2171T	1178T	2273T	383T	2150T	2716T	501T	2945L	2411L	4009L	2381L	2956L	63.33	2974T	726T	2329T	209

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/6 POINT (0.167L)

K_{AB} = 0.144 C_{AB} = 5.00
K_{BA} = 3.573 C_{BA} = 0.200

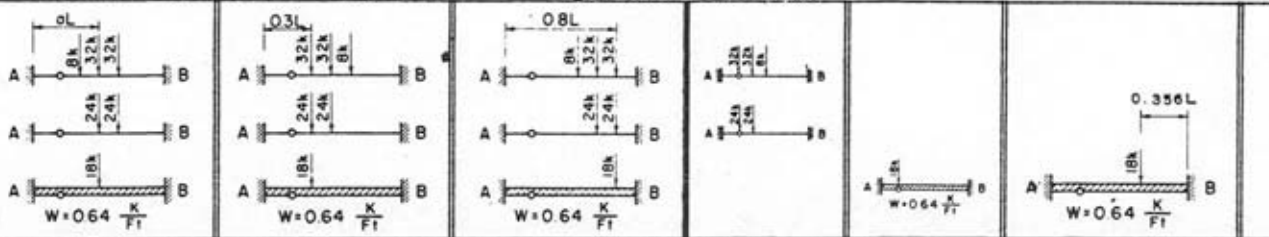
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.356L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
30	.300	15.0	312A	81A	219A	274A	155A	139A	211A	34A	213A	210A	55A	127L	54L	190L	59L	139L	8.8	271	59	227	30
31	.300	15.5	324	84	227	284	161	143	219	35	220	218	56	132	58	198	62	145	9.2	282	61	235	31
32	.300	16.1	336	87	234	294	167	146	227	35	227	226	56	138	62	207	65	152	9.5	293A	62A	243A	32
33	.300	16.6	348	90	242	304	173	150	234	36	234	234	56	144	66	216	69	158	6.40	243T	122T	250T	33
34	.300	17.1	360	93	249	314	179	153	242	36	240	242	57	149	70	225	72	165	6.70	256	123	262	34
35	.300	17.6	372	96	256	324	185	157	250	37	247	250A	57A	155	74	234	76	172	7.00	269	124	275	35
36	.300	18.2	383	99	264	334A	191A	160A	257	38	254	258T	200T	161	78	244	80	179	7.27	282	131	288	36
37	.300	18.7	395	103	271	363T	188T	273T	265	38	261	268	208	167	82	253	83	186	7.55	296	138	300	37
38	.300	19.2	407	106	278	376	195	281	273	39	268	279	216	173	87	263	87	193	7.87	310	145	313	38
39	.300	19.7	419	109	285	390	203	289	280	39	274	290	223	180	91	273	91	200	8.15	324	152	325	39
40	.300	20.3	431	112	293	403	210	297	288	40	281	300	229	186	96	282	95	208	8.44	338	159	338	40
41	.300	20.8	443	115	300	418	218	309	296	40	288	311	236	192	100	293	99	215	8.73	352	166	350	41
42	.299	21.3	455	118	307	433	225	322	303	41	295	322	241	199	105	303	103	223	9.07	367	173	362	42
43	.298	21.8	467	121	315	449	233	334	311	42	301	333	247	205	110	313	108	231	9.37	381	180	375	43
44	.296	22.4	479	124	322	464	241	345	319	42	308	344	252	212	115	324	112	239	8.54	365	181	385	44
45	.294	22.9	491	127	329	479	249	356	326	43	315	355	257	219	121	334	117	247	8.82	379	182	399	45
46	.292	23.4	503	131	336	494	256	367	334	43	321	366	261	226	126	345	121	255	9.11	393	183	413	46
47	.291	24.0	515A	133A	344A	509	264	378	342	44	328	377	265	232	131	356	126	263	9.45	408	186	427	47
48	.289	24.1	583T	189T	440T	524	273	388	349	45	335	388	269	239	137	367	130	271	9.74	423	187	441	48
49	.287	24.6	601	193	454	539	281	398	357	45	341	400	273	246	142	378	135	280	10.04	437	189	454	49
50	.286	25.1	619	198	467	554	289	407	365	46	348	411	277	254	146	390	140	288	10.35	452	190	468	50
51	.284	25.7	637	202	481	570	297	417	372	46	355	422	280	261	154	401	145	297	10.66	467	192	481	51
52	.282	26.2	655	207	494	585	305	426	380	47	361	434	283	268	160	413	150	306	11.02	483	195	495	52
53	.281	26.7	673	211	507	600	314	435	388	48	368	445	286	275	166	425	155	315	11.34	498	197	508	53
54	.279	27.2	691	216	520	615	322	443	396	48	374	457	289	283	173	437	160	324	11.66	513	199	522	54
55	.278	27.7	709	220	533	630	330	452	403	49	381	468	292	291	179	449	166	333	11.93	527	200	535	55
56	.276	28.2	727	224	546	645	339	460	411	49	388	480	295	298	185	461	171	342	12.26	542	202	548	56
57	.275	28.7	745	229	558	660	347	469	419	50	394	491	297	306	192	474	176	352	12.60	558	204	562	57
58	.273	29.2	763	233	571	675	356	477	426	51	401	503	300	314	199	486	182	361	12.93	574	206	575	58
59	.272	29.7	781T	238T	583T	690T	364T	485T	434A	51A	407A	514T	302T	322L	205L	499L	188L	371L	13.27	590T	208T	588T	59

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/6 POINT (0.167L)

K_{AB} = 0.144 C_{AB} = 5.00
K_{BA} = 3.573 C_{BA} = 0.200

POSITIVE MOMENTS (kip feet)

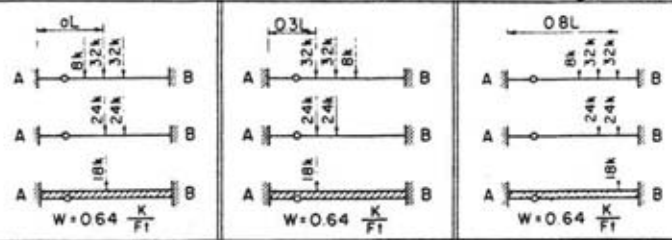
NEGATIVE MOMENTS (kip feet)

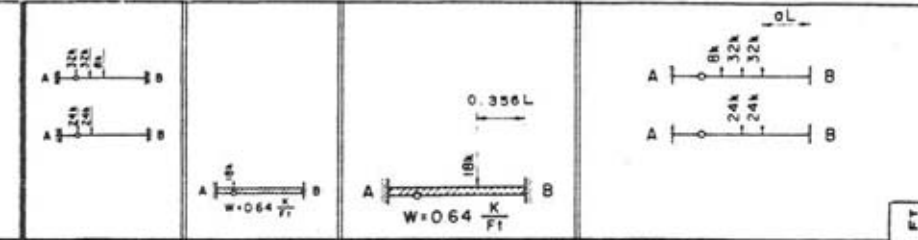
LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)





SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.356L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
60	.270	30.2	799T	243T	596T	706T	373T	492T	557T	188T	598T	526T	304T	330L	212L	512L	193L	380L	13.56	604T	210T	601T	60
61	.269	30.8	816	247	608	721	381	500	568	188	611	537	307	338	219	525	199	390	13.91	620	212	614	61
62	.267	31.3	834	251	621	736	390	508	580	189	623	549	309	346	226	538	205	400	14.26	636	215	627	62
63	.266	31.8	852	256	633	751	399	515	591	189	636	560	311	354	234	551	211	410	14.55	651	216	640	63
64	.265	32.3	870	261	645	766	407	523	603	190	648	572	313	362	241	565	217	420	14.91	667	219	653	64
65	.263	32.8	888	265	657	781	416	530	614	190	660	584	315	371	249	578	223	431	15.21	682	221	666	65
66	.262	33.4	906	269	669	796	424	537	626	190	673	595	316	379	256	592	229	441	15.58	698	223	679	66
67	.260	33.9	924	274	681	811	433	544	637	191	685	607	318	388	264	606	235	452	15.88	713	225	692	67
68	.259	34.4	942	279	693	827	442	551	649	191	697	619	320	396	272	620	242	462	16.25	730	228	705	68
69	.258	34.9	960	283	705	842	451	558	660	192	709	630	321	405	280	634	248	473	16.56	745	230	717	69
70	.256	35.4	978	288	717	857	459	565	672	192	721	642	323	414	288	648	255	484	16.94	762	233	730	70
71	.255	35.9	996	293	729	872	468	572	684	193	733	654	325	423	296	663	261	495	17.25	777	235	743	71
72	.254	36.5	1013	296	741	887	477	579	695	193	745	666	326	432	304	677	268	506	17.57	792	237	756	72
73	.253	37.0	1031	301	753	902	486	585	707	194	757	677	328	441	313	692	275	517	17.96	810	240	768	73
74	.251	37.5	1049	306	765	917	494	592	718	194	769	689	329	450	321	707	282	528	18.28	825	242	781	74
75	.250	38.0	1067	311	776	932	503	599	730	195	781	701	330	459	330	722	289	540	18.60	840	244	794	75
76	.249	38.5	1085	316	788	948	512	605	741	195	793	713	332	469	338	737	296	551	18.92	856	246	806	76
77	.248	39.0	1103	320	800	963	521	612	753	196	804	724	333	478	347	753	303	563	19.25	872	248	819	77
78	.246	39.6	1121	324	812	978	529	618	764	196	816	736	334	488	356	768	310	575	19.66	889	252	831	78
79	.245	40.1	1139	329	823	993	538	624	776	197	828	748	336	497	365	784	317	587	19.99	905	254	844	79
80	.244	40.6	1157	333	835	1008	547	631	787	197	839	760	337	507	375	800	325	599	20.32	921	256	857	80
81	.243	41.1	1175	338	846	1023	556	637	799	198	851	771	338	517	384	816	332	611	20.65	937	259	869	81
82	.241	41.7	1193	343	858	1038	565	643	810	199	863	783	339	526	393	832	340	623	20.99	952	261	882	82
83	.240	42.2	1211	348	869	1053	574	650	822	199	874	795	340	536	403	848	347	635	21.33	968	263	894	83
84	.239	42.8	1228	351	881	1068	583	656	833	200	885	807	342	546	413	864	355	648	21.67	984	266	907	84
85	.238	43.3	1246	356	893	1084	591	662	845	200	897	819	343	556	422	881	363	660	22.01	1000	268	919	85
86	.237	43.8	1264	361	904	1099	600	668	856	201	908	830	344	567	432	898	371	673	22.36	1017	271	931	86
87	.236	44.3	1282	366	915	1114	609	674	868	202	920	842	345	577	442	914	379	686	22.71	1033	273	944	87
88	.235	44.8	1300	371	927	1129	618	680	879	202	931	854	346	587	452	931	387	699	23.06	1049	276	956	88
89	.234	45.3	1318T	375T	938T	1144T	627T	686T	891T	203T	942T	866T	347T	598L	463L	948L	395L	712L	23.41	1065T	278T	969T	89

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/6 POINT (0.167L)

K_{AB} = 0.144 C_{AB} = 5.00
K_{BA} = 3.573 C_{BA} = 0.200

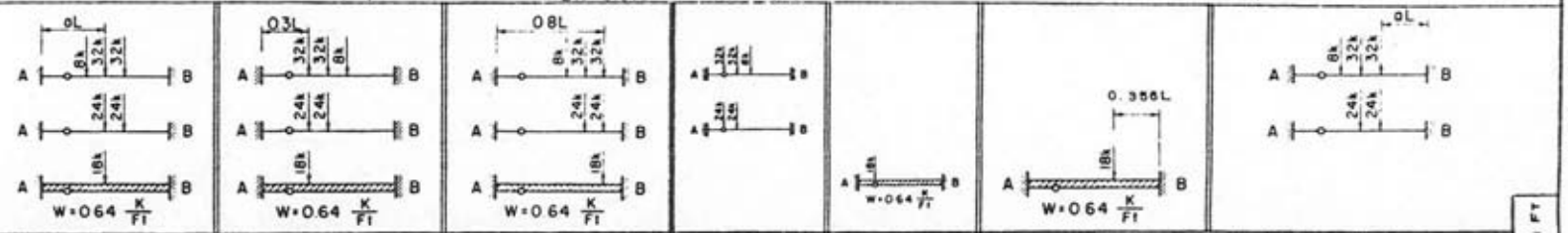
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @ 0L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.356L	FEM @ A	FEM @ B	0L FT	SBM @ 0L	FEM @ A	FEM @ B	
90	.233	45.9	1336T	379T	950T	1159T	636T	692T	902T	203T	954T	878T	348T	608L	473L	966L	403L	725L	23.76	1082T	281T	981T	90
91	.231	46.4	1354	384	961	1174	645	698	914	204	965	890	349	619	483	983	411	738	24.11	1098	284	993	91
92	.230	46.9	1372	388	973	1189	654	704	925	205	976	901	350	629	494	1001	420	751	24.38	1112	285	1006	92
93	.229	47.4	1390	393	984	1205	663	710	937	205	987	913	351	640	505	1018	428	765	24.74	1129	288	1018	93
94	.228	47.9	1408	398	995	1220	672	716	948	206	998	925	352	651	515	1036	437	778	25.10	1145	290	1030	94
95	.227	48.4	1426	403	1006	1235	680	722	960	207	1009	937	353	662	526	1053	446	792	25.46	1162	293	1043	95
96	.226	49.0	1444	408	1018	1250	689	728	972	207	1021	949	354	673	537	1072	454	806	25.82	1178	296	1055	96
97	.225	49.5	1462	412	1029	1265	698	734	983	208	1032	961	354	684	548	1091	463	820	26.19	1195	299	1067	97
98	.224	50.1	1479	416	1041	1280	707	739	995	209	1043	972	355	695	560	1109	472	834	26.46	1209	300	1079	98
99	.223	50.6	1497	420	1052	1295	716	745	1006	209	1054	984	356	706	571	1128	481	848	26.83	1226	303	1092	99
100	.222	51.1	1515	425	1063	1310	725	751	1018	210	1065	996	357	718	583	1146	490	862	27.20	1243	306	1104	100
101	.221	51.6	1533	430	1074	1326	734	757	1029	211	1076	1008	358	729	594	1165	499	877	27.57	1260	309	1116	101
102	.220	52.1	1551	435	1086	1341	743	762	1041	211	1087	1020	359	741	606	1184	508	891	27.85	1274	310	1128	102
103	.219	52.6	1569	440	1097	1356	752	768	1052	212	1098	1032	360	752	618	1203	518	906	28.22	1291	313	1141	103
104	.218	53.1	1587	445	1108	1371	761	774	1064	213	1109	1044	360	764	630	1223	527	921	28.60	1308	316	1153	104
105	.217	53.7	1605	449	1119	1386	770	780	1075	213	1119	1055	361	776	642	1242	537	936	28.87	1322	318	1165	105
106	.216	54.3	1623	453	1131	1401	779	785	1087	214	1130	1067	362	787	654	1262	546	951	29.26	1340	321	1177	106
107	.216	54.8	1641	457	1142	1416	788	791	1098	215	1141	1079	363	799	666	1282	556	966	29.64	1357	324	1189	107
108	.215	55.3	1659	462	1153	1431	797	797	1110	216	1152	1091	364	811	679	1301	565	981	29.92	1371	326	1201	108
109	.214	55.8	1677	467	1164	1446	806	802	1121	216	1163	1103	364	823	691	1321	575	996	30.30	1388	329	1214	109
110	.213	56.3	1695	472	1175	1462	815	808	1133	217	1174	1115	365	836	704	1342	585	1012	30.69	1406	332	1226	110
111	.212	56.8	1713	477	1186	1477	824	813	1144	218	1184	1127	366	848	716	1362	595	1027	30.97	1420	334	1238	111
112	.211	57.3	1731	482	1197	1492	833	819	1156	218	1195	1138	367	860	729	1382	605	1043	31.36	1438	337	1250	112
113	.210	57.9	1749	486	1208	1507	842	825	1167	219	1206	1150	367	873	742	1403	615	1058	31.75	1455	340	1262	113
114	.209	58.4	1767	491	1219	1522	851	830	1179	220	1217	1162	368	885	755	1424	626	1074	32.03	1470	342	1274	114
115	.208	59.0	1784	494	1232	1537	860	836	1190	221	1227	1174	369	898	769	1445	636	1090	32.43	1487	345	1286	115
116	.207	59.5	1802	499	1243	1552	869	841	1202	221	1238	1186	370	910	782	1466	646	1106	32.71	1502	347	1298	116
117	.207	60.0	1820	504	1254	1567	878	847	1213	222	1249	1198	370	923	795	1487	657	1123	33.11	1519	350	1311	117
118	.206	60.5	1838	509	1265	1583	887	852	1225	223	1259	1210	371	936	809	1508	667	1139	33.39	1534	352	1323	118
119	.205	61.0	1856T	513T	1276T	1598T	896T	858T	1236T	224T	1270T	1222T	372T	949L	822L	1530L	678L	1155L	33.80	1551T	355T	1335T	119

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/6 POINT (0.167L)

$K_{AB} = 0.144$ $C_{AB} = 5.00$
$K_{BA} = 3.573$ $C_{BA} = 0.200$

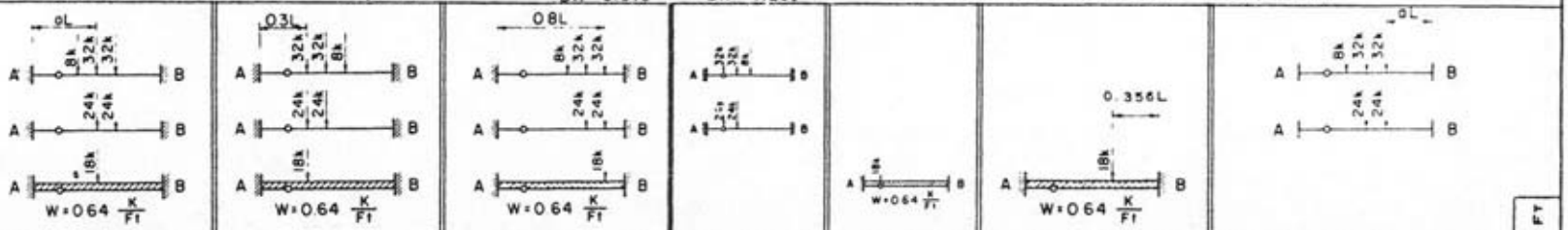
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		@L FT	SBM @@L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.356L	FEM @ A	FEM @ B	@L FT	SBM @@L	FEM @ A	FEM @ B	
120	.204	61.6	1874T	518T	1287T	1613T	905T	863T	1248T	224T	1281T	1233T	372T	962L	836L	1552L	689L	1172L	34.20	1569T	358T	1347T	120
121	.203	62.1	1892	523	1298	1628	914	869	1260	225	1291	1245	373	975	850	1573	700	1189	34.48	1584	360	1359	121
122	.202	62.6	1910	528	1308	1643	923	874	1271	226	1302	1257	374	988	864	1595	710	1205	34.89	1602	364	1371	122
123	.202	63.1	1928	533	1319	1658	932	880	1283	227	1313	1269	474	1002	878	1618	721	1222	35.18	1616	365	1383	123
124	.201	63.6	1946	538	1330	1673	941	885	1294	227	1323	1281	375	1015	892	1640	733	1239	35.59	1634	369	1395	124
125	.200	64.1	1964	542	1341	1688	950	891	1306	228	1334	1293	376	1028	907	1662	744	1257	35.87	1649	370	1407	125
126	.199	64.8	1982	545	1354	1704	959	896	1317	229	1344	1305	376	1042	921	1685	755	1274	36.29	1667	374	1419	126
127	.198	65.3	2000	550	1365	1719	968	902	1329	230	1355	1317	377	1055	936	1707	766	1291	36.58	1681	376	1431	127
128	.198	65.8	2017	555	1376	1734	977	907	1340	231	1365	1329	378	1069	951	1730	778	1309	36.99	1699	379	1443	128
129	.197	66.3	2035	560	1386	1749	986	912	1352	231	1376	1340	378	1083	965	1753	789	1326	37.28	1714	381	1455	129
130	.196	66.8	2053	564	1397	1764	995	918	1363	232	1386	1352	379	1097	980	1776	801	1344	37.70	1732	385	1467	130
131	.195	67.3	2071	569	1408	1779	1004	923	1375	233	1397	1364	380	1111	995	1800	812	1362	37.99	1747	387	1479	131
132	.195	67.8	2089	574	1419	1794	1013	929	1386	234	1407	1376	380	1125	1010	1823	824	1380	38.41	1765	390	1491	132
133	.194	68.4	2107	579	1430	1809	1022	934	1398	234	1418	1388	381	1139	1026	1847	836	1398	38.70	1780	392	1503	133
134	.193	68.9	2125	584	1441	1824	1031	939	1409	235	1428	1400	382	1153	1041	1870	848	1416	38.99	1795	394	1515	134
135	.192	69.4	2143	589	1452	1840	1040	945	1421	236	1439	1412	382	1167	1056	1894	860	1434	39.42	1813	398	1527	135
136	.192	69.9	2161	593	1463	1855	1049	950	1432	237	1449	1424	383	1182	1072	1918	872	1453	39.71	1828	399	1539	136
137	.191	70.4	2179	598	1474	1870	1058	956	1444	238	1460	1436	384	1196	1088	1942	884	1471	40.14	1846	403	1551	137
138	.190	71.1	2197	601	1486	1885	1067	961	1455	238	1470	1448	384	1211	1104	1967	896	1490	40.43	1861	405	1563	138
139	.189	71.6	2215	606	1497	1900	1076	966	1467	239	1480	1459	385	1225	1120	1991	909	1508	40.87	1880	409	1575	139
140	.189	72.1	2233	610	1508	1915	1085	972	1478	240	1491	1471	385	1240	1136	2016	921	1527	41.16	1895	411	1587	140
141	.188	72.6	2251	615	1519	1930	1094	977	1490	241	1501	1483	386	1255	1152	2040	934	1546	41.45	1910	413	1599	141
142	.187	73.1	2269	620	1530	1945	1103	982	1501	242	1512	1495	387	1270	1168	2065	946	1565	41.89	1928	416	1611	142
143	.187	73.6	2287	625	1540	1961	1112	988	1513	242	1522	1507	387	1285	1184	2090	959	1584	42.18	1943	418	1623	143
144	.186	74.2	2305	630	1551	1976	1121	993	1524	243	1532	1519	388	1300	1201	2116	972	1604	42.62	1962	422	1635	144
145	.185	74.7	2323	635	1562	1991	1130	998	1536	244	1543	1531	389	1315	1218	2141	984	1623	42.92	1977	424	1647	145
146	.185	75.2	2341	639	1573	2006	1139	1004	1548	245	1553	1543	389	1330	1234	2166	997	1643	43.22	1992	426	1659	146
147	.184	75.7	2359	644	1584	2021	1148	1009	1559	246	1563	1555	390	1345	1251	2192	1010	1662	43.66	2010	430	1671	147
148	.183	76.2	2377	649	1595	2036	1157	1014	1571	246	1574	1567	390	1361	1268	2218	1023	1682	43.96	2025	432	1683	148
149	.182	76.7	2395T	654T	1605T	2051T	1166T	1020T	1582T	247T	1584T	1578T	391T	1376L	1285L	2244L	1037L	1702L	44.25	2040T	434T	1694T	149

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/6 POINT (0.167L)

K_{AB} = 0.144 C_{AB} = 5.00
K_{BA} = 3.573 C_{BA} = 0.200

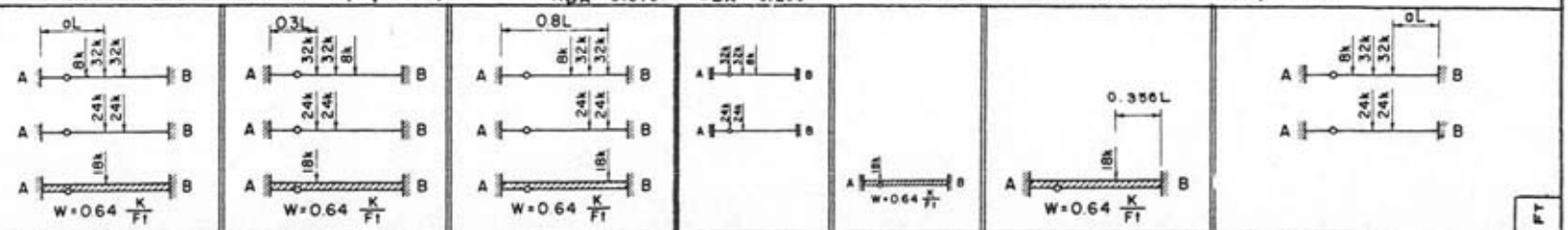
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.356L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
150	.182	77.2	2413T	659T	1616T	2066T	1175T	1025T	1594T	248T	1594T	1590T	391T	1392L	1302L	2270L	1050L	1722L	44.70	2059T	438T	1706T	150
151	.181	77.9	2430	661	1629	2082	1184	1030	1605	249	1605	1602	392	1407	1320	2296	1063	1742	45.00	2074	440	1718	151
152	.181	78.4	2448	666	1640	2097	1194	1036	1617	250	1615	1614	393	1423	1337	2322	1077	1762	45.45	2093	444	1730	152
153	.180	78.9	2466	671	1651	2112	1203	1041	1628	251	1625	1626	393	1439	1355	2349	1090	1783	45.75	2108	446	1742	153
154	.179	79.5	2484	675	1661	2127	1212	1046	1640	251	1636	1638	394	1455	1372	2375	1104	1803	46.05	2123	448	1754	154
155	.179	80.0	2502	680	1672	2142	1221	1051	1651	252	1646	1650	394	1471	1390	2402	1117	1824	46.50	2142	452	1766	155
156	.178	80.5	2520	685	1683	2157	1230	1057	1663	253	1656	1662	385	1487	1408	2429	1131	1844	46.80	2157	454	1778	156
157	.177	81.0	2538	690	1694	2172	1239	1062	1674	254	1666	1674	396	1503	1426	2456	1145	1865	47.10	2172	456	1790	157
158	.177	81.5	2556	695	1705	2187	1248	1067	1686	255	1677	1686	396	1519	1444	2483	1159	1886	47.56	2191	460	1802	158
159	.176	82.0	2574	700	1716	2202	1257	1073	1697	256	1687	1698	397	1535	1462	2511	1173	1907	47.86	2206	462	1814	159
160	.175	82.6	2592	704	1726	2218	1266	1078	1709	256	1697	1709	397	1552	1481	2538	1187	1928	48.16	2222	464	1825	160
161	.175	83.1	2610	709	1737	2233	1275	1083	1720	257	1707	1721	398	1568	1499	2566	1201	1949	48.62	2241	468	1837	161
162	.174	83.6	2628	714	1748	2248	1284	1088	1732	258	1718	1733	398	1585	1518	2594	1215	1971	48.92	2256	470	1849	162
163	.174	84.1	2646	719	1759	2263	1293	1094	1743	259	1728	1745	399	1601	1536	2622	1230	1992	49.23	2271	472	1861	163
164	.173	84.6	2664	724	1770	2278	1302	1099	1755	260	1738	1757	400	1618	1555	2650	1244	2014	49.53	2286	474	1873	164
165	.172	85.1	2682	728	1780	2293	1311	1104	1766	261	1748	1769	400	1635	1574	2678	1259	2036	49.99	2305	478	1885	165
166	.172	85.7	2700	733	1791	2308	1320	1109	1778	261	1758	1781	401	1652	1593	2707	1273	2057	50.30	2321	480	1897	166
167	.171	86.2	2718	738	1802	2323	1329	1115	1789	262	1769	1793	401	1669	1612	2735	1288	2079	50.60	2336	482	1909	167
168	.171	86.9	2735	740	1815	2339	1338	1120	1801	263	1779	1805	402	1686	1631	2764	1303	2101	51.07	2355	487	1921	168
169	.170	87.4	2753	745	1826	2354	1347	1125	1812	264	1789	1817	402	1703	1651	2793	1318	2123	51.38	2370	489	1932	169
170	.169	87.9	2771	750	1836	2369	1356	1130	1824	265	1799	1829	403	1720	1670	2822	1333	2146	51.68	2386	491	1944	170
171	.169	88.4	2789	754	1847	2384	1365	1135	1836	266	1809	1840	403	1737	1690	2851	1348	2168	52.15	2405	495	1956	171
172	.168	88.9	2807	759	1858	2399	1375	1141	1847	266	1820	1852	404	1755	1710	2880	1363	2191	52.46	2420	497	1968	172
173	.168	89.4	2825	764	1869	2414	1384	1146	1859	267	1830	1864	405	1772	1729	2910	1378	2213	52.76	2435	499	1980	173
174	.167	90.0	2843	769	1880	2429	1393	1151	1870	268	1840	1876	405	1790	1749	2939	1393	2236	53.07	2451	501	1992	174
175	.167	90.5	2861	774	1890	2444	1402	1156	1882	269	1850	1888	406	1807	1769	2969	1409	2259	53.55	2470	506	2004	175
176	.166	91.0	2879	779	1901	2460	1411	1162	1893	270	1860	1900	406	1825	1790	2999	1424	2282	53.86	2485	508	2015	176
177	.166	91.5	2897	783	1912	2475	1420	1167	1905	271	1870	1912	407	1843	1810	3029	1440	2305	54.16	2501	510	2027	177
178	.165	92.0	2915	788	1923	2490	1429	1172	1916	272	1881	1924	407	1861	1830	3059	1455	2328	54.47	2516	512	2039	178
179	.164	92.5	2933T	793T	1934T	2505T	1438T	1177T	1928T	272T	1891T	1936T	408T	1879L	1851L	3089L	1471L	2351L	54.95	2536T	517T	2051T	179

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/6 POINT (0.167L)

$K_{AB} = 0.144$ $K_{BA} = 3.573$ $C_{AB} = 5.00$ $C_{BA} = 0.200$

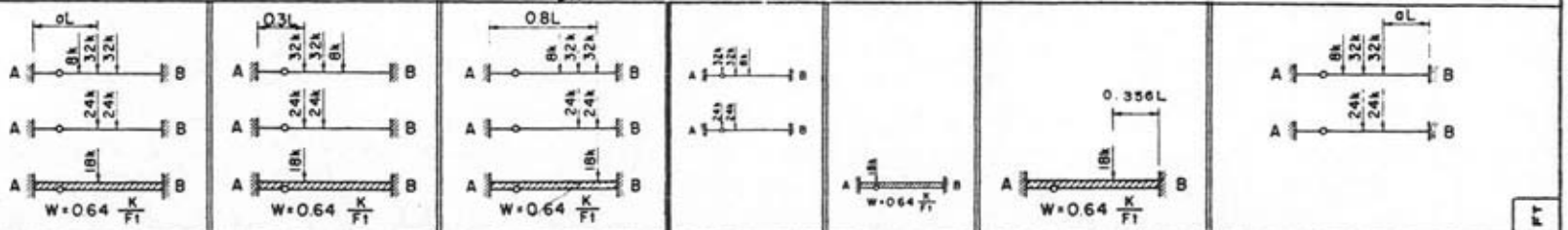
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		@L FT	SBM @@L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.356L	FEM @ A	FEM @ B	@L FT	SBM @@L	FEM @ A	FEM @ B	
180	.164	93.1	2951T	798T	1944T	2520T	1447T	1182T	1939T	273T	1901T	1948T	408T	1897L	1871L	3120L	1487L	2375L	55.26	2551T	519T	2063T	180
181	.163	93.6	2969	803	1955	2535	1456	1188	1951	274	1911	1960	409	1915	1892	3150	1502	2398	55.57	2566	521	2075	181
182	.163	94.1	2987	807	1966	2550	1465	1193	1962	275	1921	1972	410	1933	1913	3181	1518	2422	55.87	2582	523	2086	182
183	.162	94.6	3004	812	1977	2565	1474	1198	1974	276	1931	1983	410	1951	1934	3212	1534	2446	56.36	2601	528	2098	183
184	.162	95.1	3022	817	1987	2580	1483	1203	1985	277	1941	1995	411	1970	1955	3243	1551	2470	56.67	2617	530	2110	184
185	.161	95.6	3040	822	1998	2596	1492	1208	1997	278	1951	2007	411	1988	1976	3274	1567	2494	56.98	2632	532	2122	185
186	.161	96.2	3058	827	2009	2611	1501	1214	2008	278	1961	2019	412	2007	1998	3306	1583	2518	57.29	2647	534	2134	186
187	.160	96.7	3076	831	2020	2626	1510	1219	2020	279	1972	2031	412	2026	2019	3337	1599	2542	57.78	2667	539	2146	187
188	.160	97.4	3094	833	2033	2641	1519	1224	2031	280	1982	2043	413	2044	2040	3369	1616	2566	58.09	2683	541	2157	188
189	.159	97.9	3112	838	2044	2656	1529	1229	2043	281	1992	2055	413	2063	2062	3401	1632	2591	58.40	2698	543	2169	189
190	.159	98.4	3130	843	2054	2671	1538	1234	2054	282	2002	2067	414	2082	2084	3433	1649	2615	58.71	2713	545	2181	190
191	.158	98.9	3147	848	2065	2686	1547	1240	2066	283	2012	2079	414	2101	2106	3465	1666	2640	59.21	2733	550	2193	191
192	.158	99.5	3165	852	2076	2701	1556	1245	2077	284	2022	2091	415	2120	2128	3497	1682	2665	59.52	2749	552	2205	192
193	.157	100.0	3183T	857T	2087T	2717	1565	1250	2089	285	2032	2103	415	2139	2150	3529	1699	2690	59.83	2764	554	2217	193
194	.157	101.9	3874L	1809L	2668L	2732	1574	1255	2100	285	2042	2115	416	2158	2172	3562	1716	2715	60.14	2779	556	2228	194
195	.156	102.4	3910	1826	2693	2747	1583	1260	2112	286	2052	2126	416	2178	2194	3594	1733	2740	60.64	2799	561	2240	195
196	.156	102.9	3945	1844	2718	2762	1592	1265	2124	287	2062	2138	417	2197	2217	3627	1750	2765	60.96	2815	563	2252	196
197	.155	103.4	3981	1862	2743	2777	1601	1271	2135	288	2072	2150	418	2217	2239	3660	1768	2790	61.27	2830	565	2264	197
198	.155	104.0	4017	1879	2768	2792	1610	1276	2147	289	2082	2162	418	2236	2262	3693	1785	2816	61.58	2846	567	2276	198
199	.154	104.5	4053	1897	2794	2807	1619	1281	2158	290	2092	2174	419	2256	2285	3727	1802	2841	61.89	2861	569	2287	199
200	.154	105.0	4090	1915	2819	2822	1628	1286	2170	291	2102	2186	419	2276	2308	3760	1820	2867	62.40	2881	574	2299	200
201	.153	105.5	4126	1933	2845	2838	1637	1291	2181	291	2113	2198	420	2295	2331	3793	1837	2893	62.71	2897	577	2311	201
202	.153	106.0	4163	1951	2870	2853	1646	1296	2193	292	2123	2210	420	2315	2354	3827	1855	2919	63.02	2912	579	2323	202
203	.152	106.6	4200	1970	2896	2868	1655	1302	2204	293	2133	2222	421	2335	2377	3861	1873	2945	63.34	2928	581	2335	203
204	.152	107.1	4237	1988	2922	2883T	1665T	1307T	2216	294	2143	2234	421	2355	2401	3895	1890	2971	63.65	2943	583	2347	204
205	.152	107.6	4274	2006	2948	3599L	2231L	2658L	2227	295	2153	2246	422	2375	2424	3929	1908	2997	64.16	2964	588	2358	205
206	.151	108.2	4311	2025	2974	3630	2250	2683	2239	296	2163	2258	422	2396	2448	3963	1926	3024	64.48	2979	590	2370	206
207	.151	108.7	4349	2043	3001	3662	2270	2707	2250	297	2173	2269	423	2416	2471	3998	1944	3050	64.79	2994	592	2382	207
208	.150	109.2	4386	2062	3027	3694	2290	2732	2262	298	2183	2281	423	2436	2495	4032	1962	3077	65.10	3010	595	2394	208
209	.150	109.7	4424L	2080L	3053L	3725L	2309L	2757L	2273T	298T	2193T	2293T	424T	2457L	2519L	4067L	1981L	3103L	65.42	3025T	597T	2406T	209

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/7 POINT (0.143L)

$K_{AB} = 0.097$ $C_{AB} = 6.00$
$K_{BA} = 3.487$ $C_{BA} = 0.167$

POSITIVE MOMENTS (kip feet)

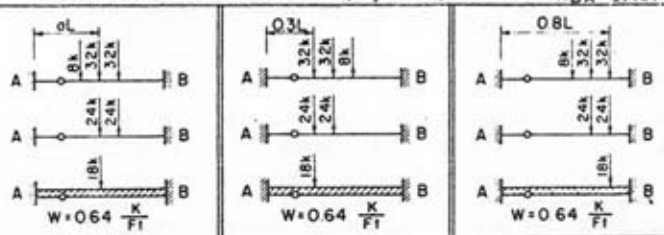
NEGATIVE MOMENTS (kip feet)

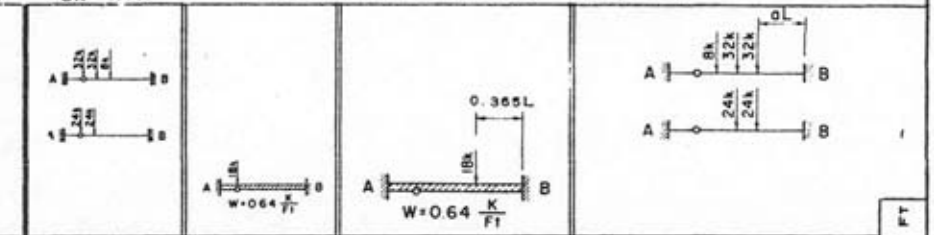
LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)





SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.365L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
30	.300	14.6	313A	70A	225A	274A	127A	151A	211A	28A	216A	181A	52A	109L	55L	192L	50L	143L	9.1	275A	50A	232A	30
31	.300	15.2	325	72	232	284	132	155	219	28	223	188	52	113	59	201	53	150	9.4	286	51	241	31
32	.300	15.6	337	75	240	294	137	159	227	29	230	195	52	118	63	209	56	157	9.8	297A	53A	249A	32
33	.300	16.2	349	78	247	304	142	163	234	29	237	202	53	123	67	218	59	164	6.60	248T	102T	260T	33
34	.300	16.7	361	80	255	314	147	167	242	30	244	209A	53A	128	71	228	62	171	6.94	262	103	273	34
35	.300	17.2	373	83	262	324	152	170	250	30	251	216T	196T	133	75	237	65	178	7.24	275	104	286	35
36	.300	17.7	385	85	270	334A	157A	174A	257	31	258	225	204	138	79	246	68	185	7.56	289	109	298	36
37	.300	18.2	397	88	277	363T	154T	287T	265	31	265	234	212	143	84	256	71	192	7.84	303	116	311	37
38	.300	18.7	409	91	285	376	160	296	273	32	272	243	219	149	88	266	74	200	8.13	316	123	324	38
39	.300	19.3	421	93	292	390	166	305	280	32	279	252	225	154	93	276	78	207	8.46	331	129	337	39
40	.300	19.8	433	96	299	403	172	313	288	32	285	261	231	159	98	286	81	215	8.76	345	136	349	40
41	.300	20.3	445	99	307	418	178	326	296	33	292	270	237	165	103	296	85	223	9.10	361	143	362	41
42	.299	20.8	456	101	314	433	184	339	303	33	299	280	242	170	108	306	88	231	9.41	375	150	374	42
43	.298	21.3	468	104	322	449	191	352	311	34	306	289	247	176	113	317	92	239	8.51	359	150	385	43
44	.296	21.8	480	107	329	464	197	364	319	34	312	299	252	182	118	327	96	247	8.80	372	151	400	44
45	.294	22.3	492A	109A	337A	479	204	376	326	35	319	308	256	187	124	338	99	255	9.13	388	153	414	45
46	.292	22.4	552T	155T	428T	494	210	387	334	35	326	318	260	193	129	349	103	264	9.43	402	154	428	46
47	.291	23.0	569	159	442	509	217	398	342	36	333	328	264	199	135	360	107	272	9.78	418	156	442	47
48	.289	23.5	587	163	456	524	223	409	349	36	339	337	268	205	140	371	111	281	10.08	432	157	456	48
49	.287	24.0	605	166	470	539	230	419	357	37	346	347	271	211	146	383	115	290	10.39	447	158	470	49
50	.286	24.4	623	170	483	554	237	430	365	37	353	357	274	217	152	394	119	299	10.75	463	161	484	50
51	.284	24.9	641	174	497	570	243	440	372	38	360	367	277	223	158	406	124	308	11.07	478	162	498	51
52	.282	25.4	659	178	510	585	250	450	380	38	366	377	280	230	165	417	128	317	11.39	493	164	512	52
53	.281	26.0	677	181	523	600	257	459	388	39	373	386	283	236	171	429	132	326	11.71	508	165	525	53
54	.279	26.5	695	185	536	615	264	468	396	39	380	396	286	242	177	442	137	335	12.04	524	167	539	54
55	.278	26.9	713	189	549	630	271	478	403A	40A	386A	406	288	249	184	454	141	345	12.37	539	169	553	55
56	.276	27.4	731	193	562	645	278	487	511T	153T	563T	416	290	255	191	466	146	354	12.71	555	170	566	56
57	.275	27.9	749	197	575	660	285	496	522	153	576	426	293	262	198	479	150	364	13.05	571	172	580	57
58	.273	28.5	767	201	588	675	291	504	534	153	589	436	295	269	204	491	155	374	13.40	587	174	593	58
59	.272	29.0	785T	205T	601T	690T	298T	513T	545T	153T	602T	446T	297T	275L	212L	504L	160L	384L	13.69	601T	175T	607T	59

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/7 POINT (0.143L)

K_{AB} = 0.097 C_{AB} = 6.00
K_{BA} = 3.487 C_{BA} = 0.167

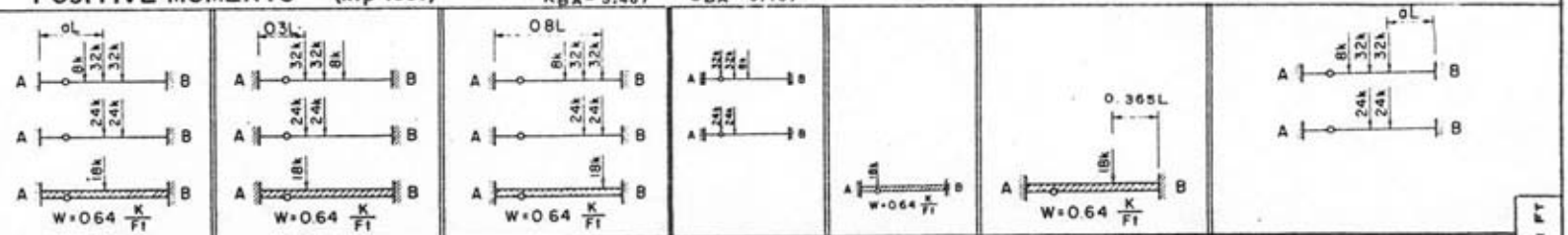
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @ 0L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.365L	FEM @ A	FEM @ B	0L FT	SBM @ 0L	FEM @ A	FEM @ B	
60	.270	29.5	803T	209T	613T	706T	305T	522T	557T	154T	615T	456T	299T	282L	219L	517L	165L	394L	14.04	617T	177T	620T	60
61	.269	30.0	821	213	626	721	312	530	568	154	628	466	301	289	226	530	170	404	14.40	633	179	633	61
62	.267	30.4	839	217	638	736	319	538	580	154	640	476	303	296	233	544	175	415	14.76	650	182	647	62
63	.266	31.0	856	220	651	751	327	546	591	155	653	486	304	303	241	557	180	425	15.06	664	183	660	63
64	.265	31.5	874	224	663	766	334	554	603	155	666	496	306	310	249	571	185	436	15.42	681	185	673	64
65	.263	32.0	892	228	675	781	341	562	614	155	678	506	308	317	256	585	190	446	15.73	696	187	686	65
66	.262	32.5	910	232	688	796	348	570	626	156	690	516	309	325	264	598	195	457	16.10	713	189	700	66
67	.260	33.0	928	236	700	811	355	578	637	156	703	526	311	332	272	612	201	468	16.41	728	190	713	67
68	.259	33.5	946	239	712	827	362	586	649	156	715	536	312	339	280	627	206	479	16.80	745	193	726	68
69	.258	34.0	964	243	724	842	369	593	660	157	727	546	314	347	289	641	212	490	17.11	760	194	739	69
70	.256	34.5	982	247	737	857	376	601	672	157	740	556	315	354	297	655	217	502	17.50	777	197	752	70
71	.255	35.0	1000	252	749	872	383	608	684	157	752	566	316	362	306	670	223	513	17.82	792	199	765	71
72	.254	35.5	1018	256	760	887	391	616	695	158	764	576	317	370	314	685	229	524	18.14	808	200	778	72
73	.253	36.1	1036	259	773	902	398	623	707	158	776	586	319	377	323	700	234	536	18.54	825	203	791	73
74	.251	36.6	1054	263	785	917	405	631	718	158	788	596	320	385	332	715	240	548	18.87	841	205	804	74
75	.250	37.0	1072	267	797	932	412	638	730	159	800	607	321	393	341	730	246	560	19.20	856	207	817	75
76	.249	37.5	1090	271	809	948	419	645	741	159	812	617	322	401	350	745	252	572	19.53	872	208	830	76
77	.248	38.0	1108	275	820	963	427	652	753	160	823	627	323	409	359	761	258	584	19.87	888	210	842	77
78	.246	38.6	1126	278	833	978	434	659	764	160	835	637	324	417	368	777	264	596	20.28	906	213	855	78
79	.245	39.1	1144	282	845	993	441	666	776	161	847	647	325	425	378	792	271	608	20.62	922	215	868	79
80	.244	39.6	1162	286	856	1008	448	673	787	161	859	657	326	434	387	808	277	621	20.96	938	217	881	80
81	.243	40.1	1180	291	868	1023	456	680	799	162	870	667	327	442	397	825	283	634	21.30	954	219	894	81
82	.241	40.6	1198	295	880	1038	463	687	810	162	882	677	328	450	407	841	290	646	21.65	970	221	907	82
83	.240	41.1	1216	299	891	1053	470	694	822	162	894	688	329	459	417	857	296	659	21.99	986	223	919	83
84	.239	41.7	1233	302	904	1068	477	701	833	163	905	698	330	467	427	874	303	672	22.34	1002	225	932	84
85	.238	42.2	1251	306	915	1084	485	708	845	163	917	708	331	476	437	890	309	685	22.69	1018	227	945	85
86	.237	42.7	1269	310	927	1099	492	715	856	164	928	718	332	485	447	907	316	698	23.05	1035	229	957	86
87	.236	43.2	1287	314	938	1114	499	721	868	164	940	728	333	493	458	924	323	712	23.40	1051	231	970	87
88	.235	43.6	1305	318	950	1129	506	728	879	165	951	738	333	502	468	941	330	725	23.76	1067	234	983	88
89	.234	44.1	1323T	322T	961T	1144T	514T	735T	891T	165T	962T	748T	334T	511L	479L	959L	337L	739L	24.12	1084T	236T	996T	89

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/7 POINT (0.143L)

K_{AB} = 0.097 C_{AB} = 6.00
K_{BA} = 3.487 C_{BA} = 0.167

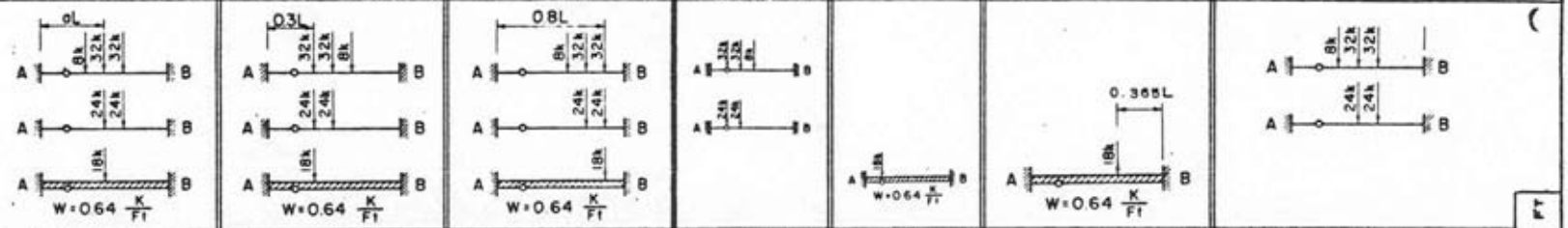
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.365L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
90	.233	44.6	1341T	327T	973T	1159T	521T	741T	902T	166T	974T	759T	335T	520L	490L	976L	344L	752L	24.48	1100T	238T	1008T	90
91	.231	45.2	1359	329	985	1174	528	748	914	166	985	769	336	529	500	994	351	766	24.84	1117	240	1021	91
92	.230	45.7	1377	334	997	1189	536	755	925	167	996	779	337	538	511	1012	358	780	25.21	1134	243	1033	92
93	.229	46.2	1395	338	1008	1205	543	761	937	167	1008	789	337	547	523	1029	365	794	25.48	1148	244	1046	93
94	.228	46.7	1413	342	1020	1220	550	768	948	168	1019	799	338	557	534	1048	373	808	25.85	1165	246	1059	94
95	.227	47.2	1431	346	1031	1235	558	774	960	169	1030	809	339	566	545	1066	380	822	26.22	1181	248	1071	95
96	.226	47.7	1449	350	1043	1250	565	781	972	169	1041	820	339	575	557	1084	387	837	26.59	1198	251	1084	96
97	.225	48.2	1467	354	1054	1265	572	787	983	170	1053	830	340	585	568	1103	395	851	26.97	1215	253	1096	97
98	.224	48.8	1485	357	1066	1280	580	794	995	170	1064	840	341	594	580	1121	402	866	27.34	1232	256	1109	98
99	.223	49.3	1503	361	1078	1295	587	800	1006	171	1075	850	341	604	592	1140	410	881	27.62	1246	257	1121	99
100	.222	49.8	1521	365	1089	1310	594	807	1018	171	1086	860	342	614	604	1159	418	896	28.00	1263	259	1134	100
101	.221	50.3	1539	369	1100	1326	602	813	1029	172	1097	871	343	623	616	1178	426	911	28.38	1280	262	1146	101
102	.220	50.8	1557	374	1112	1341	609	820	1041	172	1108	881	343	633	628	1197	433	926	28.76	1297	264	1159	102
103	.219	51.3	1575	378	1123	1356	616	826	1052	173	1119	891	344	643	640	1217	441	941	29.05	1312	266	1171	103
104	.218	51.8	1593	382	1134	1371	624	832	1064	173	1130	901	345	653	653	1236	449	956	29.43	1329	268	1184	104
105	.217	52.3	1611	386	1146	1386	631	839	1075	174	1141	911	345	663	665	1256	457	972	29.82	1346	271	1196	105
106	.216	52.9	1628	389	1158	1401	638	845	1087	175	1152	922	346	673	678	1276	466	987	30.10	1361	272	1209	106
107	.216	53.4	1646	393	1169	1416	646	851	1098	175	1163	932	346	683	691	1296	474	1003	30.49	1378	275	1221	107
108	.215	53.9	1664	397	1181	1431	653	858	1110	176	1174	942	347	694	704	1316	482	1019	30.89	1396	277	1234	108
109	.214	54.4	1682	401	1192	1446	660	864	1121	176	1185	952	347	704	717	1336	491	1035	31.17	1410	279	1246	109
110	.213	54.9	1700	405	1203	1462	668	870	1133	177	1196	962	348	714	730	1356	499	1051	31.57	1428	281	1258	110
111	.212	55.4	1718	409	1215	1477	675	876	1144	177	1207	973	349	725	743	1377	507	1067	31.97	1445	284	1271	111
112	.211	55.9	1736	414	1226	1492	682	883	1156	178	1218	983	349	735	756	1398	516	1083	32.26	1460	286	1283	112
113	.210	56.4	1754	418	1237	1507	690	889	1167	179	1228	993	350	746	770	1418	525	1100	32.66	1478	288	1296	113
114	.209	57.0	1772	420	1250	1522	697	895	1179	179	1239	1003	350	757	784	1439	533	1116	32.95	1492	290	1308	114
115	.208	57.5	1790	424	1261	1537	705	901	1190	180	1250	1013	351	768	797	1461	542	1133	33.35	1510	292	1320	115
116	.207	58.0	1808	429	1272	1552	712	908	1202	180	1261	1024	351	778	811	1482	551	1150	33.76	1528	295	1333	116
117	.207	58.5	1826	433	1283	1567	719	914	1213	181	1272	1034	352	789	825	1503	560	1167	34.05	1542	297	1345	117
118	.206	59.0	1844	437	1294	1583	727	920	1225	182	1282	1044	352	800	839	1525	569	1184	34.46	1560	300	1358	118
119	.205	59.5	1862T	441T	1306T	1598T	734T	926T	1236T	182T	1293T	1054T	353T	811L	854L	1547L	578L	1201L	34.75	1575T	301T	1370T	119

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT L/2 POINT (H20-S16-44)

K_{AB} = K_{BA} = (IMPACT NOT INCLUDED) C_{AB} = C_{BA} = 1.0

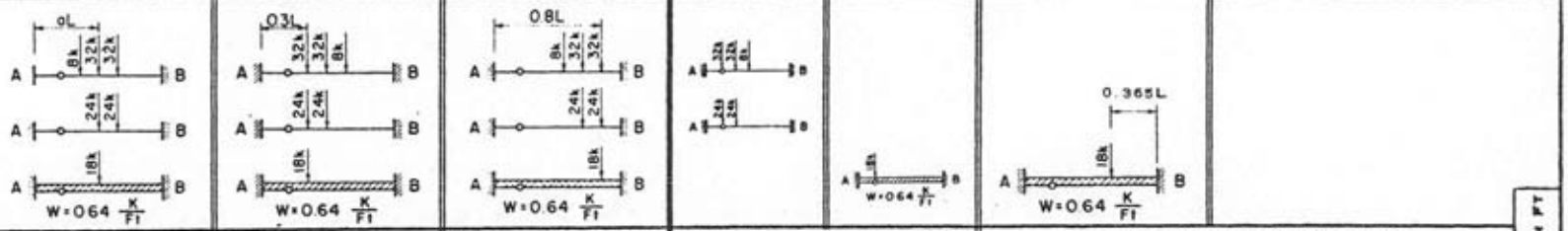
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.365L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
120	.204	60.0	1880T	445T	1317T	1613T	741T	932T	1248T	183T	1304T	1064T	353T	822L	868L	1569L	587L	1218L	35.16	1593T	304T	1382T	120
121	.203	60.5	1898	449	1328	1628	749	938	1260	184	1315	1075	354	834	882	1591	596	1235	35.45	1608	305	1395	121
122	.202	61.0	1916	453	1339	1643	756	945	1271	184	1325	1085	354	845	897	1613	606	1253	35.87	1626	308	1407	122
123	.202	61.5	1934	457	1350	1658	764	951	1283	185	1336	1095	355	856	912	1635	615	1270	36.28	1644	311	1419	123
124	.201	62.0	1952	462	1361	1673	771	957	1294	185	1347	1105	355	868	926	1658	625	1288	36.58	1659	313	1432	124
125	.200	62.6	1970	464	1374	1688	778	963	1306	186	1357	1116	356	879	941	1680	634	1306	37.00	1677	316	1444	125
126	.199	63.1	1988	468	1385	1704	786	969	1317	187	1368	1126	356	891	956	1703	644	1324	37.30	1692	317	1456	126
127	.198	63.6	2006	472	1396	1719	793	975	1329	187	1379	1136	357	902	972	1726	653	1342	37.72	1710	320	1469	127
128	.198	64.1	2024	476	1408	1734	801	981	1340	188	1389	1146	357	914	987	1749	663	1360	38.02	1725	322	1481	128
129	.197	64.6	2042	481	1419	1749	808	987	1352	189	1400	1156	357	926	1002	1772	673	1379	38.44	1743	325	1493	129
130	.196	65.1	2060	485	1430	1764	815	993	1363	189	1410	1167	358	938	1018	1796	683	1397	38.74	1758	326	1505	130
131	.195	65.6	2078	489	1441	1779	823	999	1375	190	1421	1177	358	949	1033	1819	693	1416	39.04	1773	328	1518	131
132	.195	66.1	2096	493	1452	1794	830	1006	1386	190	1432	1187	359	961	1049	1843	703	1434	39.47	1791	331	1530	132
133	.194	66.6	2114	497	1463	1809	838	1012	1398	191	1442	1197	359	973	1065	1867	713	1453	39.77	1806	333	1542	133
134	.193	67.1	2132	501	1474	1824	845	1018	1409	192	1453	1208	360	986	1081	1891	723	1472	40.20	1824	336	1555	134
135	.192	67.6	2150	505	1485	1840	852	1024	1421	192	1463	1218	360	998	1097	1915	733	1491	40.50	1840	337	1567	135
136	.192	68.3	2167	508	1498	1855	860	1030	1432	193	1474	1228	360	1010	1114	1939	743	1510	40.94	1858	340	1579	136
137	.191	68.8	2185	512	1509	1870	867	1036	1444	194	1484	1238	361	1022	1130	1964	754	1530	41.24	1873	342	1591	137
138	.190	69.3	2203	516	1520	1885	875	1042	1455	194	1495	1248	361	1035	1146	1988	764	1549	41.68	1892	345	1604	138
139	.189	69.8	2221	520	1532	1900	882	1048	1467	195	1505	1259	362	1047	1163	2013	775	1569	41.98	1907	347	1616	139
140	.189	70.3	2239	524	1543	1915	889	1054	1478	196	1516	1269	362	1060	1180	2038	785	1588	42.28	1922	348	1628	140
141	.188	70.8	2257	528	1554	1930	897	1060	1490	196	1526	1279	363	1072	1197	2063	796	1608	42.72	1940	352	1640	141
142	.187	71.3	2275	532	1565	1945	904	1066	1501	197	1537	1289	363	1085	1214	2088	807	1628	43.03	1956	353	1653	142
143	.187	71.8	2293	537	1576	1961	912	1072	1513	198	1547	1300	363	1098	1231	2113	818	1648	43.47	1974	357	1665	143
144	.186	72.3	2311	541	1587	1976	919	1078	1524	198	1558	1310	364	1111	1248	2139	828	1668	43.78	1989	358	1677	144
145	.185	72.8	2329	545	1598	1991	926	1084	1536	199	1568	1320	364	1124	1265	2164	839	1688	44.08	2005	360	1689	145
146	.185	73.3	2347	549	1609	2006	934	1090	1548	200	1579	1330	365	1137	1283	2190	850	1709	44.53	2023	363	1701	146
147	.184	73.8	2365	553	1620	2021	941	1096	1559	200	1589	1340	365	1150	1300	2216	861	1729	44.83	2039	365	1714	147
148	.183	74.3	2383	557	1631	2036	949	1102	1571	201	1600	1351	365	1163	1318	2242	873	1750	45.29	2057	368	1726	148
149	.182	74.9	2401T	559T	1644T	2051T	956T	1108T	1582T	201T	1610T	1361T	366T	1176L	1336L	2268L	884L	1770L	45.59	2073T	370T	1738T	149

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/7 POINT (0.143L)

K_{AB} = 0.097 C_{AB} = 6.00
K_{BA} = 3.487 C_{BA} = 0.167

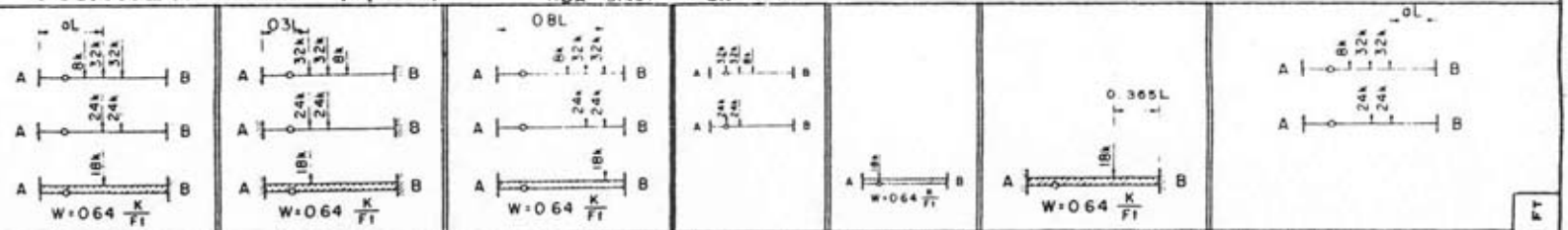
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B						SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.365L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
150	.182	75.4	2419T	563T	1655T	2066T	964T	1114T	1594T	202T	1621T	1371T	366T	1189L	1354L	2295L	895L	1791L	45.90	2088T	372T	1750T	150
151	.181	76.0	2437	567	1666	2082	971	1120	1605	203	1631	1381	367	1203	1372	2321	907	1812	46.36	2107	375	1763	151
152	.181	76.5	2455	572	1677	2097	978	1125	1617	203	1641	1392	367	1216	1390	2348	918	1833	46.66	2122	377	1775	152
153	.180	77.0	2473	576	1688	2112	986	1131	1628	204	1652	1402	367	1229	1408	2375	929	1854	46.97	2137	378	1787	153
154	.179	77.5	2491	580	1700	2127	993	1137	1640	205	1662	1412	368	1243	1426	2401	941	1876	47.43	2156	382	1799	154
155	.179	78.0	2509	584	1711	2142	1001	1143	1651	205	1672	1422	368	1257	1445	2429	953	1897	47.74	2172	383	1811	155
156	.178	78.5	2527	588	1722	2157	1008	1149	1663	206	1683	1433	369	1270	1464	2456	964	1919	48.05	2187	385	1824	156
157	.177	79.0	2545	592	1733	2172	1015	1155	1674	207	1693	1443	369	1284	1482	2483	976	1940	48.51	2206	389	1836	157
158	.177	79.5	2563	596	1744	2187	1023	1161	1686	208	1704	1453	369	1298	1501	2511	988	1962	48.82	2221	390	1848	158
159	.176	80.0	2581	601	1755	2202	1030	1167	1697	208	1714	1463	370	1312	1520	2538	1000	1984	49.13	2237	392	1860	159
160	.175	80.5	2599	605	1766	2218	1038	1173	1709	209	1724	1473	370	1326	1539	2566	1012	2006	49.60	2256	396	1872	160
161	.175	81.0	2617	609	1777	2233	1045	1179	1720	210	1735	1484	370	1340	1559	2594	1024	2028	49.91	2271	397	1884	161
162	.174	81.5	2635	613	1788	2248	1053	1185	1732	210	1745	1494	371	1354	1578	2622	1036	2051	50.22	2287	399	1897	162
163	.174	82.0	2653	617	1799	2263	1060	1191	1743	211	1755	1504	371	1368	1597	2651	1049	2073	50.69	2306	403	1909	163
164	.173	82.5	2671	621	1810	2278	1067	1197	1755	212	1766	1514	371	1382	1617	2679	1061	2095	51.00	2321	404	1921	164
165	.172	83.2	2688	623	1823	2293	1075	1202	1766	212	1776	1525	372	1397	1637	2708	1073	2118	51.31	2337	406	1933	165
166	.172	83.7	2706	627	1834	2308	1082	1208	1778	213	1786	1535	372	1411	1657	2736	1086	2141	51.79	2356	410	1945	166
167	.171	84.2	2724	631	1845	2323	1090	1214	1789	214	1796	1545	373	1426	1677	2765	1098	2164	52.10	2371	411	1957	167
168	.171	84.7	2742	635	1856	2339	1097	1220	1801	214	1807	1555	373	1440	1697	2794	1111	2187	52.42	2387	413	1970	168
169	.170	85.2	2760	639	1867	2354	1105	1226	1812	215	1817	1566	373	1455	1717	2823	1123	2210	52.73	2402	415	1982	169
170	.169	85.7	2778	644	1878	2369	1112	1232	1824	216	1827	1576	374	1470	1737	2853	1136	2233	53.21	2422	419	1994	170
171	.169	86.2	2796	648	1889	2384	1119	1238	1836	216	1838	1586	374	1484	1758	2882	1149	2256	53.52	2437	420	2006	171
172	.168	86.7	2814	652	1900	2399	1127	1244	1847	217	1848	1596	374	1499	1778	2912	1162	2280	53.84	2453	422	2018	172
173	.168	87.2	2832	656	1911	2414	1134	1249	1859	218	1858	1607	375	1514	1799	2942	1175	2303	54.32	2472	426	2030	173
174	.167	87.7	2850	660	1922	2429	1142	1255	1870	218	1868	1617	375	1529	1820	2971	1188	2327	54.64	2488	428	2042	174
175	.167	88.2	2868	664	1933	2444	1149	1261	1882	219	1879	1627	375	1544	1841	3001	1201	2351	54.95	2503	429	2055	175
176	.166	88.7	2886	668	1944	2460	1157	1267	1893	220	1889	1637	376	1559	1862	3032	1214	2375	55.26	2519	431	2067	176
177	.166	89.2	2904	672	1955	2475	1164	1273	1905	221	1899	1647	376	1574	1883	3062	1227	2399	55.75	2538	435	2079	177
178	.165	89.7	2922	677	1966	2490	1171	1279	1916	221	1909	1658	376	1590	1904	3093	1241	2423	56.07	2554	437	2091	178
179	.164	90.2	2940T	681T	1977T	2505T	1179T	1285T	1928T	222T	1920T	1668T	377T	1605L	1925L	3123L	1254L	2447L	56.38	2569T	439T	2103T	179

ONE LANE LIVE LOAD (H20-S16-44)

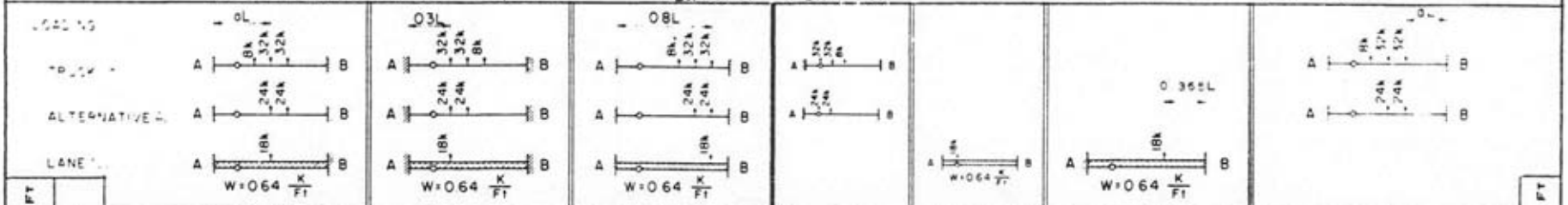
(IMPACT NOT INCLUDED)

HINGE AT 1/7 POINT (0.143L)

K_{AB} = 0.097 C_{AB} = 6.00
K_{BA} = 3.487 C_{BA} = 0.167

POSITIVE MOMENTS (kip feet)

NEGATIVE MOMENTS (kip feet)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		@L FT	SBM @@L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.365L	FEM @ A	FEM @ B	@L FT	SBM @@L	FEM @ A	FEM @ B	
180	.164	90.7	2958T	685T	1988T	2520T	1186T	1291T	1939T	223T	1930T	1678T	377T	1621L	1947L	3154L	1267L	2472L	56.70	2585T	440T	2115T	180
181	.163	91.2	2976	689	1999	2535	1194	1296	1951	223	1940	1688	378	1636	1968	3185	1281	2496	57.20	2604	444	2127	181
182	.163	91.7	2994	693	2010	2550	1201	1302	1962	224	1950	1699	378	1652	1990	3216	1295	2521	57.51	2620	446	2139	182
183	.162	92.2	3012	697	2021	2565	1209	1308	1974	225	1961	1709	378	1667	2012	3247	1308	2546	57.83	2636	448	2152	183
184	.162	92.9	3030T	699T	2035T	2580	1216	1314	1985	225	1971	1719	379	1683	2034	3279	1322	2571	58.14	2651	450	2164	184
185	.161	95.1	3568L	1411L	2551L	2596	1223	1320	1997	226	1981	1729	379	1699	2056	3310	1336	2596	58.64	2671	454	2176	185
186	.161	95.6	3602	1425	2575	2611	1231	1326	2008	227	1991	1740	379	1714	2078	3342	1350	2621	58.96	2686	455	2188	186
187	.160	96.1	3636	1439	2600	2626	1238	1331	2020	228	2001	1750	380	1730	2101	3374	1364	2646	59.28	2702	457	2200	187
188	.160	96.6	3671	1454	2626	2641	1246	1337	2031	228	2012	1760	380	1746	2123	3406	1378	2672	59.60	2718	459	2212	188
189	.159	97.1	3705	1468	2651	2656	1253	1343	2043	229	2022	1770	380	1762	2146	3438	1392	2697	60.10	2738	463	2224	189
190	.159	97.7	3740	1483	2676	2671	1261	1349	2054	230	2032	1781	381	1779	2168	3470	1406	2723	60.42	2753	465	2236	190
191	.158	98.2	3775	1497	2702	2686	1268	1355	2066	230	2042	1791	381	1795	2191	3503	1420	2748	60.74	2769	467	2248	191
192	.158	98.7	3810	1512	2727	2701	1276	1361	2077	231	2052	1801	381	1811	2214	3535	1434	2774	61.06	2784	468	2261	192
193	.157	99.2	3845	1527	2753	2717	1283	1366	2089	232	2062	1811	382	1827	2237	3568	1449	2800	61.57	2804	473	2273	193
194	.157	99.7	3881	1542	2779	2732	1290	1372	2100	232	2073	1822	382	1844	2260	3601	1463	2826	61.89	2820	474	2285	194
195	.156	100.2	3916	1557	2805	2747T	1298T	1378T	2112	233	2083	1832	382	1860	2284	3634	1478	2852	62.20	2836	476	2297	195
196	.156	100.7	3952	1572	2831	3322L	1741L	2572L	2124	234	2093	1842	383	1877	2307	3667	1492	2879	62.52	2851	478	2309	196
197	.155	101.3	3988	1587	2857	3353	1757	2596	2135	235	2103	1852	383	1893	2331	3700	1507	2905	62.84	2867	480	2321	197
198	.155	101.8	4024	1602	2884	3383	1773	2621	2147	235	2113	1863	383	1910	2354	3734	1522	2832	63.36	2887	484	2333	198
199	.154	102.3	4060	1617	2910	3413	1789	2647	2158	236	2123	1873	384	1927	2378	3767	1537	2959	63.68	2903	486	2345	199
200	.154	102.8	4097	1632	2937	3444	1805	2672	2170	237	2134	1883	384	1944	2402	3801	1552	2985	64.00	2918	488	2357	200
201	.153	103.3	4133	1648	2963	3475	1821	2697	2181	237	2144	1893	384	1961	2426	3835	1566	3012	64.32	2934	490	2369	201
202	.153	103.8	4170	1663	2990	3506	1838	2723	2193	238	2154	1903	385	1978	2450	3869	1581	3039	64.64	2950	491	2382	202
203	.152	104.3	4207	1679	3017	3537	1854	2748	2204	239	2164	1914	385	1995	2474	3903	1597	3066	65.16	2970	496	2394	203
204	.152	104.9	4244	1694	3044	3568	1870	2774	2216	240	2174	1924	385	2012	2499	3938	1612	3094	65.48	2986	497	2406	204
205	.152	105.4	4281	1710	3071	3599	1887	2800	2227	240	2184	1934	386	2029	2523	3972	1627	3121	65.80	3001	499	2418	205
206	.151	105.9	4318	1726	3098	3630	1903	2826	2239	241	2194	1944	386	2046	2548	4007	1642	3149	66.13	3017	501	2430	206
207	.151	106.4	4356	1741	3126	3662	1920	2852	2250	242	2205	1955	386	2064	2573	4042	1658	3176	66.45	3033	503	2442	207
208	.150	106.9	4394	1757	3153	3694	1937	2878	2262	242	2215	1965	387	2081	2598	4077	1673	3204	66.98	3053	507	2454	208
209	.150	107.4	4432L	1773L	3181L	3725L	1954L	2904L	2273T	243T	2225T	1975T	387T	2099L	2622L	4112L	1689L	3232L	67.30	3069T	509T	2466T	209

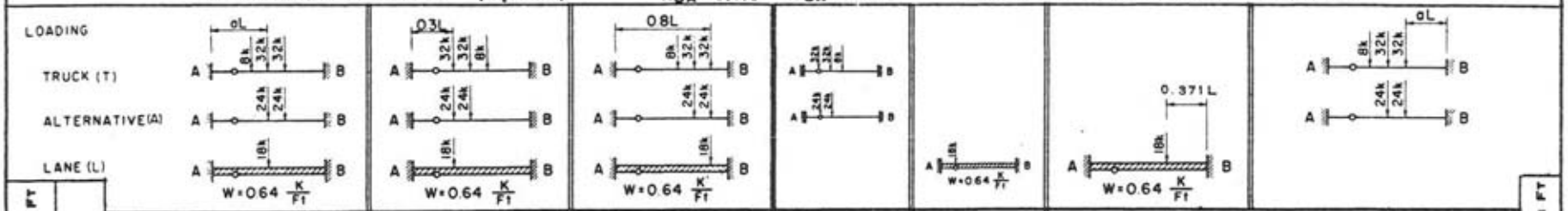
ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/8 POINT (0.125L)

K_{AB} = .070 C_{AB} = 7.0
K_{BA} = 3.419 C_{BA} = 0.143

POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.371L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
30	.300	14.2	314A	62A	228A	274A	107A	160A	211A	24A	219A	159A	50A	95L	57L	193L	44L	147L	9.3	278A	43A	237A	30
31	.300	14.8	325	64	236	284	112	164	219	24	226	165	50	99	60	202	46	154	9.6	289A	45A	245A	31
32	.300	15.3	337	66	243	294	116	169	227	24	233	171	51	103	64	211	49	161	6.50	240T	87T	254T	32
33	.300	15.8	349	69	251	304	120	173	234	25	240	177A	51A	107	68	220	51	168	6.80	253	88	268	33
34	.300	16.3	361	71	259	314	124	177	242	25	247	183T	191T	112	73	229	54	175	7.11	266	89	281	34
35	.300	16.8	373	73	266	324	128	181	250	25	254	191	199	116	77	238	56	182	7.45	280	90	294	35
36	.300	17.2	385	76	274	334A	133A	186A	257	26	261	198	207	121	81	248	59	190	7.78	294	93	307	36
37	.300	17.8	397	78	281	363T	130T	299T	265	26	268	206	215	125	86	258	62	197	8.07	308	100	320	37
38	.300	18.3	409	80	289	376	135	308	273	27	275	214	221	130	91	267	65	205	8.40	323	106	333	38
39	.300	18.8	421	83	296	390	140	317	280	27	282	223	227	134	95	277	68	213	8.70	337	113	345	39
40	.300	19.3	433	85	304	403	145	326	288	27	289	231	233	139	100	287	71	221	9.04	352	119	358	40
41	.300	19.8	445	87	311	418	151	339	296	28	295	239	239	144	105	298	74	229	9.35	366	126	371	41
42	.299	20.2	457	90	319	433	156	353	303	28	302	247	244	149	111	308	77	237	8.44	351	128	382	42
43	.298	20.8	469	92	327	449	161	366	311	29	309	256	248	154	116	319	80	245	8.73	364	129	397	43
44	.296	21.3	481	95	334	464	167	379	319	29	316	264	253	159	121	329	83	254	9.06	380	130	411	44
45	.294	21.8	493A	97A	342A	479	172	391	326	29	323	272	257	164	127	340	86	262	9.40	395	132	426	45
46	.292	21.9	554T	137T	440T	494	178	403	334	30	329	281	260	169	133	351	90	271	9.71	410	133	440	46
47	.291	22.4	572	140	454	509	183	414	342	30	336	289	264	174	138	362	93	280	10.06	425	135	454	47
48	.289	22.9	590	143	468	524	189	426	349	31	343	298	267	179	144	374	97	289	10.37	440	136	469	48
49	.287	23.4	608	147	482	539	194	437	357	31	350	306	271	184	150	385	100	298	10.68	455	137	483	49
50	.286	23.8	626	150	495	554	200	447	365	31	357	315	274	190	156	397	104	307	11.00	470	138	497	50
51	.284	24.3	644	154	509	570	206	458	372	32	363	324	276	195	163	408	108	316	11.37	486	140	511	51
52	.282	24.8	662	157	522	585	212	468	380	32	370	332	279	200	169	420	111	325	11.70	502	141	525	52
53	.281	25.3	680	161	535	600	217	478	388	33	377	341	282	206	176	432	115	335	12.03	517	143	539	53
54	.279	25.8	698	164	549	615	223	488	396	33	384	349	284	212	182	445	119	345	12.37	533	144	553	54
55	.278	26.3	715	167	562	630	229	498	403	33	390	358	286	217	189	457	123	354	12.70	548	146	567	55
56	.276	26.8	733	171	575	645	235	508	411	34	397	367	289	223	196	469	127	364	13.05	564	147	580	56
57	.275	27.2	751	174	588	660	241	517	419AA	34A	404A	375	291	229	203	482	131	374	13.39	580	149	594	57
58	.273	27.7	769	178	600	675	246	526	534TT	129T	602T	384	293	234	210	495	135	385	13.75	596	151	608	58
59	.272	28.3	787T	181T	614T	690T	252T	535T	545T	129T	615T	393T	295T	240L	218L	508L	139L	395L	14.10	612T	152T	621T	59

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/8 POINT (0.125L)

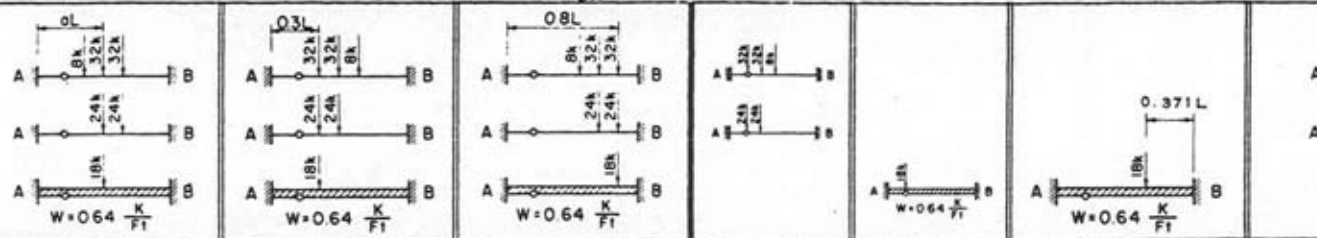
K_{AB} = .070 C_{AB} = 7.0
K_{BA} = 3.419 C_{BA} = 0.143

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	POSITIVE MOMENTS (kip feet)										NEGATIVE MOMENTS (kip feet)											SPAN IN FT
		MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.371L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
60	.270	28.7	805T	184T	626T	706T	258T	544T	557T	130T	628T	402T	296T	246L	225L	521L	143L	405L	14.40	627T	153T	635T	60
61	.269	29.2	823	188	639	721	264	553	568	130	641	410	298	252	232	534	148	416	14.76	643	155	648	61
62	.267	29.7	841	191	651	736	270	562	580	130	654	419	300	258	240	547	152	426	15.13	659	157	662	62
63	.266	30.2	859	195	664	751	276	571	591	130	666	428	301	265	248	561	156	437	15.43	674	158	675	63
64	.265	30.7	877	198	677	766	282	579	603	131	679	437	303	271	256	575	161	448	15.81	691	160	689	64
65	.263	31.2	895	201	689	781	288	588	614	131	692	446	304	277	264	589	165	459	16.18	708	162	702	65
66	.262	31.7	913	205	701	796	294	596	626	131	704	454	306	283	272	603	170	470	16.50	723	163	716	66
67	.260	32.2	931	208	714	811	300	605	637	131	716	463	307	290	280	617	175	481	16.88	740	166	729	67
68	.259	32.6	949	212	726	827	306	613	649	132	729	472	308	296	289	631	179	493	17.20	755	167	742	68
69	.258	33.2	967	215	739	842	312	621	660	132	741	481	310	303	297	645	184	504	17.59	772	169	756	69
70	.256	33.7	985	218	751	857	318	629	672	132	753	490	311	309	306	660	189	516	17.92	788	170	769	70
71	.255	34.2	1003	222	763	872	324	637	684	133	766	498	312	316	315	675	194	528	18.25	803	172	782	71
72	.254	34.6	1021	226	775	887	330	645	695	133	778	507	313	323	323	690	199	540	18.65	821	174	795	72
73	.253	35.1	1038	229	787	902	336	653	707	133	790	516	314	329	332	705	204	552	18.98	837	176	809	73
74	.251	35.6	1056	233	799	917	342	661	718	134	802	525	315	336	342	720	209	564	19.31	852	177	822	74
75	.250	36.1	1074	236	812	932	349	668	730	134	814	534	316	343	351	735	214	576	19.65	868	179	835	75
76	.249	36.6	1092	239	824	948	355	676	741	134	826	543	317	350	360	751	219	588	20.06	886	181	848	76
77	.248	37.1	1110	243	835	963	361	684	753	135	838	552	318	357	370	766	225	601	20.40	902	183	861	77
78	.246	37.6	1128	247	847	978	367	691	764	135	850	560	319	364	379	782	230	614	20.75	918	185	874	78
79	.245	38.1	1146	250	859	993	373	699	776	135	861	569	320	371	389	798	236	626	21.09	934	186	887	79
80	.244	38.6	1164	254	871	1008	379	707	787	136	873	578	321	378	399	814	241	639	21.44	950	188	900	80
81	.243	39.1	1182	257	884	1023	385	714	799	136	885	587	322	386	409	830	247	652	21.79	966	190	913	81
82	.241	39.6	1200	260	895	1038	391	722	810	137	897	596	323	393	419	847	252	665	22.22	984	192	926	82
83	.240	40.1	1218	264	907	1053	397	729	822	137	908	605	323	400	429	863	258	679	22.58	1001	194	939	83
84	.239	40.6	1236	267	919	1068	404	736	833	137	920	614	324	408	440	880	264	692	22.93	1017	196	952	84
85	.238	41.1	1254	271	931	1084	410	744	845	138	932	623	325	415	450	897	269	705	23.29	1033	198	965	85
86	.237	41.5	1272	275	942	1099	416	751	856	138	943	631	326	423	461	914	275	719	23.65	1050	200	978	86
87	.236	42.1	1290	277	955	1114	422	758	868	139	955	640	326	431	472	931	281	733	24.01	1066	201	991	87
88	.235	42.6	1308	281	967	1129	428	766	879	139	966	649	327	438	483	948	287	747	24.38	1083	203	1004	88
89	.234	43.1	1326T	285T	978T	1144T	434T	773T	891T	139T	978T	658T	328T	446L	494L	965L	293L	761L	24.65	1097T	204T	1017T	89

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/8 POINT (0.125L)

K_{AB} = .070 K_{BA} = 3.419 C_{AB} = 7.0 C_{BA} = 0.143

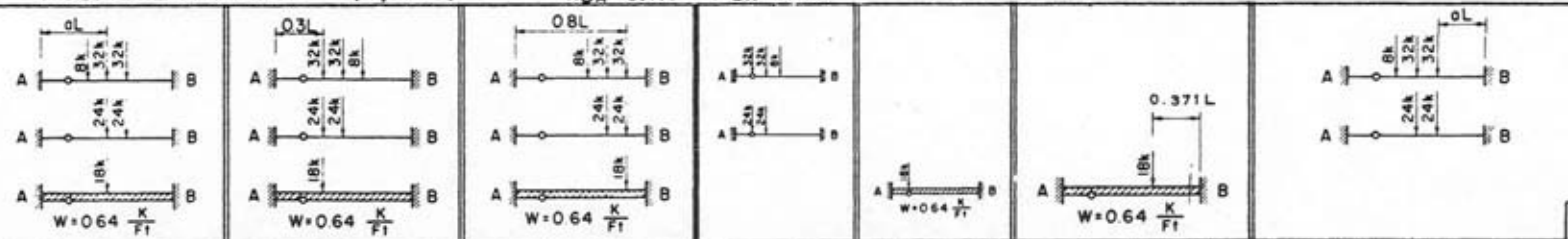
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.371L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
90	.233	43.6	1344T	288T	990T	1159T	441T	780T	902T	140T	989T	667T	328T	454L	505L	983L	299L	775L	25.02	1114T	206T	1030T	90
91	.231	44.0	1362	292	1001	1174	447	787	914	140	1001	676	329	462	516	1001	305	789	25.39	1131	208	1042	91
92	.230	44.5	1380	296	1013	1189	453	794	925	141	1012	685	330	470	527	1018	312	803	25.76	1147	210	1055	92
93	.229	45.0	1398	299	1025	1205	459	801	937	141	1023	694	330	478	539	1037	318	818	26.13	1164	212	1068	93
94	.228	45.6	1416	302	1037	1220	465	808	948	142	1035	703	331	486	550	1055	324	833	26.51	1181	214	1081	94
95	.227	46.1	1434	305	1049	1235	471	816	960	142	1046	712	331	494	562	1073	331	847	26.88	1198	216	1094	95
96	.226	46.6	1451	309	1060	1250	478	823	972	142	1057	721	332	502	574	1091	337	862	27.26	1215	218	1106	96
97	.225	47.0	1469	313	1072	1265	484	830	983	143	1068	729	333	510	586	1110	344	877	27.55	1229	219	1119	97
98	.224	47.5	1487	316	1083	1280	490	837	995	143	1080	738	333	519	598	1129	350	892	27.93	1246	222	1132	98
99	.223	48.0	1505	320	1095	1295	496	844	1006	144	1091	747	334	527	610	1148	357	907	28.31	1263	224	1145	99
100	.222	48.5	1523	324	1106	1310	502	851	1018	144	1102	756	334	535	623	1167	364	923	28.70	1280	226	1157	100
101	.221	49.1	1541	326	1119	1326	509	857	1029	145	1113	765	335	544	635	1186	370	938	28.99	1295	227	1170	101
102	.220	49.6	1559	330	1130	1341	515	864	1041	145	1124	774	335	553	648	1205	377	954	29.38	1312	229	1183	102
103	.219	50.1	1577	333	1142	1356	521	871	1052	146	1135	783	336	561	660	1225	384	970	29.77	1330	231	1196	103
104	.218	50.5	1595	337	1153	1371	527	878	1064	146	1147	792	336	570	673	1245	391	985	30.16	1347	234	1208	104
105	.217	51.0	1613	341	1165	1386	534	885	1075	147	1158	801	337	579	686	1264	398	1001	30.45	1362	235	1221	105
106	.216	51.5	1631	344	1176	1401	540	892	1087	147	1169	810	337	587	699	1284	405	1017	30.85	1379	237	1234	106
107	.216	52.0	1649	348	1188	1416	546	899	1098	148	1180	819	338	596	713	1304	412	1034	31.24	1396	239	1246	107
108	.215	52.5	1667	352	1199	1431	552	906	1110	148	1191	828	338	605	726	1325	420	1050	31.54	1411	241	1259	108
109	.214	53.0	1685	355	1210	1446	558	912	1121	149	1202	837	339	614	739	1345	427	1067	31.94	1429	243	1272	109
110	.213	53.6	1703	358	1223	1462	565	919	1133	149	1213	846	339	623	753	1366	434	1083	32.34	1446	245	1284	110
111	.212	54.1	1721	361	1234	1477	571	926	1144	150	1224	855	339	632	767	1386	442	1100	32.63	1461	246	1297	111
112	.211	54.5	1739	365	1246	1492	577	933	1156	150	1234	863	340	642	781	1407	449	1117	33.04	1479	249	1309	112
113	.210	55.0	1757	369	1257	1507	583	939	1167	151	1245	872	340	651	795	1428	457	1134	33.45	1497	251	1322	113
114	.209	55.5	1775	372	1269	1522	590	946	1179	151	1256	881	341	660	809	1449	464	1151	33.74	1512	252	1335	114
115	.208	56.0	1793	376	1280	1537	596	953	1190	152	1267	890	341	670	823	1471	472	1168	34.15	1529	255	1347	115
116	.207	56.5	1811	380	1291	1552	602	960	1202	152	1278	899	342	679	837	1492	480	1185	34.45	1544	256	1360	116
117	.207	57.0	1829	383	1303	1567	608	966	1213	153	1289	908	342	689	852	1514	487	1203	34.87	1562	259	1372	117
118	.206	57.5	1847	387	1314	1583	615	973	1225	153	1300	917	342	698	866	1535	495	1220	35.16	1577	260	1385	118
119	.205	58.1	1865T	389T	1327T	1598T	621T	980T	1236T	154T	1311T	926T	343T	708L	881L	1557L	503L	1238L	35.58	1595T	262T	1398T	119

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/8 POINT (0.125L)

K_{AB} = .070 C_{AB} = 7.0
K_{BA} = 3.419 C_{BA} = 0.143

POSITIVE MOMENTS (kip feet)

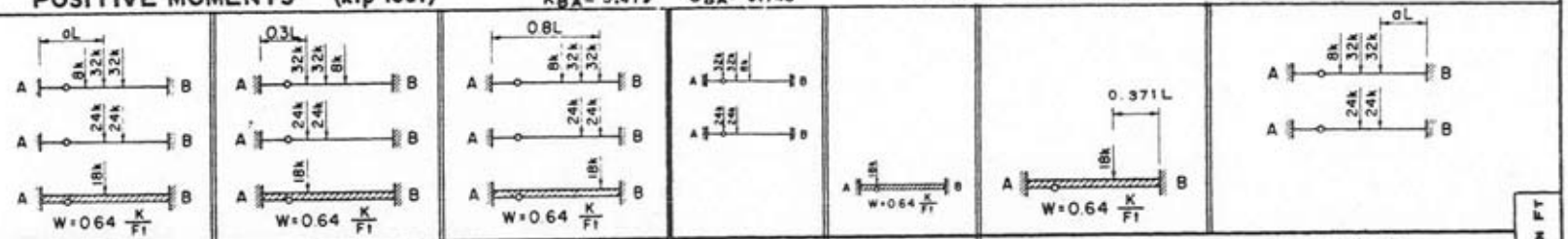
NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.371L	FEM @ A	FEM @ B	0L FT	SBM @0L	FEM @ A	FEM @ B	
120	.204	58.6	1883T	393T	1338T	1613T	627T	986T	1248T	154T	1321T	935T	343T	717L	896L	1579L	511L	1256L	36.00	1613T	265T	1410T	120
121	.203	59.0	1901	396	1349	1628	633	993	1260	155	1332	944	344	727	911	1602	519	1274	36.30	1628	266	1423	121
122	.202	59.5	1919	400	1361	1643	640	1000	1271	155	1343	953	344	737	926	1624	527	1292	36.72	1646	269	1435	122
123	.202	60.0	1937	404	1372	1658	646	1006	1283	156	1354	962	344	747	941	1646	535	1310	37.02	1661	270	1448	123
124	.201	60.5	1955	407	1383	1673	652	1013	1294	156	1364	971	345	757	956	1669	544	1328	37.45	1679	273	1460	124
125	.200	61.0	1973	411	1395	1688	658	1020	1306	157	1375	980	345	767	972	1692	552	1347	37.75	1694	274	1473	125
126	.199	61.5	1991	415	1406	1704	665	1026	1317	157	1386	989	345	777	987	1715	560	1365	38.18	1712	276	1485	126
127	.198	62.0	2009	418	1417	1719	671	1033	1329	158	1397	998	346	787	1003	1738	569	1384	38.48	1728	278	1498	127
128	.198	62.5	2027	422	1429	1734	677	1040	1340	158	1407	1007	346	797	1019	1761	577	1403	38.91	1746	280	1511	128
129	.197	63.0	2045	426	1440	1749	683	1046	1352	159	1418	1016	346	807	1035	1785	586	1422	39.22	1761	282	1523	129
130	.196	63.6	2063	428	1453	1764	690	1053	1363	159	1429	1024	347	818	1051	1808	594	1441	39.65	1779	284	1536	130
131	.195	64.1	2081	431	1464	1779	696	1059	1375	160	1439	1033	347	828	1067	1832	603	1460	39.95	1794	286	1548	131
132	.195	64.5	2099	435	1475	1794	702	1066	1386	160	1450	1042	347	839	1083	1856	612	1479	40.39	1813	289	1561	132
133	.194	65.0	2117	439	1486	1809	708	1072	1398	161	1461	1051	348	849	1100	1880	620	1499	40.70	1828	290	1573	133
134	.193	65.5	2135	442	1498	1824	715	1079	1409	161	1471	1060	348	860	1116	1904	629	1518	41.00	1843	291	1586	134
135	.192	66.0	2153	446	1509	1840	721	1086	1421	162	1482	1069	348	870	1133	1928	638	1538	41.44	1862	294	1598	135
136	.192	66.5	2171	450	1520	1855	727	1092	1432	163	1493	1078	349	881	1150	1952	647	1558	41.75	1877	295	1611	136
137	.191	67.0	2189	453	1531	1870	733	1099	1444	163	1503	1087	349	892	1167	1977	656	1578	42.20	1895	298	1623	137
138	.190	67.5	2206	457	1543	1885	740	1105	1455	164	1514	1096	349	903	1184	2002	665	1598	42.50	1911	300	1635	138
139	.189	68.0	2224	461	1554	1900	746	1112	1467	164	1524	1105	350	913	1201	2027	674	1618	42.95	1929	302	1648	139
140	.189	68.5	2242	464	1565	1915	752	1118	1478	165	1535	1114	350	924	1218	2052	684	1638	43.26	1945	304	1660	140
141	.188	68.9	2260	468	1576	1930	759	1125	1490	165	1546	1123	350	935	1236	2077	693	1659	43.57	1960	305	1673	141
142	.187	69.4	2278	472	1588	1945	765	1131	1501	166	1556	1132	351	946	1253	2102	702	1679	44.02	1979	308	1685	142
143	.187	70.1	2296	473	1601	1961	771	1138	1513	166	1567	1141	351	958	1271	2128	712	1700	44.33	1994	309	1698	143
144	.186	70.6	2314	477	1612	1976	777	1144	1524	167	1577	1150	351	969	1289	2153	721	1721	44.78	2013	312	1710	144
145	.185	71.0	2332	481	1623	1991	784	1151	1536	167	1588	1159	351	980	1307	2179	731	1742	45.09	2028	314	1723	145
146	.185	71.5	2350	484	1634	2006	790	1157	1548	168	1598	1168	352	991	1325	2205	740	1763	45.41	2044	315	1735	146
147	.184	72.0	2368	488	1646	2021	796	1164	1559	169	1609	1177	352	1003	1343	2231	750	1784	45.86	2062	318	1748	147
148	.183	72.5	2386	492	1657	2036	802	1170	1571	169	1619	1186	352	1014	1361	2257	759	1805	46.18	2078	320	1760	148
149	.182	73.0	2404T	495T	1668T	2051T	809T	1177T	1582T	170T	1630T	1195T	353T	1026L	1380L	2284L	769L	1827L	46.64	2097T	322T	1772T	149

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

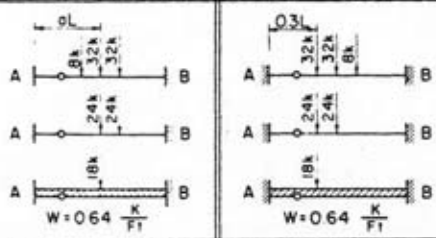
HINGE AT 1/8 POINT (0.125L)

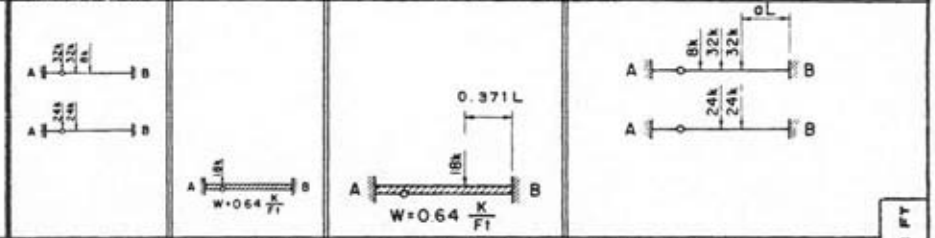
K_{AB} = .070 C_{AB} = 7.0
K_{BA} = 3.419 C_{BA} = 0.143

POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T) — ALTERNATIVE (A) — LANE (L)





SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		0L FT	SBM @0L	FEM @A	FEM @B	SBM @0.3L	FEM @A	FEM @B	SBM @0.8L	FEM @A	FEM @B	FEM @A	FEM @B	FEM @A	FEM @B	SBM 0.371L	FEM @A	FEM @B	0L FT	SBM @0L	FEM @A	FEM @B	
150	.182	73.5	2422T	499T	1679T	2066T	815T	1183T	1594T	170T	1640T	1204T	353T	1037L	1398L	2310L	779L	1848L	46.95	2112T	324T	1785T	150
151	.181	74.0	2440	503	1690	2082	821	1190	1605	171	1651	1213	353	1049	1417	2337	789	1870	47.26	2127	325	1797	151
152	.181	74.5	2458	506	1702	2097	828	1196	1617	171	1661	1222	353	1060	1436	2364	799	1892	47.73	2146	328	1810	152
153	.180	75.0	2476	510	1713	2112	834	1203	1628	172	1672	1230	354	1072	1455	2391	809	1913	48.04	2162	330	1822	153
154	.179	75.5	2494	514	1724	2127	840	1209	1640	172	1682	1239	354	1084	1474	2418	819	1935	48.36	2177	331	1835	154
155	.179	75.9	2512	517	1735	2142	846	1215	1651	173	1693	1248	354	1096	1493	2445	829	1958	48.82	2196	334	1847	155
156	.178	76.4	2530	521	1746	2157	853	1222	1663	174	1703	1257	355	1108	1512	2473	839	1980	49.14	2212	336	1859	156
157	.177	76.9	2548	524	1758	2172	859	1228	1674	174	1713	1266	355	1120	1531	2500	850	2002	49.45	2227	337	1872	157
158	.177	77.6	2566	526	1771	2187	865	1235	1686	175	1724	1275	355	1132	1551	2528	860	2025	49.93	2247	340	1884	158
159	.176	78.1	2584	530	1782	2202	871	1241	1697	175	1734	1284	355	1144	1571	2556	870	2048	50.24	2262	342	1897	159
160	.175	78.6	2602	533	1793	2218	878	1248	1709	176	1745	1293	356	1156	1590	2584	881	2070	50.56	2278	343	1909	160
161	.175	79.1	2620	537	1804	2233	884	1254	1720	176	1755	1302	356	1168	1610	2612	891	2093	51.04	2297	346	1921	161
162	.174	79.5	2638	541	1816	2248	890	1261	1732	177	1766	1311	356	1181	1630	2640	902	2116	51.35	2312	348	1934	162
163	.174	80.0	2656	544	1827	2263	897	1267	1743	178	1776	1320	356	1193	1651	2669	913	2139	51.67	2328	349	1946	163
164	.173	80.5	2674	548	1838	2278	903	1273	1755	178	1786	1329	357	1206	1671	2697	923	2163	52.15	2347	353	1959	164
165	.172	81.0	2692	552	1849	2293	909	1280	1766	179	1797	1338	357	1218	1691	2726	934	2186	52.47	2363	354	1971	165
166	.172	81.5	2710	555	1860	2308	915	1286	1778	179	1807	1347	357	1231	1712	2755	945	2210	52.79	2378	356	1983	166
167	.171	82.0	2728	559	1871	2323	922	1293	1789	180	1817	1356	358	1243	1732	2784	956	2233	53.27	2398	359	1996	167
168	.171	82.5	2746	563	1883	2339	928	1299	1801	180	1828	1365	358	1256	1753	2813	967	2257	53.59	2413	360	2008	168
169	.170	83.0	2764	566	1894	2354	934	1305	1812	181	1838	1374	358	1269	1774	2843	978	2281	53.91	2429	362	2020	169
170	.169	83.5	2782	570	1905	2369	941	1312	1824	182	1849	1383	358	1281	1795	2872	989	2305	54.23	2445	363	2033	170
171	.169	84.0	2800	574	1916	2384	947	1318	1835	182	1859	1392	359	1294	1816	2902	1000	2329	54.72	2464	367	2045	171
172	.168	84.5	2818	577	1927	2399	953	1325	1847	183	1869	1401	359	1307	1837	2932	1011	2353	55.04	2480	368	2058	172
173	.168	84.9	2836	581	1938	2414	959	1331	1859	183	1880	1410	359	1320	1859	2962	1023	2376	55.36	2495	370	2070	173
174	.167	85.4	2854	584	1950	2429	966	1337	1870	184	1890	1419	359	1333	1880	2992	1034	2402	55.65	2515	373	2082	174
175	.167	86.1	2872	586	1963	2444	972	1344	1882	185	1900	1428	360	1346	1902	3022	1045	2427	56.17	2531	375	2095	175
176	.166	86.6	2890	590	1974	2460	978	1350	1893	185	1911	1437	360	1360	1924	3052	1057	2452	56.50	2546	376	2107	176
177	.166	87.1	2908	593	1985	2475	985	1356	1905	186	1921	1446	360	1373	1946	3083	1068	2476	56.82	2562	378	2119	177
178	.165	87.6	2926	597	1997	2490	991	1363	1916	186	1931	1455	360	1386	1968	3114	1080	2501	57.32	2582	381	2132	178
179	.164	88.1	2944T	600T	2008T	2505T	997T	1369T	1928T	187T	1942T	1464T	360T	1400L	1990L	3145L	1091L	2527L	57.64	2597T	383T	2144T	179

ONE LANE LIVE LOAD (H20-S16-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/8 POINT (0.125L)

K_{AB} = .070 C_{AB} = 7.0
K_{BA} = 3.419 C_{BA} = 0.143

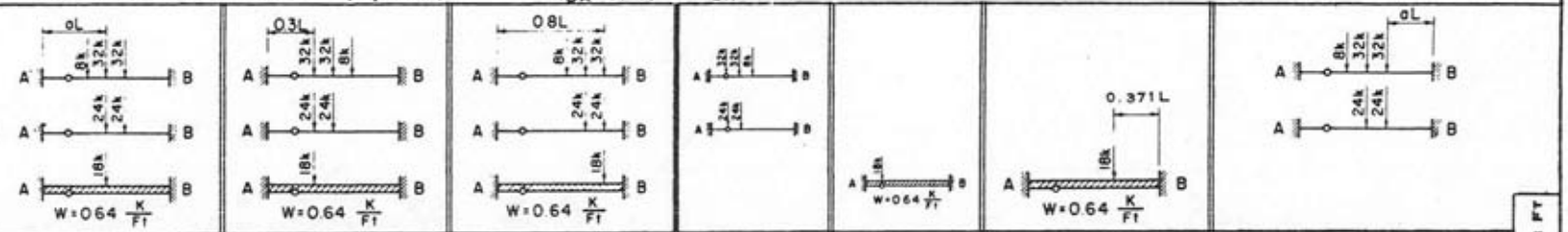
POSITIVE MOMENTS (kip feet) — NEGATIVE MOMENTS (kip feet)

LOADING

TRUCK (T)

ALTERNATIVE(A)

LANE (L)



SPAN IN FT	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FT
		ℓL FT	SBM @ℓL	FEM @ A	FEM @ B	SBM @0.3L	FEM @ A	FEM @ B	SBM @0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM 0.371L	FEM @ A	FEM @ B	ℓL FT	SBM @ℓL	FEM @ A	FEM @ B	
180	.164	88.6	2962T	604T	2019T	2520T	1003T	1376T	1939T	187T	1952T	1472T	361T	1413L	2012L	3176L	1103L	2552L	57.96	2613T	384T	2156T	180
181	.163	89.1	2980T	608T	2030T	2535	1010	1382	1951	188	1962	1481	361	1426	2034	3207	1115	2577	58.28	2629	386	2169	181
182	.163	91.2	3469L	1194L	2555L	2550	1016	1388	1962	189	1972	1490	361	1440	2057	3238	1127	2603	58.79	2648	389	2181	182
183	.162	91.7	3503	1206	2580	2565	1022	1395	1974	189	1983	1499	361	1454	2080	3269	1139	2628	59.11	2664	391	2193	183
184	.162	92.2	3536	1218	2605	2580	1029	1401	1985	190	1993	1508	362	1467	2102	3301	1151	2654	59.43	2680	392	2206	184
185	.161	92.7	3570	1231	2631	2596	1035	1407	1997	190	2003	1517	362	1481	2125	3333	1163	2680	59.75	2696	394	2218	185
186	.161	93.2	3605	1243	2657	2611	1041	1414	2008	191	2014	1526	362	1495	2148	3365	1175	2706	60.26	2715	397	2230	186
187	.160	93.7	3639	1255	2683	2626	1048	1420	2020	192	2024	1535	362	1509	2171	3397	1187	2732	60.59	2731	399	2243	187
188	.160	94.2	3674	1268	2709	2641	1054	1426	2031	192	2034	1544	363	1523	2195	3429	1199	2758	60.91	2747	400	2255	188
189	.159	94.7	3708	1281	2735	2656	1060	1433	2043	193	2044	1553	363	1537	2218	3461	1211	2785	61.24	2763	402	2267	189
190	.159	95.2	3743	1293	2761	2671	1066	1439	2054	193	2055	1562	363	1551	2241	3494	1224	2811	61.75	2783	405	2280	190
191	.158	95.7	3778	1306	2787	2686T	1073T	1446T	2066	194	2065	1571	363	1565	2265	3527	1236	2838	62.07	2798	407	2292	191
192	.158	96.2	3813	1319	2814	3203L	1452L	2577L	2077	195	2075	1580	364	1579	2289	3559	1249	2864	62.40	2814	409	2304	192
193	.157	96.7	3848	1332	2840	3233	1466	2602	2089	195	2085	1589	364	1593	2313	3592	1261	2891	62.72	2830	410	2317	193
194	.157	97.2	3884	1345	2867	3262	1479	2628	2100	196	2096	1598	364	1608	2337	3625	1274	2918	63.05	2846	412	2329	194
195	.156	97.7	3919	1358	2894	3292	1493	2653	2112	196	2106	1607	364	1622	2361	3659	1286	2945	63.37	2866	415	2341	195
196	.156	98.2	3955	1371	2921	3322	1507	2679	2124	197	2116	1616	365	1636	2385	3692	1299	2973	63.90	2882	417	2354	196
197	.155	98.7	3991	1384	2948	3353	1521	2705	2135	197	2126	1625	365	1651	2409	3726	1312	3000	64.22	2897	419	2366	197
198	.155	99.2	4027	1397	2975	3383	1534	2731	2147	198	2137	1634	365	1665	2434	3759	1325	3027	64.55	2913	420	2378	198
199	.154	99.7	4064	1410	3002	3413	1548	2757	2158	199	2147	1643	365	1680	2458	3793	1337	3055	65.07	2933	424	2391	199
200	.154	100.2	4100	1424	3030	3444	1562	2783	2170	199	2157	1652	365	1695	2483	3827	1350	3083	65.40	2949	425	2403	200
201	.153	100.7	4137	1437	3057	3475	1576	2810	2181	200	2167	1661	366	1709	2508	3861	1363	3111	65.73	2965	427	2415	201
202	.153	101.2	4173	1451	3085	3506	1591	2836	2193	200	2178	1670	366	1724	2533	3896	1377	3139	66.05	2981	429	2428	202
203	.152	101.7	4210	1464	3113	3537	1605	2863	2204	201	2188	1679	366	1739	2558	3930	1390	3167	66.38	2997	430	2440	203
204	.152	102.2	4247	1478	3141	3568	1619	2889	2216	202	2198	1688	366	1754	2583	3965	1403	3195	66.91	3017	434	2452	204
205	.152	102.7	4284	1491	3169	3599	1633	2916	2227	202	2208	1697	367	1769	2609	3999	1416	3223	67.24	3033	436	2465	205
206	.151	103.2	4322	1505	3197	3630	1648	2943	2239	203	2218	1706	367	1784	2634	4034	1429	3252	67.57	3049	437	2477	206
207	.151	103.7	4359	1519	3226	3662	1662	2970	2250	203	2229	1715	367	1799	2660	4069	1443	3280	67.90	3065	439	2489	207
208	.150	104.2	4397	1533	3254	3694	1677	2998	2262	204	2239	1724	367	1814	2685	4104	1456	3309	68.22	3081	440	2501	208
209	.150	104.7	4435L	1546L	3283L	3725L	1691L	3025L	2273T	205T	2249T	1733T	367T	1830L	2711L	4140L	1470L	3338L	68.76	3101T	444T	2514T	209

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/9 POINT (0.111L)

$K_{AB} = 0.053$ $C_{AB} = 8.000$

$K_{BA} = 3.368$ $C_{BA} = 0.125$

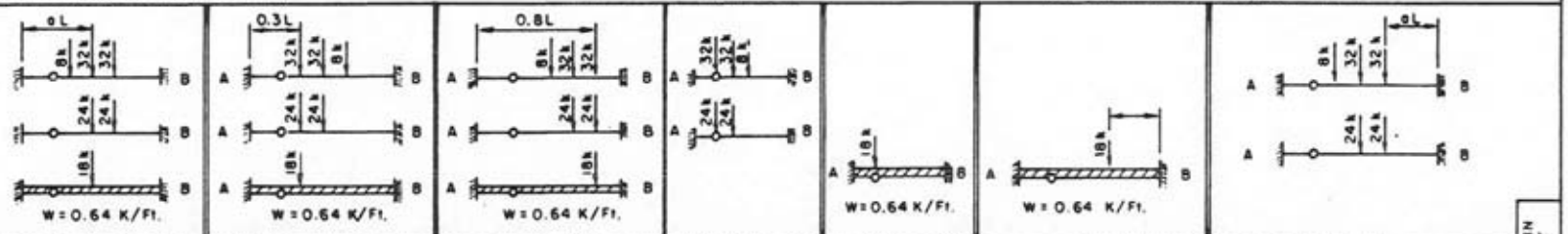
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.377L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
30	.300	14.0	314A	55A	231A	274A	93A	167A	211A	20A	221A	142A	49A	84L	58L	194L	39L	150L	9.40	280A	38A	241A	30
31	.300	14.5	326	57	239	284	97	172	219	21	228	147	49	88	62	203	41	157	9.80	291A	40A	249A	31
32	.300	15.0	337	59	247	294	100	176	227	21	235	152	49	92	66	212	43	164	6.62	243T	76T	261T	32
33	.300	15.5	349	61	255	304	104	181	234	21	242	158A	50A	95	70	221	45	171	6.96	257	77	274	33
34	.300	16.0	361	63	262	314	108	185	242	22	249	164T	194T	99	74	231	48	178	7.28	270	78	287	34
35	.300	16.5	373	65	270	324A	111A	190A	250	22	256	171	203	103	79	240	50	186	7.59	283	79	301	35
36	.300	17.0	385	67	278	349T	108T	298T	257	22	263	178	210	107	83	250	52	194	7.96	298	81	314	36
37	.300	17.5	397	69	285	363	113	308	265	23	270	185	217	111	88	259	55	201	8.25	312	87	327	37
38	.300	18.0	409	72	293	376	117	317	273	23	277	192	224	115	93	269	57	209	8.59	327	94	340	38
39	.300	18.5	421	73	301	390	122	326	280	23	284	199	230	119	97	279	60	217	8.93	342	100	353	39
40	.300	19.0	433	76	308	403	126	336	288	24	291	207	235	123	103	289	63	225	9.24	356	106	365	40
41	.300	19.5	445	78	316	418	131	350	296	24	298	214	240	128	108	300	65	234	8.28	340	111	376	41
42	.299	19.9	457	80	324	433	135	364	303	24	305	221	245	132	113	310	68	242	8.61	355	113	391	42
43	.298	20.5	469	82	331	449	140	377	311	25	312	229	249	136	118	321	71	250	8.94	370	114	406	43
44	.296	20.9	481A	84A	339A	464	144	390	319	25	319	236	254	141	124	332	74	259	9.28	386	115	421	44
45	.294	21.1	537T	119T	435T	479	149	403	326	25	325	244	257	145	130	342	77	268	9.58	400	116	435	45
46	.292	21.6	555	122	449	494	154	415	334	26	332	251	261	150	136	354	80	277	9.94	416	117	450	46
47	.291	22.0	573	125	463	509	159	427	342	26	339	259	265	154	142	365	83	286	10.25	430	118	464	47
48	.289	22.5	591	128	477	524	164	430	349	26	346	266	268	159	148	376	86	295	10.61	446	120	478	48
49	.287	23.0	609	131	491	539	168	450	357	27	353	274	271	164	154	388	89	304	10.93	461	121	493	49
50	.286	23.4	627	134	505	554	173	461	365	27	359	282	274	168	160	399	92	313	11.25	477	122	507	50
51	.284	23.9	645	137	519	570	178	472	372	27	366	289	276	173	167	411	95	323	11.58	492	123	521	51
52	.282	24.4	663	139	532	585	183	483	380	28	373	297	279	178	173	423	99	333	11.96	509	125	535	52
53	.281	24.0	681	143	546	600	188	493	388	28	380	305	281	183	180	435	102	342	12.30	524	126	550	53
54	.279	25.4	699	146	559	615	193	504	396A	28A	387A	313	284	188	187	447	105	352	12.64	540	127	564	54
55	.278	25.8	717	149	572	630	198	514	499T	111T	573T	320	286	193	194	460	109	362	12.98	555	129	578	55
56	.276	26.3	734	152	585	645	203	524	511	112	586	328	288	198	201	472	112	372	13.33	571	130	591	56
57	.275	26.8	752	155	598	660	208	534	522	112	599	336	290	203	208	485	116	383	13.68	587	131	605	57
58	.273	27.3	770	158	611	675	213	543	534	112	612	343	292	208	215	498	120	393	14.04	603	133	619	58
59	.272	27.8	788T	161T	624T	690T	219T	553T	545T	112T	625T	351T	294T	213L	223L	511L	123L	404L	14.40	620T	134T	633T	59

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 9 POINT (0.111L)

$K_{AB} = 0.053$ $C_{AB} = 8.000$

$K_{BA} = 3.368$ $C_{BA} = 0.125$

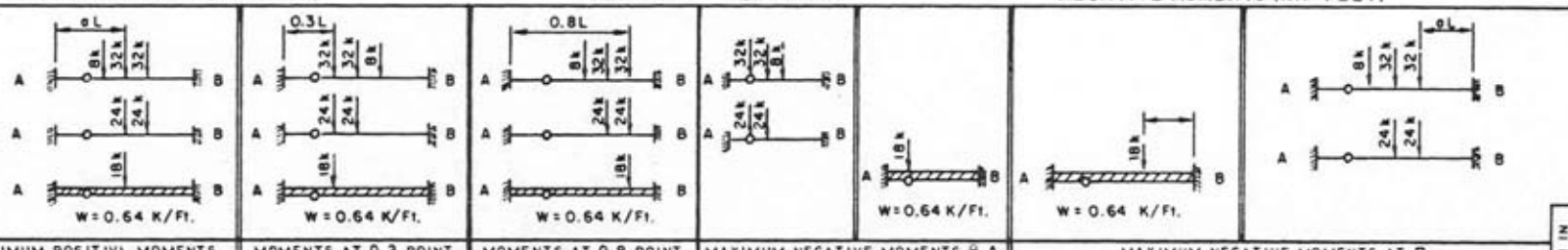
POSITIVE MOMENTS (KIP FEET) — NEGATIVE MOMENTS (KIP FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.377L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
60	270	28.3	806T	164T	637T	706T	224T	562T	557T	112T	638T	359T	295T	219L	230L	524L	127L	414L	14.70	634T	135T	647T	60
61	269	28.7	824	167	650	721	229	572	568	112	651	367	297	224	238	538	131	425	15.07	651	137	661	61
62	267	29.3	842	170	663	736	234	581	580	113	664	375	298	229	246	551	135	436	15.44	667	139	674	62
63	266	29.7	860	173	675	751	239	590	591	113	677	382	300	235	254	565	139	447	15.75	683	140	688	63
64	265	30.2	878	176	688	766	244	599	603	113	689	390	301	240	262	578	143	458	16.13	699	141	701	64
65	263	30.7	896	179	701	781	249	608	614	113	702	398	303	246	270	592	147	469	16.51	716	143	715	65
66	262	31.2	914	182	713	796	255	617	626	113	715	406	304	251	279	606	151	481	16.83	731	144	729	66
67	260	31.7	932	185	726	811	260	625	637	114	727	414	305	257	287	621	155	492	17.22	748	146	742	67
68	259	32.2	950	188	738	827	265	634	649	114	740	422	307	263	296	635	159	504	17.54	764	147	756	68
69	258	32.6	967	191	751	842	270	643	660	114	752	429	308	269	305	650	163	516	17.94	781	149	769	69
70	256	33.1	985	195	763	857	276	651	672	114	764	437	309	274	313	664	168	528	18.27	797	151	783	70
71	255	33.6	1003	198	775	872	281	659	684	115	776	445	310	280	322	679	172	540	18.60	812	152	796	71
72	254	34.1	1021	200	788	887	286	668	695	115	789	453	311	286	332	694	176	552	19.01	830	154	809	72
73	253	34.6	1039	204	800	902	291	670	707	115	801	461	312	292	341	709	181	564	19.34	846	155	823	73
74	251	35.1	1057	207	812	917	297	684	718	116	813	469	313	298	350	724	185	577	19.68	862	157	836	74
75	250	35.5	1075	210	824	932	302	693	730	116	825	477	314	304	360	740	190	589	20.10	879	159	849	75
76	249	36.0	1093	213	836	948	307	701	741	116	837	485	315	311	369	755	195	602	20.44	895	160	863	76
77	248	36.6	1111	216	849	963	312	709	753	116	849	493	316	317	379	771	199	615	20.79	911	162	876	77
78	246	37.0	1129	219	861	978	318	717	764	117	861	500	316	323	389	787	204	628	21.14	927	163	889	78
79	245	37.5	1147	222	873	993	323	725	776	117	873	508	317	329	399	803	209	641	21.49	944	165	902	79
80	244	38.0	1165	225	885	1008	328	733	787	117	885	516	318	336	409	819	214	654	21.84	960	166	915	80
81	243	38.5	1183	229	897	1023	334	741	799	118	896	524	319	342	419	836	219	667	22.27	978	168	929	81
82	241	38.9	1201	232	909	1038	339	749	810	118	908	532	320	349	430	852	223	681	22.63	994	170	942	82
83	240	39.5	1219	234	922	1053	344	756	822	118	920	540	320	355	440	869	229	695	22.99	1011	172	955	83
84	239	40.0	1237	237	934	1068	350	764	833	119	932	548	321	362	451	885	234	708	23.35	1027	173	968	84
85	238	40.5	1255	241	946	1084	355	772	845	119	943	556	322	369	462	902	239	722	23.71	1044	175	981	85
86	237	40.9	1272	244	957	1099	360	780	856	119	955	564	322	375	473	919	244	736	24.08	1060	176	994	86
87	236	41.4	1290	247	969	1114	366	787	868	120	966	572	323	382	484	937	249	750	24.45	1077	178	1007	87
88	235	41.9	1308	250	981	1129	371	795	879	120	978	580	324	389	495	954	254	764	24.82	1093	180	1020	88
89	234	42.5	1326T	253T	994T	1144T	376T	803T	891T	120T	990T	587T	324T	396L	506L	972L	260L	779L	25.19	1110T	181T	1033T	89

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/9 POINT (0.111L)

$K_{AB} = 0.053$ $C_{AB} = 8.000$

$K_{BA} = 3.368$ $C_{BA} = 0.125$

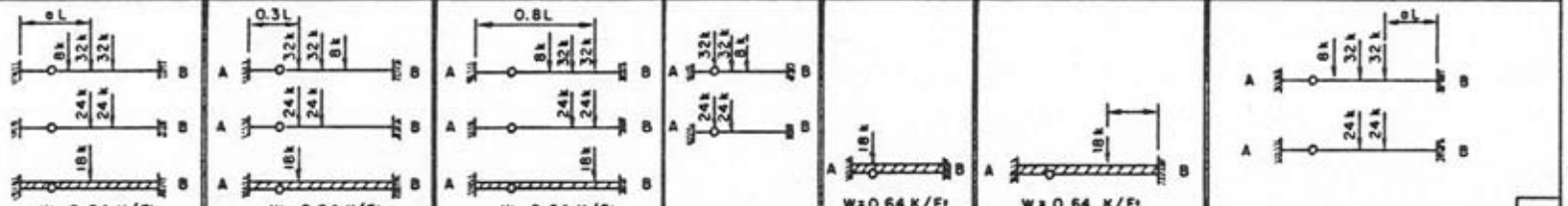
POSITIVE MOMENTS (KIP FEET) — NEGATIVE MOMENTS (KIP FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		aL FT	SBM @ aL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.377L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	
90	.233	42.9	1344T	256T	1006T	1159T	382T	810T	902T	121T	1001T	595T	325T	403L	518L	989L	265L	793L	25.56	1127T	183T	1046T	90
91	.231	43.4	1362	259	1017	1174	387	818	914	121	1012	603	325	410	529	1007	271	808	25.93	1144	185	1059	91
92	.230	43.9	1380	262	1029	1189	392	825	925	122	1024	611	326	417	541	1025	276	822	26.22	1158	186	1072	92
93	.229	44.4	1398	266	1041	1205	398	833	937	122	1035	619	326	424	553	1043	282	837	26.60	1175	188	1085	93
94	.228	44.8	1416	269	1053	1220	403	840	948	122	1047	627	327	431	565	1062	287	852	26.98	1192	189	1098	94
95	.227	45.3	1434	272	1064	1235	408	848	960	123	1058	635	327	438	577	1080	293	867	27.36	1209	191	1111	95
96	.226	45.9	1452	274	1077	1250	414	855	972	123	1069	643	328	445	589	1099	299	883	27.74	1226	193	1124	96
97	.225	46.4	1470	278	1089	1265	419	863	983	123	1081	651	328	453	601	1117	305	898	28.13	1243	195	1137	97
98	.224	46.8	1488	281	1100	1280	425	870	995	124	1092	659	329	460	614	1136	310	914	28.42	1258	196	1150	98
99	.223	47.3	1506	284	1112	1295	430	878	1006	124	1103	667	329	468	626	1155	316	929	28.81	1275	198	1163	99
100	.222	47.8	1524	287	1124	1310	435	885	1018	125	1114	675	330	475	639	1174	322	945	29.20	1292	200	1176	100
101	.221	48.3	1542	291	1135	1326	441	892	1029	125	1126	683	330	483	652	1194	328	961	29.59	1310	202	1189	101
102	.220	48.8	1560	294	1147	1341	446	900	1041	125	1137	691	331	490	665	1213	334	977	29.89	1314	203	1202	102
103	.219	49.2	1578	297	1159	1356	451	907	1052	126	1148	699	331	498	678	1233	340	993	30.28	1342	205	1215	103
104	.218	49.8	1596	299	1171	1371	457	914	1064	126	1159	706	332	506	691	1253	347	1009	30.68	1359	207	1228	104
105	.217	50.3	1614	302	1183	1386	462	922	1075	127	1170	714	332	513	704	1273	353	1026	31.08	1376	209	1240	105
106	.216	50.8	1632	306	1194	1401	468	929	1087	127	1181	722	332	521	718	1293	359	1042	31.38	1391	210	1253	106
107	.216	51.3	1650	309	1206	1416	473	936	1098	128	1192	730	333	529	731	1313	365	1059	31.78	1409	212	1266	107
108	.215	51.7	1668	312	1218	1431	478	943	1110	128	1204	738	333	537	745	1333	372	1075	32.18	1426	214	1279	108
109	.214	52.2	1686	315	1229	1446	484	951	1121	128	1215	746	334	545	759	1354	378	1092	32.48	1442	215	1292	109
110	.213	52.7	1704	319	1241	1462	489	958	1133	129	1226	754	334	553	773	1374	385	1109	32.89	1459	217	1305	110
111	.212	53.2	1722	322	1252	1477	495	965	1144	129	1237	762	334	561	787	1395	391	1127	33.30	1477	219	1317	111
112	.211	53.6	1739	325	1264	1492	500	972	1156	130	1248	770	335	569	801	1416	398	1144	33.60	1492	220	1330	112
113	.210	54.2	1757	327	1277	1507	505	979	1167	130	1259	778	335	577	815	1437	405	1161	34.01	1510	222	1343	113
114	.209	54.7	1775	330	1288	1522	511	986	1179	130	1270	786	335	586	830	1459	411	1179	34.31	1525	223	1356	114
115	.208	55.2	1793	334	1300	1537	516	994	1190	131	1280	794	336	594	845	1480	418	1196	34.73	1542	225	1369	115
116	.207	55.7	1811	337	1311	1552	522	1001	1202	131	1291	802	336	602	859	1502	425	1214	35.15	1560	228	1381	116
117	.207	56.2	1829	340	1323	1567	527	1008	1213	132	1302	810	336	611	874	1523	432	1232	35.45	1575	229	1394	117
118	.206	56.6	1847	343	1334	1583	532	1015	1225	132	1313	818	337	619	889	1545	439	1250	35.87	1593	231	1407	118
119	.205	57.1	1865T	347T	1346T	1598T	538T	1022T	1236T	133T	1324T	826T	337T	628L	904L	1567L	446L	1268L	36.18	1609T	232T	1420T	119

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/9 POINT (0.111L)

$K_{AB} = 0.053$ $C_{AB} = 8.000$

$K_{BA} = 3.368$ $C_{BA} = 0.125$

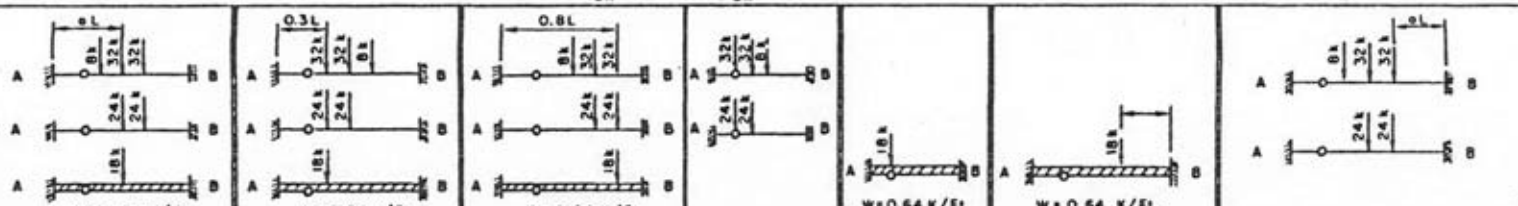
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



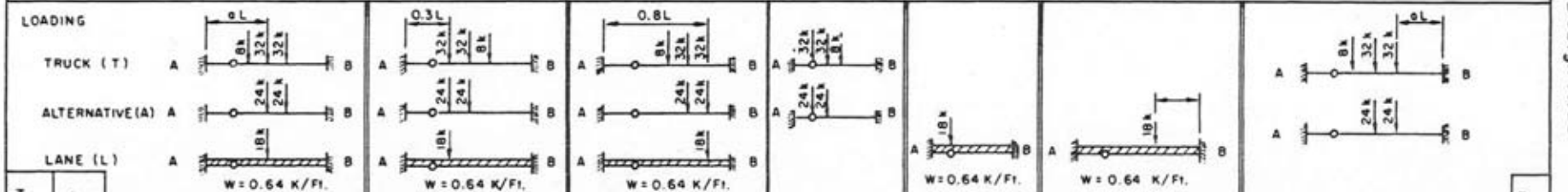
SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		uL FT	SBM @ uL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.377L	FEM @ A	FEM @ B	uL FT	SBM @ uL	FEM @ A	FEM @ B	
120	.204	57.6	1883T	350T	1357T	1613T	543T	1029T	1248T	133T	1335T	834T	337T	636L	919L	1590L	453L	1287L	36.60	1627T	234T	1432T	120
121	.203	58.1	1901	353	1369	1628	549	1036	1260	134	1346	842	338	645	935	1612	460	1305	36.90	1642	235	1445	121
122	.202	58.7	1919	355	1382	1643	554	1043	1271	134	1357	850	338	654	950	1634	467	1324	37.33	1660	238	1458	122
123	.202	59.2	1937	358	1393	1658	560	1050	1283	134	1367	858	338	663	966	1657	474	1342	37.64	1675	239	1471	123
124	.201	59.6	1955	362	1405	1673	565	1057	1294	135	1378	866	339	671	982	1680	480	1361	38.07	1693	241	1483	124
125	.200	60.1	1973	365	1416	1688	570	1064	1306	135	1389	874	339	680	998	1703	489	1380	38.50	1711	243	1496	125
126	.199	60.6	1991	368	1427	1704	576	1071	1317	136	1400	882	339	689	1014	1726	496	1399	38.81	1727	245	1509	126
127	.199	61.1	2009	371	1439	1719	581	1078	1329	136	1411	889	340	698	1030	1749	504	1418	39.24	1745	247	1521	127
128	.198	61.6	2027	375	1450	1734	587	1085	1340	137	1421	897	340	707	1046	1773	511	1438	39.55	1760	248	1534	128
129	.197	62.0	2045	378	1462	1749	592	1092	1352	137	1432	905	340	716	1062	1796	519	1457	39.86	1776	249	1547	129
130	.196	62.5	2063	381	1473	1764	597	1099	1363	138	1443	913	340	725	1079	1820	527	1477	40.30	1794	252	1559	130
131	.195	63.0	2081	384	1485	1779	603	1106	1375	138	1454	921	341	735	1095	1844	534	1496	40.61	1809	253	1572	131
132	.195	63.5	2099	388	1496	1794	608	1113	1386	139	1464	929	341	744	1112	1868	542	1516	41.05	1828	255	1585	132
133	.194	64.0	2117	391	1507	1809	614	1120	1398	139	1475	937	341	753	1129	1892	550	1536	41.36	1843	257	1597	133
134	.193	64.6	2135	393	1521	1824	619	1127	1409	139	1486	945	341	763	1146	1916	558	1556	41.81	1861	259	1610	134
135	.192	65.1	2153	396	1532	1840	625	1134	1421	140	1496	953	342	772	1163	1941	565	1576	42.12	1877	260	1623	135
136	.192	65.6	2171	399	1543	1855	630	1141	1432	140	1507	961	342	781	1181	1965	573	1597	42.57	1895	263	1635	136
137	.191	66.0	2189	402	1555	1870	635	1148	1444	141	1518	969	342	791	1198	1990	581	1617	42.88	1911	264	1648	137
138	.190	66.5	2207	406	1566	1885	641	1155	1455	141	1528	977	343	801	1216	2015	589	1638	43.33	1929	266	1661	138
139	.189	67.0	2225	409	1578	1900	646	1162	1467	142	1539	985	343	810	1233	2040	598	1658	43.65	1945	268	1673	139
140	.189	67.5	2243	412	1589	1915	652	1169	1478	142	1550	993	343	820	1251	2065	606	1679	43.96	1960	269	1686	140
141	.188	68.0	2261	415	1600	1930	657	1176	1490	143	1560	1001	343	830	1269	2090	614	1700	44.41	1979	271	1699	141
142	.187	68.4	2279	418	1612	1945	663	1183	1501	143	1571	1009	343	839	1287	2116	622	1721	44.73	1994	273	1711	142
143	.187	68.9	2297	422	1623	1961	668	1190	1513	144	1581	1017	344	849	1305	2141	621	1742	45.19	2013	275	1724	143
144	.186	69.4	2315	425	1635	1976	674	1197	1524	144	1592	1025	344	859	1323	2167	639	1764	45.50	2029	276	1737	144
145	.185	69.9	2333	428	1646	1991	679	1204	1536	145	1603	1033	344	869	1342	2193	647	1785	45.82	2044	278	1749	145
146	.185	70.4	2351	431	1657	2006	684	1211	1548	145	1613	1041	344	879	1360	2219	656	1807	46.28	2063	280	1762	146
147	.184	71.0	2369	433	1671	2021	690	1217	1559	146	1624	1049	345	889	1379	2246	664	1829	46.60	2079	282	1774	147
148	.183	71.5	2387	436	1682	2036	695	1224	1571	146	1634	1057	345	899	1398	2272	673	1850	47.06	2097	284	1787	148
149	.182	72.0	2405T	440T	1693T	2051T	701T	1231T	1582T	147T	1645T	1065T	345T	910L	1417L	2299L	682L	1872L	47.38	2113T	285T	1800T	149

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)
HINGE AT 1 9 POINT (0 111L)
K_{AB} = 0.053 C_{AB} = 8.000
K_{BA} = 3.368 C_{BA} = 0.125

POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		wL FT	SBM @ wL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.377L	FEM @ A	FEM @ B	wL FT	SBM @ wL	FEM @ A	FEM @ B	
150	.182	72.4	2423T	443T	1705T	2066T	706T	1238T	1594T	147T	1655T	1073T	345T	920L	1436L	2325L	690L	1895L	47.70	2129T	287T	1812T	150
151	.181	72.9	2441	446	1716	2082	712	1245	1605	148	1666	1081	346	930	1455	2352	699	1917	48.17	2147	289	1825	151
152	.181	73.4	2459	449	1727	2097	717	1252	1617	148	1677	1089	346	941	1474	2379	708	1939	48.49	2163	291	1837	152
153	.180	73.9	2477	453	1739	2112	722	1259	1628	149	1687	1097	346	951	1494	2406	717	1962	48.81	2179	292	1850	153
154	.179	74.4	2495	456	1750	2127	728	1266	1640	149	1698	1105	346	961	1513	2434	726	1984	49.28	2198	295	1863	154
155	.179	74.9	2512	459	1761	2142	733	1272	1651	149	1708	1113	346	972	1533	2461	735	2007	49.60	2213	296	1875	155
156	.178	75.3	2530	462	1773	2157	739	1279	1663	150	1719	1121	347	983	1553	2489	744	2030	49.92	2229	297	1888	156
157	.177	75.8	2548	465	1784	2172	744	1286	1674	150	1729	1129	347	993	1573	2516	753	2053	50.40	2248	300	1900	157
158	.177	76.3	2566	469	1795	2187	750	1293	1686	151	1740	1137	347	1004	1593	2544	762	2076	50.72	2264	301	1913	158
159	.176	76.8	2584	472	1807	2202	755	1300	1697	151	1750	1144	347	1015	1613	2572	771	2099	51.04	2279	303	1926	159
160	.175	77.3	2602	475	1818	2218	761	1307	1709	152	1761	1152	347	1025	1633	2600	781	2123	51.52	2299	305	1938	160
161	.175	77.8	2620	478	1829	2233	766	1313	1720	152	1771	1160	348	1036	1654	2629	790	2146	51.84	2314	307	1951	161
162	.174	78.4	2638	480	1843	2248	771	1320	1732	153	1781	1168	348	1047	1674	2657	799	2170	52.16	2330	308	1963	162
163	.174	78.9	2656	483	1854	2263	777	1327	1743	153	1792	1176	348	1058	1695	2686	809	2194	52.65	2349	311	1976	163
164	.173	79.4	2674	486	1866	2278	782	1334	1755	154	1802	1184	348	1069	1716	2715	818	2217	52.97	2365	312	1988	164
163	.172	79.9	2692	490	1877	2293	788	1341	1766	154	1813	1192	349	1080	1737	2744	828	2242	53.29	2381	314	2001	165
166	.172	80.3	2710	493	1888	2308	793	1348	1778	155	1823	1200	349	1091	1758	2773	837	2266	53.78	2400	316	2014	166
167	.171	80.8	2728	496	1900	2323	799	1354	1789	155	1834	1208	349	1103	1779	2802	847	2290	54.11	2416	318	2026	167
168	.171	81.3	2746	499	1911	2339	804	1361	1801	156	1844	1216	349	1114	1801	2832	857	2314	54.43	2432	319	2039	168
169	.170	81.8	2764	502	1922	2354	810	1368	1812	156	1855	1224	349	1125	1822	2861	866	2339	54.76	2447	320	2051	169
170	.169	82.3	2782	506	1934	2369	815	1375	1824	157	1865	1232	349	1136	1844	2891	876	2364	55.25	2467	323	2064	170
171	.169	82.8	2800	509	1945	2384	821	1382	1836	157	1875	1240	350	1148	1865	2921	886	2388	55.57	2483	325	2076	171
172	.168	83.2	2818	512	1956	2399	826	1388	1847	158	1886	1248	350	1159	1887	2951	896	2413	55.90	2498	326	2089	172
173	.168	83.7	2836	515	1968	2414	831	1395	1859	158	1896	1256	350	1171	1909	2981	906	2438	56.40	2518	329	2101	173
174	.167	84.2	2854	519	1979	2429	837	1402	1870	159	1907	1264	350	1182	1931	3011	916	2463	56.72	2534	330	2114	174
175	.167	84.7	2872	522	1990	2444	842	1409	1882	159	1917	1272	350	1194	1954	3042	926	2489	57.05	2549	332	2126	175
176	.166	85.2	2890T	525T	2002T	2460	848	1416	1893	160	1927	1280	351	1206	1976	3072	936	2514	57.38	2565	333	2139	176
177	.166	87.6	3302L	1003L	2493L	2475	853	1422	1905	160	1938	1288	351	1217	1998	3103	947	2540	57.88	2585	336	2151	177
178	.165	88.1	3335	1014	2518	2480	859	1429	1916	161	1948	1296	351	1229	2021	3134	957	2565	58.21	2601	337	2164	178
179	.164	88.6	3368L	1025L	2544L	2505T	864T	1436T	1923T	161T	1958T	1304T	351T	1241L	2044L	3165L	967L	2591L	58.53	2617T	339T	2177T	179

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 9 POINT (0.111L)

$K_{AB} = 0.053$ $C_{AB} = 8.000$

$K_{BA} = 3.368$ $C_{BA} = 0.125$

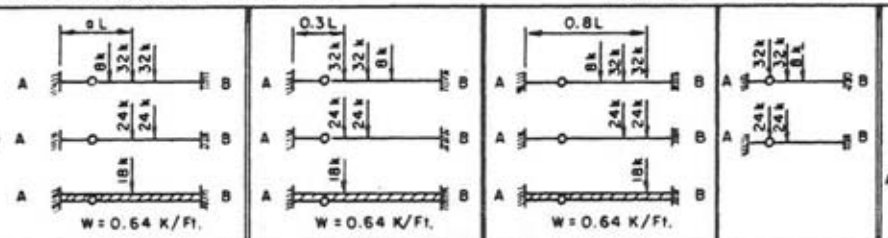
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

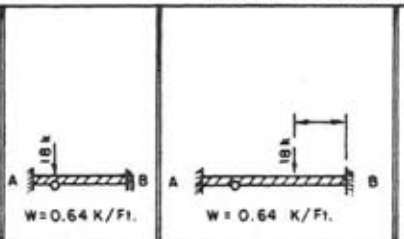
LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)





SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	MAXIMUM POSITIVE MOMENTS SBM @ aL	MAXIMUM POSITIVE MOMENTS FEM @ A	MAXIMUM POSITIVE MOMENTS FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	MOMENTS AT 0.3 POINT FEM @ A	MOMENTS AT 0.3 POINT FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	MOMENTS AT 0.8 POINT FEM @ A	MOMENTS AT 0.8 POINT FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	MAXIMUM NEGATIVE MOMENTS @ A FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	MAXIMUM NEGATIVE MOMENTS @ A FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.377L	MAXIMUM NEGATIVE MOMENTS AT B FEM @ A	MAXIMUM NEGATIVE MOMENTS AT B FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
180	.164	89.1	3402L	1035L	2570L	2520T	870T	1443T	1939T	162T	1969T	1312T	351T	1253L	2067L	3196L	977L	2617L	58.86	2632T	340T	2189T	180
181	.163	89.6	3435	1046	2595	2535	875	1449	1951	162	1979	1320	352	1265	2090	3227	988	2643	59.37	2652	343	2202	181
182	.163	90.1	3469	1057	2621	2550	880	1456	1962	163	1990	1328	352	1277	2113	3259	998	2669	59.70	2668	344	2214	182
183	.162	90.6	3502	1068	2647	2565	886	1463	1974	163	2000	1336	352	1289	2136	3291	1009	2696	60.02	2684	346	2227	183
184	.162	91.1	3536	1079	2674	2780	891	1470	1985	164	2010	1344	352	1301	2159	3322	1019	2722	60.35	2700	347	2239	184
185	.161	91.6	3570	1090	2700	2596	897	1477	1997	164	2021	1352	352	1313	2183	3354	1030	2749	60.86	2719	350	2252	185
186	.161	92.1	3604	1101	2726	2611T	902T	1483T	2008	165	2031	1360	352	1326	2207	3387	1041	2775	61.19	2735	352	2264	186
187	.160	92.6	3639	1112	2753	3057L	1221L	2533L	2020	165	2041	1368	353	1338	2230	3419	1052	2802	61.52	2751	353	2277	187
188	.160	93.1	3673	1123	2780	3086	1233	2558	2031	166	2052	1376	353	1350	2254	3451	1062	2829	61.85	2767	354	2289	188
189	.159	93.6	3708	1134	2806	3115	1245	2584	2043	166	2062	1384	353	1363	2278	3484	1073	2856	62.37	2787	358	2302	189
190	.159	94.1	3743	1145	2833	3144	1257	2609	2054	167	2072	1392	353	1375	2302	3516	1084	2883	62.70	2803	359	2314	190
191	.158	94.6	3778	1156	2860	3174	1268	2635	2066	167	2082	1400	353	1388	2327	3549	1095	2911	63.03	2819	360	2327	191
192	.158	95.0	3813	1168	2888	3203	1280	2661	2077	168	2093	1408	353	1400	2351	3582	1106	2938	63.36	2835	362	2339	192
193	.157	95.5	3848	1179	2915	3233	1292	2687	2089	168	2103	1416	354	1413	2376	3616	1117	2966	63.88	2855	365	2352	193
194	.157	96.0	3883	1191	2942	3262	1304	2714	2100	169	2113	1424	354	1425	2400	3649	1128	2993	64.21	2871	366	2364	194
195	.156	96.5	3919	1202	2970	3292	1316	2740	2112	170	2124	1432	354	1438	2425	3682	1140	3021	64.54	2887	368	2377	195
196	.156	97.0	3955	1214	2998	3322	1329	2767	2124	170	2134	1440	354	1451	2450	3716	1151	3049	64.88	2903	369	2389	196
197	.155	97.5	3991	1225	3025	3353	1341	2793	2135	171	2144	1448	354	1464	2475	3750	1162	3077	65.40	2923	372	2402	197
198	.155	98.0	4027	1237	3053	3383	1353	2820	2147	171	2155	1456	354	1477	2500	3784	1174	3106	65.74	2939	374	2414	198
199	.154	98.5	4063	1249	3081	3413	1365	2847	2158	172	2165	1464	355	1490	2525	3818	1185	3134	66.07	2955	375	2427	199
200	.154	99.0	4100	1261	3110	3444	1378	2874	2170	172	2175	1472	355	1503	2551	3852	1196	3162	66.40	2970	377	2439	200
201	.153	99.5	4136	1272	3138	3475	1390	2901	2181	173	2185	1479	355	1516	2576	3886	1208	3191	66.73	2986	378	2452	201
202	.153	100.0	4173	1284	3166	3506	1403	2928	2193	173	2196	1487	355	1529	2602	3921	1220	3220	67.27	3007	381	2464	202
203	.152	100.5	4210	1296	3195	3537	1415	2956	2204	174	2206	1495	355	1542	2628	3955	1231	3249	67.60	3023	383	2477	203
204	.152	101.0	4247	1308	3224	3568	1428	2983	2216	174	2216	1503	355	1555	2654	3990	1243	3278	67.93	3039	384	2489	204
205	.152	101.5	4284	1320	3253	3599	1441	3011	2227	175	2227	1511	356	1569	2680	4025	1255	3307	68.26	3055	386	2502	205
206	.151	102.0	4321	1333	3282	3630	1453	3039	2239	175	2237	1519	356	1582	2706	4060	1266	3336	68.60	3071	387	2514	206
207	.151	102.5	4359	1345	3311	3662	1466	3067	2250	176	2247	1527	356	1595	2732	4096	1278	3365	69.14	3091	390	2527	207
208	.150	103.0	4397	1357	3340	3694	1479	3095	2262	176	2257	1535	356	1609	2759	4131	1290	3395	69.47	3107	392	2539	208
209	.150	103.5	4435L	1369L	3369L	3725L	1492L	3123L	2273T	177T	2268T	1543T	356T	1622L	2785L	4167L	1302L	3424L	69.81	3123T	393T	2552T	209

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/10 POINT (0.100L)

K_{AB} = 0.041 C_{AB} = 9.000

K_{BA} = 3.329 C_{BA} = 0.111

POSITIVE MOMENTS (KIP-FEET) | NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T) A 8k 32k 32k B

ALTERNATIVE (A) A 24k 24k B

LANE (L) A 18k B W = 0.64 K/Ft.

0.3L: A 32k 32k 8k B; A 24k 24k B; A 18k B W = 0.64 K/Ft.

0.8L: A 8k 32k 32k B; A 24k 24k B; A 18k B W = 0.64 K/Ft.

A 32k 32k 8k B; A 24k 24k B

A 18k B W = 0.64 K/Ft.

A 18k B W = 0.64 K/Ft.

aL: A 8k 32k 32k B; A 24k 24k B

SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		aL FT	SBM @ aL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.381L	FEM @ A	FEM @ B	aL FT	SBM aL	FEM @ A	FEM @ B	
30	.300	13.8	314A	50A	234A	274A	82A	173A	211A	18A	223A	128A	49A	76L	59L	195L	35L	152L	9.6	282A	35A	244A	30
31	.300	14.3	325	51	242	284	85	178	219	18	230	133	49	79	63	204	37	159	6.42	233T	67T	252T	31
32	.300	14.8	337	53	250	294	89	183	227	18	237	138A	49A	82	67	213	39	167	6.75	246	68	266	32
33	.300	15.3	349	55	258	304	92	187	234	19	244	142T	188T	86	71	222	41	174	7.06	259	69	279	33
34	.300	15.8	361	57	265	314	95	192	242	19	251	148	197	89	76	232	43	181	7.41	273	70	293	34
35	.300	16.3	373	59	273	324A	98A	197A	250	19	258	155	205	93	80	241	45	189	7.73	287	71	306	35
36	.300	16.7	385	61	281	349T	96T	305T	257	20	265	161	213	96	85	251	47	197	8.06	300	72	319	36
37	.300	17.2	397	63	288	363	99	315	265	20	272	167	219	100	89	260	49	205	8.40	315	77	332	37
38	.300	17.7	409	64	296	376	103	325	273	20	279	174	226	104	94	270	52	213	8.74	330	84	345	38
39	.300	18.2	421	66	304	390	107	334	280	20	286	180	231	107	99	280	54	221	9.09	345	90	358	39
40	.300	18.7	433	68	312	403	111	344	288	21	293	187	237	111	105	291	56	229	9.40	360	96	371	40
41	.300	19.2	445	70	319	418	115	358	296	21	300	194	242	115	110	301	59	237	8.45	344	100	383	41
42	.299	19.7	457	72	327	433	119	372	303	21	307	200	246	119	115	311	61	246	8.78	359	101	398	42
43	.298	20.2	469A	74A	335A	449	123	386	311	22	314	207	251	123	121	322	64	255	9.12	375	102	413	43
44	.296	20.3	520T	104T	428T	464	127	399	319	22	321	214	255	127	127	333	66	263	9.42	389	102	428	44
45	.294	20.8	538	107	442	479	132	412	326	22	327	221	258	131	132	344	69	272	9.76	405	104	443	45
46	.292	21.3	556	110	457	494	136	425	334	23	334	227	262	135	138	355	71	281	10.12	420	105	457	46
47	.291	21.7	574	113	471	509	140	437	342	23	341	234	265	139	144	366	74	291	10.43	435	106	472	47
48	.289	22.2	592	115	485	524	144	449	349	23	348	241	268	143	151	378	77	300	10.75	450	107	487	48
49	.287	22.6	610	118	499	539	149	461	357	24	355	248	271	147	157	389	80	309	11.12	467	108	501	49
50	.286	23.1	628	121	513	554	153	472	365	24	362	255	274	151	163	401	83	319	11.45	482	109	515	50
51	.284	23.6	645	123	527	570	157	484	372	24	369	262	277	156	170	413	86	329	11.78	497	110	530	51
52	.282	24.1	663	126	540	585	162	495	380	24	375	269	279	160	177	425	89	338	12.17	514	112	544	52
53	.281	24.5	681	129	554	600	166	505	388	25	382	276	282	164	184	437	92	348	12.51	529	113	558	53
54	.279	25.0	699	132	567	615	170	516	396A	25A	389A	283	284	169	191	449	95	358	12.85	545	114	572	54
55	.278	25.5	717	134	580	630	175	527	499T	98T	581T	290	286	173	198	462	98	369	13.20	561	115	587	55
56	.276	26.0	735	137	594	645	179	537	511	98	594	297	288	178	205	474	101	379	13.55	577	116	601	56
57	.275	26.4	753	140	607	660	184	547	522	98	607	304	290	182	212	487	104	389	13.91	593	118	615	57
58	.273	26.9	771	143	620	675	188	557	534	99	620	311	291	187	220	500	107	400	14.27	609	119	629	58
59	.272	27.4	789T	145T	633T	690T	193T	567T	545T	99T	633T	318T	293T	192L	227L	513L	111L	411L	14.63	626T	120T	643T	59

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 10 POINT (0.100L)

K_{AB} = 0.041 C_{AB} = 9.000

K_{BA} = 3.329 C_{BA} = 0.111

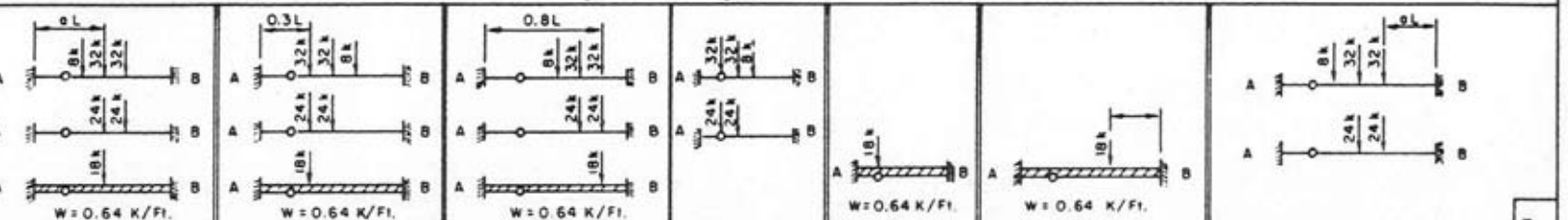
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		uL FT	SBM @ uL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.381L	FEM @ A	FEM @ B	uL FT	SBM @ uL	FEM @ A	FEM @ B	
60	.270	27.8	806T	148T	646T	706T	197T	577T	557T	99T	646T	325T	295T	197L	235L	526L	114L	422L	14.94	641T	121T	656T	60
61	.269	28.4	824	151	659	721	202	586	568	99	659	332	296	201	243	540	117	433	15.31	657	123	670	61
62	.267	28.8	842	153	672	736	206	596	580	99	672	339	298	206	251	553	121	444	15.69	674	124	684	62
63	.266	29.3	860	156	684	751	211	605	591	99	685	346	299	211	259	567	124	455	16.06	690	126	698	63
64	.265	29.8	878	159	697	766	215	615	603	100	698	353	301	216	268	581	128	466	16.38	706	127	712	64
65	.263	30.3	896	161	710	781	220	624	614	100	710	360	302	221	276	595	132	478	16.77	723	128	725	65
66	.262	30.8	914	164	723	796	225	633	626	100	723	367	303	226	285	609	135	490	17.09	738	129	739	66
67	.260	31.2	932	167	735	811	229	642	637	100	736	374	304	231	293	623	139	501	17.49	755	131	753	67
68	.259	31.7	950	170	748	827	234	651	649	100	748	381	306	236	302	638	143	513	17.82	771	132	766	68
69	.258	32.2	968	173	760	842	238	660	660	101	760	388	307	241	311	652	147	525	18.22	788	134	780	69
70	.256	32.7	986	175	773	857	243	669	672	101	773	395	308	247	320	667	150	538	18.55	804	135	794	70
71	.255	33.2	1004	178	785	872	248	678	684	101	785	402	309	252	329	682	154	550	18.96	821	137	807	71
72	.254	33.6	1021	181	798	887	252	686	695	101	797	409	310	257	339	697	158	562	19.30	837	138	821	72
73	.253	34.1	1039	184	810	902	257	695	707	102	810	416	311	263	348	712	162	575	19.64	853	139	834	73
74	.251	34.6	1057	187	822	917	262	703	718	102	822	424	312	268	358	727	166	588	20.05	870	141	848	74
75	.250	35.0	1075	190	834	932	266	712	730	102	834	431	312	274	367	743	170	600	20.40	887	142	861	75
76	.249	35.6	1093	192	847	948	271	720	741	102	846	438	313	279	377	759	175	613	20.75	903	143	874	76
77	.248	36.0	1111	195	859	963	276	729	753	103	858	445	314	285	387	774	179	626	21.10	919	145	888	77
78	.246	36.5	1129	198	872	978	280	737	764	103	870	452	315	290	397	790	183	640	21.45	935	146	901	78
79	.245	37.0	1147	201	884	993	285	746	776	103	882	459	316	296	408	806	187	653	21.88	953	148	915	79
80	.244	37.4	1165	204	896	1008	290	754	787	103	894	466	316	302	418	823	192	666	22.24	969	149	928	80
81	.243	38.0	1183	206	909	1023	294	762	799	104	905	473	317	308	428	839	196	680	22.60	986	151	941	81
82	.241	38.5	1201	209	921	1038	299	770	810	104	917	480	318	313	439	856	201	694	22.96	1002	152	954	82
83	.240	38.9	1219	212	933	1053	304	778	822	104	929	488	318	319	450	872	205	708	23.32	1019	154	968	83
84	.239	39.4	1237	215	945	1068	308	787	833	105	941	495	319	325	461	889	210	722	23.69	1035	155	981	84
85	.238	39.9	1255	217	957	1084	313	795	845	105	952	502	320	331	472	906	214	736	24.05	1052	157	994	85
86	.237	40.3	1272	220	969	1099	318	803	856	105	964	509	320	337	483	923	219	750	24.42	1068	158	1007	86
87	.236	40.9	1290	222	981	1114	322	811	868	105	976	516	321	343	494	941	224	764	24.79	1085	160	1021	87
88	.235	41.4	1308	225	993	1129	327	819	879	106	987	523	321	349	506	958	228	779	25.17	1102	161	1034	88
89	.234	41.8	1326T	228T	1005T	1144T	332T	827T	891T	106T	999T	530T	322T	356L	517L	976L	233L	794L	25.54	1118T	163T	1047T	89

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 10 POINT (0 100L)

K_{AB} 0.041 C_{AB} 9.000

K_{BA} 3.329 C_{BA} 0.111

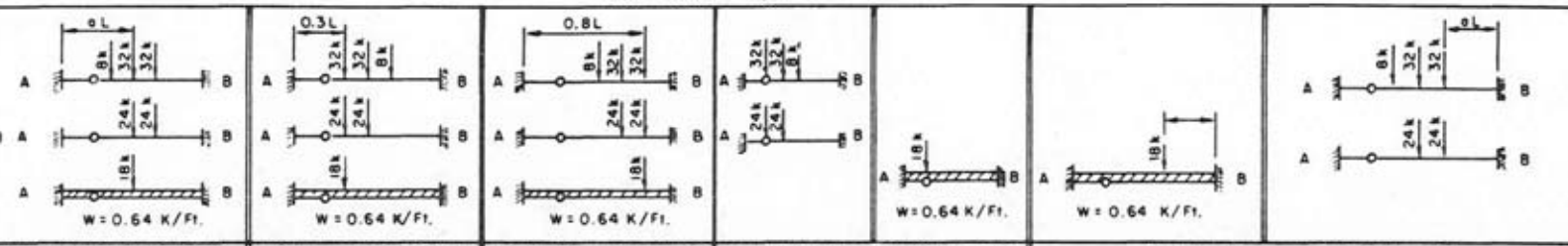
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0 3 POINT			MOMENTS AT 0 8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		uL FT	SBM @ uL	FEM @ A	FEM @ B	SBM @ 0 3L	FEM @ A	FEM @ B	SBM @ 0 8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0381L	FEM @ A	FEM @ B	uL FT	SBM @ uL	FEM @ A	FEM @ B	
90	.233	42 3	1344T	231T	1017T	1159T	337T	835T	902T	106T	1010T	537T	323T	362L	529L	993L	238L	808L	25 92	1135T	164T	1060T	90
91	.231	42 8	1362	234	1029	1174	341	843	914	107	1022	545	323	368	541	1011	243	823	26 30	1152	166	1073	91
92	.230	43 2	1380	237	1041	1189	346	850	925	107	1033	552	324	375	553	1029	248	838	26 68	1169	167	1087	92
93	.229	43 7	1398	240	1053	1205	351	858	937	107	1045	559	324	381	565	1048	253	853	27 06	1186	169	1100	93
94	.228	44 3	1416	242	1066	1220	355	866	948	108	1056	566	325	387	577	1066	258	869	27 35	1201	170	1113	94
95	.227	44 7	1434	245	1077	1235	360	874	960	108	1068	573	325	394	589	1084	263	884	27 74	1218	171	1126	95
96	.226	45 2	1452	248	1089	1250	365	882	972	108	1079	580	326	400	602	1103	268	900	28 13	1235	173	1139	96
97	.225	45 7	1470	251	1101	1265	370	890	983	109	1090	588	326	407	614	1122	273	915	28 52	1252	175	1152	97
98	.224	46 2	1488	254	1113	1280	374	897	995	109	1102	595	326	414	627	1141	279	931	28.91	1269	176	1165	98
99	.223	46 6	1506	257	1125	1295	379	905	1006	109	1113	602	327	420	640	1160	284	947	29 20	1284	177	1178	99
100	.222	47 1	1524	260	1136	1310	384	913	1018	110	1124	609	327	427	653	1179	289	963	29 60	1301	179	1191	100
101	.221	47 7	1542	262	1149	1326	389	920	1029	110	1136	616	328	434	666	1199	295	979	30.00	1319	181	1204	101
102	.220	48 1	1560	265	1161	1341	393	928	1041	110	1147	623	328	441	679	1218	300	996	30 40	1336	183	1217	102
103	.219	48 6	1578	267	1173	1356	398	936	1052	111	1158	630	328	447	692	1238	306	1012	30 69	1351	184	1230	103
104	.218	49 1	1596	270	1184	1371	403	943	1064	111	1169	638	329	454	706	1258	311	1029	31 10	1369	185	1243	104
105	.217	49 6	1613	273	1196	1386	408	951	1075	112	1180	645	329	461	720	1278	317	1046	31 50	1386	187	1256	105
106	.216	50 0	1631	276	1208	1401	412	959	1087	112	1192	652	330	468	733	1298	322	1062	31.91	1403	189	1269	106
107	.216	50 5	1649	279	1219	1416	417	966	1098	112	1203	659	330	475	747	1318	328	1079	32 21	1419	190	1282	107
108	.215	51 0	1667	282	1231	1431	422	974	1110	113	1214	666	330	483	761	1339	334	1097	32 62	1436	192	1295	108
109	.214	51 4	1685	285	1243	1446	427	981	1121	113	1225	673	331	490	775	1359	339	1114	33 03	1454	194	1308	109
110	.213	52 0	1703	287	1256	1462	431	989	1133	113	1236	681	331	497	790	1380	345	1131	33 33	1469	195	1321	110
111	.212	52 5	1721	290	1267	1477	436	996	1144	114	1247	688	331	504	804	1401	351	1149	33 74	1487	196	1334	111
112	.211	53 0	1739	293	1279	1492	441	1004	1156	114	1258	695	332	512	819	1422	357	1166	34.16	1504	198	1347	112
113	.210	53 4	1757	296	1291	1507	446	1011	1167	114	1269	702	332	519	833	1443	363	1184	34 46	1520	199	1360	113
114	.209	53 9	1775	299	1302	1522	451	1019	1179	115	1280	709	332	526	848	1465	369	1202	34.88	1537	201	1373	114
115	.208	54.4	1793	302	1314	1537	455	1026	1190	115	1291	716	333	534	863	1486	375	1220	35 19	1553	202	1386	115
116	.207	54 9	1811	304	1326	1552	460	1034	1202	116	1302	724	333	541	878	1508	381	1238	35.61	1571	204	1399	116
117	.207	55 3	1829	307	1337	1567	465	1041	1213	116	1313	731	333	549	893	1530	388	1256	35 92	1586	205	1412	117
118	.206	55 8	1847	310	1349	1583	470	1049	1225	116	1324	738	333	556	909	1552	394	1275	36 34	1604	207	1425	118
119	.205	56 4	1865T	312T	1362T	1598T	474T	1056T	1236T	117T	1335T	745T	334T	564L	924L	1574L	400L	1293L	36 77	1622T	209T	1437T	119

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

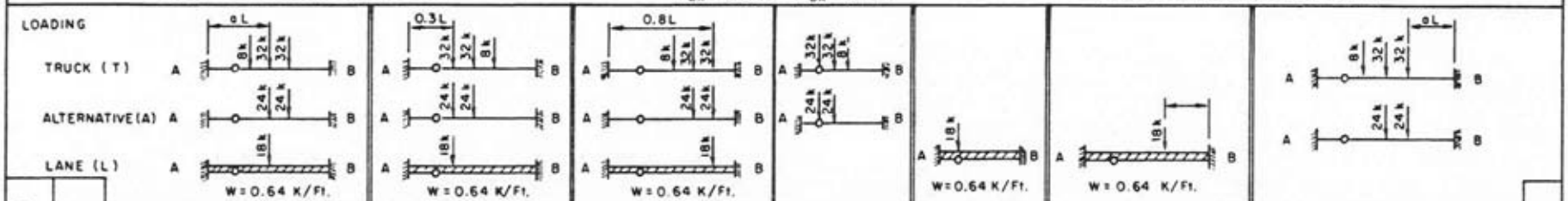
HINGE AT 1/10 POINT (0.100L)

K_{AB} = 0.041 C_{AB} = 9.000

K_{BA} = 3.329 C_{BA} = 0.111

POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		⌀L FT	SBM @ ⌀L	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.381L	FEM @ A	FEM @ B	⌀L FT	SBM @ ⌀L	FEM @ A	FEM @ B	
120	204	56.9	1883T	315T	1373T	1613T	479T	1063T	1248T	117T	1346T	752T	334T	572L	940L	1596L	406L	1312L	37.08	1637T	210T	1450T	120
121	203	57.4	1901	318	1385	1628	484	1071	1260	118	1357	759	334	580	955	1619	413	1331	37.51	1655	212	1463	121
122	202	57.8	1919	321	1397	1643	489	1078	1271	118	1367	767	335	587	971	1641	419	1350	37.82	1671	213	1476	122
123	202	58.3	1937	324	1408	1658	494	1086	1283	118	1378	774	335	595	987	1664	426	1369	38.25	1689	215	1489	123
124	201	58.8	1955	327	1420	1673	498	1093	1294	119	1389	781	335	603	1003	1687	432	1388	38.56	1704	216	1502	124
125	200	59.2	1973	330	1431	1688	503	1100	1306	119	1400	788	335	611	1019	1710	439	1407	39.00	1722	218	1515	125
126	199	59.7	1991	333	1443	1704	508	1108	1317	120	1411	795	336	619	1036	1733	445	1427	39.31	1738	219	1528	126
127	198	60.2	2009	335	1454	1719	513	1115	1329	120	1422	802	336	627	1052	1756	452	1447	39.75	1756	222	1540	127
128	198	60.7	2027	338	1466	1734	517	1122	1340	120	1432	810	336	635	1069	1780	459	1466	40.06	1771	223	1553	128
129	197	61.1	2044	341	1478	1749	522	1130	1352	121	1443	817	336	644	1086	1803	466	1486	40.51	1790	225	1566	129
130	196	61.7	2063	343	1491	1764	527	1137	1363	121	1454	824	337	652	1103	1827	473	1506	40.82	1805	226	1579	130
131	195	62.2	2081	346	1502	1779	532	1144	1375	122	1465	831	337	660	1120	1851	479	1526	41.26	1824	228	1592	131
132	195	62.7	2098	349	1514	1794	537	1152	1386	122	1476	838	337	668	1137	1875	486	1546	41.58	1839	229	1604	132
133	194	63.2	2116	352	1525	1809	541	1159	1398	122	1486	845	337	677	1154	1900	493	1567	42.03	1857	231	1617	133
134	193	63.6	2134	355	1537	1824	546	1166	1409	123	1497	853	337	685	1171	1924	500	1587	42.34	1873	232	1630	134
135	192	64.1	2152	358	1548	1840	551	1174	1421	123	1508	860	338	694	1189	1949	507	1608	42.79	1891	234	1643	135
136	192	64.6	2170	361	1560	1855	556	1181	1432	124	1518	867	338	702	1207	1973	515	1629	43.11	1907	236	1656	136
137	191	65.1	2188	363	1571	1870	561	1188	1444	124	1529	874	338	711	1224	1998	522	1650	43.43	1923	237	1669	137
138	190	65.5	2206	366	1583	1885	565	1196	1455	124	1540	881	338	719	1242	2023	529	1671	43.88	1941	239	1681	139
139	189	66.0	2224	369	1595	1900	570	1203	1467	125	1551	889	339	728	1260	2048	536	1692	44.20	1957	240	1694	139
140	189	66.5	2242	372	1606	1915	575	1210	1478	125	1561	896	339	737	1278	2073	544	1713	44.66	1975	242	1707	140
141	188	67.0	2260	375	1618	1930	580	1217	1490	126	1572	903	339	745	1297	2099	551	1734	44.98	1991	243	1720	141
142	187	67.6	2278	377	1631	1945	584	1225	1501	126	1583	910	339	754	1315	2125	558	1756	45.44	2010	246	1732	142
143	187	68.1	2296	380	1642	1961	589	1232	1513	126	1593	917	339	763	1334	2150	566	1778	45.76	2025	247	1745	143
144	186	68.5	2314	383	1654	1976	594	1239	1524	127	1604	924	340	772	1353	2176	573	1800	46.08	2041	248	1758	144
145	185	69.0	2332	385	1665	1991	599	1246	1536	127	1614	932	340	781	1371	2202	581	1821	46.54	2060	250	1771	145
146	185	69.5	2350	388	1677	2006	604	1254	1548	128	1625	939	340	790	1390	2228	589	1844	46.87	2075	251	1783	146
147	184	70.0	2368	391	1688	2021	608	1261	1559	128	1636	946	340	799	1409	2255	596	1866	47.33	2094	254	1796	147
148	183	70.4	2386	394	1700	2036	613	1268	1571	129	1646	953	340	808	1429	2281	604	1888	47.66	2110	255	1809	148
149	182	70.9	2404T	397T	1711T	2051T	618T	1275T	1582T	129T	1657T	960T	341T	817L	1448L	2308L	612L	1910L	47.98	2126T	256T	1822T	149

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/10 POINT (0.100L)

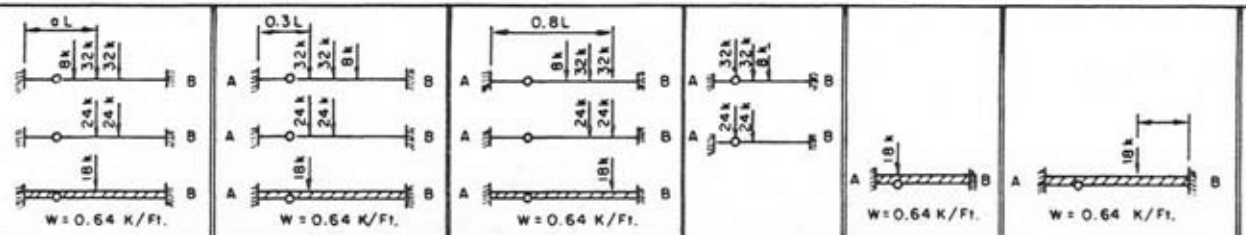
$K_{AB} = 0.041$ $C_{AB} = 9.000$

$K_{BA} = 3.329$ $C_{BA} = 0.111$

POSITIVE MOMENTS (KIP-FEET) | NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T) — ALTERNATIVE (A) — LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	MAXIMUM POSITIVE MOMENTS SBM @ aL	MAXIMUM POSITIVE MOMENTS FEM @ A	MAXIMUM POSITIVE MOMENTS FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	MOMENTS AT 0.3 POINT FEM @ A	MOMENTS AT 0.3 POINT FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	MOMENTS AT 0.8 POINT FEM @ A	MOMENTS AT 0.8 POINT FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	MAXIMUM NEGATIVE MOMENTS @ A FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	MAXIMUM NEGATIVE MOMENTS @ A FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.381L	MAXIMUM NEGATIVE MOMENTS AT B FEM @ A	MAXIMUM NEGATIVE MOMENTS AT B FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B aL FT	MAXIMUM NEGATIVE MOMENTS AT B SBM @ aL	MAXIMUM NEGATIVE MOMENTS AT B FEM @ A	MAXIMUM NEGATIVE MOMENTS AT B FEM @ B	SPAN IN FEET
150	182	71.4	2422T	400T	1723T	2066T	623T	1282T	1594T	129T	1668T	967T	341T	826L	1467L	2335L	620L	1933L	48.45	2145T	258T	1835T	150
151	181	71.9	2440	403	1734	2082	628	1290	1605	130	1678	975	341	836	1487	2362	627	1956	48.77	2160	260	1847	151
152	181	72.4	2458	406	1746	2097	632	1297	1617	130	1689	982	341	845	1507	2389	635	1979	49.10	2176	261	1860	152
153	180	72.8	2476	409	1757	2112	637	1304	1628	131	1699	989	341	854	1527	2416	643	2002	49.57	2195	263	1873	153
154	179	73.3	2494	412	1769	2127	642	1311	1640	131	1710	996	341	864	1547	2444	651	2025	49.90	2211	264	1885	154
155	179	73.8	2512	415	1780	2142	647	1318	1651	132	1720	1003	342	873	1567	2471	659	2048	50.22	2227	266	1898	155
156	178	74.3	2530	418	1792	2157	652	1326	1663	132	1731	1011	342	883	1587	2499	667	2071	50.70	2246	268	1911	156
157	177	74.9	2548	419	1805	2172	656	1333	1674	132	1741	1018	342	892	1608	2527	676	2095	51.02	2261	269	1924	157
158	177	75.4	2566	422	1817	2187	661	1340	1686	133	1752	1025	342	902	1628	2555	684	2118	51.35	2277	270	1936	158
159	176	75.8	2584	425	1828	2202	666	1347	1697	133	1763	1032	342	911	1649	2583	692	2142	51.83	2296	273	1949	159
160	175	76.3	2602	428	1840	2218	671	1354	1709	134	1773	1039	342	921	1670	2611	700	2166	52.16	2312	274	1962	160
161	175	76.8	2620	431	1851	2233	676	1361	1720	134	1784	1046	343	931	1690	2640	709	2190	52.49	2328	275	1975	161
162	174	77.3	2638	434	1862	2248	680	1369	1732	135	1794	1054	343	941	1711	2668	717	2214	52.97	2347	278	1987	162
163	174	77.8	2656	436	1874	2263	685	1376	1743	135	1805	1061	343	951	1733	2697	726	2239	53.30	2363	279	2000	163
164	173	78.2	2673	439	1885	2278	690	1383	1755	135	1815	1068	343	960	1754	2726	734	2263	53.63	2379	280	2013	164
165	172	78.7	2691	442	1897	2293	695	1390	1766	136	1826	1075	343	970	1775	2755	743	2287	54.12	2398	283	2025	165
166	172	79.2	2709	445	1908	2308	700	1397	1778	136	1836	1082	343	980	1797	2784	751	2312	54.45	2414	284	2038	166
167	171	79.7	2727	448	1920	2323	705	1404	1789	137	1847	1090	344	990	1819	2814	760	2337	54.78	2430	285	2051	167
168	171	80.1	2745	451	1931	2339	709	1411	1801	137	1857	1097	344	1001	1840	2843	769	2362	55.27	2449	288	2063	168
169	170	80.6	2763	454	1943	2354	714	1419	1812	138	1867	1104	344	1011	1862	2873	778	2387	55.60	2465	289	2076	169
170	169	81.1	2781	457	1954	2369	719	1426	1824	138	1878	1111	344	1021	1885	2903	786	2412	55.93	2481	290	2089	170
171	169	81.6	2799	460	1965	2384	724	1433	1836	138	1888	1118	344	1031	1907	2933	795	2437	56.26	2497	291	2102	171
172	168	82.0	2817	463	1977	2399	729	1440	1847	139	1899	1125	344	1041	1929	2963	804	2463	56.76	2516	294	2114	172
173	168	82.5	2835	466	1988	2414	733	1447	1859	139	1909	1133	345	1052	1952	2993	813	2489	57.09	2532	295	2127	173
174	167	83.2	2853T	467T	2002T	2429	738	1454	1870	140	1920	1140	345	1062	1974	3024	822	2514	57.42	2548	296	2140	174
175	167	85.4	3236L	882L	2493L	2444	743	1461	1882	140	1930	1147	345	1073	1997	3054	831	2540	57.92	2568	299	2152	175
176	166	85.9	3268	892	2518	2460	748	1468	1893	141	1941	1154	345	1083	2020	3085	840	2566	58.26	2584	300	2165	176
177	166	86.4	3301	901	2544	2475	753	1476	1905	141	1951	1161	345	1094	2043	3116	849	2592	58.59	2600	301	2178	177
178	165	86.9	3334	911	2570	2490	757	1483	1916	142	1961	1169	345	1104	2066	3147	859	2618	58.92	2616	303	2190	178
179	164	87.4	3367L	920L	2596L	2505T	762T	1490T	1928T	142T	1972T	1176T	345T	1115L	2089L	3178L	868L	2645L	59.43	2635T	305T	2203T	179

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/10 POINT (0.100L)

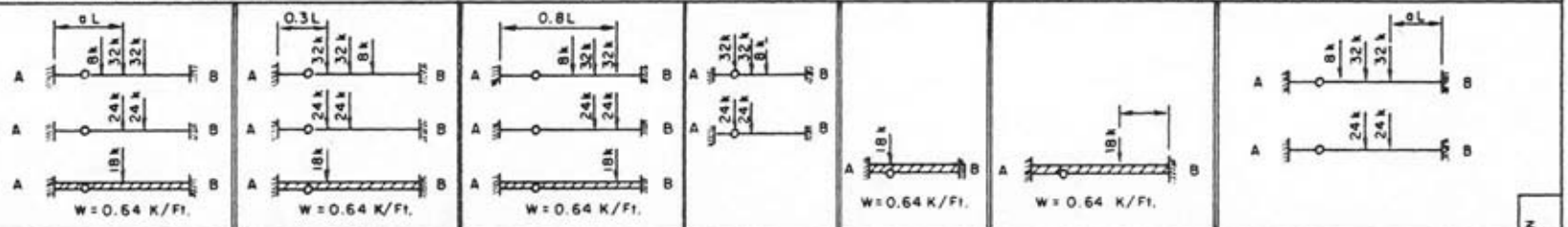
$K_{AB} = 0.041$ $C_{AB} = 9.000$

$K_{BA} = 3.329$ $C_{BA} = 0.111$

POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T) — ALTERNATIVE(A) — LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		aL FT	SBM @ aL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.381L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	
180	.164	87.8	3400L	930L	2622L	2520T	767T	1497T	1939T	142T	1982T	1183T	346T	1126L	2113L	3209L	877L	2671L	59.76	2651T	307T	2216T	180
181	.163	88.3	3433	939	2649	2535	772	1504	1951	143	1993	1190	346	1136	2136	3241	887	2698	60.09	2667	308	2228	181
182	.163	88.8	3467	949	2675	2550	777	1511	1962	143	2003	1197	346	1147	2160	3272	896	2725	60.42	2683	309	2241	182
183	.162	89.3	3501	959	2702	2565T	781T	1518T	1974	144	2013	1204	346	1158	2184	3304	905	2751	60.94	2703	312	2254	183
184	.162	89.8	3534	969	2729	2971L	1061L	2521L	1985	144	2024	1212	346	1169	2207	3336	915	2778	61.27	2719	313	2266	184
185	.161	90.3	3568	978	2755	2999	1071	2547	1997	145	2034	1219	346	1180	2232	3368	924	2806	61.60	2735	314	2279	185
186	.161	90.8	3603	988	2782	3028	1082	2573	2008	145	2045	1226	346	1191	2256	3400	934	2833	61.94	2751	316	2292	186
187	.160	91.3	3637	998	2810	3057	1092	2599	2020	146	2055	1233	347	1202	2280	3433	944	2860	62.46	2771	318	2304	187
188	.160	91.7	3671	1008	2837	3086	1103	2625	2031	146	2065	1240	347	1213	2304	3465	953	2888	62.79	2787	320	2317	188
189	.159	92.2	3706	1018	2864	3115	1113	2652	2043	146	2076	1248	347	1224	2329	3498	963	2916	63.13	2803	321	2330	189
190	.159	92.7	3741	1028	2892	3144	1124	2678	2054	147	2086	1255	347	1235	2354	3531	973	2943	63.46	2819	322	2342	190
191	.158	93.2	3776	1039	2919	3174	1134	2704	2066	147	2096	1262	347	1246	2379	3564	983	2971	63.98	2838	325	2355	191
192	.158	93.7	3811	1049	2947	3203	1145	2731	2077	148	2107	1269	347	1258	2403	3597	993	2999	64.32	2855	326	2368	192
193	.157	94.2	3846	1059	2975	3233	1156	2758	2089	148	2117	1276	347	1269	2429	3630	1003	3027	64.65	2871	327	2380	193
194	.157	94.5	3882	1069	3003	3262	1167	2785	2100	149	2127	1284	348	1280	2454	3664	1013	3056	64.99	2887	329	2393	194
195	.156	95.2	3917	1080	3031	3292	1177	2812	2112	149	2138	1291	348	1292	2479	3697	1023	3084	65.32	2903	330	2405	195
196	.156	95.6	3953	1090	3060	3322	1188	2839	2124	150	2148	1298	348	1303	2505	3731	1033	3113	65.86	2923	333	2418	196
197	.155	96.1	3989	1100	3088	3353	1199	2866	2135	150	2159	1305	348	1315	2530	3765	1043	3142	66.19	2939	334	2431	197
198	.155	96.6	4025	1111	3117	3383	1210	2894	2147	150	2169	1312	348	1326	2556	3799	1053	3170	66.53	2955	335	2443	198
199	.154	97.1	4061	1122	3145	3413	1221	2921	2158	151	2179	1319	348	1338	2582	3833	1063	3199	66.86	2971	337	2456	199
200	.154	97.6	4098	1132	3174	3444	1232	2949	2170	151	2190	1327	348	1350	2608	3868	1074	3228	67.40	2991	340	2469	200
201	.153	98.1	4134	1143	3203	3475	1243	2977	2181	152	2200	1334	348	1361	2634	3902	1084	3258	67.74	3007	341	2481	201
202	.153	98.6	4171	1153	3232	3506	1255	3005	2193	152	2210	1341	349	1373	2660	3937	1094	3287	68.07	3023	342	2494	202
203	.152	99.1	4208	1164	3261	3537	1266	3033	2204	153	2220	1348	349	1385	2687	3972	1105	3316	68.41	3039	343	2507	203
204	.152	99.6	4245	1175	3291	3568	1277	3061	2216	153	2231	1355	349	1397	2713	4007	1115	3346	68.75	3055	345	2519	204
205	.152	100.0	4282	1186	3320	3599	1289	3089	2227	154	2241	1363	349	1409	2740	4042	1126	3376	69.29	3076	348	2532	205
206	.151	100.5	4319	1197	3350	3630	1300	3118	2239	154	2251	1370	349	1421	2766	4077	1137	3406	69.63	3092	349	2544	206
207	.151	101.0	4357	1208	3380	3662	1311	3147	2250	155	2262	1377	349	1433	2793	4112	1147	3436	69.97	3108	350	2557	207
208	.150	101.5	4395	1219	3409	3694	1323	3175	2262	155	2272	1384	349	1445	2820	4148	1158	3466	70.30	3124	352	2570	208
209	.150	102.0	4432L	1230L	3439L	3725L	1334L	3204L	2273T	155T	2282T	1391T	349T	1457L	2848L	4184L	1169L	3496L	70.64	3140T	353T	2582T	209

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 11 POINT (0.091L)

K_{AB} = 0.033 C_{AB} = 10.000

K_{BA} = 3.297 C_{BA} = 0.100

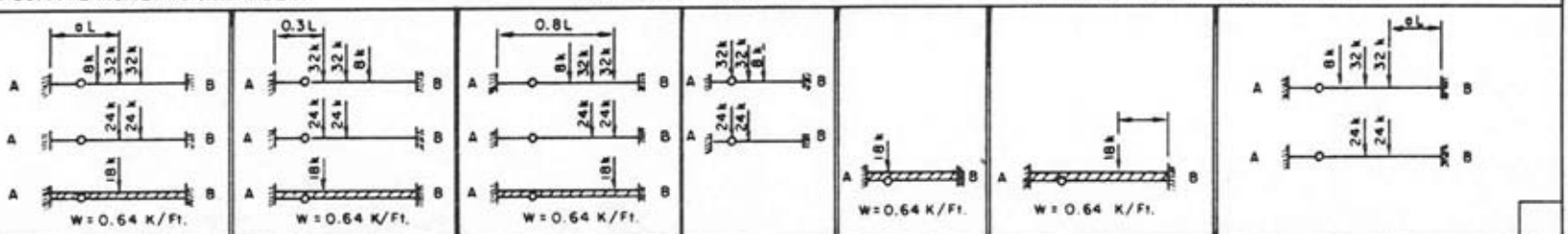
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		aL FT	SBM @ aL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.385L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	
30	.300	13.7	313A	45A	236A	274A	73A	178A	211A	16A	224A	116A	48A	69L	60L	196L	32L	154L	9.7	283A	31A	246A	30
31	.300	14.2	325	47	244	284	76	183	219	16	231	121	48	72	64	205	33	161	6.51	235T	61T	256	31
32	.300	14.6	337	49	252	294	79	188	227	16	238	125A	48A	75	68	214	35	169	6.85	249	62	270	32
33	.300	15.1	349	50	260	304	82	193	234	17	246	130T	191T	78	72	223	37	176	7.16	262	62	283	33
34	.300	15.6	361	52	268	314	85	198	242	17	253	135	199	81	77	232	39	184	7.51	276	63	297	34
35	.300	16.1	373	54	275	324A	88A	203A	250	17	260	141	207	84	81	242	41	192	7.84	289	64	310	35
36	.300	16.6	385	55	283	349T	85T	310T	257	17	267	147	215	87	86	252	43	199	8.21	303	65	324	36
37	.300	17.1	397	57	291	363	89	321	265	18	274	153	221	91	91	261	45	207	8.55	318	69	337	37
38	.300	17.5	409	59	299	376	92	331	273	18	281	159	227	94	96	271	47	216	8.85	332	76	350	38
39	.300	18.0	421	60	307	390	96	341	280	18	288	165	233	97	101	281	49	224	9.20	348	82	363	39
40	.300	18.5	433	62	314	403	99	350	288	19	295	171	238	101	106	292	51	232	8.24	333	89	374	40
41	.300	19.0	445	64	322	418	103	365	296	19	302	177	243	104	112	302	53	241	8.57	348	90	389	41
42	.299	19.4	457	66	330	433	107	379	303	19	308	183	247	108	117	313	55	249	8.90	363	91	404	42
43	.298	19.9	469A	67A	338A	449	110	393	311	19	315	189	252	111	123	323	58	258	9.24	378	92	419	43
44	.296	20.1	521T	95T	434T	464	114	407	319	20	322	195	256	115	129	334	60	267	9.55	392	93	434	44
45	.294	20.5	539	98	449	479	118	420	326	20	329	201	259	119	135	345	62	276	9.90	408	94	449	45
46	.292	21.0	556	100	463	494	121	433	334	20	336	208	263	122	141	356	65	285	10.26	824	95	464	46
47	.291	21.4	574	103	477	509	125	446	342	20	343	214	266	126	147	368	67	295	10.57	839	95	479	47
48	.289	21.9	592	105	492	524	129	458	349	21	350	220	269	130	153	379	70	304	10.94	455	97	493	48
49	.287	22.4	610	107	506	539	133	470	357	21	357	226	272	134	160	391	72	314	11.27	470	98	508	49
50	.286	22.8	628	110	519	554	137	482	365	21	364	233	275	137	166	403	75	323	11.60	486	98	522	50
51	.284	23.3	646	112	533	570	141	493	372	22	370	239	277	141	173	414	78	333	11.98	502	100	537	51
52	.282	23.8	664	115	547	585	144	504	380	22	377	245	280	145	180	426	80	343	12.32	518	101	551	52
53	.281	24.2	681	118	560	600	148	515	388A	22A	384A	252	282	149	187	439	83	353	12.67	533	102	565	53
54	.279	24.7	699	120	574	615	152	526	488T	88T	574T	258	284	153	194	451	86	364	13.01	549	103	580	54
55	.278	25.2	717	122	587	630	156	537	499	88	587	264	286	157	201	464	89	374	13.36	565	104	594	55
56	.276	25.6	735	125	600	645	160	548	511	88	600	271	288	161	208	476	92	385	13.72	581	105	608	56
57	.275	26.1	753	127	614	660	164	558	522	88	614	277	290	166	216	489	94	395	14.08	597	106	622	57
58	.273	26.6	771	130	627	675	168	568	534	88	627	283	291	170	224	502	97	406	14.44	614	108	636	58
59	.272	27.1	789T	132T	640T	690T	172T	579T	545T	88T	640T	290T	293T	174L	231L	515L	100L	417L	14.81	630T	109T	650T	59

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 11 POINT (0 091L)

K_{AB} : 0.033 C_{AB} - 10 000

K_{BA} : 3 297 C_{BA} 0 100

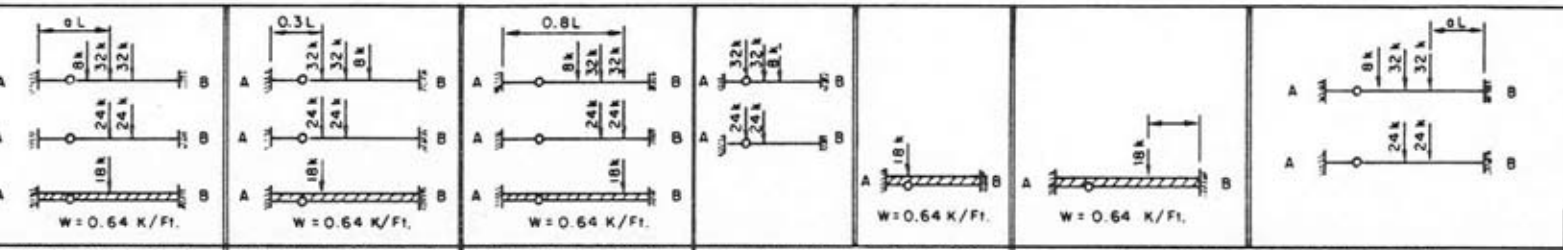
POSITIVE MOMENTS (KIP-FEET) | NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.385L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
60	.270	27.5	807T	135T	653T	706T	176T	589T	557T	88T	653T	296T	295T	178L	239L	528L	103L	428L	15.18	646T	110T	664T	60
61	.269	28.0	824	137	666	721	180	598	568	88	666	302	296	183	247	542	107	439	15.55	663	111	678	61
62	.267	28.5	842	140	679	736	184	608	580	89	679	309	298	187	256	555	110	450	15.87	678	112	692	62
63	.266	29.0	860	142	692	751	189	618	591	89	692	315	299	192	264	569	113	462	16.25	695	114	706	63
64	.265	29.4	878	145	705	766	193	628	603	89	705	322	300	196	272	583	116	473	16.64	712	115	720	64
65	.263	29.9	896	147	717	781	197	637	614	89	717	328	302	201	281	597	119	485	16.96	727	116	734	65
66	.262	30.4	914	150	730	796	201	647	626	89	730	334	303	205	290	611	123	497	17.36	744	117	748	66
67	.260	30.8	932	153	743	811	205	656	637	89	742	341	304	210	298	626	126	509	17.69	760	118	762	67
68	.259	31.3	950	155	756	827	209	665	649	90	755	347	305	214	307	640	130	521	18.09	777	120	775	68
69	.258	31.8	968	157	768	842	213	674	660	90	767	354	306	219	316	655	133	533	18.42	793	121	789	69
70	.256	32.3	985	160	781	857	217	683	672	90	780	360	307	224	326	670	136	546	18.83	810	122	803	70
71	.255	32.7	1003	163	793	872	221	692	684	90	792	367	308	229	335	685	140	558	19.17	826	124	816	71
72	.254	33.2	1021	165	806	887	226	701	695	90	804	373	309	234	345	700	144	571	19.51	842	125	830	72
73	.253	33.7	1039	167	819	902	230	710	707	91	817	380	310	238	354	715	147	584	19.93	860	126	844	73
74	.251	34.2	1057	170	831	917	234	719	718	91	829	386	311	243	364	730	151	597	20.28	876	127	857	74
75	.250	34.6	1075	173	843	932	238	728	730	91	841	393	312	248	374	746	155	610	20.62	892	129	871	75
76	.249	35.1	1093	175	856	948	242	737	741	91	853	399	312	253	384	762	158	623	21.05	910	130	884	76
77	.246	35.6	1111	178	868	963	246	745	753	92	865	405	313	258	394	777	162	636	21.41	926	132	898	77
78	.246	36.1	1129	180	881	978	250	754	764	92	877	412	314	264	404	793	166	650	21.76	942	133	911	78
79	.245	36.6	1147	183	893	993	255	763	776	92	889	418	315	269	415	810	170	663	22.12	959	134	925	79
80	.244	37.0	1165	185	905	1008	259	771	787	92	901	425	315	274	425	826	174	677	22.48	975	135	938	80
81	.243	37.5	1182	188	917	1023	263	780	799	93	913	431	316	279	436	842	178	691	22.84	991	136	952	81
82	.241	38.0	1200	190	929	1038	267	788	810	93	925	438	317	285	447	859	182	705	23.21	1008	138	965	82
83	.240	38.4	1218	193	941	1053	271	797	822	93	937	444	317	290	458	876	186	719	23.65	1026	140	978	83
84	.239	39.0	1236	195	954	1068	276	805	833	93	948	451	318	295	469	893	190	733	24.02	1043	141	992	84
85	.238	39.4	1254	198	967	1084	280	813	845	94	960	457	319	301	480	910	194	747	24.39	1059	142	1005	85
86	.237	39.9	1272	200	979	1099	284	822	856	94	972	464	319	306	492	927	199	762	24.77	1076	144	1018	86
87	.236	40.4	1290	203	991	1114	288	830	868	94	983	470	320	312	503	944	203	776	25.14	1093	145	1032	87
88	.235	40.8	1308	206	1003	1129	292	838	879	94	995	477	320	317	515	962	207	791	25.52	1110	146	1045	88
89	.234	41.3	1326T	208T	1015T	1144T	297T	847T	891T	95T	1007T	483T	321T	323L	526L	979L	211L	806L	25.81	1125T	147T	1058T	89

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/11 POINT (0.091L)

$K_{AB} = 0.033$ $C_{AB} = 10.000$

$K_{BA} = 3.297$ $C_{BA} = 0.100$

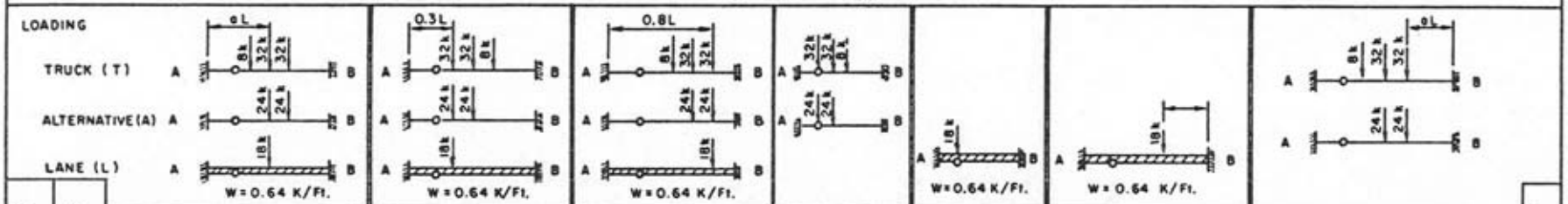
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		aL FT	SBM @ aL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.385L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	
90	.233	41.8	1344T	211T	1027T	1159T	301T	855T	902T	95T	1018T	490T	321T	328L	538L	997L	216L	821L	26.19	1141T	149T	1072T	90
91	.231	42.3	1362	213	1039	1174	305	863	914	95	1030	496	322	334	550	1015	220	836	26.57	1158	150	1085	91
92	.230	42.8	1380	216	1051	1189	309	871	925	96	1041	503	322	340	562	1033	225	852	26.96	1175	151	1098	92
93	.229	43.2	1398	218	1063	1205	314	879	937	96	1053	509	323	346	575	1052	229	867	27.34	1192	153	1111	93
94	.228	43.7	1415	221	1075	1220	318	887	948	96	1064	516	323	352	587	1070	234	883	27.73	1209	154	1125	94
95	.227	44.2	1433	224	1087	1235	322	895	960	96	1076	522	324	357	600	1089	239	898	28.12	1226	156	1138	95
96	.226	44.6	1451	226	1099	1250	326	903	972	97	1087	529	324	363	612	1107	243	914	28.51	1244	157	1151	96
97	.225	45.1	1469	229	1111	1265	330	912	983	97	1098	535	324	369	625	1126	248	930	28.81	1259	158	1164	97
98	.224	45.7	1487	231	1124	1280	335	920	995	97	1110	542	325	375	638	1145	253	946	29.20	1276	160	1177	98
99	.223	46.1	1505	233	1136	1295	339	928	1006	98	1121	548	325	381	651	1165	257	962	29.60	1293	161	1191	99
100	.222	46.6	1523	236	1148	1310	343	935	1018	98	1132	555	326	388	664	1184	262	979	30.00	1310	163	1204	100
101	.221	47.1	1541	239	1160	1326	347	943	1029	98	1144	561	326	394	678	1203	267	995	30.40	1328	164	1217	101
102	.220	47.5	1559	241	1171	1341	352	951	1041	99	1155	568	326	400	691	1223	272	1012	30.70	1343	165	1230	102
103	.219	48.0	1577	244	1183	1356	356	959	1052	99	1166	574	327	406	705	1243	277	1029	31.11	1360	167	1243	103
104	.218	48.5	1595	247	1195	1371	360	967	1064	99	1177	581	327	412	719	1263	282	1045	31.51	1378	168	1256	104
105	.217	48.9	1613	249	1207	1386	364	975	1075	100	1189	587	327	419	733	1283	287	1062	31.81	1393	169	1269	105
106	.216	49.5	1631	251	1220	1401	369	983	1087	100	1200	594	328	425	747	1303	292	1080	32.22	1411	171	1283	106
107	.216	50.0	1649	254	1232	1416	373	991	1098	100	1211	600	328	431	761	1323	297	1097	32.63	1428	173	1296	107
108	.215	50.4	1667	256	1243	1431	377	999	1110	101	1222	607	328	438	775	1344	303	1114	33.05	1446	174	1309	108
109	.214	50.9	1685	259	1255	1446	381	1006	1121	101	1233	613	329	444	789	1365	308	1132	33.35	1461	175	1322	109
110	.213	51.4	1702	262	1267	1462	386	1014	1133	101	1244	620	329	451	804	1386	313	1149	33.77	1479	177	1335	110
111	.212	51.8	1720	264	1279	1477	390	1022	1144	101	1255	626	329	458	819	1407	319	1167	34.08	1494	178	1348	111
112	.211	52.3	1738	267	1290	1492	394	1030	1156	102	1266	633	330	464	833	1428	324	1185	34.50	1512	179	1361	112
113	.210	52.8	1756	270	1302	1507	399	1038	1167	102	1278	639	330	471	848	1449	329	1203	34.92	1530	181	1374	113
114	.209	53.4	1774	272	1315	1522	403	1045	1179	102	1289	646	330	478	863	1471	335	1222	35.23	1545	182	1387	114
115	.208	53.8	1792	274	1327	1537	407	1053	1190	103	1300	652	330	484	879	1492	340	1240	35.65	1563	184	1400	115
116	.207	54.3	1810	277	1339	1552	411	1061	1202	103	1311	659	331	491	894	1514	346	1258	36.08	1581	186	1413	116
117	.207	54.8	1828	279	1350	1567	416	1069	1213	104	1322	665	331	498	909	1536	352	1277	36.39	1596	187	1426	117
118	.206	55.2	1846	282	1362	1583	420	1076	1225	104	1333	672	331	505	925	1558	357	1296	36.82	1614	188	1439	118
119	.205	55.7	1864T	285T	1374T	1598T	424T	1084T	1236T	104T	1343T	678T	332T	512L	941L	1580L	363L	1315L	37.13	1630T	189T	1452T	119

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/11 POINT (0.091L)

$K_{AB} = 0.033$ $C_{AB} = 10.000$

$K_{BA} = 3.297$ $C_{BA} = 0.100$

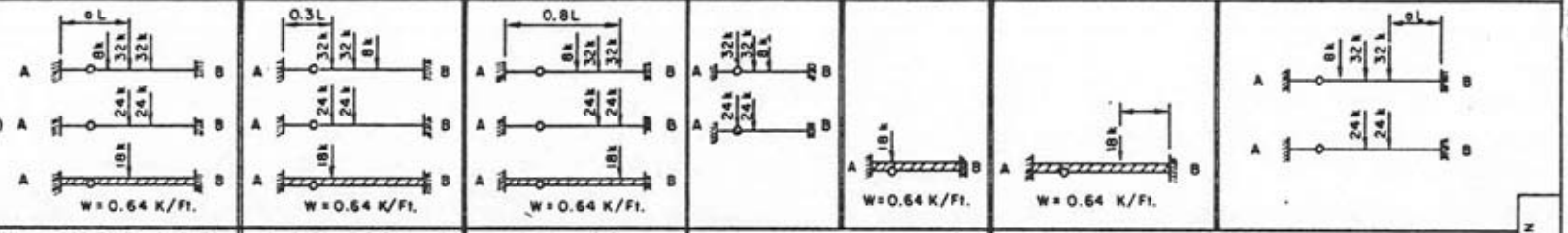
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		aL FT	SBM @ aL	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.385L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	
120	.204	56.2	1882T	287T	1385T	1613T	428T	1092T	1248T	105T	1354T	685T	332T	519L	957L	1602L	369L	1334L	37.56	1648T	191T	1465T	120
121	.203	56.6	1900	290	1397	1628	433	1099	1260	105	1365	692	332	526	973	1625	374	1353	37.87	1663	192	1478	121
122	.202	57.1	1918	293	1409	1643	437	1107	1271	105	1376	698	332	533	989	1648	380	1372	38.31	1681	194	1491	122
123	.202	57.6	1936	295	1420	1658	441	1115	1283	106	1387	705	333	540	1005	1671	386	1391	38.62	1697	195	1504	123
124	.201	58.2	1954	297	1434	1673	445	1122	1294	106	1398	711	333	547	1021	1693	392	1411	39.06	1715	197	1517	124
125	.200	58.6	1972	300	1445	1688	450	1130	1306	106	1409	718	333	555	1038	1717	398	1431	39.37	1730	198	1530	125
126	.199	59.1	1990	302	1457	1704	454	1138	1317	107	1420	724	333	562	1055	1740	404	1450	39.82	1749	200	1543	126
127	.198	59.6	2008	305	1469	1719	458	1145	1329	107	1431	731	333	569	1071	1763	410	1470	40.13	1764	201	1556	127
128	.198	60.0	2026	308	1480	1734	463	1153	1340	107	1442	737	334	577	1088	1787	416	1490	40.58	1782	202	1569	128
129	.197	60.5	2043	310	1492	1749	467	1161	1352	108	1452	744	334	584	1105	1811	422	1511	40.89	1798	203	1582	129
130	.196	61.0	2061	313	1504	1764	471	1168	1363	108	1463	750	334	591	1123	1835	429	1531	41.34	1816	205	1595	130
131	.195	61.4	2079	316	1515	1779	475	1176	1375	108	1474	757	334	599	1140	1859	435	1551	41.66	1832	206	1608	131
132	.195	61.9	2097	318	1527	1794	480	1183	1386	109	1485	763	334	607	1157	1883	441	1572	42.11	1850	208	1621	132
133	.194	62.4	2115	321	1539	1809	484	1191	1398	109	1496	770	335	614	1175	1907	447	1593	42.43	1866	209	1634	133
134	.193	62.8	2133	324	1550	1824	488	1198	1409	110	1506	776	335	622	1193	1932	454	1614	42.88	1884	211	1647	134
135	.192	63.3	2151	326	1562	1840	493	1206	1421	110	1517	783	335	629	1211	1956	460	1635	43.20	1900	212	1660	135
136	.192	63.9	2169	328	1575	1855	497	1214	1432	110	1528	789	335	637	1229	1981	467	1656	43.66	1919	214	1673	136
137	.191	64.4	2187	330	1587	1870	501	1221	1444	111	1539	796	335	645	1247	2006	473	1677	43.98	1934	215	1685	137
138	.190	64.9	2205	333	1598	1885	505	1229	1455	111	1549	802	336	653	1265	2031	480	1698	44.44	1953	217	1698	138
139	.189	65.3	2223	336	1610	1900	510	1236	1467	111	1560	809	336	661	1283	2056	486	1720	44.76	1969	218	1711	139
140	.189	65.8	2241	338	1622	1915	514	1244	1478	112	1571	815	336	668	1302	2082	493	1742	45.08	1984	219	1724	140
141	.188	66.3	2259	341	1633	1930	518	1251	1490	112	1581	822	336	676	1321	2107	500	1763	45.54	2003	221	1737	141
142	.187	66.7	2277	344	1645	1945	523	1259	1501	112	1592	829	336	684	1339	2133	506	1785	45.87	2019	222	1750	142
143	.187	67.2	2295	346	1656	1961	527	1266	1513	113	1603	835	337	692	1358	2159	513	1807	46.33	2037	224	1763	143
144	.186	67.7	2313	349	1668	1976	531	1274	1524	113	1613	842	337	701	1377	2185	520	1830	46.66	2053	226	1776	144
145	.185	68.1	2331	352	1680	1991	535	1281	1536	114	1624	848	337	709	1397	2211	527	1852	46.98	2069	227	1789	145
146	.185	68.6	2349	354	1691	2006	540	1289	1548	114	1635	855	337	717	1416	2237	534	1874	47.45	2088	229	1801	146
147	.184	69.1	2367	357	1703	2021	544	1296	1559	114	1645	861	337	725	1435	2264	541	1897	47.77	2103	230	1814	147
148	.183	69.6	2384	360	1714	2036	548	1304	1571	115	1656	868	337	733	1455	2290	548	1920	48.10	2119	231	1827	148
149	.182	70.2	2403T	361T	1728T	2051T	553T	1311T	1582T	115T	1667T	874T	338T	742L	1475L	2317L	555L	1942L	48.57	2138T	233T	1840T	149

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 11 POINT (0.091L)

K_{AB} = 0.033 C_{AB} = 10.000

K_{BA} = 3.297 C_{BA} = 0.100

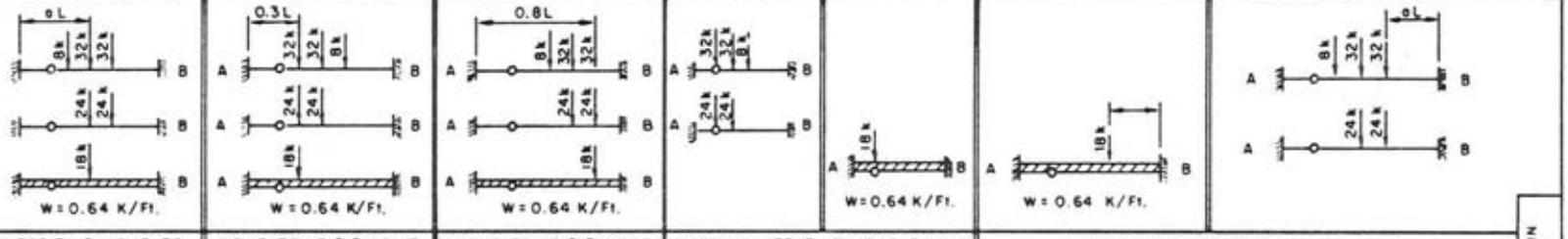
POSITIVE MOMENTS (KIP-FEET) | NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		ML FT	SBM @ ML	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.385L	FEM @ A	FEM @ B	ML FT	SBM @ ML	FEM @ A	FEM @ B	
150	.182	70.6	2421T	364T	1739T	2066T	557T	1319T	1594T	115T	1677T	881T	338T	750L	1494L	2344L	562L	1965L	48.90	2154T	234T	1853T	150
151	.181	71.1	2439	366	1751	2082	561	1326	1605	116	1688	887	338	758	1514	2371	569	1989	49.38	2173	236	1866	151
152	.181	71.6	2457	369	1763	2092	565	1334	1617	116	1699	894	338	767	1535	2398	576	2012	49.70	2189	237	1879	152
153	.180	72.1	2474	372	1774	2112	570	1341	1628	117	1709	900	338	775	1555	2426	583	2035	50.03	2205	238	1892	153
154	.179	72.5	2492	374	1786	2127	574	1349	1640	117	1720	907	338	784	1575	2453	591	2059	50.51	2224	240	1904	154
155	.179	73.0	2510	377	1797	2142	578	1356	1651	117	1730	913	338	792	1596	2481	598	2082	50.84	2239	241	1917	155
156	.178	73.5	2528	380	1809	2157	583	1364	1663	118	1741	920	339	801	1616	2509	605	2106	51.17	2255	243	1930	156
157	.177	73.9	2546	382	1820	2172	587	1371	1674	118	1752	926	339	810	1637	2537	613	2130	51.65	2274	245	1943	157
158	.177	74.4	2564	385	1832	2187	591	1379	1686	118	1762	933	339	818	1658	2565	620	2154	51.98	2290	246	1956	158
159	.176	74.9	2582	388	1844	2202	595	1386	1697	119	1773	940	339	827	1679	2593	628	2178	52.31	2306	247	1969	159
160	.175	75.4	2600	390	1855	2218	600	1393	1709	119	1783	946	339	836	1700	2622	635	2203	52.80	2325	249	1981	160
161	.175	75.8	2618	393	1867	2233	604	1401	1720	120	1794	953	339	845	1722	2650	643	2227	53.13	2341	250	1994	161
162	.174	76.3	2636	396	1878	2248	608	1408	1732	120	1804	959	340	854	1743	2679	650	2252	53.46	2357	251	2007	162
163	.174	76.8	2654	398	1890	2263	613	1416	1743	120	1815	966	340	863	1765	2708	658	2276	53.95	2376	254	2020	163
164	.173	77.2	2672	401	1901	2278	617	1423	1755	121	1825	972	340	872	1786	2737	666	2301	54.28	2392	255	2033	164
165	.172	77.9	2690	402	1915	2293	621	1431	1766	121	1836	979	340	881	1808	2766	674	2326	54.61	2408	256	2046	165
166	.172	78.4	2708	405	1927	2308	626	1438	1778	122	1846	985	340	890	1830	2795	681	2351	55.11	2428	258	2058	166
167	.171	78.8	2726	407	1938	2323	630	1445	1789	122	1857	992	340	899	1852	2825	689	2377	55.44	2444	259	2071	167
168	.171	79.3	2744	410	1950	2339	634	1453	1801	122	1867	998	340	908	1874	2854	697	2402	55.78	2459	260	2084	168
169	.170	79.8	2762	413	1961	2354	638	1460	1812	123	1878	1005	340	917	1897	2884	705	2427	56.11	2475	261	2097	169
170	.169	80.2	2780	415	1973	2369	643	1468	1824	123	1888	1011	341	926	1919	2914	713	2453	56.61	2495	264	2110	170
171	.169	80.7	2798	418	1984	2384	647	1475	1836	124	1899	1018	341	936	1942	2944	721	2479	56.94	2511	265	2122	171
172	.168	81.2	2816T	421T	1996T	2399	651	1482	1847	124	1909	1024	341	945	1965	2975	729	2505	57.28	2527	266	2135	172
173	.168	83.6	3169L	783L	2483L	2414	656	1490	1859	124	1920	1031	341	954	1988	3005	737	2531	57.78	2546	268	2148	173
174	.167	84.0	3201	792	2509	2429	660	1497	1870	125	1930	1037	341	964	2011	3036	746	2557	58.12	2562	270	2161	174
175	.167	84.5	3234	800	2535	2444	664	1505	1882	125	1941	1044	341	973	2034	3066	754	2583	58.45	2578	271	2174	175
176	.166	85.0	3266	809	2561	2460	669	1512	1893	125	1951	1051	341	983	2057	3097	762	2610	58.78	2594	272	2186	176
177	.166	85.5	3299	817	2588	2475	673	1519	1905	126	1962	1057	341	992	2081	3128	770	2636	59.29	2614	274	2199	177
178	.165	86.0	3332	826	2614	2490	677	1527	1916	126	1972	1064	342	1002	2104	3159	779	2663	59.63	2630	275	2212	178
179	.164	86.5	3365L	835L	2641L	2505T	681T	1534T	1928T	127T	1983T	1070T	342T	1012L	2128L	3191L	787L	2690L	59.96	2646T	276T	2225T	179

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/11 POINT (0.091L)

$K_{AB} = 0.033$ $C_{AB} = 10.000$

$K_{BA} = 3.297$ $C_{BA} = 0.100$

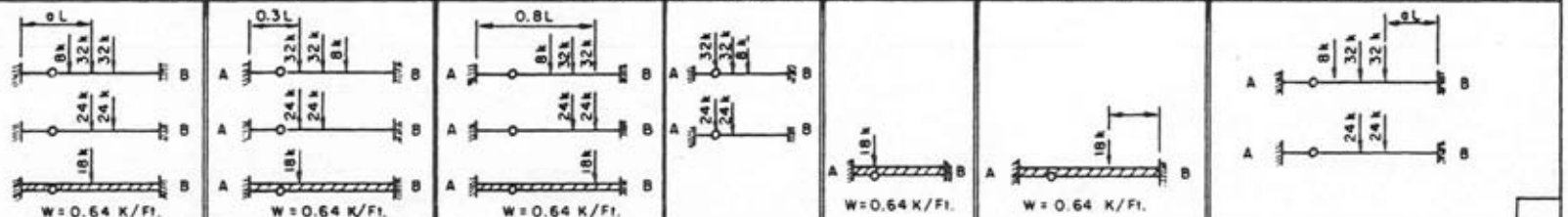
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.385L	FEM @ A	FEM @ B	aL FT	SBM aL	FEM @ A	FEM @ B	SPAN IN FEET
180	.164	86.9	3398L	843L	2667L	2520T	686T	1541T	1939T	127T	1993T	1077T	342T	1021L	2152L	3222L	796L	2717L	60.30	2662T	278T	2238	180
181	.163	87.4	3431	852	2694	2886L	931L	2498L	1951	127	2004	1083	342	1031	2176	3254	804	2744	60.82	2682	280	2250	181
182	.163	87.9	3465	861	2721	2914	940	2524	1962	128	2014	1090	342	1041	2200	3285	813	2771	61.15	2698	281	2263	182
183	.162	88.4	3499	870	2748	2942	950	2550	1974	128	2024	1096	342	1051	2224	3317	821	2798	61.49	2714	282	2276	183
184	.162	88.9	3532	878	2776	2971	959	2576	1985	129	2035	1103	342	1061	2248	3349	830	2826	61.82	2730	283	2289	184
185	.161	89.4	3566	887	2803	2999	968	2602	1997	129	2045	1109	342	1070	2273	3382	838	2854	62.34	2750	286	2302	185
186	.161	89.8	3601	896	2830	3028	978	2628	2008	129	2056	1116	343	1080	2297	3414	847	2881	62.68	2766	287	2314	186
187	.160	90.3	3635	905	2858	3057	987	2655	2020	130	2066	1122	343	1090	2322	3447	856	2909	63.02	2782	288	2327	187
188	.160	90.8	3669	914	2886	3086	997	2682	2031	130	2077	1129	343	1100	2347	3479	865	2937	63.36	2798	289	2340	188
189	.159	91.3	3704	924	2914	3115	1006	2708	2043	131	2087	1135	343	1111	2372	3512	874	2965	63.88	2818	292	2353	189
190	.159	91.8	3739	933	2942	3144	1016	2735	2054	131	2097	1142	343	1121	2397	3545	882	2994	64.22	2834	293	2365	190
191	.158	92.3	3774	942	2970	3174	1026	2762	2066	131	2108	1149	343	1131	2423	3578	891	3022	64.56	2850	294	2378	191
192	.158	92.7	3809	951	2998	3203	1035	2790	2077	132	2118	1155	343	1141	2448	3611	900	3051	64.90	2866	295	2391	192
193	.157	93.2	3844	960	3027	3233	1045	2817	2089	132	2129	1162	343	1151	2474	3645	909	3079	65.43	2886	298	2404	193
194	.157	93.7	3879	970	3055	3262	1055	2844	2100	133	2139	1168	343	1162	2499	3678	918	3108	65.77	2902	299	2417	194
195	.156	94.2	3915	979	3084	3292	1065	2872	2112	133	2149	1175	344	1172	2525	3712	928	3137	66.10	2918	300	2429	195
196	.156	94.7	3951	989	3113	3322	1074	2900	2124	133	2160	1181	344	1183	2551	3746	937	3166	66.44	2934	301	2442	196
197	.155	95.2	3987	998	3142	3353	1084	2928	2135	134	2170	1188	344	1193	2577	3780	946	3196	66.98	2954	304	2455	197
198	.155	95.6	4023	1008	3171	3383	1094	2956	2147	134	2180	1194	344	1203	2603	3814	955	3225	67.32	2971	305	2468	198
199	.154	96.1	4059	1017	3200	3413	1104	2984	2158	135	2191	1201	344	1214	2630	3849	964	3254	67.66	2987	306	2480	199
200	.154	96.6	4095	1027	3229	3444	1114	3012	2170	135	2201	1207	344	1225	2656	3883	974	3284	68.00	3003	307	2493	200
201	.153	97.1	4132	1036	3259	3475	1124	3040	2181	135	2212	1214	344	1235	2683	3918	983	3314	68.34	3019	309	2506	201
202	.153	97.6	4168	1046	3288	3506	1135	3069	2193	136	2222	1220	344	1246	2710	3953	993	3344	68.88	3039	311	2519	202
203	.152	98.0	4205	1056	3318	3537	1145	3098	2204	136	2232	1227	344	1257	2736	3987	1002	3374	69.22	3055	312	2531	203
204	.152	98.5	4242	1066	3348	3568	1155	3126	2216	137	2243	1234	345	1267	2763	4023	1012	3404	69.56	3072	314	2544	204
205	.152	99.0	4280	1075	3378	3599	1165	3155	2227	137	2253	1240	345	1278	2791	4058	1021	3434	69.90	3088	315	2557	205
206	.151	99.5	4317	1085	3408	3630	1176	3184	2239	137	2263	1247	345	1289	2818	4093	1031	3465	70.25	3104	316	2570	206
207	.151	100.0	4354	1095	3438	3662	1186	3214	2250	138	2274	1253	345	1300	2845	4129	1040	3495	70.79	3124	319	2582	207
208	.150	100.5	4392	1105	3469	3694	1196	3243	2262	138	2284	1260	345	1311	2873	4165	1050	3526	71.14	3140	320	2595	208
209	.150	100.9	4430L	1115L	3499L	3725L	1207L	3272L	2273T	139T	2294T	1266T	345T	1322L	2900L	4200L	1060L	3557L	71.48	3157T	321T	2608T	209

ONE LANE LIVE LOAD (HS20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/12 POINT (0.083L)

$K_{AB} = 0.027$ $C_{AB} = 11.000$

$K_{BA} = 3.270$ $C_{BA} = 0.091$

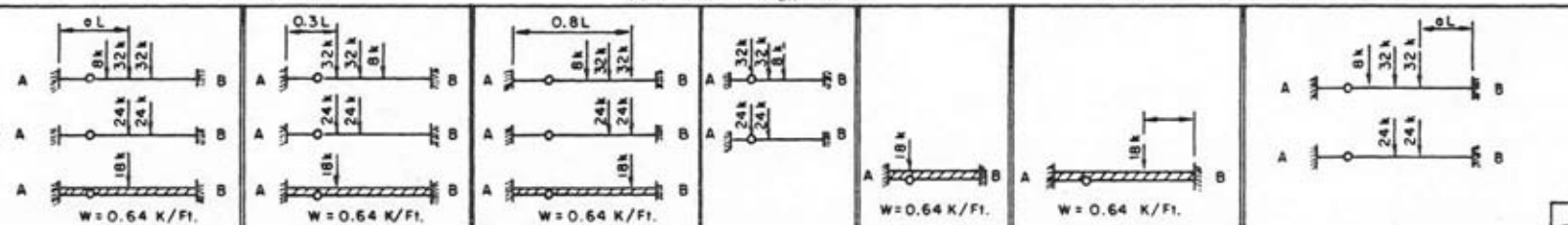
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.388L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
30	.300	13.5	313A	41A	238A	274A	66A	182A	211A	14A	225A	107A	48A	63L	61L	197L	29L	156L	9.7	285A	29A	248A	30
31	.300	14.0	325	43	246	284	69	187	219	15	233	111	48	66	65	206	30	163	6.60	237T	56T	259T	31
32	.300	14.5	337	45	254	294	72	192	227	15	240	115A	48A	68	69	215	32	171	6.91	250	56	273	32
33	.300	15.0	349	46	262	304	74	197	234	15	247	119T	193T	71	73	224	34	178	7.26	264	57	287	33
34	.300	15.4	361	48	270	314	77	202	242	15	254	125	201	74	78	233	35	186	7.62	278	58	301	34
35	.300	15.9	373	49	278	324A	79A	207A	250	16	261	130	209	77	82	243	37	194	7.94	291	58	314	35
36	.300	16.4	385	51	285	349T	77T	315T	257	16	268	135	216	80	87	252	39	202	8.28	305	59	328	36
37	.300	16.9	397	52	293	363	80	326	265	16	275	141	223	83	92	262	41	210	8.62	320	63	320	37
38	.300	17.4	409	54	301	376	83	336	273	16	282	146	229	86	97	272	43	218	8.97	335	69	354	38
39	.300	17.8	421	56	309	390	87	346	280	18	289	152	234	89	102	282	45	226	9.32	350	75	367	39
40	.300	18.3	433	57	317	403	90	356	288	17	296	157	239	92	108	293	47	235	8.36	336	81	379	40
41	.300	18.8	445	59	325	418	93	371	296	17	303	163	244	95	113	303	49	244	8.69	351	82	394	41
42	.299	19.2	456A	60A	332A	433	96	385	303	17	310	168	249	99	119	314	51	252	9.03	366	83	409	42
43	.298	19.4	503T	85T	424T	449	100	400	311	17	317	174	253	102	125	324	53	261	9.33	380	84	424	43
44	.296	19.8	521	88	439	464	103	413	319	18	324	180	257	105	131	335	55	270	9.68	396	84	439	44
45	.294	20.3	539	90	454	479	106	427	326	18	331	185	260	108	137	346	57	279	10.03	412	85	454	45
46	.292	20.8	556	92	468	494	110	440	334	18	338	191	264	112	143	357	59	289	10.35	426	86	469	46
47	.291	21.2	574	94	483	509	113	453	342	18	344	197	267	115	149	369	62	298	10.72	442	87	484	47
48	.289	21.7	592	96	497	524	117	465	349	19	351	202	270	119	155	380	64	308	11.04	457	88	499	48
49	.287	22.1	610	99	511	539	120	477	357	19	358	208	272	122	162	392	66	318	11.42	474	89	513	49
50	.286	22.6	628	101	525	554	123	489	365	19	365	214	275	126	169	404	69	327	11.75	489	90	528	50
51	.284	23.1	646	103	539	570	127	501	372	19	372	220	278	129	175	416	71	337	12.14	506	91	543	51
52	.282	23.6	664	105	552	585	131	512	380	20	379	225	280	133	182	428	74	348	12.48	522	92	557	52
53	.281	24.0	681	108	566	600	134	524	388A	20A	386A	231	282	137	189	440	76	358	12.83	537	93	572	53
54	.279	24.5	699	110	579	615	138	535	488T	79T	579T	237	284	140	197	452	79	368	13.18	553	94	586	54
55	.278	24.9	717	112	593	630	141	546	499	79	592	243	286	144	204	465	81	379	13.53	569	95	600	55
56	.276	25.4	735	115	606	645	145	557	511	79	606	249	288	148	212	478	84	389	13.89	585	96	615	56
57	.275	25.9	753	117	620	660	148	567	522	79	619	254	290	152	219	491	86	400	14.25	602	97	629	57
58	.273	26.3	771	119	633	675	152	578	534	79	632	260	292	155	227	504	89	411	14.62	618	98	643	58
59	.272	26.8	788T	122T	646T	690T	156T	588T	545T	80T	646T	266T	293T	159L	235L	517L	92L	422L	14.99	634T	99T	657T	59

ONE LANE LIVE LOAD (HS 20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/12 POINT (0.083L)

$K_{AB} = 0.027$ $C_{AB} = 11.000$

$K_{BA} = 3.270$ $C_{BA} = 0.091$

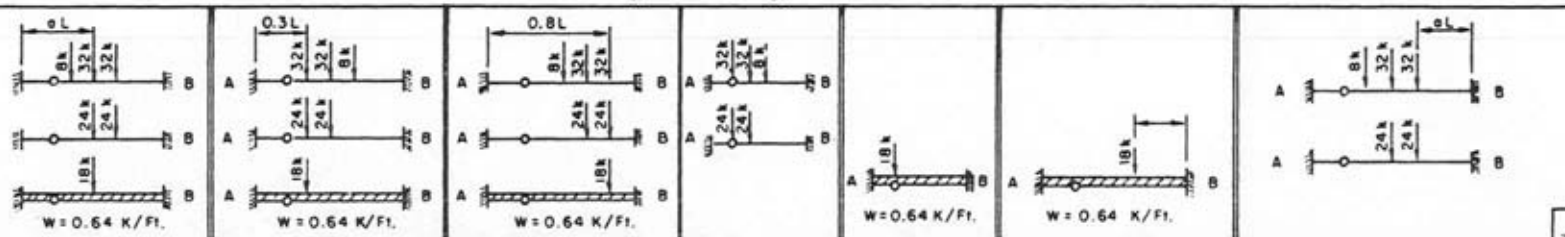
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.388L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
60	.270	27.2	806T	124T	659T	706T	159T	598T	557T	80T	659T	272T	295T	163L	243L	530L	95L	433L	15.36	651T	101T	671T	60
61	.269	27.8	824	126	672	721	163	609	568	80	672	278	296	167	251	543	97	445	15.68	666	101	685	61
62	.267	28.2	842	128	685	736	167	619	580	80	685	284	298	171	259	557	100	456	16.06	683	103	699	62
63	.266	28.7	860	131	698	751	170	629	591	80	697	290	299	175	268	571	103	468	16.44	700	104	713	63
64	.265	29.1	878	133	711	766	174	638	603	80	710	296	300	179	276	585	106	479	16.83	716	105	727	64
65	.263	29.6	896	135	724	781	178	648	614	80	723	301	301	184	285	599	109	491	17.16	732	106	741	65
66	.262	30.1	814	137	737	796	181	658	626	81	736	307	303	188	294	613	112	503	17.56	749	107	755	66
67	.260	30.6	931	140	750	811	185	667	637	81	748	313	304	192	303	627	115	515	17.89	765	108	769	67
68	.259	31.0	949	142	762	827	189	677	649	81	761	319	305	196	312	642	118	528	18.29	782	110	783	68
69	.258	31.5	967	145	775	842	193	686	660	81	773	325	306	201	321	657	122	540	18.63	798	111	797	69
70	.256	31.9	985	147	787	857	196	696	672	81	786	331	307	205	331	672	125	553	19.04	815	112	810	70
71	.255	32.4	1003	149	800	872	200	705	684	81	798	337	308	209	340	687	128	565	19.38	831	113	824	71
72	.254	32.9	1021	151	813	887	204	714	695	82	810	343	309	214	350	702	131	578	19.73	847	114	838	72
73	.253	33.4	1039	154	825	902	208	723	707	82	823	349	309	218	360	717	135	591	20.15	865	116	852	73
74	.251	33.8	1057	156	838	917	211	732	718	82	835	355	310	223	369	732	138	604	20.50	881	117	865	74
75	.250	34.3	1074	159	850	932	215	741	730	82	847	360	311	227	380	748	141	617	20.85	897	118	879	75
76	.249	34.8	1092	161	863	948	219	750	741	82	859	366	312	232	390	764	145	631	21.20	913	119	892	76
77	.248	35.3	1110	163	876	963	223	759	753	83	871	372	313	237	400	780	148	644	21.64	931	120	906	77
78	.246	35.7	1128	165	888	978	226	768	764	83	883	378	313	241	410	796	152	658	22.00	948	121	920	78
79	.245	36.2	1146	168	900	993	230	777	776	83	895	384	314	246	421	812	155	672	22.36	964	123	933	79
80	.244	36.6	1164	170	912	1008	234	786	787	83	907	390	315	251	432	828	159	686	22.72	980	124	947	80
81	.243	37.1	1182	173	925	1023	238	794	799	84	919	396	315	256	443	845	163	700	23.08	997	125	960	81
82	.241	37.6	1200	175	938	1038	242	803	810	84	931	402	316	260	454	861	166	714	23.45	1013	126	974	82
83	.240	38.1	1218	177	950	1053	245	812	822	84	943	408	317	265	465	878	170	728	23.82	1030	127	987	83
84	.239	38.6	1236	179	962	1068	249	820	833	84	955	414	317	270	476	895	174	743	24.28	1049	129	1001	84
85	.238	39.0	1258	182	974	1084	253	829	845	84	966	420	318	275	487	912	178	757	24.65	1065	130	1014	85
86	.237	39.5	1271	184	986	1099	257	838	856	85	978	426	318	280	499	930	182	772	25.03	1082	131	1028	86
87	.236	39.9	1289	187	998	1114	260	846	868	85	990	432	319	285	511	947	185	787	25.40	1099	133	1041	87
88	.235	40.5	1307	188	1011	1129	264	855	879	85	1001	438	319	290	522	965	189	802	25.78	1116	134	1054	88
89	.234	40.9	1325T	191T	1023T	1144T	268T	863T	891T	85T	1013T	444T	320T	295L	534L	982L	193L	817L	26.08	1131T	135T	1068T	89

ONE LANE LIVE LOAD (HS 20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/12 POINT (0.083L)

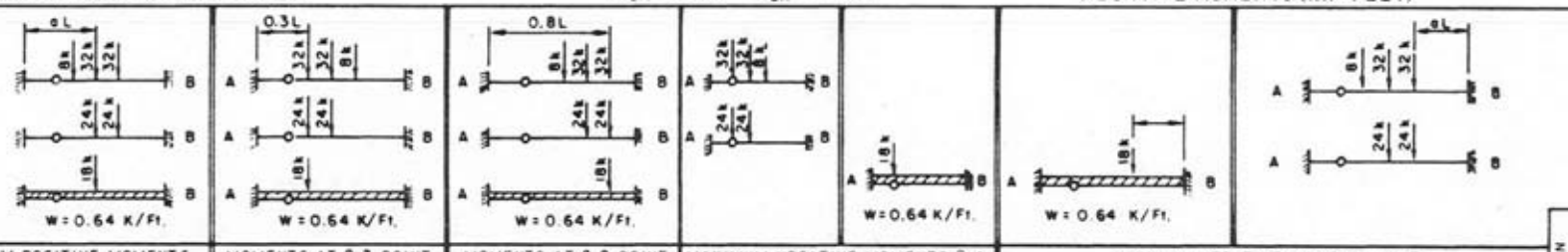
$K_{AB} = 0.027$ $C_{AB} = 11.000$

$K_{BA} = 3.270$ $C_{BA} = 0.091$

POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T) — ALTERNATIVE (A) — LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS aL FT	SBM @ aL	FEM @ A	FEM @ B	MOMENTS AT 0.3 POINT SBM @ 0.3L	FEM @ A	FEM @ B	MOMENTS AT 0.8 POINT SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B SBM @ 0.388L	FEM @ A	FEM @ B	aL FT	SBM @ aL	FEM @ A	FEM @ B	SPAN IN FEET
90	.233	41.4	1343T	193T	1035T	1159T	272T	872T	902T	86T	1025T	450T	320T	301L	546L	1000L	197L	832L	26.46	1147T	136T	1081T	90
91	.231	41.9	1361	196	1048	1174	276	880	914	86	1036	456	321	306	559	1018	201	847	26.84	1164	137	1095	91
92	.230	42.3	1379	198	1060	1189	280	888	925	86	1048	462	321	311	571	1036	206	863	27.23	1181	139	1108	92
93	.229	42.8	1397	201	1072	1205	283	897	937	87	1059	467	322	316	584	1055	210	878	27.62	1198	140	1121	93
94	.228	43.3	1415	202	1085	1220	287	905	948	87	1071	473	322	322	596	1073	214	894	28.01	1216	141	1135	94
95	.227	43.8	1433	205	1097	1235	291	913	960	87	1082	479	323	327	609	1092	218	910	28.40	1233	143	1148	95
96	.226	44.3	1451	207	1109	1250	295	922	972	87	1094	485	323	333	622	1111	222	926	28.80	1250	144	1161	96
97	.225	44.7	1468	210	1121	1265	299	930	983	88	1105	491	323	338	635	1130	227	940	29.10	1265	145	1175	97
98	.224	45.2	1486	212	1133	1280	303	938	995	88	1116	497	324	344	648	1149	231	959	29.50	1282	146	1188	98
99	.223	45.6	1504	215	1144	1295	306	946	1006	88	1128	503	324	349	661	1168	235	975	29.90	1300	148	1201	99
100	.222	46.1	1522	217	1156	1310	310	955	1018	88	1139	509	325	355	675	1187	240	992	30.30	1317	149	1214	100
101	.221	46.6	1540	219	1168	1326	314	963	1029	89	1150	515	325	360	688	1207	244	1008	30.70	1334	150	1228	101
102	.220	47.1	1558	221	1181	1341	318	971	1041	89	1162	521	325	366	702	1227	249	1025	34.01	1350	151	1241	102
103	.219	47.6	1576	224	1193	1356	322	979	1052	89	1173	527	326	372	716	1246	253	1042	31.41	1367	153	1254	103
104	.218	48.0	1594	226	1205	1371	326	987	1064	90	1184	533	326	377	730	1266	258	1059	31.82	1385	154	1267	104
105	.217	48.5	1612	228	1217	1386	329	995	1075	90	1195	539	326	383	744	1287	263	1077	32.13	1400	155	1281	105
106	.216	49.0	1630	231	1229	1401	333	1003	1087	90	1207	545	327	389	758	1307	267	1094	32.54	1417	156	1294	106
107	.216	49.4	1648	233	1241	1416	337	1012	1098	90	1218	551	327	395	772	1327	272	1112	32.96	1435	158	1307	107
108	.215	49.9	1666	236	1253	1431	341	1020	1110	91	1229	557	327	401	787	1348	277	1129	33.37	1453	159	1320	108
109	.214	50.4	1683	238	1264	1446	345	1028	1121	91	1240	563	327	407	802	1369	282	1147	33.68	1468	160	1333	109
110	.213	50.9	1702	240	1278	1462	349	1036	1133	91	1251	569	328	413	816	1390	286	1165	34.10	1486	162	1346	110
111	.212	51.4	1719	242	1289	1477	352	1044	1144	92	1262	575	328	419	831	1411	291	1183	34.41	1501	163	1360	111
112	.211	51.9	1737	245	1301	1492	356	1052	1156	92	1273	581	328	425	846	1432	296	1201	34.83	1519	164	1373	112
113	.210	52.3	1755	247	1313	1507	360	1060	1167	92	1285	587	329	431	861	1453	301	1220	35.26	1537	166	1386	113
114	.209	52.8	1773	250	1325	1522	364	1068	1179	93	1296	593	329	437	877	1475	306	1238	35.57	1552	167	1399	114
115	.208	53.2	1791	252	1337	1537	368	1076	1190	93	1307	599	329	443	892	1496	311	1257	35.99	1570	168	1412	115
116	.207	53.7	1809	254	1349	1552	372	1084	1202	93	1318	605	329	450	908	1518	316	1276	36.42	1588	170	1425	116
117	.207	54.2	1827	257	1360	1567	376	1092	1213	93	1329	611	330	456	923	1540	322	1294	36.74	1604	171	1438	117
118	.206	54.6	1845	259	1372	1583	379	1100	1225	94	1340	617	330	462	939	1562	327	1313	37.17	1622	172	1452	118
119	.205	55.1	1863T	262T	1384T	1598T	383T	1107T	1236T	94T	1351T	623T	330T	469L	955L	1585L	332L	1333L	37.48	1637T	173T	1465T	119

ONE LANE LIVE LOAD (HS 20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 12 POINT (0 083L)

K_{AB} 0 027 C_{AB} 11 000

K_{BA} 3 270 C_{BA} 0 091

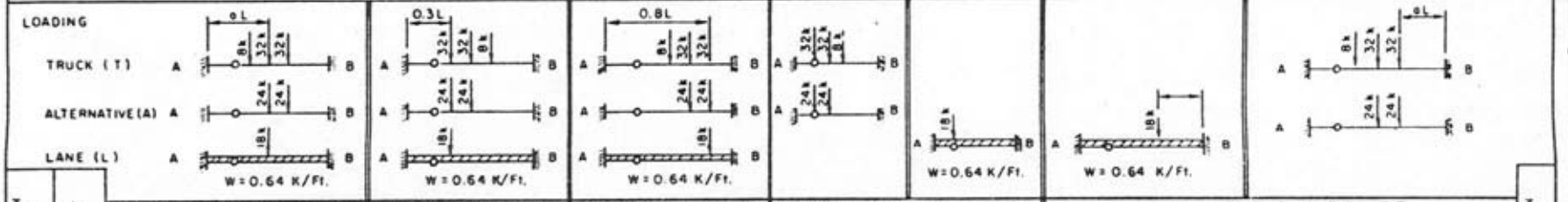
POSITIVE MOMENTS (KIP-FEET) | NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		0L FT	SBM @ 0L	FEM @ A	FEM @ B	SBM @ 0 3L	FEM @ A	FEM @ B	SBM @ 0 8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0 388L	FEM @ A	FEM @ B	0L FT	SBM @ 0L	FEM @ A	FEM @ B	
120	204	55 7	1881T	263T	1397T	1613T	387T	1115T	1248T	94T	1362T	629T	330T	475L	971L	1607L	337L	1352L	37 92	1655T	175T	1478T	120
121	203	56 1	1899	266	1409	1628	391	1123	1260	95	1373	635	331	481	988	1630	342	1371	38 24	1671	176	1491	121
122	202	56 6	1917	268	1421	1643	395	1131	1271	95	1384	641	331	488	1004	1652	348	1391	38 67	1689	177	1504	122
123	202	57 1	1935	271	1432	1658	399	1139	1283	95	1395	647	331	494	1021	1675	353	1411	38 99	1704	178	1517	123
124	201	57 5	1953	273	1444	1673	403	1147	1294	96	1405	653	331	501	1037	1698	359	1430	39 43	1723	180	1530	124
125	200	58 0	1970	276	1456	1688	406	1155	1306	96	1416	659	331	508	1054	1722	364	1450	39 75	1738	181	1543	125
126	199	58 5	1988	278	1468	1704	410	1163	1317	96	1427	664	332	514	1071	1745	370	1470	40 19	1756	183	1556	126
127	198	58 9	2006	280	1479	1719	414	1171	1329	97	1438	670	332	521	1088	1768	375	1491	40 51	1772	184	1569	127
128	198	59 4	2024	283	1491	1734	418	1178	1340	97	1449	676	332	528	1105	1792	381	1511	40 96	1790	185	1582	128
129	197	59 9	2042	285	1503	1749	422	1186	1352	97	1460	682	332	534	1123	1816	386	1531	41 28	1806	186	1595	129
130	196	60 4	2060	287	1516	1764	426	1194	1363	98	1471	688	332	541	1140	1840	392	1552	41 73	1824	188	1608	130
131	195	60 9	2078	289	1528	1779	430	1202	1375	98	1482	694	333	548	1158	1864	398	1573	42 05	1840	189	1622	131
132	195	61 4	2096	292	1540	1794	434	1210	1386	98	1492	700	333	555	1175	1888	403	1594	42 50	1858	191	1635	132
133	194	61 8	2114	294	1551	1809	437	1218	1398	99	1503	706	333	562	1193	1913	409	1615	42 83	1874	192	1648	133
134	193	62 3	2132	296	1563	1824	441	1225	1409	99	1514	712	333	569	1211	1937	415	1636	43 28	1893	193	1661	134
135	192	62 8	2150	299	1575	1840	445	1233	1421	99	1525	718	333	576	1229	1962	421	1657	43 60	1908	194	1674	135
136	192	63 2	2168	301	1587	1855	449	1241	1432	99	1536	724	334	583	1248	1987	427	1679	44 06	1927	196	1687	136
137	191	63 7	2186	304	1598	1870	453	1249	1444	100	1546	730	334	590	1266	2012	433	1700	44 39	1943	197	1700	137
138	190	64 2	2204	306	1610	1885	457	1256	1455	100	1557	736	334	597	1285	2037	439	1722	44 85	1961	199	1713	138
139	189	64 6	2222	309	1622	1900	461	1264	1467	100	1568	742	334	604	1303	2062	445	1744	45 17	1977	200	1726	139
140	189	65 1	2239	311	1633	1915	465	1272	1478	101	1579	748	334	612	1322	2088	451	1766	45 50	1993	201	1739	140
141	188	65 6	2257	314	1645	1930	468	1280	1490	101	1589	754	334	619	1341	2113	457	1788	45 97	2012	203	1752	141
142	187	66 0	2275	316	1657	1945	472	1287	1501	101	1600	760	335	626	1360	2139	463	1810	46 29	2027	204	1765	142
143	187	66 6	2294	317	1670	1961	476	1295	1513	102	1611	766	335	634	1379	2165	469	1833	46 76	2046	205	1778	143
144	186	67 1	2311	320	1682	1976	480	1303	1524	102	1621	772	335	641	1399	2191	476	1855	47 09	2062	206	1791	144
145	185	67 6	2329	322	1694	1991	484	1311	1536	102	1632	778	335	648	1418	2217	482	1878	47 41	2078	207	1804	145
146	185	68 0	2347	325	1705	2006	488	1318	1548	103	1643	784	335	656	1438	2244	488	1901	47 89	2097	209	1817	146
147	184	68 5	2365	327	1717	2021	492	1326	1559	103	1654	790	335	663	1458	2270	495	1923	48 22	2112	210	1830	147
148	183	69 0	2383	329	1729	2036	496	1334	1571	104	1664	796	335	671	1477	2297	501	1947	48 69	2131	212	1843	148
149	182	69 4	2401T	332T	1740T	2051T	499T	1342T	1582T	104T	1675T	802T	336T	679L	1498L	2324L	507L	1970L	49 02	2147T	213T	1856T	149

ONE LANE LIVE LOAD (HS 20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1/12 POINT (0.083L)

K_{AB} = 0.027 C_{AB} = 11.000

K_{BA} = 3.270 C_{BA} = 0.091

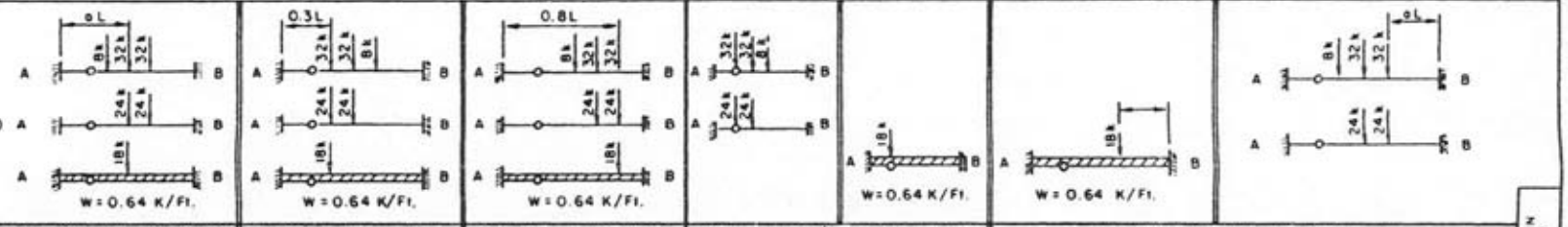
POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T)

ALTERNATIVE (A)

LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS				MOMENTS AT 0.3 POINT			MOMENTS AT 0.8 POINT			MAXIMUM NEGATIVE MOMENTS @ A				MAXIMUM NEGATIVE MOMENTS AT B							SPAN IN FEET
		ML FT	SBM @ ML	FEM @ A	FEM @ B	SBM @ 0.3L	FEM @ A	FEM @ B	SBM @ 0.8L	FEM @ A	FEM @ B	FEM @ A	FEM @ B	FEM @ A	FEM @ B	SBM @ 0.388L	FEM @ A	FEM @ B	ML FT	SBM @ ML	FEM @ A	FEM @ B	
150	.182	69.9	2419T	334T	1752T	2066T	503T	1349T	1594T	104T	1686T	808T	336T	686L	1518L	2351L	514L	1993L	49.35	2163T	214T	1869T	150
151	.181	70.4	2437	337	1764	2082	507	1357	1605	105	1696	814	336	694	1538	2378	520	2017	49.83	2182	216	1881	151
152	.181	70.8	2455	339	1775	2097	511	1365	1617	105	1707	820	336	702	1558	2405	527	2040	50.16	2198	217	1894	152
153	.180	71.3	2473	342	1787	2112	515	1372	1628	105	1717	826	336	709	1579	2433	534	2064	50.49	2214	218	1907	153
154	.179	71.8	2491	344	1798	2127	519	1380	1640	106	1728	832	336	717	1600	2460	540	2088	50.97	2233	220	1920	154
155	.179	72.2	2509	347	1810	2142	523	1388	1651	106	1739	838	336	725	1621	2488	547	2112	51.30	2249	221	1933	155
156	.178	72.7	2526	349	1822	2157	527	1395	1663	106	1749	844	337	733	1641	2516	554	2136	51.64	2265	222	1946	156
157	.177	73.3	2545	350	1836	2172	530	1403	1674	107	1760	850	337	741	1663	2544	560	2160	52.12	2284	224	1959	157
158	.177	73.8	2563	353	1847	2187	534	1411	1686	107	1771	856	337	749	1684	2572	567	2185	52.46	2300	225	1972	158
159	.176	74.3	2581	355	1859	2202	538	1418	1697	107	1781	862	337	757	1705	2601	574	2209	52.79	2316	226	1985	159
160	.175	74.7	2599	357	1870	2218	542	1426	1709	108	1792	868	337	765	1727	2629	581	2234	53.28	2335	228	1998	160
161	.175	75.2	2616	360	1882	2233	546	1434	1720	108	1802	874	337	773	1748	2658	588	2259	53.61	2351	229	2011	161
162	.174	75.7	2634	362	1894	2248	550	1441	1732	108	1813	880	337	781	1770	2687	595	2284	53.95	2367	230	2024	162
163	.174	76.1	2652	365	1905	2263	554	1449	1743	109	1823	886	337	789	1792	2716	602	2309	54.44	2386	232	2037	163
164	.173	76.6	2670	367	1917	2278	558	1457	1755	109	1834	892	338	797	1814	2745	609	2334	54.78	2402	233	2050	164
165	.172	77.1	2688	370	1929	2293	562	1464	1766	109	1845	898	338	806	1836	2774	616	2359	55.11	2418	234	2063	165
166	.172	77.5	2706	372	1940	2308	565	1472	1778	110	1855	904	338	814	1859	2803	623	2385	55.61	2437	236	2076	166
167	.171	78.0	2724	374	1952	2323	569	1480	1789	110	1866	910	338	822	1881	2833	630	2410	55.94	2454	237	2088	167
168	.171	78.5	2742	377	1964	2339	573	1487	1801	110	1876	916	338	831	1904	2863	638	2436	56.28	2470	238	2101	168
169	.170	78.9	2760	379	1975	2354	577	1495	1812	111	1887	922	338	839	1926	2893	645	2462	56.78	2489	240	2114	169
170	.169	79.4	2778T	382T	1987T	2369	581	1503	1824	111	1897	928	338	848	1949	2923	652	2488	57.12	2505	241	2127	170
171	.169	81.9	3103L	701L	2467L	2384	585	1510	1836	111	1908	934	338	856	1972	2953	660	2514	57.46	2521	243	2140	171
172	.168	82.4	3135	709	2493	2399	589	1518	1847	112	1918	940	338	865	1995	2983	667	2540	57.79	2537	244	2153	172
173	.168	82.9	3167	716	2519	2414	593	1525	1859	112	1929	946	339	873	2019	3014	674	2567	58.30	2557	246	2166	173
174	.167	83.3	3199	724	2545	2429	597	1533	1870	113	1939	952	339	882	2042	3044	682	2593	58.64	2573	247	2179	174
175	.167	83.8	3232	732	2572	2444	600	1541	1882	113	1950	958	339	890	2066	3075	689	2620	58.97	2589	248	2192	175
176	.166	84.3	3264	740	2598	2460	604	1548	1893	113	1960	964	339	899	2089	3106	697	2647	59.31	2605	249	2205	176
177	.166	84.8	3297	747	2625	2475	608	1556	1905	114	1971	970	339	908	2113	3137	704	2674	59.83	2624	251	2218	177
178	.165	85.3	3330	755	2652	2490T	612T	1564T	1916	114	1981	976	339	917	2137	3168	712	2701	60.16	2641	252	2230	178
179	.164	85.7	3363L	763L	2679L	2830L	833L	2490L	1928T	114T	1992T	982T	339T	926L	2161L	3200L	720L	2728L	60.50	2657T	253T	2243T	179

ONE LANE LIVE LOAD (HS 20-44)

(IMPACT NOT INCLUDED)

HINGE AT 1 12 POINT (0 083L)

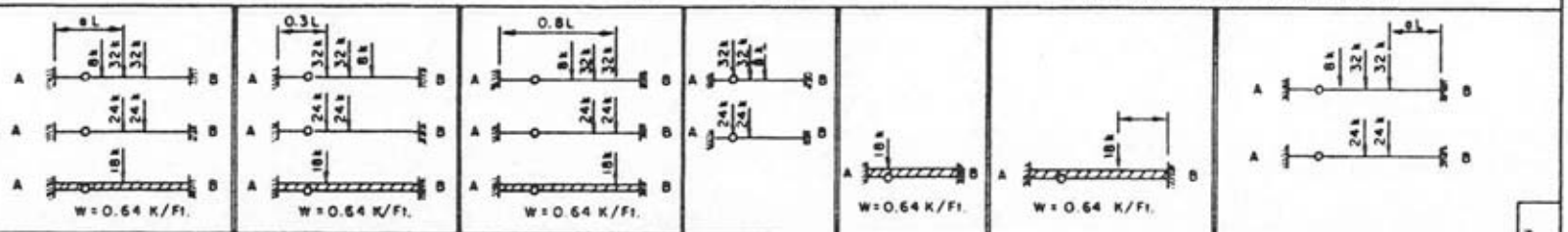
K_{AB} = 0 027 C_{AB} = 11 000

K_{BA} = 3 270 C_{BA} = 0 091

POSITIVE MOMENTS (KIP-FEET) — NEGATIVE MOMENTS (KIP-FEET)

LOADING

TRUCK (T) — ALTERNATIVE (A) — LANE (L)



SPAN IN FEET	IMPACT	MAXIMUM POSITIVE MOMENTS: LL FT	SBM @ LL	FEM @ A	FEM @ B	MOMENTS AT 0 3 POINT: SBM @ 0 3L	FEM @ A	FEM @ B	MOMENTS AT 0 8 POINT: SBM @ 0.8L	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS @ A: FEM @ A	FEM @ B	FEM @ A	FEM @ B	MAXIMUM NEGATIVE MOMENTS AT B: SBM @ 0 388L	FEM @ A	FEM @ B	LL FT	SBM @ LL	FEM @ A	FEM @ B	SPAN IN FEET
180	.164	86 2	3396L	771L	2706L	2858L	841L	2516L	1939T	115T	2002T	988T	339T	934L	2185L	3231L	727L	2756L	61 02	2676T	255T	2256T	180
181	.163	86 7	3429	779	2733	2886	849	2543	1951	115	2013	994	339	943	2210	3263	735	2783	61 36	2692	256	2269	181
182	.163	87 2	3463	787	2761	2914	858	2569	1962	115	2023	1000	340	952	2234	3295	743	2811	61 70	2709	257	2282	182
183	.162	87 7	3496	795	2788	2942	866	2595	1974	116	2034	1006	340	961	2259	3327	751	2839	62 04	2725	258	2295	183
184	.162	88 1	3530	803	2816	2971	875	2622	1985	116	2044	1012	340	970	2283	3359	759	2866	62 56	2744	261	2308	184
185	.161	88 6	3564	812	2843	2999	883	2649	1997	116	2055	1018	340	979	2308	3391	767	2894	62 90	2761	262	2321	185
186	.161	89 1	3598	820	2871	3028	892	2675	2008	117	2065	1024	340	989	2333	3424	775	2923	63 24	2777	263	2333	186
187	.160	89 6	3633	828	2899	3057	901	2702	2020	117	2075	1030	340	998	2358	3456	783	2951	63 58	2793	264	2346	187
188	.160	90 1	3667	836	2928	3086	909	2730	2031	118	2086	1036	340	1007	2384	3489	791	2979	64 11	2813	266	2359	188
189	.159	90 5	3702	845	2956	3115	918	2757	2043	118	2096	1042	340	1016	2409	3522	799	3008	64 45	2829	267	2372	189
190	.159	91 0	3736	853	2984	3144	927	2784	2054	118	2107	1048	340	1025	2435	3555	807	3037	64 79	2845	268	2385	190
191	.158	91 5	3771	861	3013	3174	936	2812	2066	119	2117	1054	340	1035	2460	3588	815	3066	65 13	2861	269	2398	191
192	.158	92 0	3806	870	3042	3203	944	2839	2077	119	2128	1060	340	1044	2486	3622	823	3095	65 47	2877	270	2411	192
193	.157	92 4	3842	878	3070	3233	953	2867	2089	119	2138	1066	341	1053	2512	3655	832	3124	66 01	2897	273	2424	193
194	.157	92 9	3877	887	3099	3262	962	2895	2100	120	2148	1072	341	1063	2538	3689	840	3153	66 35	2913	274	2436	194
195	.156	93 4	3913	895	3129	3292	971	2923	2112	120	2159	1078	341	1072	2564	3723	848	3182	66 69	2930	275	2449	195
196	.156	93 9	3948	904	3158	3322	980	2951	2124	120	2169	1083	341	1082	2591	3757	857	3212	67 03	2946	276	2462	196
197	.155	94 4	3984	913	3187	3353	989	2980	2135	121	2180	1089	341	1091	2617	3791	865	3242	67 57	2966	278	2475	197
198	.155	94 8	4020	921	3217	3383	998	3008	2147	121	2190	1095	341	1101	2644	3825	873	3271	67 91	2982	279	2488	198
199	.154	95 3	4056	930	3246	3413	1007	3037	2158	122	2200	1101	341	1111	2671	3860	882	3301	68 26	2998	280	2501	199
200	.154	95 8	4093	939	3276	3444	1017	3066	2170	122	2211	1107	341	1120	2698	3894	890	3331	68 60	3015	281	2514	200
201	.153	96.3	4129	948	3306	3475	1026	3094	2181	122	2221	1113	341	1130	2725	3929	899	3362	68 94	3031	283	2526	201
202	.153	96.8	4166	957	3336	3506	1035	3123	2193	123	2232	1119	341	1140	2752	3964	908	3392	69 49	3051	285	2539	202
203	.152	97 2	4203	966	3366	3537	1044	3153	2204	123	2242	1125	341	1150	2779	3999	916	3422	69 83	3067	286	2552	203
204	.152	97 7	4240	975	3397	3568	1054	3182	2216	123	2252	1131	342	1160	2807	4034	925	3453	70 18	3083	287	2565	204
205	.152	98 2	4277	983	3427	3599	1063	3211	2227	124	2263	1137	342	1170	2834	4070	934	3484	70 52	3100	288	2578	205
206	.151	98 7	4314	993	3458	3630	1073	3241	2239	124	2273	1143	342	1179	2862	4105	943	3515	70 86	3116	289	2591	206
207	.151	99 2	4352	1002	3489	3662	1082	3271	2250	124	2284	1149	342	1189	2890	4141	951	3546	71 41	3136	292	2604	207
208	.150	99 6	4389	1011	3519	3694	1091	3300	2262	125	2294	1155	342	1199	2918	4176	960	3577	71 76	3152	293	2616	208
209	.150	100 1	4427L	1020L	3550L	3725L	1101L	3330L	2273T	125T	2304T	1161T	342T	1210L	2946L	4212L	969L	3608L	72 10	3169T	294T	2629T	209

TABLE OF MAXIMUM MOMENTS FOR PERMIT LOAD

Spans in Feet; Moments in FtK per lane at ℄ Span. Impact not included.

LOAD CONDITION

SPAN		P-5	P-7	P-9	P-11	P-13
1		6.5				
2		13.0				
3		19.5				
4		26.0				
5		32.5				
6		39.0				
7		45.5				
8		52.0				
9		58.5				
10		66.0				
11		78.0				
12		90.0				
13		102.0				
14		114.0				
15		126.0				
16		138.0				
17		150.0				
18		162.0				
19		174.0				
20		186.0				
21		198.0				
22		210.0				
23		222.0				
24		234.0				
25		246.0				
26		258.0				
27		270.1				
28		288.0				
29		306.0				
30		324.0				
31		342.0				

Note: Values given are based on groups of two 24 kip axles spaced 4'-6" apart. Values will not agree with computer programs that use groups of single 48 kip axles.

TABLE OF MAXIMUM MOMENTS FOR PERMIT LOAD (Cont'd)

SPAN		P–5	P–7	P–9	P–11	P–13
32		360.0				
33		378.0				
34		396.0				
35		414.0				
36		432.0				
37		456.0	462.0			
38		480.0	492.0			
39		504.0	522.0			
40		528.0	552.0			
41		555.3	582.0			
42		585.8	612.0			
43		610.3	642.0			
44		646.8	672.0			
45		677.3	702.0			
46		707.8	738.0			
47		738.3	774.0			
48		768.8	810.0			
49		799.3	846.0			
50		829.8	882.0			
51		860.3	918.0			
52		890.8	954.0			
53		921.3	990.0			
54		951.8	1026.0			
55		982.3	1062.0			
56		1012.8	1098.0			
57		1043.3	1134.0			
58		1073.8	1170.0			
59		1104.3	1206.0			
60		1134.8	1242.0			
61		1165.3	1248.0			
62		1195.8	1314.0			
63		1226.3	1350.0			
64		1256.8	1386.0	1392.0		
65		1287.3	1422.0	1434.0		

TABLE OF MAXIMUM MOMENTS FOR PERMIT LOAD (Cont'd)

SPAN		P–5	P–7	P–9	P–11	P–13
66		1317.8	1458.0	1476.0		
67		1348.3	1494.0	1518.0		
68		1378.8	1533.2	1560.0		
69		1409.3	1575.7	1602.0		
70		1439.8	1618.2	1644.0		
71		1470.3	1660.7	1686.0		
72		1500.8	1703.2	1728.0		
73		1531.3	1745.7	1776.0	1782.0	
74		1561.8	1788.2	1824.0	1836.0	
75		1592.3	1830.7	1872.0	1890.0	
76		1622.8	1873.2	1920.0	1944.0	
77		1653.3	1915.7	1971.2	1998.0	
78		1683.8	1958.2	2025.7	2052.0	
79		1714.3	2000.7	2080.2	2106.0	
80		1744.8	2043.2	2134.7	2160.0	
81		1775.3	2085.7	2189.2	2214.0	
82		1805.8	2128.2	2243.7	2274.0	
83		1836.3	2170.7	2298.2	2334.0	
84		1866.8	2213.2	2352.7	2394.0	
85		1897.3	2255.7	2407.2	2454.0	
86		1927.8	2298.2	2461.7	2514.0	
87		1958.3	2340.7	2516.2	2574.0	
88		1988.8	2383.2	2570.7	2634.0	
89		2019.3	2425.7	2625.2	2694.0	
90		2049.8	2468.2	2679.7	2754.0	
91		2080.3	2510.7	2734.2	2814.0	
92		2110.8	2553.2	2788.7	2874.0	
93		2141.3	2595.7	2843.2	2934.0	
94		2171.8	2638.2	2897.7	2994.0	
95		2202.3	2680.7	2952.2	3054.0	
96		2232.8	2723.2	3006.7	3114.0	
97		2263.3	2765.7	3061.2	3174.0	
98		2293.8	2808.2	3115.7	3164.9	
99		2324.3	2850.7	3170.2	3294.0	

TABLE OF MAXIMUM MOMENTS FOR PERMIT LOAD (Cont'd)

SPAN		P–5	P–7	P–9	P–11	P–13
100		2354.8	2893.2	3224.7	3354.0	3360.1
101		2385.3	2935.7	3279.2	3414.0	3426.1
102		2415.8	2978.2	3333.7	3474.0	3492.1
103		2446.3	3020.7	3388.2	3534.0	3558.1
104		2476.8	3063.2	3442.7	3597.3	3624.1
105		2507.3	3105.7	3497.2	3663.8	3690.1
106		2537.8	3148.2	3551.7	3730.3	3756.1
107		2568.3	3190.7	3606.2	3796.8	3822.1
108		2598.8	3233.2	3660.7	3863.3	3888.0
109		2629.3	3275.7	3715.2	3929.8	3960.0
110		2659.3	3318.2	3769.7	3996.3	4032.0
111		2690.3	3360.7	3824.2	4062.8	4104.0
112		2720.8	3403.2	3878.7	4129.3	4176.0
113		2751.2	3445.7	3933.2	4195.8	4251.2
114		2781.8	3488.2	3987.7	4262.3	4329.7
115		2812.3	3530.7	4042.2	4328.8	4408.2
116		2842.8	3573.2	4096.7	4395.3	4486.7
117		2873.3	3615.7	4151.2	4461.8	4565.2
118		2903.8	3658.2	4205.7	4528.3	4643.7
119		2934.3	3700.7	4260.2	4594.8	4722.2
120		2964.8	3743.2	4314.7	4661.3	4800.7
121		2995.3	3785.7	4369.2	4727.8	4879.2
122		3025.8	3828.2	4423.7	4794.3	4957.7
123		3056.3	3870.7	4478.2	4860.8	5036.2
124		3086.8	3913.2	4532.7	4927.3	5114.7
125		3117.3	3955.7	4587.2	4993.8	5193.2
126		3147.8	3998.2	4641.7	5060.3	5271.7
127		3178.3	4040.7	4696.2	5126.8	5350.2
128		3208.8	4083.2	4750.7	5193.3	5428.7
129		3239.3	4125.7	4805.2	5259.8	5507.2
130		3269.8	4168.2	4859.7	5326.3	5585.7
131		3300.3	4210.7	4914.2	5392.8	5664.2
132		3330.8	4253.2	4968.7	5459.3	5742.7
133		3361.3	4295.7	5023.2	5525.8	5821.2

TABLE OF MAXIMUM MOMENTS FOR PERMIT LOAD (Cont'd)

SPAN		P–5	P–7	P–9	P–11	P–13
134		3391.8	4338.2	5077.7	5592.3	5899.7
135		3422.3	4380.7	5132.2	5658.8	5978.2
136		3452.8	4423.2	5186.7	5725.3	6056.7
137		3483.3	4465.7	5241.2	5791.8	6135.2
138		3513.8	4508.2	5295.7	5858.3	6213.7
139		3544.3	4550.7	5350.2	5924.8	6292.2
140		3574.8	4593.2	5404.7	5991.3	6370.7
141		3605.3	4635.7	5459.2	6057.8	6449.2
142		3635.8	4678.2	5513.7	6124.3	6527.7
143		3666.3	4720.7	5568.2	6190.8	6606.2
144		3695.8	4763.2	5622.7	6257.3	6684.7
145		3727.3	4805.7	5677.2	6323.8	6763.2
146		3757.8	4848.2	5731.7	6390.3	6841.7
147		3788.3	4890.7	5786.2	6456.8	6920.2
148		3818.8	4933.2	5840.7	6523.3	6998.7
149		3849.3	4975.7	5895.2	6589.8	7077.2
150		3879.8	5018.2	5949.7	6656.3	7155.7
151		3910.3	5060.7	6004.2	6722.8	7234.2
152		3940.8	5103.2	6058.7	6789.3	7312.7
153		3971.3	5145.7	6113.2	6855.8	7391.2
154		4001.8	5188.2	6167.7	6922.3	7469.7
155		4032.3	5230.7	6222.2	6988.8	7548.2
156		4062.8	5273.2	6276.6	7055.3	7676.7
157		4093.3	5315.7	6331.2	7121.8	7705.2
158		4123.8	5358.2	6385.7	7188.3	7783.7
159		4154.3	5400.7	6440.2	7254.8	7862.2
160		4184.8	5443.2	6494.7	7321.3	7940.7
161		4215.3	5485.7	6549.2	7387.8	8019.2
162		4245.8	5528.2	6603.7	7454.3	8097.7
163		4276.3	5570.7	6658.2	7520.8	8176.2
164		4306.8	5613.2	6712.7	7587.3	8254.7
165		4337.3	5655.7	6767.2	7653.8	8333.2
166		4367.8	5698.2	6821.7	7720.3	8411.7
167		4398.3	5740.7	6876.2	7786.8	8490.2

TABLE OF MAXIMUM MOMENTS FOR PERMIT LOAD (Cont'd)

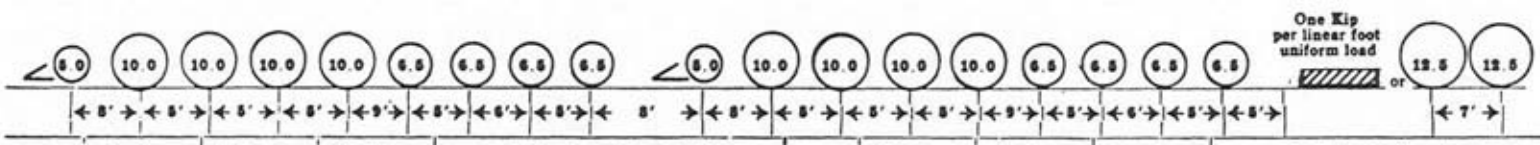
SPAN		P–5	P–7	P–9	P–11	P–13
168		4428.8	5783.2	6930.7	7853.3	8568.7
169		4459.3	5825.7	6985.2	7919.8	8647.2
170		4489.8	5868.2	7039.7	7986.3	8725.7
171		4520.3	5910.7	7094.2	8052.8	8804.2
172		4550.8	5953.2	7148.7	8119.3	8882.7
173		4581.3	5995.7	7203.2	8185.8	8961.2
174		4611.8	6038.2	7257.7	8252.3	9039.7
175		4642.3	6080.7	7312.2	8318.8	9118.2
176		4672.8	6123.2	7366.7	8385.3	9196.7
177		4703.3	6165.7	7421.2	8451.8	9275.2
178		4733.8	6208.2	7475.7	8518.3	9353.8
179		4764.3	6250.7	7530.2	8584.8	9432.2
180		4794.8	6293.2	7584.7	8651.3	9510.7
181		4825.3	6335.7	7639.2	8717.8	9589.2
182		4855.8	6378.2	7693.7	8784.3	9667.7
183		4886.3	6420.7	7748.2	8850.8	9746.2
184		4916.8	6463.2	7802.7	8917.3	9824.7
185		4947.3	6505.7	7857.2	8983.8	9903.2
186		4977.8	6548.2	7911.7	9050.3	9981.7
187		5008.3	6590.7	7966.2	9116.8	10060.2
188		5038.8	6633.2	8020.7	9183.3	10138.7
189		5069.3	6675.7	8075.2	9249.9	10217.2
190		5099.8	6718.2	8129.7	9316.3	10295.7
191		5130.3	6760.7	8184.2	9382.8	10374.2
192		5160.8	6803.2	8238.7	9449.3	10452.7
193		5191.3	6845.7	8293.2	9515.8	10531.2
194		5221.8	6888.2	8347.7	9582.3	10609.7
195		5252.3	6930.7	8402.2	9648.8	10688.2
196		5282.8	6973.2	8456.7	9715.3	10766.7
197		5313.3	7015.7	8511.2	9781.8	10845.2
198		5343.8	7058.2	8565.7	9848.3	10923.7
199		5374.3	7100.7	8620.2	9914.8	11002.2
200		5404.8	7143.2	8674.7	9981.3	11080.7

CHART B

STEAM RAILROAD LOADING

MAXIMUM MOMENTS, SHEARS, AND REACTIONS FOR CLASS E-10 ENGINE LOADING

One Track of Two Rails



Span in Feet	Maximum Moment in Foot-Kips	Maximum Shear in Kips	Maximum Floor-beam Reaction Kips	Equivalent Uniform Load			Span in Feet	Maximum Moment in Foot-Kips	Maximum Shear in Kips	Maximum Floor-beam Reaction Kips	Equivalent Uniform Load		
				Moment	Shear	Reaction					Moment	Shear	Reaction
7	21.9	12.5	15.1	3.57	3.57	2.15	42	356.7	39.2	56.0	1.62	1.87	1.34
7½	23.5	13.4	16.0	3.33	3.56	2.12	44	385.8	40.3	58.2	1.60	1.83	1.32
8	25.0	14.0	16.8	3.12	3.51	2.11	46	414.9	41.4	60.3	1.57	1.80	1.31
9	28.1	15.3	18.2	2.78	3.39	2.02	48	443.8	42.4	62.4	1.54	1.77	1.30
10	31.2	16.2	19.2	2.50	3.25	1.92	50	475.5	43.5	64.3	1.52	1.74	1.29
11	34.4	17.0	21.0	2.28	3.09	1.90	52	507.6	44.6	66.7	1.50	1.72	1.28
12	40.0	17.7	23.3	2.22	2.95	1.94	54	540.5	45.6	69.0	1.48	1.69	1.28
13	47.5	18.3	24.6	2.25	2.81	1.90	56	576.1	46.5	71.4	1.47	1.66	1.27
14	55.0	18.8	26.1	2.25	2.68	1.86	58	611.6	47.7	74.0	1.46	1.65	1.28
15	62.5	20.0	27.3	2.22	2.67	1.82	60	649.5	48.8	76.6	1.44	1.63	1.28
16	70.0	21.3	28.5	2.19	2.66	1.78	62	688.2	50.0	79.1	1.43	1.61	1.27
17	77.5	22.4	29.4	2.15	2.63	1.73	64	727.7	51.3	81.5	1.42	1.60	1.27
18	85.0	23.3	30.3	2.10	2.59	1.69	66	769.7	52.5	83.9	1.41	1.59	1.27
19	93.3	24.2	31.5	2.07	2.55	1.66	68	811.7	53.9	86.2	1.40	1.59	1.27
20	103.1	25.0	32.8	2.06	2.50	1.64	70	853.7	55.3	88.5	1.39	1.58	1.26
21	112.9	25.7	34.0	2.05	2.45	1.62	72	896.7	56.7	90.7	1.38	1.58	1.26
22	122.8	26.3	35.1	2.03	2.40	1.60	74	939.0	58.1	93.0	1.37	1.57	1.26
23	132.7	27.0	36.1	2.01	2.34	1.57	76	986.0	59.5	95.2	1.36	1.57	1.25
24	142.6	27.7	37.0	1.98	2.31	1.54	78	1032.7	60.9	97.3	1.36	1.56	1.25
25	152.5	28.4	37.8	1.95	2.27	1.51	80	1080.0	62.1	99.4	1.35	1.55	1.24
26	162.4	29.1	38.8	1.92	2.24	1.49	82	1128.3	63.5	101.5	1.34	1.55	1.24
27	172.3	29.6	40.0	1.89	2.20	1.48	84	1177.7	64.8	103.5	1.34	1.54	1.23
28	182.7	30.2	41.2	1.86	2.16	1.47	86	1229.7	66.1	105.4	1.33	1.54	1.23
29	194.0	30.8	42.2	1.84	2.12	1.46	88	1282.0	67.4	107.3	1.32	1.53	1.22
30	205.2	31.5	43.1	1.82	2.10	1.44	90	1334.7	68.6	109.3	1.32	1.53	1.22
31	216.5	32.2	44.3	1.80	2.08	1.43	92	1388.3	69.9	111.2	1.31	1.52	1.21
32	227.7	32.9	45.5	1.78	2.06	1.42	94	1442.7	71.2	113.1	1.31	1.52	1.20
33	239.0	33.5	46.7	1.75	2.03	1.41	96	1497.3	72.4	115.0	1.30	1.51	1.20
34	250.3	34.1	47.8	1.73	2.00	1.40	98	1552.7	73.7	116.8	1.29	1.51	1.19
35	261.5	34.6	48.8	1.71	1.98	1.39	100	1609.7	75.0	118.6	1.29	1.50	1.19
36	274.3	35.3	49.8	1.69	1.96	1.38	125	2497.7	89.7	140.5	1.25	1.44	1.12
37	287.2	35.9	50.7	1.68	1.94	1.37	150	3531.0	103.7	162.7	1.23	1.38	1.08
38	300.0	36.5	51.8	1.66	1.92	1.36	175	4676.3	117.3	185.8	1.22	1.34	1.06
39	313.3	37.2	52.9	1.65	1.90	1.36	200	5939.0	130.5	209.5	1.19	1.31	1.05
40	327.8	37.7	54.0	1.64	1.88	1.35	250	8796.3	156.6	257.6	1.13	1.25	1.03

CHART C

STEAM RAILROAD LOADING

MOMENTS IN FOOT-KIPS FOR CLASS E-10 ENGINE LOADING

One Track of Two Rails

Wheel Numbers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	One Kip per linear foot uniform load
Axle Loads	5.0	10.0	10.0	10.0	10.0	6.5	6.5	6.5	6.5	5.0	10.0	10.0	10.0	10.0	6.5	6.5	6.5	6.5	
Spacing in feet	8	5	5	5	9	5	6	5	8	8	5	5	5	9	5	6	5	5	

Totals from end of train																				
Kips	142.0	137.0	127.0	117.0	107.0	97.0	90.5	84.0	77.5	71.0	65.0	56.0	46.0	36.0	26.0	19.5	13.0	6.5	0
Feet	109	101	96	91	86	77	72	66	61	53	45	40	35	30	21	16	10	5	0

Moments of wheel loads about — Wheel Number

End of Train	8182.0	7637.0	6627.0	5667.0	4757.0	3897.0	3396.5	2928.5	2499.5	2103.0	1838.0	1388.0	988.0	638.0	338.0	201.5	97.5	32.5	
18	7472.0	6982.0	5992.0	5082.1	4222.0	3412.0	2944.0	2508.5	2112.0	1748.0	1508.0	1108.0	758.0	458.0	208.0	104.2	32.5		
17	6794.5	6299.5	5389.2	4529.5	3719.5	2959.5	2524.0	2121.0	1757.0	1425.5	1210.5	860.5	560.5	310.5	110.5	39.0	32.5		
16	6020.5	5555.6	4705.5	3905.5	3155.6	2455.5	2059.0	1695.0	1370.0	1077.5	892.5	602.5	362.5	172.5	32.5	39.0	110.5		
15	5408.0	4968.0	4168.0	3418.0	2718.0	2068.0	1704.0	1372.5	1080.0	820.0	660.0	420.0	230.0	90.0	32.5	104.0	208.0		
14	4364.0	3969.0	3259.0	2599.0	1989.0	1429.0	1123.5	850.5	616.5	415.0	300.0	150.0	50.0	58.5	149.5	279.5	442.0		
13	3834.0	3464.0	2804.0	2194.0	1634.0	1124.0	851.0	610.5	409.0	240.0	150.0	50.0	50.0	141.0	264.5	427.0	622.0		
12	3354.0	3009.0	2399.0	1839.0	1329.0	869.0	628.5	420.5	251.5	115.0	50.0	50.0	150.0	273.5	429.5	624.5	852.0		
11	2924.0	2604.0	2044.0	1534.0	1074.0	664.0	456.0	280.5	144.0	40.0	50.0	150.0	300.0	456.0	644.5	872.0	1132.0		
10	2316.0	2036.0	1556.0	1126.0	746.0	416.0	260.0	136.5	52.0	80.0	210.0	390.0	620.0	828.0	1068.5	1348.0	1660.0		
9	1748.0	1508.0	1108.0	758.0	458.0	208.0	104.0	32.5	40.0	200.0	410.0	670.0	980.0	1240.0	1532.5	1864.0	2228.0		
8	1425.5	1210.5	860.5	560.5	310.5	110.5	39.0	32.5	97.5	307.5	567.5	877.5	1237.5	1530.0	1855.0	2219.0	2615.5		
7	1077.2	892.5	602.5	362.5	172.5	32.5	39.0	110.5	205.5	475.5	795.5	1165.5	1585.5	1917.0	2281.0	2684.0	3119.5		
6	820.0	660.0	420.0	230.0	90.0	32.5	104.0	208.0	328.0	648.0	1018.0	1438.0	1908.0	2272.0	2668.5	3104.0	3572.0		
5	415.0	300.0	150.0	50.0	58.5	149.5	279.5	442.0	607.0	1017.0	1477.0	1987.0	2547.0	2969.5	3434.5	3918.5	4445.0		
4	240.0	150.0	50.0	50.0	141.0	264.5	427.0	622.0	812.0	1272.0	1782.0	2342.0	2952.0	3407.0	3394.5	4421.0	4980.0		
3	115.0	50.0	50.0	150.0	273.5	429.5	624.5	852.0	1067.0	1577.0	2137.0	2747.0	3407.0	3894.5	4414.4	4973.5	5565.0		
2	40.0	50.0	150.0	300.0	456.0	644.5	872.0	1132.0	1372.0	1932.0	2542.0	3202.0	3912.0	4432.0	4984.5	5576.0	6200.0		
1	50.0	210.0	390.0	620.0	828.0	1068.5	1348.0	1660.0	1940.0	2580.0	3270.0	4010.0	4800.0	5372.0	5976.5	6620.0	7296.0		

Totals from wheel No. 1																			
Kips	5.0	15.0	25.0	35.0	45.0	51.5	58.0	64.5	71.0	76.0	86.0	96.0	106.0	116.0	122.5	129.0	135.5	142.0	142.0
Feet	0	8	13	18	23	32	37	43	48	56	64	69	74	79	88	93	99	104	109

For E 40 loading multiply Moments tabulated above by 4; for E 50 loading multiply by 5; for E 60 loading multiply by 6.