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Strain and dial gage readings, Supplement to F. L.  
Report No. 248.5, July 1962

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# 2

Built-Up Members in Plastic Design

TESTS ON LONGITUDINALLY STIFFENED PLATE PANELS

Effect of Residual Stresses and Rotational  
Restraint by Stiffeners

S T R A I N   A N D   D I A L   G A G E

R E A D I N G S

by

Robert H. Rampetsreiter  
Ti-ta Lee  
Alexis Ostapenko

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Fritz Engineering Laboratory  
Department of Civil Engineering  
Lehigh University  
Bethlehem, Pennsylvania  
July 1962

Fritz Engineering Laboratory Report No. 248.5A  
(Supplement to F. L. Report No. 248.5)

DEPARTMENT OF CIVIL ENGINEERING  
FRITZ ENGINEERING LABORATORY  
LEHIGH UNIVERSITY  
BETHLEHEM, PENNSYLVANIA

T A B L E   O F   C O N T E N T S

	Page
1. INTRODUCTION	1
2. STRAIN GAGE READINGS	5
Table 1. SPECIMEN T-6	10
Table 2. SPECIMEN T-7	16
Table 3. SPECIMEN T-8	21
Table 4. SPECIMEN T-9	26
Table 5. SPECIMEN T-10S	31
3. DIAL GAGE READINGS	35
Table 6. SPECIMEN T-6	39
Table 7. SPECIMEN T-7	43
Table 8. SPECIMEN T-8	47
Table 9. SPECIMEN T-9	51
Table 10. SPECIMEN T-10S	55

## 1. INTRODUCTION

This report is a supplement to Fritz Engineering Laboratory Report No. 248.5, "TESTS ON LONGITUDINALLY STIFFENED PLATE PANELS" (CONTINUATION OF FRITZ LAB REPORT NO. 248.4), and contains all the readings of the strain and dial gages taken during the tests.

The readings are presented in the form of tables. Neither smoothing nor zero adjustment of the data was carried out - the data were only reduced to the first reading whether it was at a zero load or not.

The strain gage readings are given in Tables 1 to 5 and the dial gage readings are given in Tables 6 to 10. Each table contains the appropriate readings for one specimen.

Nominal dimensions of the test specimens are shown in Figs. 1, 2, and 3 on pp. 2, 3, and 4, respectively.

248.5A

-2

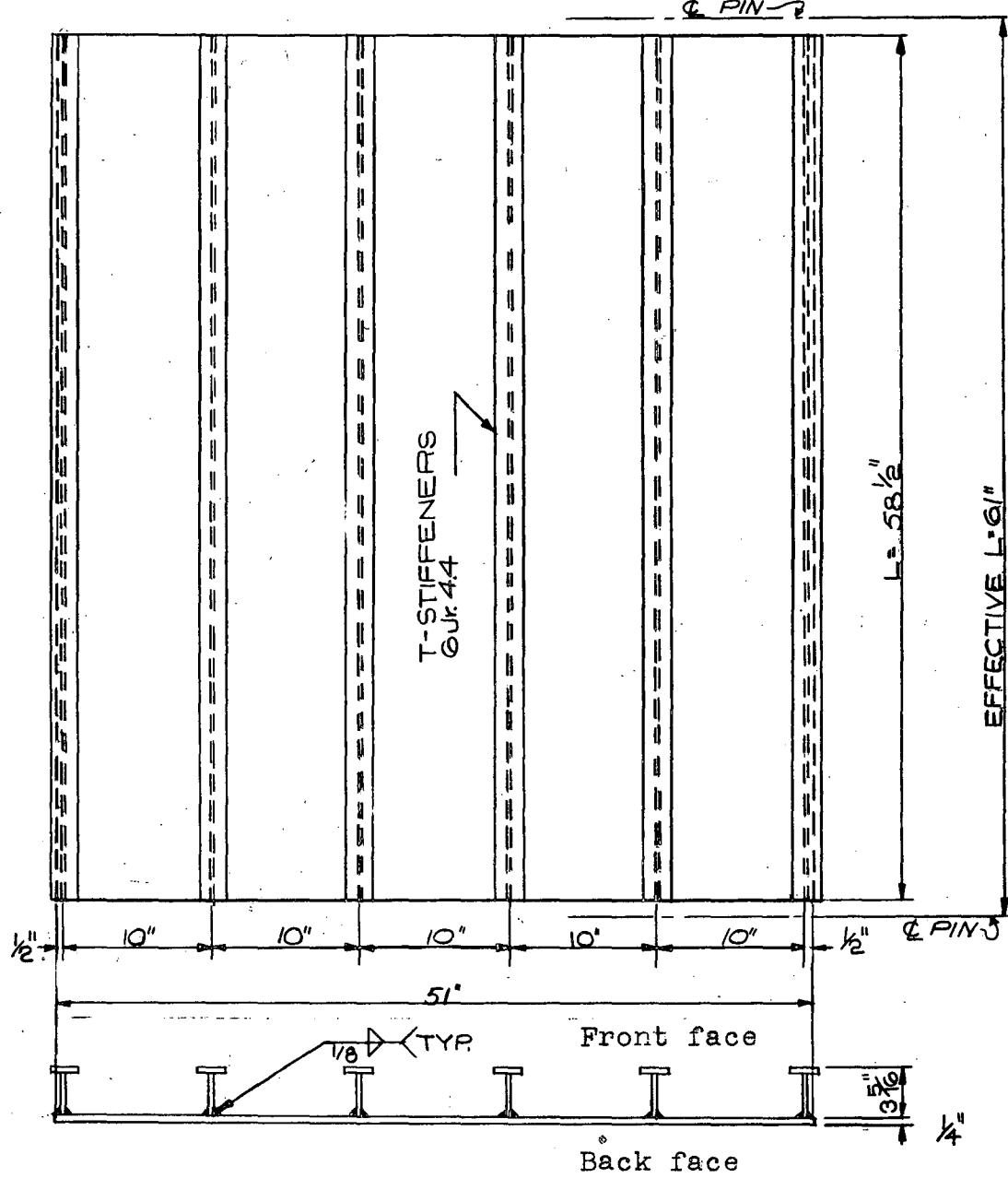


Fig. 1 TEST SPECIMEN DIMENSIONS (T-6)

SCALE:  $1"=1'-0"$

248.5A

- 3

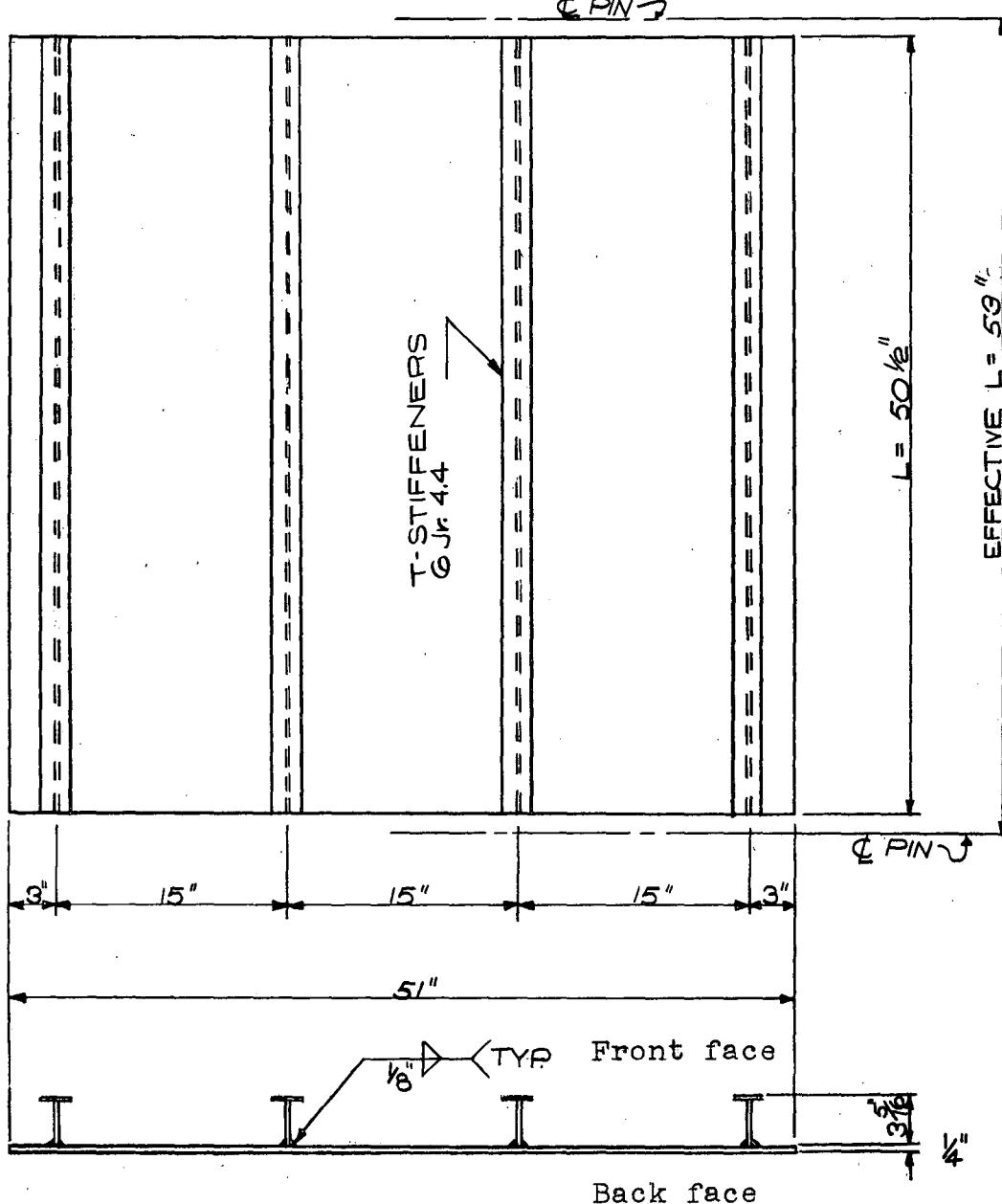


Fig. 2 TEST SPECIMEN DIMENSIONS (T-7, T-8, T-9)  
SCALE 1"=1'-0"

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-4

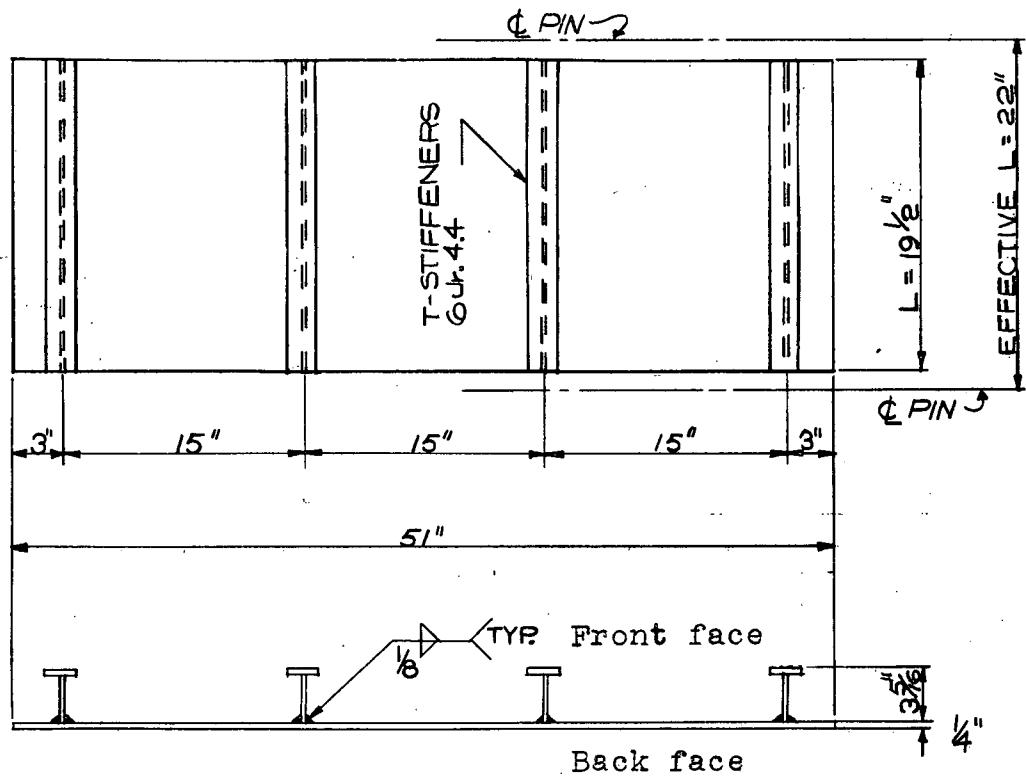


Fig. 3 TEST SPECIMEN DIMENSIONS (T-10S)  
SCALE 1"=1'-0"

## 2. STRAIN GAGE READINGS

Locations and directions of SR-4 strain gages are depicted in Figs. 4, 5, and 6 on pp. 6, 7, and 8, respectively. Each specimen had a somewhat different arrangement and number of gages. Table A, page 9, shows which gages were used on which specimen. All readings were taken on strain indicators.

All readings are given in micro-inches per inch with minus sign indicating shortening and no sign indicating elongation.

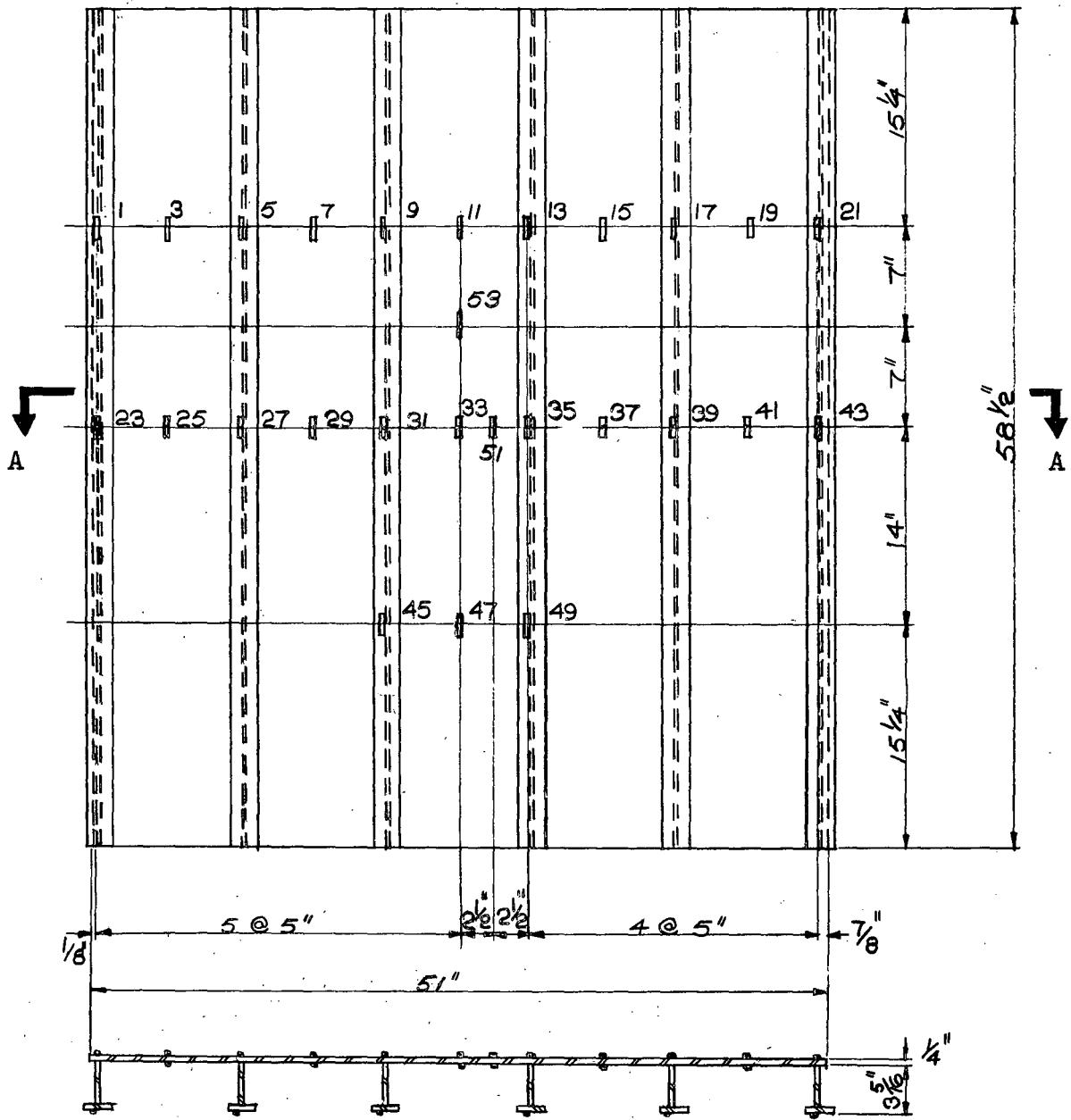
Section A-A

Fig. 4 LOCATION OF SR-4 STRAIN GAGES (T-6).

Note: For each gage on the front face there is a corresponding gage on the back face. The gage number on the back face is the following even number to that of the gage on the front face.

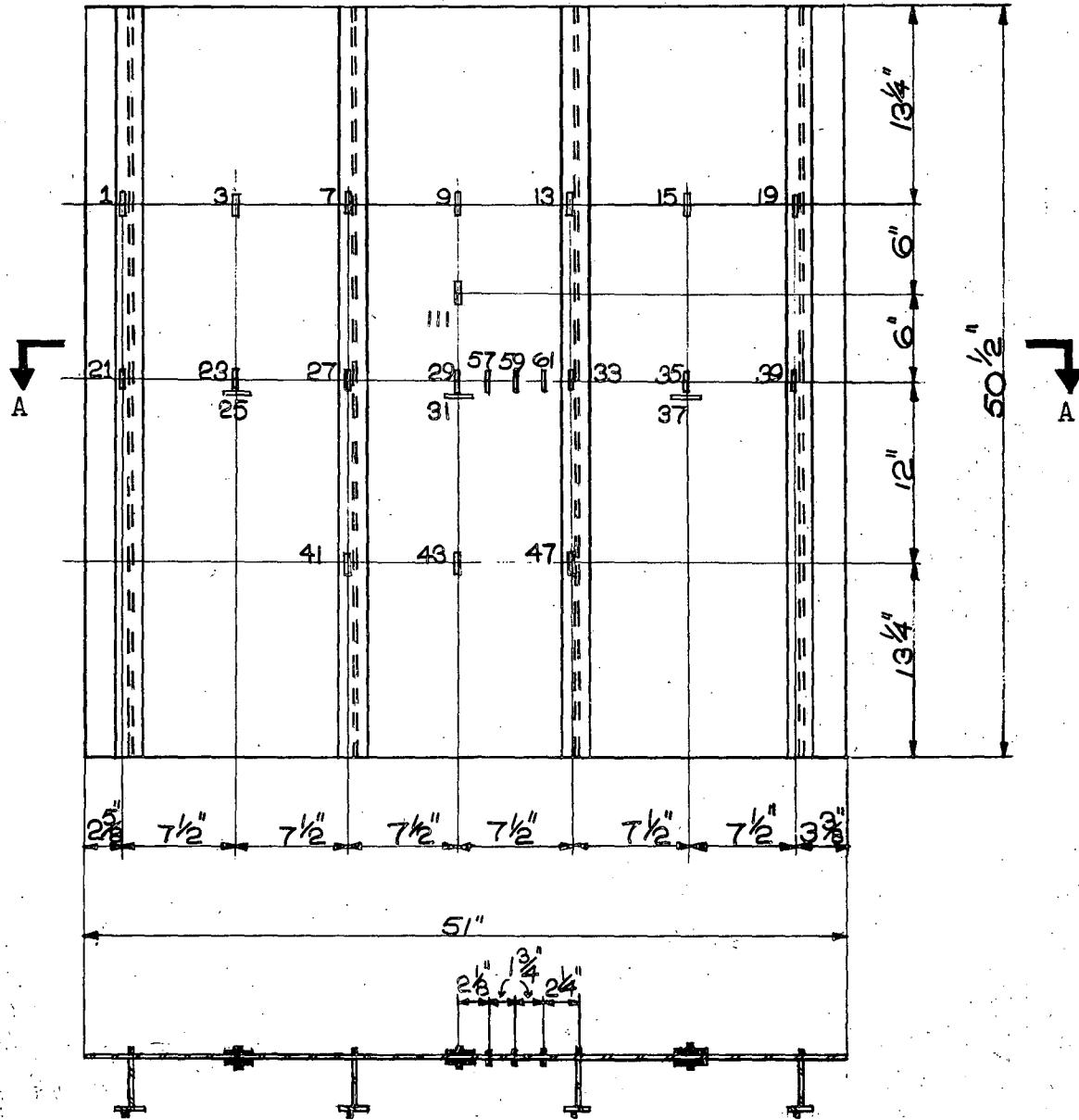
Section A-A

Fig. 5 LOCATION OF SR-4 STRAIN GAGES (T-7, T-8, T-9)

- Notes:
1. For each gage on the front face there is a corresponding gage on the back face. The gage number on the back face is the following even number to that of the gage on the front face.
  2. Table A shows which gages were used on which specimen.

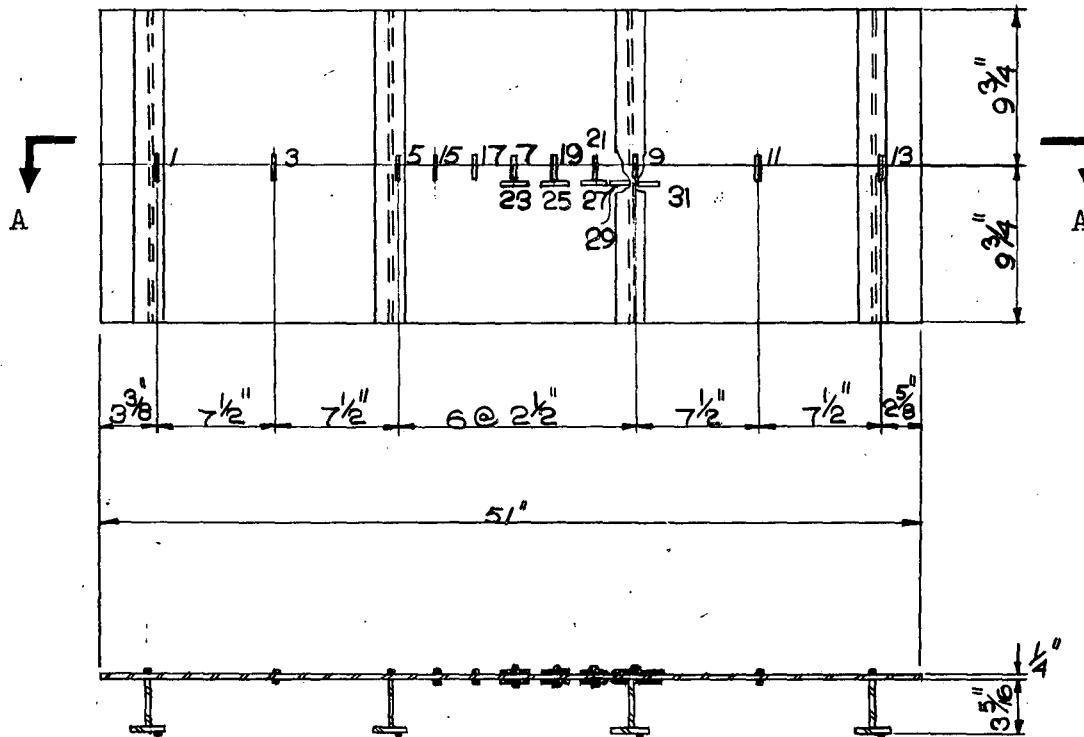
Section A-A

Fig. 6 LOCATION OF SR-4 STRAIN GAGES (T-10S)

Note: For each gage on the front face there is a corresponding gage on the back face. The gage number on the back face is the following even number to that of the gage on the front face.

Table A: ARRANGEMENT OF SR-4 STRAIN GAGES

Specimen	Gages on Specimen	Total number of Gages
T-6	1 to 54	54
T-7	1 to 4, 7 to 10, 13 to 16, 19 to 24, 27 to 30, 33 to 44, 47 and 48, 57 to 62 111 and 112	44
T-8	1 to 4, 7 to 10, 13 to 16, 19 to 44, 47 and 48, 59 and 60	42
T-9	1 to 4, 7 to 10, 13 to 16 19 to 44, 47 and 48, 59 and 60	42
T-10S	1 to 32	32

Table 1. STRAIN GAGE READINGS-SPECIMEN T-6 $(10^{-6} \text{ in. per in.})$ 

Ld. No.	Loads		Gage Nos.							
	Lat. (psi)	Axial (kips)	1	2	3	4	5	6	7	8
1	1.96	0	0	0	0	0	0	0	0	0
2	3.93	0	95	-1	-13	-50	165	-82	0	-37
3	5.89	0	197	-41	-26	-102	340	-126	-39	-75
4	6.48	0	245	-61	-38	-105	350	-142	-30	-105
5	"	50	238	-148	-138	-220	325	-254	-165	-210
6	"	100	173	-273	-258	-319	257	-364	-258	-315
7	"	200	95	-441	-446	-529	110	-572	-462	-523
8	"	300	-33	-596	-608	-725	-5	-772	-680	-722
9	"	400	-125	-756	-798	-887	-80	-992	-905	-1009
10	"	423	-110	-869	-948	-980	-75	-1144	-945	-1255
11	"	442	103	-951	-1083	-1160	-40	-1257	-1240	-2075
12	"	450	-60	-1051	-1215	-1395	15	-1382	-1700	-3355
13	"	458	-13	-1201	-1600	-1828	82	-1562	-1940	-4712
14	"	460	60	-1271	-1718	-2030	110	-1622	-1967	-5050
15	"	462	43	-1313	-1778	-2098	130	-1672	-1955	-5157
16	"	463	105	-1381	-1837	-2200	165	-1732	-1990	-5414
17	"	453	193	-1561	-2048	-2460	245	-1842	-2000	-5705
18	"	422	415	-1881	-2445	-2700	425	-1932	-1975	-5685
19	"	397	425	-1821	-2413	-2660	432	-1852	-1930	-5605
20	"	330	445	-1711	-2318	-2552	440	-1742	-1820	-5482
21	"	297	425	-1561	-2193	-2417	450	-1592	-1715	-5325
22	"	348	415	-1701	-2303	-2540	433	-1732	-1825	-5472
23	"	398	463	-1811	-2418	-2645	437	-1850	-1930	-5595
24	"	398	605	-1961	-2468	-2710	525	-1842	-1870	-5611
25	"	263	1040	-1726	-2188	-2477	893	-1572	-1638	-5357
26	"	54	637	-1141	-1698	-1850	590	-957	-1198	-4673
27	"	0	545	-1006	-1558	-1725	490	-794	-1080	-4485
28	3.93	0	415	-958	-1513	-1680	260	-754	-1077	-4425

Table 1. STRAIN GAGE READINGS-SPECIMEN T-6 (Cont'd)(10<sup>-6</sup> in. per in.)

Ld No.	9	Gage Nos.									
		10	11	12	13	14	15	16	17	18	
1	0	0	0	0	0	0	0	0	0	0	0
2	160	-41	-30	-35	150	-48	-20	-50	146	-41	
3	339	-82	-60	-75	310	-90	-54	-90	300	-171	
4	368	-92	-60	-95	360	0	-70	-100	340	-111	
5	290	-202	-170	-197	300	-205	-170	-199	280	-201	
6	210	-282	-274	-295	210	-295	-268	-282	185	-301	
7	55	-517	-490	-500	35	-515	-480	-470	20	-516	
8	-60	-747	-720	-710	-80	-719	-735	-680	-93	-751	
9	-135	-1012	-970	-970	-184	-1018	-1170	-870	-200	-1056	
10	-135	-1182	-1080	-1035	-178	-1178	-1650	-970	190	-1278	
11	-100	-1302	-1150	-1055	-125	-1320	-2100	-1029	-112	-1471	
12	-80	-1415	-1185	-1063	-112	-1410	-2410	-1070	-97	-1578	
13	10	-1592	-1200	-1035	-40	-1540	-2880	-1090	-25	-1771	
14	20	-1622	-1200	-1015	-22	-1590	-3015	-1070	0	-1831	
15	40	-1657	-1212	-1005	-9	-1610	-3080	-1055	10	-1878	
16	80	-1697	-1220	-1005	20	-1658	-3180	-1055	55	-1928	
17	160	-1739	-1185	-960	-900	-1615	-3150	-1020	140	-1993	
18	245	-1642	-1115	-847	183	-1525	-2965	-1008	285	-1921	
19	265	-1572	-1050	-800	200	-1450	-2900	-960	295	-1856	
20	270	-1432	-938	-700	210	-1355	-2770	-885	295	-1746	
21	283	-1322	-815	-575	232	-1225	-2630	-795	295	-1621	
22	270	-1457	-930	-685	205	-1335	-2760	-880	275	-1741	
23	260	-1567	-1040	-795	195	-1470	-2900	-980	280	-1856	
24	327	-1554	-1050	-770	280	-1468	-2860	-1010	345	-1871	
25	643	-1319	-855	-527	690	-1270	-2563	-940	685	-1661	
26	410	-722	-300	-35	420	-700	-1970	-465	395	-1051	
27	370	-562	-160	100	380	-570	-1805	360	405	-891	
28	160	-517	-150	115	175	-520	-1788	-322	190	-841	

Table 1: STRAIN GAGE READINGS-SPECIMEN T-6 (Cont'd) $(10^{-6} \text{ in. per in.})$ 

Ld No.	Gage Nos.									
	19	20	21	22	23	24	25	26	27	28
1	0	0	0	0	0	0	0	0	0	0
2	-47	-50	100	-33	150	-37	-22	-38	212	-58
3	-398	-95	210	-68	274	-74	-32	-83	474	-126
4	-565	-105	242	-80	331	-84	-44	-98	529	-138
5	-670	-208	205	-143	302	-248	-157	-220	481	-268
6	-675	-329	95	-238	244	-324	-264	-330	421	-368
7	-865	-605	-70	-438	180	-523	-443	-528	263	-579
8	-395	-1050	-220	-638	87	-701	-622	-728	189	-790
9	-610	-3008	-318	-923	17	-1033	-1604	-820	163	-1138
10	-840	-3105	-300	-1133	64	-1242	-2324	-1216	226	-1406
11	-495	-5005	-260	-1317	103	-1372	-2653	-1917	276	-1667
12	-598	-5630	-260	-1423	167	-1499	-2910	-2516	401	-1837
13	-720	-7115	-185	-1618	222	-1752	-3132	-3553	490	-2179
14	-1305	-7540	-175	-1696	287	-1850	-3216	-4087	551	-2314
15	-1803	-7855	-150	-1753	300	-1906	-3240	-4378	571	-2396
16	-1820	-18805	-135	-1850	352	-1994	-3290	-4936	623	-2550
17	-1772	-19495	-20	-2073	503	-2244	-3320	-6398	809	-2023
18	-1985	-19577	155	-2303	852	-2772	-3087	-9165	1762	-4716
19	55	-19485	165	-2238	832	-2727	-3072	-9163	1943	-4706
20	-100	-19280	175	-2133	807	-2582	-3082	-8956	1890	-4553
21	-550	-19075	168	-1998	785	-2420	-3080	-8746	1843	-4398
22	-585	-19265	165	-2118	762	-2571	-3085	-8946	1862	-5548
23	-565	-19470	160	-2243	837	-2717	-3061	-9136	1930	-4686
24	-430	-19545	318	-2383	2382	-5714	-2211	-12680	5129	-7896
25	-535	-19185	1060	-2218	-	-15656	3524	-22482	20456	-18648
26	-275	-18140	760	-1563	-	-14467	3031	-21335	20708	-17362
27	-355	-17840	680	-1368	-	-14047	2886	-20998	20446	-16598
28	-465	-17765	540	-1315	-	-13857	2858	-20911	20056	-16833

Table 1: STRAIN GAGE READINGS-SPECIMEN T-6 (Cont'd)  
 $(10^{-6} \text{ in. per in.})$

Ld No.	Gage Nos.									
	29	30	31	32	33	34	35	36	37	38
1	0	0	0	0	0	0	0	0	0	0
2	-9	-34	198	-59	-32	-40	196	-50	-41	-78
3	-47	-73	400	-121	-69	-99	383	-122	-59	-118
4	-64	-100	462	-142	-57	-114	455	-139	-77	-152
5	-174	-217	411	-251	-172	-200	426	-234	-155	-249
6	-290	-307	345	-354	-270	-300	347	-332	-243	-335
7	-494	-513	219	-562	-543	-554	223	-550	-482	-558
8	-704	-715	158	-782	-771	-764	157	-785	-677	-790
9	-970	-995	120	-1062	-1084	-1000	125	-1561	-904	-1040
10	-1582	-1743	185	-1320	-1640	-1403	204	-1510	-1065	-2009
11	-1321	-2677	246	-1562	-1839	-1600	270	-1810	-1149	-1038
12	-2154	-3222	304	-1700	-1830	-1604	335	-2015	-1202	-1139
13	-3114	-3943	413	-1954	-1821	-1623	468	-2402	-1439	-1509
14	-3332	-4203	448	-2077	-1820	-1616	510	-2599	-1575	-1856
15	-3416	-4353	478	-2104	-1822	-1612	555	-2778	-1620	-2098
16	-3577	-4625	540	-2253	-1804	-1598	635	-3258	-1682	-2765
17	-3753	-5455	795	-2852	-1733	-1424	995	-3260	-915	-8182
18	-3074	-9023	1502	-4950	-1660	-986	2685	-9032	2061	-17495
19	-3030	-9075	1512	-4920	-1614	-967	3117	-8955	2036	-17395
20	-2992	-8893	1502	-4763	-1534	-920	3055	-8712	1948	-17089
21	-2892	-8687	1440	-4591	-1422	-860	2976	-8489	1855	-16813
22	-2987	-8865	1485	-4750	-1513	-917	3030	-8679	1935	-17061
23	-3014	-9057	1542	-4900	-1602	-958	3106	-8959	2038	-17385
24	-1759	-13230	2988	-7255	-1564	-790	6217	-11274	4172	-21665
25	2458	-18686	-	-14869	-1041	-773	-20808	-10127	-	-30036
26	1966	-17445	-	-13625	-710	-682	-	-17757	10158	-28581
27	1796	-17222	-	-13257	-650	-634	-	-17323	9504	-
28	1748	-16992	-	-13133	-642	-600	-	-17165	9443	-

Table 1: STRAIN GAGE READINGS-SPECIMEN T-6 (Cont'd)  
 $(10^{-6} \text{ in. per in.})$

Ld No.	Gage Nos.									
	39	40	41	42	43	44	45	46	47	48
1	0	0	0	0	0	0	0	0	0	0
2	212	-55	-24	-318	133	-38	189	-98	-9	-90
3	401	-107	-49	-362	272	-79	325	-78	-72	-107
4	478	-119	-56	-378	310	-88	384	-119	-80	-156
5	440	-208	-140	-459	253	-169	306	-210	-159	-243
6	348	-304	-240	-545	151	-251	236	-302	-240	-365
7	202	-511	-432	-759	-20	-499	86	-545	-433	-577
8	112	-737	-638	-960	-167	-705	-14	-715	-641	-747
9	51	-1077	-883	-1042	-280	-920	-55	-970	-930	-947
10	99	-1366	-1066	-962	-270	-1109	-52	-1111	-1122	-1046
11	-830	-1569	-1181	-939	-239	-1254	-35	-1249	-1233	-1097
12	202	-1693	-1243	-907	-218	-1337	5	-1285	-1288	-1171
13	310	-1960	-1404	-840	-166	-1501	38	-1408	-1388	-1129
14	345	-2075	-1470	-810	-160	-1569	78	-1429	-1401	-1125
15	378	-2167	-1539	-785	-151	-1621	85	-1441	-1431	-1130
16	442	-2340	-1689	-718	-122	-1714	95	-1498	-1461	-1108
17	635	-3231	-2021	-438	-15	-1998	173	-1466	-1458	-1110
18	1438	-5377	-7887	689	220	-2744	287	-1436	-1331	-1057
19	1448	-5297	-7751	679	225	-2684	301	-1378	-1282	-1008
20	1404	-5131	-7543	646	228	-2563	314	-1308	-1161	-907
21	1355	-4894	-7276	621	206	-2378	325	-1156	-1042	-850
22	1381	-5110	-7512	644	208	-2549	310	-1293	-1140	-920
23	1429	-5289	-7733	672	211	-2689	297	-1372	-1281	-1031
24	3093	-7093	-10678	1501	485	-3161	380	-1408	-1261	-1040
25	18420	-13012	-16435	4528	6754	-4141	765	-1148	-1021	-847
26	18077	-11674	-15233	3902	6338	-3239	510	-580	-484	-400
27	17915	-11276	-14912	3750	6198	-2979	475	-458	-366	-287
28	17555	-11164	-14830	3725	6002	-2835	255	-408	-341	-260

Table 1: STRAIN GAGE READINGS-SPECIMEN T-6 (Cont'd)(10<sup>-6</sup> in. per in.)

Ld No.	Gage Nos.					
	49	50	51	52	53	54
1	0	0	0	0	0	0
2	117	-1032	12	-31	-37	-49
3	316	-1062	-14	-105	-40	-78
4	356	-1092	-72	-127	-59	-123
5	357	-1176	-149	-217	-168	-203
6	244	-1269	-229	-297	-252	-318
7	77	-1469	-467	-515	-411	-528
8	-3	-1680	-699	-703	-586	-797
9	-130	-1913	-960	-954	-853	-1169
10	-123	-2008	-1048	-937	-957	-1359
11	-127	-2098	-1065	-1006	-1036	-1329
12	-56	-2161	-1073	-1088	-1076	-1296
13	-35	-2267	-1164	-1277	-1206	-1244
14	-22	-2299	-1238	-1329	-1316	-1290
15	-35	-2331	-1307	-1360	-1343	-1311
16	19	-2346	-1439	-1468	-1465	-1281
17	87	-2361	-1941	-1577	-1632	-1131
18	207	-2240	-2198	-1523	-2056	-711
19	184	-2196	-3168	-1478	-2001	-663
20	225	-2084	-2928	-1386	-1893	-561
21	205	-1972	-2863	-1263	-1734	-458
22	187	-2076	-3014	-1371	-1906	-562
23	217	-2201	-3139	-1481	-1999	-669
24	207	-2198	-3632	-1549	-2316	-506
25	610	-1991	-3726	-1985	-2636	23
26	355	-1438	-2968	-1560	-2146	451
27	287	-1333	-2805	-1406	-1976	541
28	117	-1261	-2798	-1344	-1926	571

Table 2: STRAIN GAGE READINGS-SPECIMEN T-7(10<sup>-6</sup> in. per in.)

Ld No.	Axial Load (kips)	Gage Nos.							
		1	2	3	4	7	8	9	10
1	0	0	0	0	0	0	0	0	0
2	50	-110	-50	-60	-80	-40	-100	-100	-130
3	50	-110	-50	-50	-80	-80	-90	-100	-140
4	100	-220	-150	-150	-170	-145	-195	-205	-250
5	150	-310	-240	-250	-270	-240	-310	-305	-365
6	200	-395	-335	-340	-375	-345	-430	-410	-505
7	300	-580	-520	-550	-580	-515	-660	-570	-750
8	350	-670	-630	-655	-690	-600	-775	-640	-905
9	375	-670	-665	-720	-730	-630	-830	-675	-990
10	385	-720	-690	-740	-760	-645	-845	-670	-1020
11	389	-700	-700	-780	-760	-660	-875	-675	-1065
12	394	-735	-700	-780	-780	-665	-890	-685	-1095
13	403	-725	-720	-800	-780	-670	-900	-675	-1115
14	406	-755	-730	-810	-790	-685	-915	-680	-1140
15	411	-765	-750	-825	-795	-690	-925	-670	-1170
16	417	-755	-765	-855	-785	-695	-945	-660	-1200
17	425	-780	-780	-865	-805	-705	-970	-645	-1245
18	430	-800	-785	-905	-805	-705	-980	-615	-1285
19	436	-810	-780	-935	-810	-710	-995	-600	-1320
20	442	-820	-795	-1000	-790	-710	-1020	-550	-1370
21	447	-835	-820	-1060	-750	-700	-1050	-460	-1470
22	449	-880	-835	-3990	-50	-660	-1130	-235	-1675
23	443	-860	-960	-7600	830	-525	-460	355	-2680
24	418	-735	-1645	-14760	3140	-100	-3130	1510	-4120
25	382	-440	-2675	-19380	5530	270	-6205	2340	-4745
26	349	-	-	-	-	-	-	-	-
27	299	-	-	-	-	-	-	-	-
28	200	-	-	-	-	-	-	-	-
29	298	-	-	-	-	-	-	-	-
30	348	-	-	-	-	-	-	-	-
31	382	-470	-2680	-19485	5625	290	-6300	2405	-4750
32	368	-280	-3155	-20360	6305	450	-7610	2620	-4915
33	341	-5	-4705	-21895	7740	710	-10550	3050	-5210
34	200	50	-4155	-21005	7185	600	-9670	2590	-4510
35	30	210	-3390	-19775	6485	540	-8480	2070	-3645

Table 2: STRAIN GAGE READINGS-SPECIMEN T-7 (Cont'd)  
 $(10^{-6} \text{ in. per in.})$

Ld No.	Gage Nos.									
	13	14	15	16	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0
2	-110	-130	-140	-150	-110	-140	-55	-110	-65	-205
3	-120	-130	-140	-150	-140	-140	-57	-72	-25	-155
4	-205	-245	-250	-250	-225	-235	-155	-230	-215	-275
5	-300	-360	-360	-360	-320	-350	-260	-240	-260	-325
6	-385	-460	-470	-465	-405	-450	-315	-405	-385	-495
7	-555	-680	-700	-655	-575	-650	-500	-575	-560	-700
8	-655	-780	-830	-750	-680	-755	-590	-680	-685	-775
9	-725	-835	-915	-800	-760	-815	-535	-730	-695	-825
10	-750	-855	-945	-810	-780	-825	-525	-770	-770	-885
11	-775	-870	-975	-820	-800	-850	-525	-800	-795	-915
12	-795	-885	-995	-825	-810	-860	-545	-840	-815	-930
13	-810	-895	-1020	-830	-825	-875	-525	-835	-775	-915
14	-825	-910	-1040	-825	-825	-885	-520	-850	-785	-935
15	-835	-915	-1070	-825	-840	-900	-535	-870	-820	-970
16	-850	-925	-1095	-825	-845	-905	-540	-870	-805	-995
17	-870	-940	-1145	-815	-855	-925	-550	-895	-805	-1025
18	-890	-960	-1180	-800	-865	-930	-555	-910	-820	-1065
19	-900	-965	-1240	-770	-865	-940	-535	-925	-780	-1090
20	-920	-970	-1520	-675	-870	-950	-535	-950	-810	-1140
21	-950	-1000	-3030	-270	-860	-975	-530	-1005	-775	-1220
22	-985	-1070	-4635	190	-830	-1070	-510	-1070	-645	-1350
23	-940	-1390	-6935	920	-770	-1280	-315	-1180	-415	-1365
24	-705	-3770	-15855	4265	-480	-2430	50	-1580	-275	-1305
25	-370	-7405	-21285	7865	-90	-4915	335	-1875	-250	-1060
26	-	-	-	-	-	-	315	-1750	-225	-980
27	-	-	-	-	-	-	275	-1570	-240	-860
28	-	-	-	-	-	-	240	-1230	-190	-615
29	-	-	-	-	-	-	275	-1540	-225	-840
30	-	-	-	-	-	-	325	-1715	-215	-945
31	-340	-7530	-21450	8005	-70	-5040	375	-1865	-225	-1030
32	-205	-8990	-22500	9030	90	-6370	505	-1950	-255	-935
33	70	-12090	-24165	10870	435	-9450	650	-1980	-305	-765
34	35	-11210	-23305	10285	340	-8650	470	-1445	-235	-465
35	60	-10045	-22105	9545	335	-7605	395	-825	-120	-95

Table 2: STRAIN GAGE READINGS-SPECIMEN T-7 (Cont'd)(10<sup>-6</sup> in. per in.)

Ld No.	Gage Nos.									
	27	28	29	30	33	34	35	36	39	40
1	0	0	0	0	0	0	0	0	0	0
2	-110	-90	-160	-155	-130	-110	-130	-145	-100	-175
3	-145	-130	-210	-175	-140	-120	-140	-140	-120	-180
4	-215	-240	-350	-285	-210	-255	-255	-240	-220	-285
5	-325	-360	-480	-390	-340	-390	-375	-375	-305	-400
6	-455	-475	-600	-505	-415	-490	-470	-470	-380	-495
7	-605	-660	-820	-685	-550	-675	-685	-700	-560	-710
8	-665	-800	-940	-760	-610	-825	-780	-810	-680	-805
9	-735	-855	-1050	-795	-670	-840	-810	-880	-820	-855
10	-745	-865	-1070	-775	-710	-865	-820	-800	-850	-860
11	-770	-890	-1130	-785	-730	-870	-825	-930	-880	-870
12	-745	-890	-1145	-785	-745	-890	-835	-950	-915	-895
13	-790	-895	-1145	-775	-740	-900	-830	-960	-920	-905
14	-775	-945	-1180	-785	-780	-940	-830	-990	-935	-920
15	-850	-950	-1220	-800	-790	-935	-850	-1015	-955	-935
16	-845	-950	-1250	-795	-780	-955	-830	-1050	-960	-945
17	-925	-980	-1310	-765	-800	-980	-815	-1085	-985	-970
18	-940	-1020	-1380	-755	-805	-1000	-800	-1130	-1010	-990
19	-960	-1000	-1415	-730	-790	-1010	-755	-1160	-1010	-1010
20	-995	-1040	-1515	-675	-780	-1020	-680	-1105	-1020	-1045
21	-925	-1090	-1725	-575	-765	-1050	-605	-1265	-1045	-1090
22	-1070	-1150	-2790	-135	-720	-1105	-445	-1350	-1045	-1150
23	-1050	-1220	-4230	435	-565	-1200	-240	-1410	-960	-1350
24	-870	-1425	-5910	1115	-290	-1420	50	-1500	-760	-2010
25	-630	-1425	-5670	1065	-45	-1370	-70	-1125	-570	-2080
26	-605	-1300	-5550	995	-60	-1250	-75	-1045	-565	-1950
27	-590	-1140	-5350	930	-85	-1090	-90	-920	-540	-1755
28	-495	-790	-4900	825	-100	-775	-115	-670	-470	-1400
29	-575	-1100	-5280	935	-80	-1075	-75	-910	-530	-1735
30	-580	-1285	-5500	1005	-55	-1235	-60	-1030	-545	-1930
31	-605	-1430	-5655	1055	-20	-1360	-50	-1095	-545	-2060
32	-535	-1415	-5570	1030	55	-1335	-90	-980	-490	-2025
33	-350	-1420	-5430	970	205	-1295	-135	-840	-360	-1985
34	-355	-880	-4880	830	65	-820	-160	-510	-380	-1430
35	-215	-315	-4190	735	30	-325	-100	-125	-260	-830

Table 2: STRAIN GAGE READINGS-SPECIMEN T-7 (Cont'd) $(10^{-6} \text{ in. per in.})$ 

Ld No.	Gage Nos.									
	41	42	43	44	47	48	57	58	59	60
1	0	0	0	0	0	0	0	0	0	0
2	-80	-90	-80	-100	-120	-100	-130	-130	-130	-150
3	-90	-90	-90	-100	-130	-120	-140	-130	-130	-175
4	-190	-190	-170	-190	-230	-210	-245	-235	-245	-280
5	-295	-300	-270	-300	-325	-310	-370	-345	-365	-390
6	-390	-410	-375	-410	-415	-420	-480	-445	-475	-460
7	-545	-620	-545	-640	-590	-640	-730	-640	-710	-685
8	-610	-735	-625	-780	-710	-745	-870	-730	-825	-775
9	-665	-790	-655	-840	-850	-795	-955	-750	-925	-800
10	-690	-815	-675	-870	-895	-815	-965	-760	-940	-815
11	-705	-835	-685	-895	-970	-830	-1010	-760	-970	-840
12	-725	-845	-685	-915	-940	-845	-1040	-770	-1010	-850
13	-735	-860	-685	-930	-970	-855	-1050	-765	-1025	-840
14	-750	-875	-695	-955	-985	-870	-1085	-770	-1050	-855
15	-765	-890	-690	-975	-1005	-880	-1115	-770	-1080	-865
16	-780	-900	-685	-995	-1025	-895	-1140	-765	-1095	-855
17	-805	-925	-680	-1035	-1040	-915	-1190	-745	-1150	-845
18	-810	-940	-670	-1070	-1055	-930	-1235	-740	-1200	-850
19	-810	-960	-630	-1135	-1090	-960	-1280	-710	-1235	-830
20	-800	-990	-555	-1220	-1140	-1030	-1365	-655	-1315	-800
21	-790	-1010	-475	-1310	-1180	-1080	-1520	-560	-1490	-715
22	-770	-1040	-340	-1390	-1200	-1120	-2750	-110	-2760	-355
23	-650	-1190	-85	-1550	-1190	-1230	-4075	370	-4000	-15
24	-455	-1310	245	-1810	-1060	-1310	-5920	955	-8260	175
25	-320	-1215	240	-1675	-890	-1190	-5715	910	-6070	145
26	-	-	-	-	-	-	-5550	870	-5910	155
27	-	-	-	-	-	-	-5345	830	-5675	165
28	-	-	-	-	-	-	-4885	770	-5210	235
29	-	-	-	-	-	-	-5300	830	-5630	185
30	-	-	-	-	-	-	-5530	880	-5865	175
31	-320	-1210	240	-1665	-885	-1175	-5670	920	-6030	165
32	-270	-1200	240	-1635	-835	-1150	-5600	890	-5970	160
33	-1165	-1140	230	-1565	-720	-1105	-5470	840	-5850	105
34	-155	-730	80	-1010	-535	-710	-4890	760	-5225	205
35	20	-315	150	-490	-260	-330	-4170	720	-4480	335

Table 2: STRAIN GAGE READINGS-SPECIMEN T-7 (Cont'd)(10<sup>-6</sup> in. per in.)

Ld No.	Gage Nos.			
	61	62	111	112
1	-	0	0	0
2	-	-135	-110	-120
3	-	-150	-120	-120
4	-	-260	-215	-220
5	-	-375	-315	-340
6	-	-460	-420	-455
7	-	-680	-640	-680
8	-	-770	-730	-805
9	-	-825	-800	-875
10	-	-830	-815	-895
11	-	-845	-825	-905
12	-	-850	-835	-930
13	-	-855	-845	-945
14	-	-870	-855	-960
15	-	-870	-860	-980
16	-	-870	-860	-990
17	-	-870	-870	-1010
18	-	-880	-875	-1025
19	-	-860	-870	-1040
20	-	-835	-860	-1060
21	-	-815	-850	-1060
22	-	-625	-780	-1010
23	-	-585	-710	-805
24	-	-650	-800	-190
25	-	-650	-1020	335
26	-	-600	-	-
27	-	-490	-	-
28	-	-290	-	-
29	-	-465	-	-
30	-	-565	-	-
31	-	-635	-1035	345
32	-	-635	-1120	500
33	-	-660	-1255	760
34	-	-350	-1155	720
35	-	-20	-940	660

Table 3: STRAIN GAGE READINGS-SPECIMEN T-8 $(10^{-6} \text{ in. per in.})$ 

Ld No.	Axial Load (kips)	Gage Nos.							
		1	2	3	4	7	8	9	10
1	0	0	0	0	0	0	0	0	0
2	20	-20	-75	-75	-60	-60	-70	-50	-60
3	20	-30	-80	-75	-55	-70	-65	-50	-55
4	50	-95	-160	-150	-135	-95	-140	-110	-130
5	100	-200	-265	-245	-260	-180	-250	-200	-245
6	150	-260	-365	-335	-365	-280	-365	-300	-365
7	200	-360	-465	-440	-480	-365	-470	-400	-495
8	250	-420	-565	-510	-585	-430	-570	-500	-625
9	300	-520	-665	-615	-700	-510	-690	-590	-805
10	350	-620	-785	-705	-855	-590	-810	-750	-935
11	375	-655	-825	-750	-925	-620	-870	-790	-995
12	400	-710	-960	-845	-1005	-670	-940	-850	-1050
13	425	-740	-1015	-845	-1155	-680	-1005	-905	-1090
14	450	-765	-1075	-840	-1265	-720	-1075	-990	-1115
15	460	-790	-1105	-815	-1315	-745	-1105	-1030	-1115
16	470	-810	-1135	-800	-1355	-740	-1130	-1075	-1105
17	480	-810	-1150	-705	-1425	-770	-1155	-1130	-1085
18	485	-790	-1195	-630	-1500	-780	-1290	-920	-1085
19	431	-730	-1095	-555	-1305	-700	-1090	-640	-1110
20	450	-740	-1145	-535	-1390	-730	-1160	-760	-1110
21	485	-775	-1260	-465	-1560	-785	-1315	-870	-1095
22	490	-785	-1285	-395	-1700	-780	-1320	-870	-1065
23	360	-320	-1230	185	-1965	-455	-900	-1220	-195
24	340	-260	-1210	165	-1875	-390	-890	-1210	-155
25	323	-215	-1190	145	-1805	-330	-880	-1180	-140
26	200	-230	-685	70	-1425	-265	-475	-790	-105
27	100	-215	-390	55	-1130	-200	-200	-450	5
28	200	-240	-685	70	-1400	-280	-470	-780	-100
29	325	-210	-1185	150	-1785	-330	-870	-1180	-135
30	308	-155	-1175	105	-1715	-270	-865	-1145	-115
31	294	-90	-1145	85	-1635	-210	-850	-1110	-105
32	200	-144	-715	35	-1345	-205	-520	-805	-75
33	20	-150	-165	15	-805	-135	-20	-295	-85

Table 3: STRAIN GAGE READINGS-SPECIMEN T-8 (Cont'd)  
 (10<sup>-6</sup> in. per in.)

Ld No.	Gage Nos.									
	13	14	15	16	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0
2	-60	-50	-60	-30	-10	-20	-45	-65	-60	-65
3	-50	-40	-60	-40	-30	-30	-55	-65	-60	-75
4	-105	-105	-110	-90	-75	-60	-130	-160	-145	-160
5	-200	-260	-210	-190	-175	-155	-225	-280	-260	-265
6	-270	-370	-310	-290	-270	-260	-310	-390	-375	-380
7	-370	-490	-425	-390	-365	-360	-385	-490	-490	-485
8	-455	-590	-535	-495	-520	-460	-460	-585	-600	-580
9	-540	-710	-650	-590	-610	-555	-550	-700	-730	-685
10	-610	-820	-750	-685	-690	-625	-640	-820	-875	-785
11	-635	-870	-805	-735	-730	-680	-690	-870	-945	-825
12	-680	-930	-855	-780	-780	-725	-740	-920	-1035	-855
13	-695	-985	-910	-840	-830	-770	-800	-970	-1130	-865
14	-735	-1050	-960	-910	-880	-825	-870	-1020	-1265	-850
15	-740	-1070	-980	-940	-900	-850	-900	-1040	-1330	-830
16	-745	-1100	-990	-970	-925	-865	-940	-1060	-1410	-800
17	-745	-1120	-995	-1000	-940	-890	-980	-1080	-1505	-755
18	-730	-1195	-990	-1085	-940	-940	-1010	-1110	-685	
19	-670	-1075	-920	-930	-860	-820	-890	-1045	-1005	-820
20	-690	-1130	-965	-980	-890	-870	-950	-1110	-1140	-770
21	-730	-1225	-1000	-1100	-950	-950	-1040	-1200	-1330	-675
22	-725	-1240	-975	-1150	-950	-980	-1050	-1230	-1350	-645
23	-320	-990	-205	-1540	-395	-1045	-120	-6200	-935	-15
24	-280	-950	-150	-1520	-330	-1020	80	-7080	-920	80
25	-240	-930	-110	-1525	-260	-970	250	-7740	-910	135
26	-250	-555	-150	-1010	-210	-635	225	-7145	-440	-200
27	-180	-310	-100	-685	-110	-390	235	-6695	-90	-420
28	-250	-570	-155	-1000	-210	-640	210	-7090	-430	-205
29	-240	-920	-95	-1510	-260	-970	265	-7785	-885	135
30	-200	-890	-50	-1500	-190	-950	445	-8490	-865	195
31	-150	-1865	-15	-1500	-125	-905	645	-9350	-850	240
32	-195	-585	-60	-1100	-120	-640	545	-8820	-530	-30
33	-125	-65	25	-505	10	-150	470	-17820	90	-445

Table 3: STRAIN GAGE READINGS-SPECIMEN T-8 (Cont'd)  
 $(10^{-6} \text{ in. per in.})$

Ld No.	Gage Nos.									
	25	26	27	28	29	30	31	32	33	34
1	0	0	0	0	0	0	0	0	0	0
2	-25	20	-45	-40	-35	-35	10	-15	-5	-30
3	25	10	-45	-40	-35	-40	10	-15	-10	-30
4	55	25	-100	-130	-95	-95	20	-15	-50	-85
5	85	45	-180	-220	-195	-210	50	-5	-140	-190
6	120	70	-270	-340	-295	-320	95	0	-230	-305
7	160	90	-350	-455	-400	-440	140	10	-320	-420
8	195	110	-425	-570	-505	-555	190	5	-415	-540
9	215	145	-510	-690	-605	-670	250	5	-500	-650
10	235	185	-595	-805	-705	-810	325	-15	-575	-765
11	235	210	-625	-860	-740	-875	370	-30	-615	-830
12	220	250	-655	-915	-775	-950	430	-60	-650	-890
13	195	310	-675	-980	-795	-1035	500	-105	-680	-950
14	135	395	-685	-1040	-795	-1150	610	-175	-710	-1030
15	95	450	-680	-1065	-780	-1200	670	-220	-715	-1050
16	45	510	-675	-1090	-755	-1260	740	-265	-730	-1090
17	-15	590	-655	-1120	-725	-1330	810	-335	-740	-1115
18	-185	770	-605	-1200	-565	-1420	930	-490	-730	-1165
19	-25	550	-595	-1060	-615	-1145	670	-305	-650	-990
20	-90	640	-600	-1225	-595	-1260	785	-385	-685	-1070
21	-185	775	-600	-1220	-525	-1415	940	-500	-730	-1170
22	-240	855	-565	-1300	-70	-3340	1150	-600	-720	-1220
23	-675	1020	555	-6990	1980	-10910	1555	-665	340	-6385
24	-745	1030	745	-8180	2235	-11450	1540	-655	590	-7840
25	-795	1050	905	-9215	2495	-12020	1535	-635	790	-9100
26	-815	1045	705	-8465	2075	-11295	1390	-755	645	-8340
27	-850	1025	620	-7870	1745	-10675	1265	-835	595	-7720
28	-815	1040	695	-8390	2045	-11240	1380	-755	630	-8255
29	-790	1050	915	-9290	2505	12060	1530	-630	800	-9180
30	-845	1070	1095	-10500	2855	12840	1520	-615	1000	-10540
31	-895	1100	1275	-11980	3365	13965	1530	-575	1230	-12040
32	-915	1105	1025	-11310	3010	13400	1430	-680	1020	-11370
33	-975	1100	730	-9995	2335	12200	1235	-860	785	-9960

Table 3: STRAIN GAGE READINGS-SPECIMEN T-8 (Cont'd)

 $(10^{-6} \text{ in. per in.})$ 

Ld No.	Gage Nos.									
	35	36	37	38	39	40	41	42	43	44
1	0	0	0	0	0	0	0	0	0	0
2	-20	-20	-	9	10	-20	-50	-30	-30	-20
3	-25	-20	-	9	-10	-20	-55	-45	-30	-10
4	-70	-80	-	19	-60	-160	-140	-110	-80	-60
5	-165	-190	-	39	-155	-160	-240	-205	-160	-210
6	-265	-310	-	54	-255	-265	-360	-305	-275	-290
7	-365	-430	-	79	-360	-370	-460	-410	-380	-365
8	-470	-560	-	94	-460	-480	-625	-495	-500	-440
9	-560	-675	-	109	-550	-575	-740	-620	-610	-535
10	-650	-805	-	124	-630	-670	-875	-730	-730	-610
11	-690	-855	-	134	-670	-710	-940	-785	-800	-650
12	-740	-920	-	139	-710	-760	-1010	-840	-880	-670
13	-785	-980	-	154	-755	-810	-1065	-905	-965	-710
14	-850	-1045	-	169	-790	-860	-1135	-960	-1055	-720
15	-865	-1070	-	184	-815	-880	-1160	-1000	-1080	-710
16	-900	-1090	-	209	-830	-900	-1190	-1035	-1125	-710
17	-930	-1110	-	224	-855	-925	-1195	-1065	-1180	-700
18	-1000	-1115	-	269	-840	-960	-1230	-1070	-1220	-650
19	-845	-980	-	189	-745	-820	-1095	-930	-1040	-670
20	-915	-1045	-	219	-775	-880	-1160	-990	-1110	-690
21	-1010	-1115	-	264	-830	-960	-1240	-1080	-1230	-670
22	-1070	-1110	-	299	-830	-980	-1250	-1070	-1240	-660
23	-940	-365	-	114	-125	-1240	-785	-760	-710	-640
24	-1000	-140	-	39	15	-1280	-695	-740	-620	-650
25	-1020	0	-	-21	135	-1315	-620	-730	-550	-720
26	-730	-200	-	-56	65	-820	-450	-415	-350	-480
27	-480	-310	-	-91	75	-430	-300	-180	-200	-320
28	-730	-200	-	-61	60	-810	-435	-420	-360	-490
29	-1035	10	-	-26	145	-1320	-610	-730	-550	-710
30	-1055	140	-	-76	250	-1365	-470	-715	-480	-760
31	-1090	260	-	-131	365	-1415	-385	-705	-405	-815
32	-875	85	-	-171	230	-980	-345	-455	-270	-610
33	-435	-190	-	-246	150	-170	-160	-40	-10	-250

Table 3: STRAIN GAGE READINGS-SPECIMEN T-8(Cont'd)  
 $(10^{-6} \text{ in. per in.})$

Ld. No.	Gage Nos.			
	47	48	59	60
1	0	0	0	0
2	-25	-10	-25	-60
3	-30	-15	-30	-50
4	-60	-45	-90	-95
5	-170	-140	-180	-205
6	-275	-235	-285	-315
7	-400	-335	-375	-425
8	-580	-430	-495	-535
9	-715	-520	-605	-655
10	-840	-625	-760	-775
11	-895	-675	-795	-845
12	-960	-720	-855	-915
13	-1020	-790	-885	-990
14	-1075	-840	-920	-1085
15	-1100	-860	-920	-1135
16	-1120	-890	-920	-1245
17	-1140	-915	-910	-1280
18	-1145	-930	-880	-1355
19	-1020	-825	-845	-1090
20	-1065	-880	-860	-1235
21	-1150	-950	-880	-1380
22	-1150	-980	-770	-1735
23	-530	-820	-970	-5065
24	-380	-810	-910	-5240
25	-325	-800	-840	-5455
26	-195	-490	-940	-4805
27	-55	-260	-980	-4335
28	-190	-485	-950	-4775
29	-315	-790	-845	-5455
30	-250	-770	-765	-5815
31	-170	-730	-590	-6455
32	-125	-495	-700	-6015
33	65	-70	-965	-5020

Table 4: STRAIN GAGE READINGS-SPECIMEN T-9 $(10^{-6} \text{ in. per in.})$ 

Ld. No.	Axial Load (kips)	Gage Nos.							
		1	2	3	4	7	8	9	10
1	0	0	0	0	0	0	0	0	0
2	20	90	-65	-75	-55	-30	-50	10	-60
3	20	-30	-50	-75	-60	-50	-60	0	-60
4	50	-120	-140	-150	-135	-110	-130	30	-120
5	100	-210	-240	-240	-240	-185	-225	55	-240
6	150	-285	-360	-345	-350	-270	-340	80	-365
7	200	-370	-440	-445	-520	-380	-455	120	-490
8	250	-435	-540	-525	-620	-460	-550	150	-610
9	300	-530	-635	-615	-730	-560	-670	220	-770
10	350	-610	-720	-705	-835	-635	-780	270	-890
11	375	-630	-770	-755	-900	-690	-905	315	-980
12	400	-670	-800	-830	-940	-715	-965	390	-1070
13	410	-695	-800	-755	-945	-730	-960	420	-1110
14	420	-685	-800	-815	-920	-710	-1020	380	-1140
15	380	-560	-720	-750	-840	-590	-960	320	-1060
16	370	-550	-710	-730	-805	-575	-900	340	-980
17	350	-520	-660	-665	-770	-550	-880	320	-925
18	300	-470	-540	-565	-655	-485	-700	285	-740
19	250	-410	-440	-465	-545	-390	-570	250	-590
20	200	-350	-320	-385	-385	-320	-460	200	-450
21	150	-275	-250	-275	-290	-230	-355	160	-310
22	100	-195	-160	-195	-190	-150	-240	120	-165
23	50	-140	-60	-105	-90	-70	-140	70	-50
24	20	-100	-25	-50	-30	-20	-85	50	25
25	0	-135	0	-25	0	0	-30	45	70

Table 4: STRAIN GAGE READINGS-SPECIMEN T-9 (Cont'd) $(10^{-6} \text{ in. per in.})$ 

Ld No.	Gage Nos.									
	13	14	15	16	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0
2	-20	-50	-50	-35	0	-40	-25	-60	-50	-55
3	-50	-60	-50	-35	-60	-30	-50	-45	-50	-35
4	-110	-110	-120	-95	-120	-105	-120	-135	-120	-115
5	-180	-220	-200	-210	-210	-195	-220	-240	-230	-220
6	-290	-330	-320	-305	-310	-290	-320	-345	-345	-325
7	-360	-430	-395	-405	-410	-440	-415	-450	-450	-435
8	-450	-540	-300	-515	-500	-550	-500	-545	-560	-530
9	-530	-665	-590	-615	-580	-630	-605	-650	-670	-635
10	-610	-770	-700	-715	-650	-730	-720	-745	-785	-725
11	-655	-830	-755	-765	-750	-785	-790	-795	-840	-745
12	-680	-900	-820	-855	-765	-860	-865	-850	-870	-725
13	-680	-945	-810	-885	-800	-890	-900	-860	-825	-720
14	-680	-1010	-990	-855	-780	-950	-905	-895	-680	-800
15	-540	-915	-1000	-665	-690	-955	-755	-900	-425	-815
16	-520	-890	-920	-655	-620	-910	-740	-855	-400	-775
17	-490	-840	-880	-655	-595	-870	-705	-805	-380	-740
18	-430	-730	750	-595	-525	-770	-640	-670	-315	-635
19	-360	-615	-620	-515	-450	-660	-560	-545	-245	-530
20	-290	-510	-510	-425	-375	-560	-475	-430	-170	-430
21	-200	-400	-405	-335	-300	-450	-395	-320	-100	-325
22	-130	-280	-280	-240	-215	-335	-310	-215	-20	-225
23	-50	-165	-170	-145	-60	-160	-230	-110	55	-115
24	0	-95	-105	-60	-40	-80	-195	-60	100	-65
25	60	-45	-40	-5	-10	-50	-175	-40	125	-35

Table 4: STRAIN GAGE READINGS-SPECIMEN T-9(Cont'd)  
 $(10^{-6}$  in. per in.)

Ld No.	Gage Nos.									
	25	26	27	28	29	30	31	32	33	34
1	0	0	0	0	0	0	0	0	0	0
2	25	-40	-30	-50	-50	-35	5	10	-5	-35
3	220	-40	-55	-50	-45	-40	0	10	-30	-35
4	35	-100	-115	-120	-120	-85	10	20	-75	-95
5	55	-195	-215	-215	-255	-170	25	45	-165	-205
6	80	-295	-315	-330	-395	-250	40	75	-265	-315
7	95	-395	-415	-440	-545	-325	55	110	-355	-430
8	110	-485	-515	-545	-695	-380	70	150	-450	-545
9	120	-565	-615	-660	-875	-435	85	195	-535	-655
10	115	-635	-740	-780	-1075	-470	90	245	-630	-775
11	70	-665	-785	-845	-1185	-480	100	265	-665	-840
12	-40	-700	-840	-900	-1315	-490	145	255	-700	-925
13	-90	-695	-840	-955	-1385	-430	140	235	-695	-970
14	-115	-555	-860	-1050	-1290	-300	-5	330	-675	-1140
15	-210	-465	-670	-1090	-1235	-15	-45	230	-470	-1230
16	-205	-475	-635	-1040	-1165	-40	-30	210	-460	-1185
17	-190	-480	-605	-980	-1090	-70	-5	190	-450	-1115
18	-175	-465	-530	-845	-895	-130	40	140	-420	-960
19	-155	-425	-455	-715	-705	-165	70	100	-365	-820
20	-135	-360	-370	-590	-525	-180	80	70	-310	-685
21	-120	-290	-290	-475	-350	-170	80	45	-235	-555
22	-110	-200	-200	-355	-185	-145	70	20	-160	-425
23	-95	-115	-115	-240	-20	-110	60	0	-80	-295
24	-95	-60	-65	-180	70	-75	50	10	-25	-215
25	-95	-20	-20	-140	130	-50	40	-20	20	-155

Table 4: STRAIN GAGE READINGS-SPECIMEN T-9 (Cont'd)

Ld No.	Gage Nos.										
	35	36	37	38	39	40	41	42	43	44	
1	0	0	0	0	0	0	0	0	0	0	
2	-30	-35	-180	5	5	-25	-50	-30	-35	-30	
3	-35	-35	-270	0	-35	-30	-65	-50	-35	-40	
4	-90	-90	-225	10	-85	-85	-125	-95	-85	-80	
5	-200	-190	-240	20	-195	-185	-240	-210	-185	-180	
6	-310	-285	55	30	-290	-285	-360	-300	-285	-260	
7	-415	-395	420	40	-395	-390	-480	-400	-395	-360	
8	-530	-495	10	50	-495	-495	-560	-500	-495	-440	
9	-635	-600	105	60	-585	-595	-640	-610	-605	-540	
10	-745	-710	105	65	-685	-700	-820	-735	-715	-620	
11	-805	-765	360	70	-735	-755	-860	-830	-855	-670	
12	-890	-835	800	95	-765	-825	-920	-1000	-915	-715	
13	-930	-885	-	110	-770	-865	-930	-1240	-845	-710	
14	-870	-1105	-	40	-755	-960	-890	-1630	-585	-710	
15	50	-1960	-	-	-220	-580	-1135	-560	-2835	-60	-770
16	40	-1925	-	-	-195	-565	-1095	-530	-2780	-55	-735
17	15	-1835	-	-	-165	-545	-1030	-520	-2715	-45	-725
18	-25	-1630	-	-	-95	-480	-885	-480	-2540	-40	-680
19	-30	-1445	-	-	-100	-415	-745	-405	-2350	-10	-615
20	-5	-1265	-	-	-20	-350	-615	-350	-2185	20	-570
21	40	-1105	-	-	0	-270	-495	-275	-2030	80	-490
22	100	-945	-	-	10	-190	-370	-200	-1880	140	-425
23	170	-790	-	-	10	-100	-245	-115	-1710	205	-350
24	225	-685	-	-	10	-35	-160	-60	-1620	235	-300
25	270	-615	-	-	5	5	-95	-10	-1555	260	-260

Table 4: STRAIN GAGE READINGS-SPECIMEN T-9 (Cont'd) $(10^{-6} \text{ in. per in.})$ 

Ld No.	Gage Nos.			
	47	48	59	60
1	0	0	0	0
2	0	-30	-50	-40
3	-40	-30	-50	-45
4	-80	-80	-120	-95
5	-240	-170	-230	-185
6	-350	-280	-360	-275
7	-480	-400	-470	-355
8	-550	-470	-620	-445
9	-670	-580	-760	-500
10	-760	-680	-920	-565
11	-800	-740	-1010	-595
12	-840	-850	-1120	-635
13	-810	-910	-1170	-605
14	-835	-1060	-1020	-605
15	-615	-2490	-1035	-405
16	-580	-2450	-995	-405
17	-570	-2410	-940	-405
18	-485	-2215	-750	-385
19	-430	-2060	-605	-345
20	-325	-1905	-440	-295
21	-235	-1750	-290	-255
22	-75	-1590	-150	-185
23	15	-1430	10	-125
24	80	-1335	45	-75
25	115	-1210	130	-40

Table 5: STRAIN GAGE READINGS-SPECIMEN T-10S $(10^{-6} \text{ in. per in.})$ 

Ld No.	Axial Load (kips)	Gage Nos.							
		1	2	3	4	5	6	7	8
1	0	0	0	0	0	0	0	0	0
2	50	-110	-130	-120	-115	-125	-100	-25	-65
3	50	-115	-115	-100	-110	-130	-90	-30	-60
4	100	-250	-245	-230	-235	-235	-185	-85	-130
5	150	-360	-335	-340	-325	-370	-280	-155	-235
6	200	-475	-40	-470	-435	-480	-380	-225	-340
7	250	-570	-545	-670	-530	-580	-480	-300	-450
8	300	-635	-650	-705	-620	-680	-580	-365	-585
9	350	-715	-755	-850	-710	-785	-690	-425	-730
10	375	-740	-835	-960	-735	-835	-750	-435	-810
11	390	-770	-880	-1030	-730	-870	-780	-445	-865
12	400	-780	-920	-1070	-730	-900	-805	-450	-910
13	410	-810	-950	-1135	-720	-920	-835	-455	-950
14	350	-670	-845	-955	-640	-780	-705	-410	-770
15	390	-755	-930	-1080	-680	-880	-795	-440	-895
16	410	-790	-970	-1150	-690	-920	-835	-445	-960
17	420	-810	-995	-1190	-690	-945	-860	-445	-1000
18	426	-830	-1045	-1210	-640	-975	-900	-420	-1075
19	431	-835	-1090	-1200	-605	-995	-925	-395	-1145
20	437	-830	-1145	-1185	-570	-1005	-945	-360	-1215
21	442	-835	-1200	-1170	-545	-1030	-985	-330	-1295
22	446	-840	-1255	-1160	-525	-1050	-1020	-290	-1380
23	452	-845	-1310	-1150	-500	-1060	-1050	-245	-1490
24	455	-850	-1380	-1140	-480	-1080	-1095	-175	-1660
25	461	-860	-1440	-1145	-455	-1095	-1130	-120	-1835
26	465	-860	-1495	-1135	-425	-1100	-1180	-55	-1970
27	467	-870	-1570	-1125	-390	-1100	-1240	100	-
28	465	-860	-1750	-1110	-305	-1060	-1475	635	-
29	472	-870	-1865	-1110	-255	-1055	-1660	1055	-
30	465	-840	-2130	-1100	-155	-990	-2060	1775	-
31	443	-620	-3610	-1060	140	-770	-4190	4750	-
32	423	-455	-4310	-1070	300	-630	-5930	6430	-
33	373	-380	-4140	-940	235	-555	-5730	6345	-
34	300	-280	-3875	-710	150	-440	-5410	6200	-
35	200	-140	-3555	-440	40	-280	-4955	5995	-
36	300	-280	-3870	-715	150	-440	-5375	6170	-
37	423	-450	-4325	-1070	290	-620	-5955	6465	-
38	402	-260	-5170	-1110	440	-475	-8015	8200	-
39	399	-	-	-	-	-	-	-	-
40	43	-	-	-	-	-	-	-	-
41	0	295	-3940	-40	0	150	-6760	8485	-

Table 5: STRAIN GAGE READINGS-SPECIMEN T-10S (Cont'd) $(10^{-6} \text{ in. per in.})$ 

Ld No.	Gage Nos.									
	9	10	11	12	13	14	15	16	17	18
1	0	0	0	0	0	0	0	0	0	0
2	-45	-55	-100	-105	-110	-195	-60	-90	-45	-95
3	-55	-55	-100	-105	-115	-195	-65	-90	-35	-90
4	-115	-125	-205	-215	-230	-330	-135	-175	-100	-170
5	-195	-215	-305	-325	-330	-435	-215	-265	-170	-255
6	-285	-315	-405	-435	-425	-545	-310	-380	-250	-365
7	-390	-410	-510	-545	-525	-650	-385	-480	-325	-475
8	-500	-505	-610	-635	-645	-735	-480	-600	-400	-605
9	-610	-615	-720	-735	-770	-830	-570	-735	-465	-745
10	-665	-670	-785	-785	-840	-875	-600	-800	-495	-825
11	-705	-705	-825	-805	-885	-905	-625	-850	-505	-880
12	-720	-725	-855	-820	-910	-925	-640	-890	-525	-925
13	-745	-755	-890	-840	-945	-940	-655	-925	-510	-965
14	-635	-625	-745	-725	-830	-830	-570	-770	-460	-785
15	-705	-715	-845	-805	-915	-905	-635	-880	-500	-910
16	-740	-755	-890	-835	-955	-945	-650	-935	-510	-970
17	-755	-780	-925	-845	-980	-965	-670	-980	-515	-1020
18	-765	-805	-965	-850	-1010	-985	-680	-1050	-490	-1090
19	-775	-825	-1000	-855	-1030	-990	-670	-1130	-465	-1170
20	-780	-845	-1025	-850	-1050	-1005	-660	-1215	-435	-1260
21	-780	-860	-1065	-845	-1070	-1015	-650	-1310	-405	-1360
22	-785	-880	-1105	-835	-1105	-1035	-650	-1390	-375	-1450
23	-790	-905	-1150	-825	-1125	-1045	-655	-1490	-345	-1560
24	-795	-925	-1200	-805	-1165	-1065	-645	-1590	-310	-1715
25	-800	-960	-1260	-785	-1195	-1095	-645	-1685	-270	-1835
26	-795	-990	-1360	-740	-1225	-1095	-660	-1845	-235	-1925
27	-795	-1045	-	-410	-1380	-1140	-790	-2170	-185	-1980
28	-785	-1215	-	85	-1650	-1265	-940	-2745	-30	-2660
29	-765	-1405	-	375	-1740	-1410	-1240	-3685	105	-3370
30	-685	-1795	-	865	-1765	-1700	-1480	-4980	310	-4840
31	-400	-3985	-	2620	-1635	-3095	-2025	-9195	1835	-10410
32	-220	-5985	-	3780	-1515	-4270	-2135	-11550	2950	-13325
33	-155	-5755	-	3670	-1405	-4100	-2100	-11310	2885	-13095
34	-70	-5445	-	3485	-1255	-3800	-2045	-10930	2755	-12725
35	45	-5020	-	3230	-1040	-3435	-1975	-10410	2615	-12215
36	-75	-5405	-	3460	-1250	-3780	-2040	-10880	2735	-12685
37	-205	-6015	-	3810	-1495	-4295	-2130	-11595	2975	-13390
38	-30	-8525	-	5155	-1370	-6705	-2155	-	4205	-
39	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-
41	355	-7565	-	4510	-500	-5740	-1940	-	4015	-

Table 5: STRAIN GAGE READINGS-SPECIMEN T-10S (Cont'd)

(10<sup>-6</sup> in. per in.)

Ld No.	Gage Nos.									
	19	20	21	22	23	24	25	26	27	28
1	0	0	0	0	0	0	0	0	0	0
2	-30	-50	-40	-45	-5	-55	-40	-30	-40	-15
3	-30	-50	-35	-45	-5	-45	-30	-40	-35	-20
4	-80	-120	-95	-110	0	-90	-35	-80	-50	-30
5	-145	-215	-175	-210	25	-105	-20	-85	-55	-20
6	-215	-320	-255	-320	65	-130	0	-95	-50	-20
7	-290	-430	-345	-420	105	-150	20	-110	-40	-35
8	-360	-555	-430	-535	155	-175	60	-120	-40	20
9	-420	-695	-515	-660	220	-215	110	-145	-25	35
10	-450	-775	-555	-725	265	-235	150	-175	-15	40
11	-465	-825	-575	-760	295	-255	170	-180	-15	50
12	-475	-865	-595	-800	315	-270	190	-185	0	45
13	-475	-900	-605	-835	355	-285	215	-200	0	45
14	-420	-730	-515	-675	255	-210	140	5	-5	35
15	-450	-850	-580	-775	325	-260	195	-175	5	50
16	-465	-910	-600	-835	365	-295	220	-195	10	60
17	-460	-960	-615	-875	400	-310	250	-205	20	65
18	-450	-1010	-620	-910	445	-335	285	-220	25	65
19	-435	-1070	-620	-950	485	-355	300	-235	35	75
20	-415	-1130	-625	-990	525	-380	330	-250	50	75
21	-390	-1190	-620	-1020	565	-400	360	-265	60	80
22	-360	-1255	-615	-1075	625	-430	390	-285	75	125
23	-320	-1375	-610	-1145	680	-455	440	-310	100	80
24	-260	-1540	-580	-1260	740	-485	500	-330	125	85
25	-205	-1700	-560	-1370	805	-520	555	-360	155	85
26	-150	-1830	-550	-1500	890	-555	640	-400	200	75
27	20	-2225	-485	-1765	1020	-615	790	-475	380	0
28	400	-3940	-375	-2615	1230	-680	1020	-585	605	-90
29	765	-5715	-415	-4270	1430	-720	1220	-660	780	-155
30	1280	-8480	-570	-6410	1715	-735	1510	-745	1210	-215
31	3305	-	-905	-11510	2340	-500	2790	-635	3370	-490
32	4660	-	-945	-	2615	-265	3395	-440	5165	-570
33	4590	-	-930	-	2460	-320	3235	-500	4985	-595
34	4470	-	-895	-	2235	-395	3000	-555	4725	-650
35	4300	-	-845	-	1925	-495	2680	-640	4375	-725
36	4445	-	-890	-	2230	-400	2990	-560	4700	-650
37	4695	-	-950	-	2615	-250	3405	-430	5195	-560
38	6150	-	-895	-	2870	5	3905	-170	7305	-545
39	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-
41	5960	-	-755	-	1765	-375	2840	-480	6600	-825

Table 5: STRAIN GAGE READINGS-SPECIMEN T-10S (Cont'd)  
 $(10^{-6} \text{ in. per in.})$

Ld No.	Gage Nos.			
	29	30	31	32
1	0	0	0	0
2	-55	-10	-40	-5
3	-50	-5	-40	0
4	-75	0	-70	10
5	-90	-140	-85	35
6	-110	70	-100	70
7	-120	115	-120	120
8	-150	160	-145	160
9	-175	220	-170	220
10	-190	260	-180	235
11	-195	270	-190	265
12	-200	290	-195	275
13	-210	310	-200	290
14	-155	235	-155	220
15	-195	285	-185	275
16	-210	320	-200	300
17	-220	345	-210	320
18	-230	375	-215	330
19	-235	405	-220	360
20	-245	430	-230	370
21	-250	450	-235	390
22	-260	470	-235	410
23	-265	505	-240	425
24	-265	540	-240	435
25	-260	570	-240	460
26	-250	595	-225	460
27	-100	525	-25	300
28	90	525	235	150
29	270	640	450	130
30	470	940	770	195
31	1995	2890	1970	995
32	3520	4085	3110	2050
33	3400	3970	3025	1920
34	3185	3810	2890	1720
35	2920	3550	2695	1480
36	3155	3765	2870	720
37	3550	4105	3140	2065
38	5400	5460	4790	3725
39	-	-	-	-
40	-	-	-	-
41	4810	4935	4500	3245

### 3. D I A L   G A G E   R E A D I N G S

The location of points at which dial gage readings were taken is shown in Figs. 7, 8, and 9 on pp. 36, 37, and 38, respectively.

The dial gages are divided into four groups depending on what they measure:

- 1) Gages Nos. 1 to 25 give lateral deflections of the specimen, positive if corresponding to convex displacement of the front face.
- 2) Gages E and C (E = end, C = corner) give lateral deflections of the end blocks, positive if in the positive direction of gages 1 to 25.
- 3) Gages L-1 and L-2 give longitudinal shortening of the specimen, positive if indicating shortening.
- 4) Gages S give displacement which should be divided by nine inches to obtain rotation (slope) of the end block, positive if rotation corresponds to convex deformation of the front face of the specimen.

All readings are given in thousands of an inch.

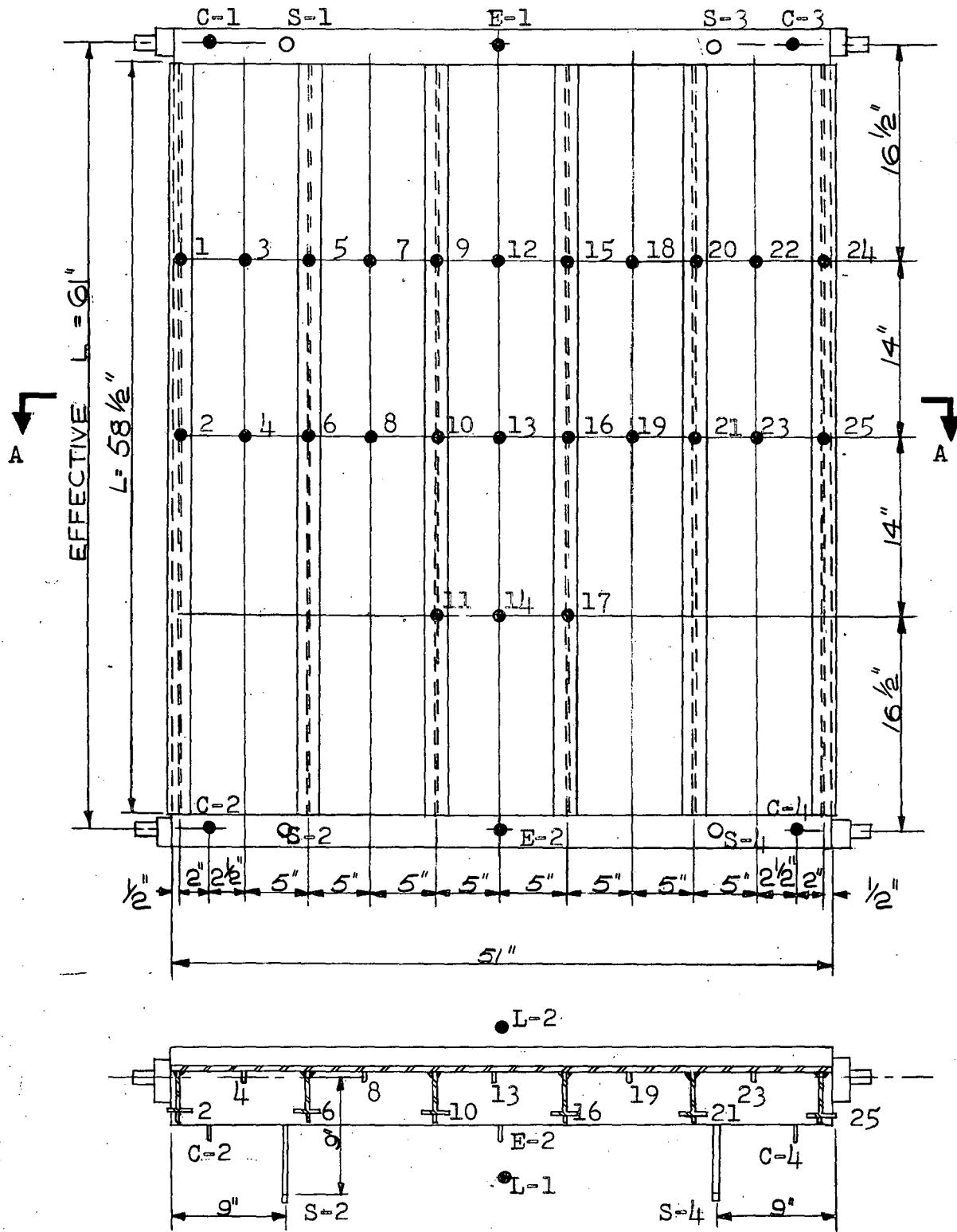


Fig. 7 LOCATION OF DIAL GAGES (T-6)

Scale  $1"=1'-0"$

248.5A.

C-1 S-1

E-1

S-3 C-3

-37

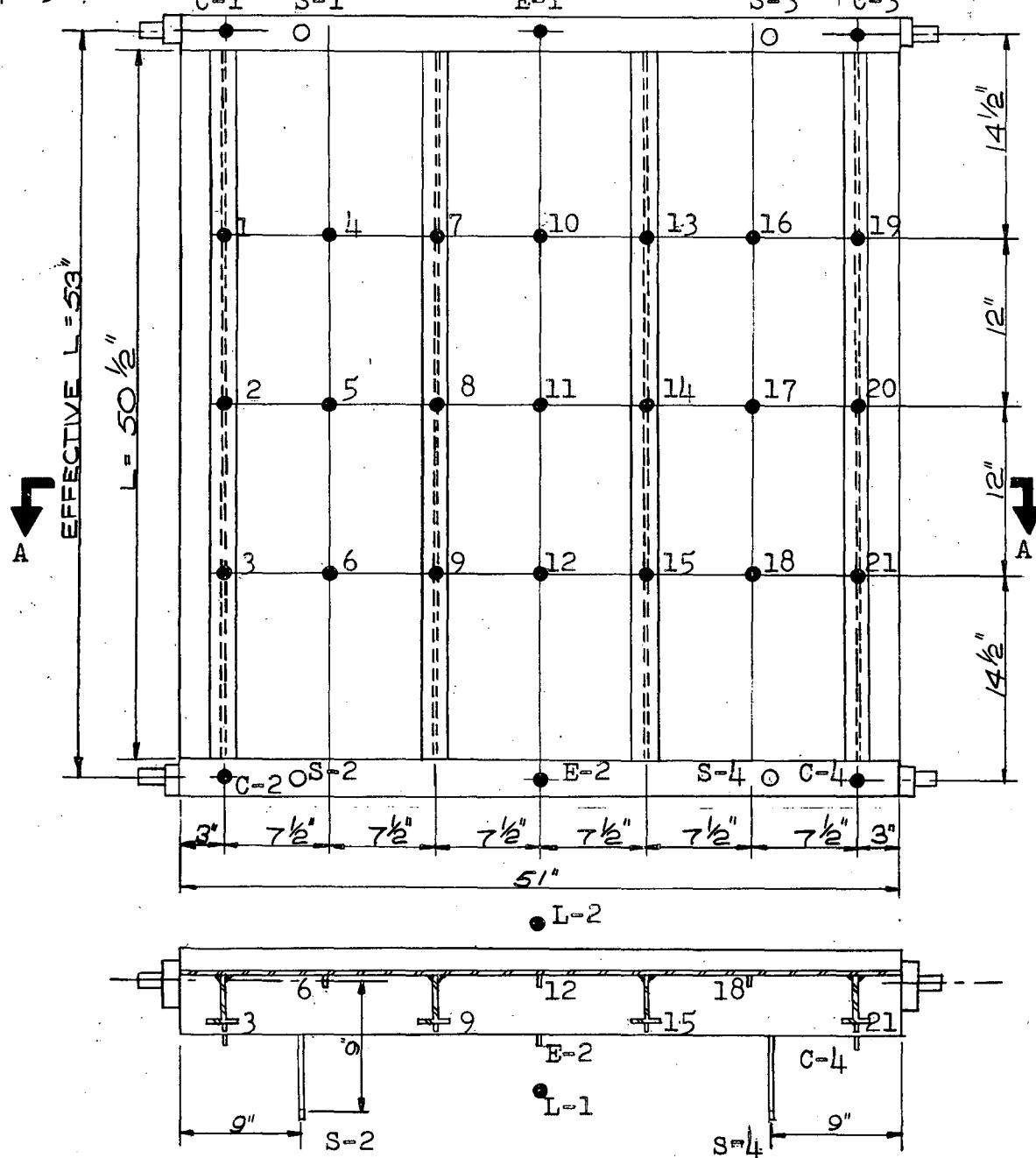
Section A-A

Fig. 8 LOCATION OF DIAL GAGES (T-7, T-8, T-9)

Scale: 1"=1'-0"

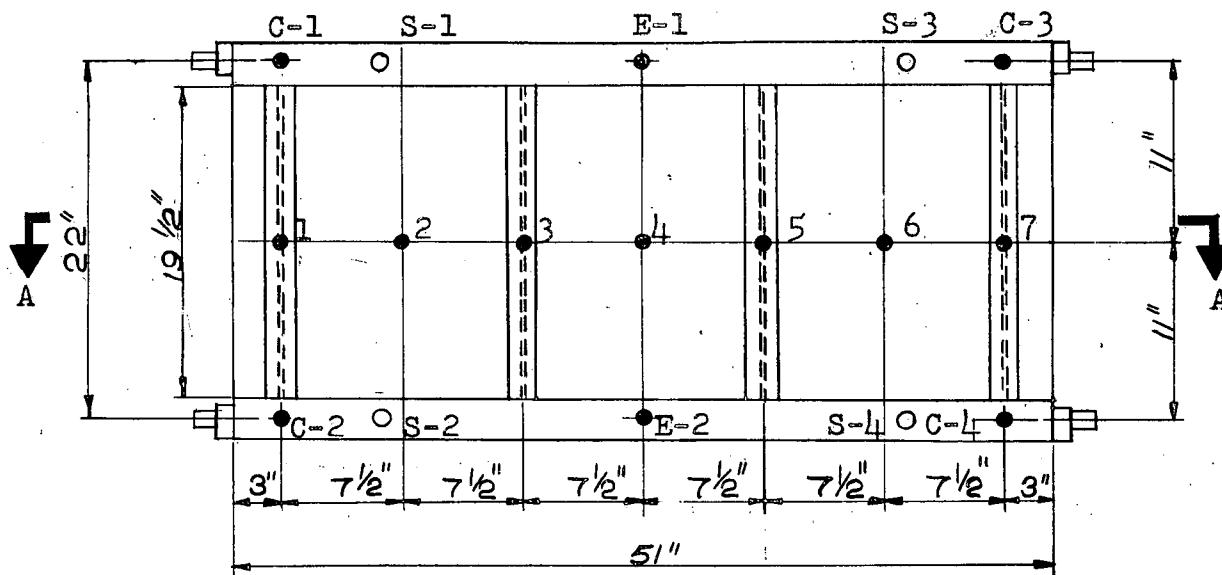
Section A-A

Fig. 9 LOCATION OF DIAL GAGES (T-10S)

Scale: 1"=1'-0"

Table 6. DIAL GAGE READINGS - SPECIMEN T-6  
 $(10^{-3}$  in.)

Ld. No.	<u>Loads</u>		Gage Nos.							
	Lat. (psi)	Axial (kips)	1	2	3	4	5	6	7	8
1	1.96	0	0	0	0	0	0	0	0	0
2	3.93	0	30	29	39	41	39	43	42	45
3	5.89	0	59	58	74	80	76	83	80	87
4	6.48	0	68	68	86	92	88	97	92	102
5	6.48	50	82	88	106	112	103	113	100	109
6	6.48	100	92	93	107	115	104	114	103	114
7	6.48	200	103	106	119	129	114	126	113	125
8	6.48	300	113	119	131	145	127	141	126	142
9	6.48	400	135	148	157	190	152	174	152	174
10	6.48	423	156	178	182	232	176	208	178	209
11	6.48	442	171	197	200	262	194	233	197	235
12	6.48	450	187	218	220	291	211	256	219	257
13	6.48	458	210	247	248	333	238	291	250	294
14	6.48	460	222	264	264	358	252	312	261	326
15	6.48	462	229	271	271	367	258	319	271	322
16	6.48	463	239	284	282	386	270	335	282	339
17	6.48	453	274	330	323	453	309	390	323	397
18	6.48	422	337	412	396	584	380	494	396	535
19	6.48	397	333	407	391	580	376	489	392	531
20	6.48	330	319	387	375	557	360	467	376	509
21	6.48	297	304	370	358	532	344	546	359	486
22	6.48	348	317	387	373	553	257	465	373	506
23	6.48	398	332	407	392	579	275	490	395	532
24	6.48	398	391	490	657	727	340	598	459	683
25	6.48	263	760	1091	846	—	745	1277	868	—
26	6.48	54	668	971	745	1410	649	1153	767	1354
27	6.48	0	639	929	720	1363	628	1116	750	1318
28	3.93	0	601	886	674	1311	582	1063	702	1262

Table 6. DIAL GAGE READINGS - SPECIMEN T-6 (Cont'd) $(10^{-3} \text{ in.})$ 

Ld. No.	Gage Nos.									
	9	10	11	12	13	14	15	16	17	18
1	0	0	0	0	0	0	0	0	0	0
2	40	43	32	39	44	34	39	43	32	40
3	78	85	93	79	88	66	78	86	64	80
4	91	98	73	92	102	77	91	100	73	93
5	96	105	77	96	106	79	92	102	76	91
6	98	109	80	97	111	83	95	108	80	93
7	107	120	88	106	122	91	103	119	88	101
8	122	126	100	120	139	104	117	136	99	113
9	150	171	125	147	171	128	143	167	121	133
10	174	205	150	173	206	150	168	200	144	155
11	193	232	169	194	234	169	189	228	163	174
12	210	254	175	207	257	185	206	249	177	189
13	237	391	213	240	295	212	236	290	206	216
14	251	310	226	253	313	224	247	305	217	-
15	258	318	233	259	323	230	253	315	225	233
16	271	336	245	272	342	243	266	333	237	245
17	311	396	285	312	411	283	306	396	276	286
18	385	513	355	386	549	357	383	520	347	364
19	393	509	352	384	545	354	379	515	344	361
20	367	488	337	370	525	338	364	494	330	346
21	350	466	321	352	503	321	348	473	313	330
22	364	485	334	365	521	335	362	491	326	344
23	483	509	351	382	543	352	379	515	349	361
24	451	619	417	450	658	419	448	625	407	431
25	864	1289	814	867	1318		858	1288	-	851
26	769	1165	726	776	1205	722	764	1163	-	751
27	759	1134	704	771	1180	700	763	1140	684	758
28	712	1081	664	725	1124	658	718	1085	648	712

Table 6. DIAL GAGE READINGS - SPECIMEN T-6 (Cont'd) $(10^{-3} \text{ in.})$ 

Ld. No.	Gage Nos.									
	19	20	21	22	23	24	25	E-1	E-2	C-1
1	0	0	0	0	0	0	0	0	0	0
2	44	38	20	38	41	29	28	20	4	19
3	88	75	62	76	81	60	64	41	9	37
4	102	87	74	87	94	70	74	49	11	43
5	102	83	73	80	91	60	69	50	11	56
6	108	85	77	83	94	61	71	50	11	56
7	119	93	86	91	101	66	77	51	12	59
8	136	105	101	105	115	77	88	54	12	63
9	171	129	130	138	139	97	110	61	14	71
10	211	153	162	170	168	119	138	59	17	73
11	243	173	191	200	196	139	164	68	19	75
12	268	189	209	218	213	157	179	70	20	77
13	316	219	248	257	249	178	212	73	23	80
14	—	—	—	—	—	231	—	24	—	—
15	350	235	272	280	271	194	233	75	26	81
16	378	250	291	297	287	207	250	76	29	82
17	485	287	350	342	331	245	300	81	35	86
18	696	365	464	418	398	317	398	89	36	92
19	693	362	460	415	394	316	395	90	35	93
20	669	347	440	399	379	302	378	89	33	91
21	648	331	419	381	360	288	359	85	34	89
22	664	344	437	396	375	301	374	88	35	91
23	691	360	460	415	393	315	393	91	76	98
24	848	427	564	481	460	376	378	98	68	99
25	1616	832	1197	876	1000		1024	138	67	131
26	1475	738	1079	772	900	666	905	125	62	118
27	1450	749	1065	783	892	680	893	154	—	122
28	1395	706	1014	741	845	647	854	137	—	105

Table 6. DIAL GAGE READINGS - SPECIMEN T-6 (Cont'd)(10<sup>-3</sup> in.)

Ld. No.	Gage Nos.							
	C-2	C-3	C-4	L <sub>1</sub> , L <sub>2</sub> Avg.	S-1	S-2	S-3	S-4
1	0	0	0	—	—	0	—	0
2	0	16	2	—	—	16	—	14
3	2	34	4	—	—	31	—	28
4	2	40	5	—	—	36	—	33
5	2	20	5	0	0	47	0	54
6	2	48	4	10	0	48	3	56
7	2	29	5	27	3	50	8	58
8	2	33	5	42	9	54	14	63
9	3	40	6	60	21	65	25	73
10	5	43	8	69	33	79	38	86
11	7	44	10	76	45	90	49	96
12	8	46	11	80	51	96	56	101
13	11	49	13	87	67	110	71	117
14	12	—	15	90	—	119	—	124
15	14	51	16	92	76	126	80	130
16	16	52	19	95	83	145	86	141
17	22	56	25	103	102	180	106	187
18	22	63	25	116	138	178	142	184
19	22	63	25	115	136	170	140	177
20	21	62	23	108	128	162	133	169
21	21	60	23	100	119	168	124	175
22	22	62	25	106	126	177	131	183
23	57	64	59	113	135	410	139	404
24	55	69	54	125	169	362	172	360
25	53	97	55	167	376	343	372	336
26	52	90	55	118	326	321	321	313
27	—	149	—	—	—	—	—	—
28	—	137	—	—	—	—	—	—

Table 7. DIAL GAGE READINGS - SPECIMEN T-7 $(10^{-3} \text{ in.})$ 

Ld. No.	Load (Axial) (kips)	Gage Nos.								
		1	2	3	4	5	6	7	8	9
1	0	0	0	0	0	0	0	0	0	0
2	50	9	5	0	6	5	2	4	2	-1
3	50	8	5	0	6	4	2	4	3	-1
4	100	11	6	0	9	8	5	7	4	-1
5	150	12	8	1	10	11	10	9	6	1
6	200	13	9	1	12	14	14	10	8	1
7	300	15	11	2	14	23	24	14	13	4
8	350	18	13	2	16	31	33	18	16	6
9	375	21	17	1	17	38	40	18	14	0
10	385	22	18	1	16	39	42	17	13	-1
11	389	23	19	0	16	41	43	17	13	-3
12	394	23	19	1	19	42	44	17	12	-3
13	403	23	20	1	13	43	43	17	11	-4
14	406	23	20	1	13	43	43	16	11	-5
15	411	23	20	1	11	44	43	17	11	-5
16	417	24	21	2	10	45	43	16	11	-6
17	425	24	21	3	7	48	42	16	10	-6
18	430	24	22	3	5	50	42	16	10	-6
19	436	24	22	3	2	54	41	16	10	-6
20	442	25	23	3	-2	62	38	17	11	-5
21	447	26	25	5	-8	72	35	19	13	-4
22	449	31	31	8	-42	101	27	24	20	1
23	443	45	50	24	-85	160	5	41	41	16
24	418	103	119	70	-147	296	43	110	112	64
25	382	175	194	117	-174	396	96	194	189	108
26	349	166	182	108	-177	370	94	184	176	100
27	299	152	155	96	-180	332	89	169	159	87
28	200	133	139	78	-177	266	74	148	132	69
29	298	150	163	95	-180	329	88	167	157	86
30	348	164	180	108	-178	367	93	182	175	99
31	382	176	196	118	-176	399	99	197	191	110
32	368	177	227	137	-176	439	120	230	221	127
33	341	282	296	177	-175	518	163	306	288	166
34	200	238	240	137	-199	407	140	257	229	126
35	30	188	180	98	-215	290	101	206	174	92

Table 7. DIAL GAGE READINGS - SPECIMEN T-7 (Cont'd)

 $(10^{-3} \text{ in.})$ 

Ld. No.	Gage Nos.									
	10	11	12	13	14	15	16	17	18	19
1	0	0	0	0	0	0	0	0	0	0
2	2	3	1	-1	0	1	-1	2	2	-3
3	3	3	1	-1	0	0	-2	1	2	-4
4	6	5	2	2	2	1	0	5	4	-2
5	10	7	3	4	4	3	2	9	6	-1
6	14	8	4	5	6	4	2	13	8	0
7	24	10	8	9	12	7	4	23	12	2
8	34	10	10	13	15	7	3	29	11	4
9	36	0	0	10	8	-2	-6	22	-4	-2
10	38	-3	-1	9	6	-5	-10	22	-9	-5
11	40	-6	-3	7	4	-6	-13	22	-11	-6
12	43	-9	-7	7	4	-8	-15	23	-14	-7
13	44	-11	-4	6	3	-8	-18	24	-16	-7
14	46	-13	-3	6	3	-9	-19	26	-18	-8
15	48	-15	-3	6	2	-9	-22	28	-19	-8
16	51	-18	-2	6	2	-10	-25	31	-20	-9
17	56	-23	-1	6	2	-10	-30	36	-24	-9
18	61	-27	1	6	3	-10	-33	41	-27	-9
19	66	-33	7	6	3	-10	-39	50	-36	-9
20	76	-43	21	7	4	-9	-47	64	-54	-8
21	90	-55	33	9	7	-7	-69	82	-64	-6
22	127	-83	57	15	14	-3	-102	114	-74	-1
23	197	-109	116	33	36	13	-133	178	-85	17
24	397	-100	197	106	112	62	-196	333	-156	85
25	571	-40	231	193	187	107	-229	426	4	173
26	555	-39	205	184	176	99	-233	400	7	164
27	530	-37	170	169	159	87	-238	363	11	149
28	486	-26	118	148	132	69	-237	299	17	130
29	526	-38	167	167	157	86	-239	361	11	148
30	553	-40	203	182	174	98	-234	398	7	163
31	577	-37	232	196	191	109	-231	429	7	177
32	639	-12	247	231	221	127	-234	463	29	213
33	767	49	280	307	286	166	-226	532	75	290
34	698	42	178	258	228	126	-254	422	77	245
35	614	47	113	208	173	92	-272	308	63	197

Table 7. DIAL GAGE READINGS - SPECIMEN T-7 (Cont'd)

( $10^{-3}$  in.)

Table 7. DIAL GAGE READINGS - SPECIMEN T-7 (Cont'd)(10<sup>-3</sup> in.)

Ld. No.	Gage Nos.		
	S-2	S-3	S-4
1	0	0	0
2	10	0	18
3	10	-2	18
4	11	0	18
5	11	2	19
6	11	4	18
7	10	7	16
8	-1	8	9
9	-28	5	-7
10	-34	4	-13
11	-38	4	-16
12	-41	3	18
13	-43	3	-19
14	-45	3	-20
15	-46	3	-21
16	-48	3	-19
17	-50	3	-21
18	-50	3	-21
19	-50	3	-21
20	-50	4	-21
21	-50	5	-21
22	-48	9	-18
23	-38	19	-9
24	-9	62	19
25	16	112	42
26	11	107	38
27	4	97	31
28	-7	80	21
29	3	96	31
30	10	106	38
31	17	115	44
32	127	136	54
33	50	183	76
34	26	147	53
35	10	109	33
36	123	335	147

Table 8: DIAL GAGE READINGS-SPECIMEN T-8 $(10^{-3} \text{ in.})$ 

Ld No.	Axial Load (kips)	Gage Nos.								
		1	2	3	4	5	6	7	8	9
1	0	0	0	0	0	0	0	0	0	0
2	20	-1	-1	-1	-3	-2	-1	-7	-5	-3
3	20	-1	0	-1	-1	-1	-1	-5	-4	-3
4	50	10	7	4	9	7	5	4	3	1
5	100	14	11	5	14	11	10	8	1	3
6	150	16	13	7	18	15	14	11	9	4
7	200	17	14	8	20	16	18	12	11	5
8	250	17	7	8	23	18	23	13	13	6
9	300	20	17	10	30	21	31	16	16	8
10	350	23	21	12	38	22	41	20	20	10
11	375	25	22	13	43	21	47	22	22	11
12	400	26	24	14	48	18	54	24	24	12
13	425	27	25	14	55	13	61	26	26	13
14	450	29	25	15	65	3	72	29	29	15
15	460	29	26	15	71	-3	78	31	31	16
16	470	30	26	16	78	-10	84	32	33	17
17	480	31	27	16	86	-19	91	34	35	18
18	485	38	34	21	112	-47	113	41	42	23
19	431	33	28	16	90	-27	84	35	36	18
20	450	34	30	18	99	-35	95	38	38	20
21	485	39	35	22	117	-49	116	43	43	24
22	490	41	37	23	125	-54	124	45	52	26
23	360	176	230	140	302	-20	257	175	245	146
24	340	210	277	169	344	-1	286	206	294	175
25	323	238	318	193	373	20	313	234	334	200
26	200	206	265	160	294	-15	240	198	282	164
27	100	181	240	138	239	-44	192	172	246	140
28	200	195	263	155	283	-26	234	189	273	159
29	325	238	319	194	372	21	313	234	335	201
30	308	272	366	224	411	45	346	267	383	231
31	294	271	422	257	456	81	384	304	441	266
32	200	278	468	224	386	44	322	270	391	231
33	20	216	546	169	269	-32	223	204	303	173

Table 8: DIAL GAGE READINGS-SPECIMEN T-8 (Cont'd)

 $(10^{-3} \text{ in.})$ 

Ld No.	Gage Nos.									
	10	11	12	13	14	15	16	17	18	19
1	0	0	0	0	0	0	0	0	0	0
2	-9	-5	-5	-13	-7	-3	-16	-10	-4	-16
3	-9	-4	-4	-11	-6	-3	-15	-9	-4	-14
4	1	3	-2	-3	0	1	-7	-3	-2	-8
5	8	9	-2	0	2	2	-4	-1	-4	-7
6	10	12	-4	1	4	2	-4	0	-8	-7
7	13	16	-7	2	5	3	-3	1	-12	-7
8	16	21	-9	3	6	2	-2	3	-16	-7
9	22	28	-13	5	9	3	1	6	-10	-5
10	29	38	-16	8	12	4	4	9	-24	-3
11	32	44	-19	10	14	4	5	11	-27	-2
12	34	52	-22	12	15	5	7	13	-30	-1
13	36	63	-26	14	18	6	10	14	-32	-1
14	36	81	-30	16	22	8	14	15	-34	0
15	36	90	-32	18	23	8	16	15	-34	0
16	33	101	-36	19	25	9	20	14	-34	1
17	29	113	-38	20	26	10	24	13	-34	1
18	29	144	-46	26	33	14	38	10	-29	5
19	31	108	-35	20	26	9	26	11	-28	1
20	32	121	-38	23	28	11	31	11	-29	3
21	30	147	-47	27	34	14	40	10	-28	6
22	27	165	-50	29	37	15	46	9	-26	8
23	93	574	40	151	223	137	191	32	144	112
24	97	647	67	182	269	168	215	81	181	140
25	121	706	91	209	309	195	238	123	210	165
26	145	641	86	177	264	163	171	90	190	135
27	154	591	86	154	230	140	131	166	174	114
28	147	631	84	168	255	159	162	184	186	128
29	145	709	92	209	312	197	238	226	211	165
30	172	776	120	260	360	228	265	276	242	194
31	205	855	153	275	418	267	297	335	276	227
32	207	796	140	245	374	234	236	301	260	197
33	192	687	121	186	293	179	151	241	226	226

Table 8: DIAL GAGE READINGS-SPECIMEN T-8 (Cont'd) $(10^{-3} \text{ in.})$ 

Ld No.	Gage Nos.								$L_1, L_2$ Avg	S-1
	20	21	E-1	E-2	C-1	C-2	C-3	C-4		
1	0	0	0	0	0	0	0	0	-	-
2	-10	-5	-15	4	-4	-2	-31	12	0	0
3	-9	-5	-13	4	0	-2	-27	12	0	-1
4	-5	-2	-3	5	12	-2	-18	13	6	2
5	-4	-1	2	6	16	-2	-17	13	14	6
6	-4	-2	2	6	17	-2	-17	13	22	8
7	-3	-2	2	6	16	-2	-18	13	28	10
8	-3	-2	0	6	14	-2	-18	13	35	12
9	-1	-1	0	7	16	-2	-17	13	42	14
10	0	-1	3	7	20	-1	-15	13	49	16
11	1	-1	3	7	21	-1	-14	13	53	16
12	2	-1	3	7	22	-1	-13	13	57	17
13	2	0	3	6	23	-2	-13	13	60	18
14	3	0	4	6	24	-1	-12	13	64	18
15	3	0	5	7	24	-1	-12	13	66	19
16	4	0	5	7	24	-1	-11	13	67	19
17	4	0	5	7	24	-1	-11	13	69	20
18	9	3	7	7	26	-1	-10	13	71	24
19	4	0	7	6	24	-2	-12	13	66	20
20	6	1	7	6	26	-1	-11	13	67	22
21	9	3	7	6	26	-1	-10	12	72	25
22	10	4	7	6	27	-1	-10	12	74	27
23	167	123	22	22	30	12	0	24	94	100
24	214	159	26	26	40	14	4	27	100	117
25	255	190	30	29	42	18	6	31	108	133
26	212	159	35	25	51	13	10	28	87	104
27	182	136	35	22	50	12	10	25	68	86
28	206	154	27	24	39	13	2	27	84	105
29	258	192	29	29	42	18	6	31	107	134
30	305	229	34	34	45	21	9	44	116	152
31	362	270	39	38	50	24	13	38	128	172
32	318	238	43	34	57	21	16	35	111	146
33	244	183	36	26	48	16	12	99	71	101

TABLE 8: DIAL GAGE READINGS-SPECIMEN T-8 (Cont'd)  
 $(10^{-3}$  in.)

Ld No.	Gage Nos.		
	S-2	S-3	S-4
1	0	-	0
2	11	0	17
3	11	-2	17
4	15	2	22
5	16	5	24
6	25	7	24
7	17	9	25
8	17	10	25
9	18	12	26
10	18	13	25
11	19	13	25
12	19	14	25
13	19	14	24
14	19	14	24
15	19	15	24
16	19	15	24
17	19	15	23
18	20	19	24
19	16	15	21
20	18	16	22
21	20	19	23
22	20	20	24
23	85	88	91
24	100	104	109
25	115	118	125
26	95	92	106
27	81	76	92
28	92	93	103
29	115	119	126
30	132	135	145
31	152	155	168
32	132	131	148
33	99	91	114

Table 9. DIAL GAGE READINGS - SPECIMEN T-9(10<sup>-3</sup> in.)

Ld. No.	Ld. (kips)	Gage Nos.								
		1	2	3	4	5	6	7	8	9
1	0	0	0	0	0	0	0	0	0	0
2	20	9	8	3	7	5	4	3	3	1
3	20	9	7	4	7	4	4	3	2	1
4	50	12	9	5	10	6	7	5	4	2
5	100	14	11	7	13	7	10	7	5	2
6	150	15	13	8	16	7	14	8	6	3
7	200	15	13	8	18	6	18	8	6	3
8	250	13	13	8	18	4	23	7	6	3
9	300	15	15	10	24	4	31	9	8	5
10	350	19	18	13	32	13	45	13	11	7
11	375	20	21	17	37	0	68	15	15	10
12	400	25	28	28	46	-6	125	20	20	18
13	410	30	37	38	53	-5	159	23	27	26
14	420	38	50	54	60	10	197	32	40	39
15	380	69	101	116	92	56	316	62	89	98
16	370	68	99	115	89	54	315	61	88	97
17	350	64	95	111	84	51	309	58	84	93
18	300	58	86	103	71	46	294	51	75	85
19	250	53	78	96	62	42	279	46	68	78
20	200	61	82	95	66	49	270	53	70	77
21	150	58	76	88	59	48	256	50	65	72
22	100	55	72	84	54	48	243	48	61	68
23	50	51	66	81	50	47	229	44	57	63
24	20	47	63	79	46	45	221	40	54	61
25	0	47	64	81	54	53	223	57	63	67

Table 9. DIAL GAGE READINGS - SPECIMEN T-9 (Cont'd)

 $(10^{-3} \text{ in.})$ 

Ld. No.	Gage Nos.									
	10	11	12	13	14	15	16	17	18	19
1	0	0	0	0	0	0	0	0	0	0
2	1	3	2	-1	1	1	-3	1	2	-6
3	2	3	1	-2	0	1	-4	-1	1	-8
4	4	4	2	0	1	1	-3	1	1	-8
5	7	4	2	1	3	2	0	4	1	-8
6	9	4	2	2	4	3	1	7	1	-8
7	10	3	2	1	4	3	1	8	-1	-9
8	12	1	1	1	4	3	3	11	-2	-9
9	13	1	3	3	6	4	6	16	-4	-7
10	17	1	4	7	9	5	11	23	-6	-5
11	21	3	3	9	12	7	15	28	-6	-3
12	33	12	-2	14	18	13	22	33	0	1
13	36	20	-4	18	24	18	29	38	6	5
14	62	12	9	28	38	28	32	66	8	12
15	88	60	70	59	89	84	67	146	13	42
16	84	62	69	57	88	83	66	140	13	42
17	78	62	65	54	84	79	63	129	13	39
18	67	62	56	47	74	71	55	106	12	31
19	58	61	49	42	66	65	48	88	11	27
20	62	65	47	47	66	63	49	80	14	31
21	56	64	42	43	61	58	43	68	14	28
22	52	61	39	41	57	55	38	59	14	25
23	47	58	35	37	52	51	33	51	14	23
24	44	55	33	35	49	48	31	47	14	23
25	66	69	41	66	68	58	67	68	26	67

Table 9. DIAL GAGE READINGS - SPECIMEN T-9 (Cont'd)  
 $(10^{-3} \text{ in.})$

Ld. No.	Gage Nos.									$L_1, L_2$ Avg.	S-1
	20	21	E-1	E-2	C-1	C-2	C-3	C-4			
1	0	0	0	0	0	0	0	0			
2	-1	2	0	3	10	-1	-14	4	0	0	0
3	-3	0	2	3	13	2	-11	4	0	0	-3
4	-3	0	4	4	16	2	-11	4	6	1	
5	-2	1	4	4	18	1	-11	4	16	5	
6	-2	1	4	5	18	1	-11	4	24	7	
7	-3	0	3	5	17	1	-14	4	32	9	
8	-3	0	1	5	14	1	-15	4	39	12	
9	-1	1	2	5	16	1	-13	4	46	13	
10	2	2	4	5	19	1	-11	4	54	15	
11	4	3	5	6	21	2	-10	4	58	16	
12	9	7	6	7	22	3	-9	4	63	19	
13	13	11	6	8	24	4	-9	5	66	22	
14	23	19	7	10	24	6	-8	6	72	27	
15	70	66	11	19	28	12	-4	12	80	39	
16	68	65	11	19	28	13	-4	12	80	43	
17	64	62	11	18	27	12	-5	12	77	41	
18	55	55	10	17	26	12	-6	11	70	37	
19	48	50	9	16	25	11	-7	10	62	33	
20	48	49	22	16	41	11	4	10	55	27	
21	43	45	22	15	41	11	4	10	47	24	
22	40	42	22	14	41	11	4	10	39	21	
23	36	39	23	13	38	11	5	10	29	16	
24	35	37	22	12	33	11	6	10	22	8	
25	63	51	51	10	36	13	70	6	-	-	

Table 9. DIAL GAGE READINGS - SPECIMEN T-9 (Cont'd)(10<sup>-3</sup> in.)

Ld. No.	Gage Nos.		
	S-2	S-3	S-4
1	0	-	0
2	13	0	20
3	13	-4	20
4	14	0	22
5	15	3	24
6	16	5	25
7	16	7	25
8	16	10	25
9	17	11	26
10	19	11	27
11	21	14	28
12	27	16	30
13	33	19	34
14	43	25	41
15	80	41	77
16	77	41	76
17	77	39	74
18	71	34	71
19	67	31	67
20	65	25	65
21	62	22	62
22	59	19	60
23	55	15	57
24	51	11	55
25	41	-	41

Table 10: DIAL GAGE READINGS-SPECIMEN T-10S(10<sup>-3</sup> in.)

Ld No.	Axial Load (kips)	Gage Nos.								
		1	2	3	4	5	6	7	E-1	E-2
1	0	0	0	0	0	0	0	0	0	0
2	50	-1	-2	-3	-2	-6	-7	-9	-11	1
3	50	0	-2	-3	-2	-6	-7	-9	-10	1
4	100	0	-2	-2	1	-6	-6	-8	-9	2
5	150	0	-1	-2	2	-6	-6	-8	-9	2
6	200	-1	-3	-3	5	-6	-6	-8	-9	1
7	250	-1	-4	-3	9	-6	-5	-8	-8	1
8	300	-1	-6	-4	13	-7	-6	-9	-9	1
9	350	-2	-10	-4	19	-7	-7	-9	-8	0
10	375	-2	-15	-5	24	-8	-9	-10	-8	0
11	390	-2	-18	-5	27	-8	-11	-10	-8	0
12	400	-2	-21	-6	30	-9	-12	-11	-8	0
13	410	-2	-25	-6	33	-9	-14	-11	-9	0
14	350	-2	-22	-6	22	-9	-13	-11	-9	0
15	390	-2	-25	-6	30	-9	-14	-11	-9	0
16	410	-2	-29	-6	34	-9	-15	-11	-9	0
17	420	-2	-33	-6	37	-9	-16	-11	-9	0
18	426	-2	-43	-6	44	-9	-19	-12	-9	0
19	431	-2	-52	-6	50	-9	-22	-12	-9	0
20	437	-1	-59	-6	56	-9	-25	-12	-9	0
21	442	-1	-65	-6	62	-9	-28	-12	-9	0
22	446	-1	-72	-6	69	-9	-32	-12	-9	0
23	452	0	-77	-6	76	-9	-37	-13	-9	0
24	455	0	-81	-6	83	-9	-42	-13	-9	0
25	461	1	-85	-5	91	-9	-48	-13	-9	0
26	465	1	-89	-5	100	-9	-56	-13	-10	0
27	467	2	-93	-4	113	-9	-74	-13	-10	0
28	465	4	-102	-1	150	-8	-143	-12	-10	0
29	472	7	-108	2	178	-6	-169	-10	-9	0
30	465	13	-114	10	224	1	-198	-4	-7	1
31	443	39	-128	41	378	30	-275	22	1	6
32	423	58	-134	63	458	51	-317	42	5	9
33	373	56	-131	61	445	50	-310	41	5	9
34	300	54	-124	58	424	48	-297	39	5	9
35	200	56	-111	59	401	48	-275	40	12	9
36	300	53	-124	57	421	46	-297	38	3	9
37	423	58	-134	63	456	50	-318	36	3	10
38	402	79	-142	86	535	169	-404	-39	9	85
39	399	89	-146	98	571	84	-373	78	11	15
40	43	80	-116	83	479	73	-316	69	17	13
41	0	83	-105	87	472	78	-497	73	33	11

Table 10: DIAL GAGE READINGS-SPECIMEN T-10S (Cont'd)

(10<sup>-3</sup> in.)

Ld No.	Gage Nos.								
	C-1	C-2	C-3	C-4	L <sub>1</sub> , L <sub>2</sub> Avg	S-1	S-2	S-3	S-4
1	0	0	0	0	-	-	0	-	0
2	-1	-1	-23	3	-	0	13	0	18
3	0	-2	-22	1	0	0	14	-1	18
4	3	-2	-20	1	6	2	14	0	19
5	4	-3	-20	1	10	2	13	1	19
6	3	-3	-20	1	15	2	12	1	18
7	5	-3	-19	0	19	2	10	0	17
8	4	-4	-20	0	23	0	6	0	15
9	6	-5	-18	0	27	-2	2	-1	14
10	5	-6	-19	-1	29	-3	0	-2	12
11	5	-6	-19	-1	30	-4	-1	-2	11
12	5	-6	-19	-1	31	-4	-2	-2	11
13	5	-7	-19	-1	31	-5	-2	-2	11
14	5	-6	-19	-1	29	-5	-3	-2	11
15	5	-6	-19	-1	31	-5	-3	-2	11
16	5	-6	-19	-1	32	-5	-3	-2	11
17	5	-7	-19	-1	33	-5	-3	-2	10
18	5	-7	-19	-1	33	-5	-3	-2	10
19	5	-7	-19	-1	34	-5	-4	-2	10
20	5	-7	-19	-1	35	-5	-4	-2	9
21	5	-7	-19	-1	35	-5	-4	-2	9
22	5	-7	-20	-2	36	-5	-4	-2	9
23	5	-7	-20	-2	37	-5	-4	-2	8
24	5	-7	-20	-2	37	-5	-4	-2	8
25	5	-7	-20	-2	38	-5	-4	-2	8
26	5	-7	-20	-2	39	-5	-4	-2	7
27	5	-7	-20	-2	39	-4	-4	-1	7
28	5	-7	-20	-1	41	-1	-2	1	7
29	6	-6	-20	-1	43	2	0	3	9
30	7	-5	-18	0	47	8	5	9	15
31	13	0	-13	5	60	37	-29	37	38
32	16	3	-10	8	69	56	44	55	54
33	15	3	-10	8	66	54	42	53	54
34	16	2	-9	7	60	50	40	50	53
35	23	3	-3	7	51	43	41	43	53
36	14	2	-12	7	59	51	39	50	52
37	14	3	-11	8	69	57	44	57	54
38	19	6	132	-123	81	98	234	-153	40
39	20	8	-6	18	86	89	70	87	82
40	27	8	2	12	50	61	64	60	74
41	62	7	20	8	-	-	48	-	58