

BAB IV

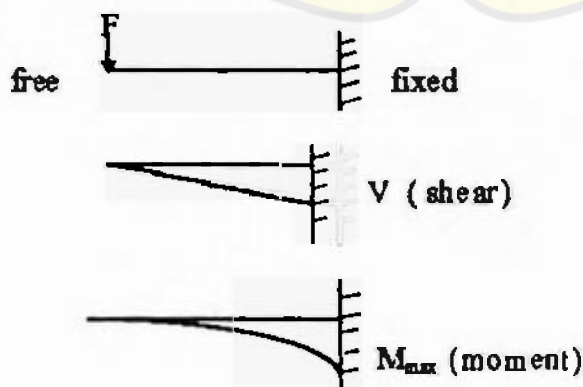
PENUTUP

IV. 1 KESIMPULAN

Dari hasil analisa SAP-90 dapat diambil beberapa kesimpulan sebagai berikut:

1. Joint Displacement	Maks = 0,76598 m	pada joint 86
	Min = 0,10838 m	pada joint 25
2. Shell Element Stress MMax	Maks = 26,6 kN/m ²	pada joint 13
	Min = 1,79 kN/m ²	pada joint 75
3. Shell Element Stress MMin	Maks = 0,11 kN/m ²	pada joint 36
	Min = -11,1 kN/m ²	pada joint 80
4. Forces	Maks = -92,4081 kN	pada joint 13
	Min = - 6,2763 kN	pada joint 3
5. Moment	Maks = - 7,8462 kN-m	pada joint 8
	Min = 0,0025 kN-m	pada joint 14

Derajat kebebasan konstruksi bangunan atas kapal ini adalah fixed pada bagian bawah dan free di atas, ini merupakan suatu bentuk kantilever. Dari gambar bending moment diagram di bawah ini terlihat bahwa momen maksimum terjadi pada bagian bawah dan pada aplikasi bangunan atas itu terjadi pada joint no. 13



Hasil analisa SAP-90 dengan realita yang terjadi pada kapal sesungguhnya mempunyai perbedaan, yaitu: besarnya momen maksimum tidak berada pada garis tengah kapal (centre line) tetapi agak menyimpang ke kiri. Hal ini mungkin disebabkan oleh:

- Perbedaan model struktur yang digunakan dalam analisa SAP-90 dengan bentuk nyata dari kapal. Dimana model struktur yang digunakan untuk analisa SAP-90 sudah disederhanakan bentuknya.
- Pembagian jumlah joint/elemen.
Semakin banyak pembagian joint/elemen maka hasil perhitungan akan semakin akurat.
- Kondisi pembebanan.
Dalam hal ini gaya luar diasumsikan hanya berasal dari gaya angin haluan saja, padahal dalam kenyataannya tidak.

IV. 2 SARAN-SARAN

1. Untuk mencegah terjadinya kerusakan struktur bangunan atas dapat dilakukan dengan cara:
 - Merubah jarak antar frame menjadi lebih rapat lagi.
 - Mengganti profile dengan harga modulus sectionnya lebih besar sehingga dapat menambah kekuatan.
2. Untuk dimasa yang akan datang sebaiknya desain kapal yang sudah jadi dianalisa terlebih dulu dengan baik sebelum dibangun.
3. Guna memenuhi perkembangan Fakultas Teknologi Kelautan agar dapat lebih dilengkapi buku-buku perpustakaan sebagai referensi untuk para mahasiswa dan sarana lain yang menunjang.
4. Sebagai penutup penulis mengharapkan agar Tugas Akhir ini dapat berguna untuk para rekan-rekan mahasiswa Fakultas Teknologi Kelautan Universitas Darma Persada.

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SKALA ANGIN BEAUFORT

KECEPATAN ANGIN DALAM KNOTS (JIKA DIGUNAKAN BILA TIDAK ADA ANEMOMETER)

ini didasarkan pada KONDISI LAUT DALAM dengan gelombang yang telah berkembang penuh. Sering terjadi gelombang tidak berkembang penuh karena angin bertiup belum cukup lama, dengan lintasan (fetch) yang pendek. Faktor-faktor lain seperti arus atau angin laut juga berpengaruh terhadap keadaan permukaan laut (tinggi gelombang).

Istilah	Kecepatan Angin dalam Knots.		Kriteria keadaan permukaan laut surut gelombang penuh.	Perairan dekat Pantai	Kemungkinan Tinggi gelombang dalam meter.	
	antara	Rata-rata			Rata-rata	Tertinggi
Udara tenang (Calm)	1	0	Permukaan laut seperti kaca	Keadaan laut tenang	-	-
Udara Silir	1 - 3	2	Laut mulai berkerut, tanpa buih.	Perahu layar nelayan mulai bergerak akan dapat dikemudikan	0,1	0,1
Angin ringan	4 - 6	5	Terlihat riuk kecil, buih belum terbentuk	Layar mulai mengembang, perahu berarak dengan kecepatan 1-2 knots.	0,2	0,3
Angin sepoi-sepoi (Gentle breeze)	7 - 10	8,5	Riuk membesar puncak mulai pecah, buih bening terbentuk; kadang terlihat garis-garis buih.	Layar mulai condong, perahu melaju dengan kecepatan 3-9 knots.	0,6	1,0
Angin sedang (Moderate breeze)	11-16	13,5	Ombak kecil mulai memanjang; garis-garis buih sering terbentuk.	Layar mengembang penuh; perahu melaju dengan kecepatan maksimum.	1,0	1,5
Angin segar	17-21	19	Ombak ukuran sedang; buih berarak-arak.	Layar mulai dipendekkan.	2,0	2,5
Angin kuat (Strong breeze)	22-27	24,5	Ombak besar mulai terbentuk, buih tipis melebar dari puncaknya, kadang-kadang timbul percikan (spray).	Perahu berlayar ganda perlu berhati-hati dalam perjalanannya.	3,0	4,0
Angin ribut (Near gale)	28-33	30,5	Laut mulai bergolak, buih putih mulai terbawa angin dan membentuk alur-alur sesuai arah angin.	Perahu layar tetap tinggal di pelabuhan dan yang terlayar melaut harus turun jangkar.	4,0	5,5
Angin ribut sedang (Gale)	34-40	37	Gelombang agak tinggi dan lebih panjang; puncak gelombang yang pecah mulai bergubung; buih yang terbesar angin semakin jelas alur-alurnya.	Semua perahu layar merapat ke pelabuhan terdekat.	5,5	7,5
Angin ribut kuat (Strong gale)	41-47	44	Gelombang tinggi terbentuk buih tebal berlajur-lajur; puncak gelombang roboh bergulung-gulung; percik-percik air mulai mengganggu penglihatan.	idem	7,0	10,0
Badai (Storm)	48-55	51,5	Gelombang sangat tinggi dengan puncak memayungi; buih yang ditimbulkannya membentuk tumpal-tumpal buih raksasa yang didorong angin seluruh permukaan laut memutih; gubungan ombak menjadi dahsyat; penglihatan terganggu.	idem	9,0	12,5
Badai keras (Violent storm)	56-63	59,5	Gelombang amat sangat tinggi (kapal-kapal kecil dan sedang terganggu pandangan karenanya), permukaan laut tertutup penuh tumpal-tumpal putih buih karena seluruh puncak gelombang menghamburkan buih yang terdorong angin; penglihatan terganggu.	idem	11,5	16,0
Tufan (Hurricane)	> 64	> 64	Udara tertutup penuh oleh buih dan percik air; permukaan laut memutih penuh oleh percik-percik air yang terhanyut angin; penglihatan amat sangat terganggu.	idem	14,0	-

N : Untuk kecepatan angin melebihi 99 knots, tambahkan di dengan angka 50 dan masukkan angka puluhan dan satuan ke dalam sondift; Contoh: arah angin 100°, kecepatan 125 knots dituliskan dd = 60, dan ff = 25.



LAMPIRAN A

File STRUK1.SOL

Joint Displacement and Reaction Forces

LEMBAGA PENELITIAN - ITB
 PROGRAM:SAP90/FIL¹...trk1.SOL
 TINJAUAN MENGENAI P¹...PENGARUH GAYA ANGIN HALUAN TERHADAP
 KONSTRUKSI BANGUNAN ATAS KAPAL BARANG 3800 DWT
 BY : AMBRY IRAWAN (FIK 94310002)

JOINT DISPLACEMENTS
 LOAD COMBINATION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	.000000	.000000	.000000	.000000
2	.000000	.000000	.000000	.000000	.000000	.000000
3	.000000	.000000	.000000	.000000	.000000	.000000
4	.000000	.000000	.000000	.000000	.000000	.000000
5	.000000	.000000	.000000	.000000	.000000	.000000
6	.000000	.000000	.000000	.000000	.000000	.000000
7	.000000	.000000	.000000	.000000	.000000	.000000
8	.000000	.000000	.000000	.000000	.000000	.000000
9	.000000	.000000	.000000	.000000	.000000	.000000
10	.000000	.000000	.000000	.000000	.000000	.000000
11	.000000	.000000	.000000	.000000	.000000	.000000
12	.000000	.000000	.000000	.000000	.000000	.000000
13	.000000	.000000	.000000	.000000	.000000	.000000
14	.000000	.000000	.000000	.000000	.000000	.000000
15	.000000	.000000	.000000	.000000	.000000	.000000
16	.000000	.000000	.000000	.000000	.000000	.000000
17	.000000	.000000	.000000	.000000	.000000	.000000
18	.000000	.000000	.000000	.000000	.000000	.000000
19	.000000	.000000	.000000	.000000	.000000	.000000
20	.000000	.000000	.000000	.000000	.000000	.000000
21	.000000	.000000	.000000	.000000	.000000	.000000
22	.000000	.000000	.000000	.000000	.000000	.000000
23	.000000	.000000	.000000	.000000	.000000	.000000
24	.000000	.000000	.000000	.000000	.000000	.000000
25	.000838	.000000	.000007	.000003	.004080	.000000
26	.010874	-.000024	-.000006	.000001	.000200	-.000004
27	.010970	-.000013	.000025	-.000004	.005685	-.000002
28	.010999	-.000002	.000008	.000122	.007287	-.000015
29	.011988	.000014	.000018	.000008	.004080	-.000035
30	.012099	-.000016	-.000012	.000000	.002112	-.000004
31	.012209	-.000023	.000020	.000016	.005945	-.000004
32	.012259	-.000000	.000004	.000062	.004776	-.000004
33	.013785	.000013	.000011	-.000000	.000557	-.000122
34	.013962	-.000019	-.000027	.000001	.000557	-.000314
35	.014097	-.000000	.000015	.000029	.000565	-.000002
36	.014174	-.000020	.000034	.000584	.000564	-.000007
37	.013786	.000006	.000011	.000003	.004255	.000007
38	.013963	-.000012	-.000027	.000004	.000567	.000014
39	.014098	-.000013	.000015	.000003	.000566	.000015
40	.014175	-.000016	.000014	-.000554	.000575	.000016
41	.011963	.000004	.000028	-.000011	.004029	.000532

JOINT DISPLACEMENTS

LOAD COMBINATION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
42	.012073	-.000001	-.000012	.000010	.003718	.000183
43	.12183	-.000025	.000019	.000008	.005898	.000308
44	.012234	-.000013	.000054	-.000623	.008275	.000900
45	.10857	-.000003	.000007	-.000005	.004089	.000345
46	.0894	-.000000	-.000006	-.000003	.000265	.000191
47	.01989	-.000027	.000026	.000029	.005664	.000268
48	.11018	-.000012	-.000019	-.000066	.007261	.000407
49	.034501	-.000075	.000048	-.000010	.009327	-.000596
50	.034508	-.000142	-.000032	.000078	.008535	-.000414
51	.036084	-.000020	.000001	-.000003	.010915	-.000819
52	.036145	-.000078	.000038	.000024	.008420	-.000700
53	.03697	-.000140	.000088	.000655	.009688	-.001538
54	.041590	-.000024	-.000003	-.000001	.012918	-.001099
55	.041792	-.000084	.000025	.000016	.007337	-.000323
56	.04161	-.000132	.000215	.000457	.011379	-.001297
57	.04118	-.000031	-.000003	-.000002	.012926	.001109
58	.041721	-.000093	.000025	-.000008	.007342	.000307
59	.041791	-.000092	.000216	-.000372	.011394	.001245
60	.03951	-.000030	.000002	.000009	.010874	.000696
61	.03011	-.000099	.000040	.000006	.008388	.000704
62	.03064	-.000012	.000094	-.000732	.009666	.001583
63	.034455	-.000102	.000049	.000039	.009271	.000602
64	.034460	-.000109	-.000034	-.000027	.008491	.000381
65	.02999	-.000073	.000060	-.000045	.003767	-.001302
66	.05302	-.000103	-.000039	.000145	.003733	-.001239
67	.05796	.000009	.000010	-.000001	.004891	-.001427
68	.056811	-.000077	.000051	-.000036	.003500	-.001273
69	.056838	-.000098	.000107	.000214	.005736	-.002128
70	.066211	.000005	.000016	-.000005	.005900	-.001563
71	.066288	-.000092	.000030	.000021	.003168	-.001204
72	.066318	-.000084	.000276	.000345	.007448	-.001887
73	.066255	-.000001	.000016	.000004	.005906	.001533
74	.066331	-.000113	.000030	-.000018	.003164	.001187
75	.066361	-.000001	.000277	-.000578	.007449	.001882
76	.056791	-.000004	.000012	-.000023	.004930	.001590
77	.056806	-.000128	.000052	.000037	.003497	.001377
78	.056834	-.000046	.000115	-.000211	.005726	.002194
79	.052913	-.000131	.000060	.000044	.003764	.001331
80	.052917	-.000041	-.000041	-.000190	.003722	.001268
81	.067191	-.000084	.000061	-.000245	.002641	-.000826
82	.067215	-.000104	.000111	.000816	.001723	-.002365
83	.076493	-.000094	.000049	-.000067	.002740	-.001582
84	.076565	-.000085	.000300	.000363	.001145	-.001938
85	.076526	-.000112	.000049	.000066	.002738	.001582
86	.076598	-.000052	.000301	-.000359	.001141	.001938
87	.067179	-.000122	.000062	.000245	.002639	.000831
88	.067204	-.000032	.000119	-.000819	.001723	.002371

LEMBAGA PENELITIAN - ITB

PROGRAM:SAP90/FILE:struk1.SOL

TINJAUAN MENGENAI PENGARUH GAYA ANGIN HALUAN TERHADAP
KONSTRUKSI BANGUNAN ATAS KAPALBARANG 3800 DWT

BY : AMBRY IRAWAN (94310002)

REACTIONS AND APPLIED FORCES

LOAD COMBINATION 1- FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	-21.3780	-2.698	-6.0496	.0697	-33.6355	.2509
2	-15.9647	.1975	5.0826	-.0724	-19.3449	-.5225
3	-6.2763	-.1752	-21.9396	-.0647	-11.6730	-.5677
4	-15.7422	-.2470	6.6823	-2.5791	-22.6131	2.7170
5	-56.5822	-.0326	-24.5559	.0333	-83.1820	.7367
6	-11.5439	.0057	10.4819	-.0069	-16.5618	.1723
7	-7.6675	-.0049	-17.3949	-.0059	-13.5362	.2056
8	-45.4880	-1.1643	-74.1221	-7.8462	-53.4850	8.3377
9	-92.3979	-.0143	-44.6059	.0173	-131.7821	.2770
10	-10.1173	.0020	23.7208	-.0035	-16.5559	.1527
11	-10.3036	-.0249	-13.5567	.0085	-16.7863	.0208
12	-68.7945	-1.0292	-148.5180	-5.2044	-82.2054	5.8660
13	-92.4081	-.0035	-44.6251	.0066	-131.7710	-.2855
14	-10.0968	-.0045	23.6773	.0025	-16.5402	-.1630
15	-10.3021	.0396	-13.5449	-.0455	-16.7858	-.0262
16	-68.6886	1.0290	-149.0003	5.1825	-82.1219	-5.8908
17	-56.4914	.0134	-24.5753	-.0082	-83.0754	-.7034
18	-11.5009	-.0175	10.7649	.0134	-16.5119	-.0870
19	-7.7132	.0232	-16.7688	-.0339	-13.5567	-.1462
20	-45.2901	1.1486	-74.4611	7.8367	-53.3283	-8.4039
21	-21.4242	.2192	-6.0340	-.0125	-33.6775	-.2220
22	-15.9808	-.0851	4.8744	-.0561	-19.3698	.5322
23	-6.3340	.2646	-22.4566	-.1695	-11.7310	.5782
24	-15.8914	.1302	7.2347	2.5831	-22.6880	-2.7262
25	.0000	.0000	-1.7920	.0000	.0000	.0000
26	.0000	.0000	-1.7920	.0000	.0000	.0000
27	.0000	.0000	-1.7920	.0000	.0000	.0000
28	.0000	.0000	-1.7920	.0000	.0000	.0000
29	.0000	.0000	-1.7920	.000	.0000	.0000
30	.0000	.0000	-1.7920	.0000	.0000	.0000
31	.0000	.0000	-1.7920	.0000	.0000	.0000
32	.0000	.0000	-1.7920	.0000	.0000	.0000
33	.0000	.0000	-1.7920	.0000	.0000	.0000
34	.0000	.0000	-1.7920	.0000	.0000	.0000
35	.0000	.0000	-1.7920	.0000	.0000	.0000
36	.0000	.0000	-1.7920	.0000	.0000	.0000
37	.0000	.0000	-1.7920	.0000	.0000	.0000
38	.0000	.0000	-1.7920	.0000	.0000	.0000
39	.0000	.0000	-1.7920	.0000	.0000	.0000
40	.0000	.0000	-1.7920	.0000	.0000	.0000

REACTIONS AND APPLIED FORCES
LOAD COMBINATION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
42	.0000	.0000	-1.702	.0000	.0000	.0000
43	.0000	.0000	-1.702	.0000	.0000	.0000
44	.0000	.0000	-1.702	.0000	.0000	.0000
45	.0000	.0000	-1.702	.0000	.0000	.0000
46	.0000	.0000	-1.702	.0000	.0000	.0000
47	.0000	.0000	-1.702	.0000	.0000	.0000
48	.0000	.0000	- .702	.0000	.0000	.0000
49	.0000	.0000	- .702	.0000	.0000	.0000
50	.0000	.0000	-1.702	.0000	.0000	.0000
51	.0000	.0000	- .702	.0000	.0000	.0000
52	.0000	.0000	-1.702	.0000	.0000	.0000
53	.0000	.0000	-1.702	.0000	.0000	.0000
54	.0000	.0000	-1.702	.0000	.0000	.0000
55	.0000	.0000	-1.702	.0000	.0000	.0000
56	.0000	.0000	-1.702	.0000	.0000	.0000
57	.0000	.0000	-1.702	.0000	.0000	.0000
58	.0000	.0000	-1.702	.0000	.0000	.0000
59	.0000	.0000	-1.702	.0000	.0000	.0000
60	.0000	.0000	- .702	.0000	.0000	.0000
61	.0000	.0000	-1.702	.0000	.0000	.0000
62	.0000	.0000	-1.702	.0000	.0000	.0000
63	.0000	.0000	-1.702	.0000	.0000	.0000
64	.0000	.0000	-1.702	.0000	.0000	.0000
65	.0000	.0000	-1.702	.0000	.0000	.0000
66	.0000	.0000	-1.702	.0000	.0000	.0000
67	.0000	.0000	-1.702	.0000	.0000	.0000
68	.0000	.0000	- .702	.0000	.0000	.0000
69	.0000	.0000	-1.702	.0000	.0000	.0000
70	.0000	.0000	-1.702	.0000	.0000	.0000
71	.0000	.0000	-1.702	.0000	.0000	.0000
72	.0000	.0000	-1.702	.0000	.0000	.0000
73	.0000	.0000	-1.702	.0000	.0000	.0000
74	.0000	.0000	-1.702	.0000	.0000	.0000
75	.0000	.0000	-1.702	.0000	.0000	.0000
76	.0000	.0000	-1.702	.0000	.0000	.0000
77	.0000	.0000	-1.702	.0000	.0000	.0000
78	.0000	.0000	-1.702	.0000	.0000	.0000
79	.0000	.0000	-1.702	.0000	.0000	.0000
80	.0000	.0000	-1.702	.0000	.0000	.0000
81	.0000	.0000	-1.702	.0000	.0000	.0000
82	.0000	.0000	-1.702	.0000	.0000	.0000
83	.0000	.0000	-1.702	.0000	.0000	.0000
84	.0000	.0000	-1.702	.0000	.0000	.0000
85	.0000	.0000	-1.702	.0000	.0000	.0000
86	.0000	.0000	-1.702	.0000	.0000	.0000
87	.0000	.0000	-1.702	.0000	.0000	.0000
88	.0000	.0000	-1.702	.0000	.0000	.0000



LAMPIRAN B

File STRUK1.EIG

Eigenvalues and Frequencies

LEMBAGA PENELITIAN - ITB
 PROGRAM:SAP90/FILE:struk1.EIG
 TINJAUAN MENGENAI PENGARUH GAYAANGIN HALUAN TERHADAP
 KONSTRUKSI BANGUNAN ATAS KAPAL BARANG 3800 DWT
 by : AMBRY IRAWAN (FTK 94310002)

EIGENVALUES AND FREQUENCIES

MODE NUMBER	EIGENVALUE (RAD/SEC) ²	CIRCULAR FREQ (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)
1	.242232E+08	.492171E+04	783.314794	.001277
2	.256607E+08	.506564E+04	806.221008	.001240
3	.340783E+08	.583767E+04	929.093384	.001076
4	.526254E+08	.725433E+04	1154.563312	.000866
5	.110932E+09	.105324E+05	1676.286591	.000597
6	.117498E+09	.108397E+05	1725.185196	.000580
7	.234556E+09	.153152E+05	2437.494763	.000410
8	.259282E+09	.161022E+05	2562.748730	.000390
9	.313577E+09	.177081E+05	2818.334249	.000355
10	.321406E+09	.179278E+05	2853.298568	.000350

LAMPIRAN C

File STRUK1.FEF

Frame Element Joint Forces and Shell
Element Joint Forces

FRAME ELEMENT JOINT FORCES

ELEMENT ID 10						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
13	.000	.000	.000	.000	.000	.000
14	.000	.000	.000	.000	.000	.000
ELEMENT ID 11						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
14	.000	.000	.000	.000	.000	.000
15	.000	.000	.000	.000	.000	.000
ELEMENT ID 12						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
15	.000	.000	.000	.000	.000	.000
16	.000	.000	.000	.000	.000	.000
ELEMENT ID 13						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
17	.000	.000	.000	.000	.000	.000
18	.000	.000	.000	.000	.000	.000
ELEMENT ID 14						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
18	.000	.000	.000	.000	.000	.000
19	.000	.000	.000	.000	.000	.000
ELEMENT ID 15						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
19	.000	.000	.000	.000	.000	.000
20	.000	.000	.000	.000	.000	.000
ELEMENT ID 16						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
21	.000	.000	.000	.000	.000	.000
22	.000	.000	.000	.000	.000	.000
ELEMENT ID 17						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
22	.000	.000	.000	.000	.000	.000
23	.000	.000	.000	.000	.000	.000
ELEMENT ID 18						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
23	.000	.000	.000	.000	.000	.000
24	.000	.000	.000	.000	.000	.000
ELEMENT ID 19						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
25	-19.328	-352	-2.839	.001	7.353	-.791
26	19.328	352	2.839	-.001	4.004	-.617

FRAME ELEMENT JOINT FORCES

ELEMENT ID 20						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
26	-33.324	-.127	-1.733	.000	3.617	-.355
27	33.324	.127	1.733	-.000	6.781	-.409
ELEMENT ID 21						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
27	-15.436	-.443	-8.469	-.036	16.242	-.822
28	15.436	.443	8.469	.036	17.635	-.952
ELEMENT ID 22						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
29	-58.233	-.580	-5.065	.002	10.272	-1.233
30	58.233	.580	5.065	-.002	9.989	-1.087
ELEMENT ID 23						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
30	-38.626	-.231	-2.818	-.003	7.805	-.673
31	38.626	.231	2.818	.003	9.106	-.714
ELEMENT ID 24						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
31	-26.234	-.907	-9.325	-.184	17.631	-1.586
32	26.234	.907	9.325	.184	19.670	-2.041
ELEMENT ID 25						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
33	-92.796	-.323	-6.728	-.000	12.670	-.581
34	92.796	.323	6.728	.000	14.244	-.709
ELEMENT ID 26						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
34	-47.088	-.105	-3.536	-.005	10.605	-.397
35	47.088	.105	3.536	.005	10.611	-.234
ELEMENT ID 27						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
35	-40.328	-.488	-10.338	-.158	19.101	-.688
36	40.328	.488	10.338	.158	22.252	-1.265
ELEMENT ID 28						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
37	-92.829	.344	-6.735	-.002	12.677	.614
38	92.829	-.344	6.735	.002	14.263	.760
ELEMENT ID 29						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
38	-47.129	.118	-3.540	.001	10.620	.439
39	47.129	-.118	3.540	-.001	10.620	.271

FRAME ELEMENT JOINT FORCES

ELEMENT ID 30						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
39	-40.436	.503	-10.345	.157	19.112	.717
40	40.436	-.503	10.345	-.157	22.270	1.295
ELEMENT ID 31						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
41	-57.970	.470	-5.061	-.006	10.257	1.092
42	57.970	-.470	5.061	.006	9.985	.788
ELEMENT ID 32						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
42	-38.494	.146	-2.805	.000	7.780	.401
43	38.494	-.146	2.805	-.000	9.052	.474
ELEMENT ID 33						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
43	-26.661	.787	-9.295	.179	17.550	1.316
44	26.661	-.787	9.295	-.179	19.630	1.834
ELEMENT ID 34						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
45	-19.525	.353	-2.847	-.000	7.368	.773
46	19.525	-.353	2.847	.000	4.022	.638
ELEMENT ID 35						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
46	-33.221	.136	-1.731	-.006	3.617	.387
47	33.221	-.136	1.731	.006	6.767	.432
ELEMENT ID 36						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
47	-15.150	.438	-8.451	.027	16.204	.815
48	15.150	-.438	8.451	-.027	17.601	.936
ELEMENT ID 37						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
49	-3.580	-.639	-11.673	-.025	23.693	-1.359
50	3.580	.639	11.673	.025	23.000	-1.199
ELEMENT ID 38						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
51	-21.275	-.437	-5.638	-.005	17.642	-1.346
52	21.275	.437	5.638	.005	16.187	-1.277
ELEMENT ID 39						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
52	-27.476	-1.446	-11.877	-.179	23.200	-2.525
53	27.476	1.446	11.877	.179	24.309	-3.259

FRAME ELEMENT JOINT FORCES

ELEMENT ID 40 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 54 -35.702 -409 -5.905 -0.03 19.344 -1.453
 55 35.702 409 5.905 0.03 16.089 -1.000

ELEMENT ID 41 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 55 -36.240 -1.046 -12.321 -1.25 22.874 -1.665
 56 36.240 1.046 12.321 1.25 26.410 -2.517

ELEMENT ID 42 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 57 -36.158 419 -5.909 -0.02 19.356 1.490
 58 36.158 -419 5.909 0.02 16.099 1.022

ELEMENT ID 43 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 58 -36.654 1.025 -12.334 0.08 22.895 1.640
 59 36.654 -1.025 12.334 -0.108 26.441 2.461

ELEMENT ID 44 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 60 21.070 414 -5.617 0.01 17.575 1.240
 61 21.070 -414 5.617 -0.001 16.125 1.245

ELEMENT ID 45 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 61 -27.471 1.502 -11.842 0.210 23.125 2.620
 62 27.471 -1.502 11.842 -0.210 24.243 3.389

ELEMENT ID 46 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 63 -3.024 646 -11.607 0.019 23.555 1.389
 64 3.024 -646 11.607 -0.019 22.873 1.196

ELEMENT ID 47 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 65 -1.805 -1.655 -4.880 -0.054 9.775 -3.337
 66 1.805 1.655 4.880 0.054 9.745 -3.282

ELEMENT ID 48 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 67 -5.209 -778 -2.449 0.007 7.753 -2.380
 68 5.209 778 2.449 -0.007 6.942 -2.290

ELEMENT ID 49 -----
 JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 68 -14.532 -2.220 -6.067 -0.071 11.156 -4.066
 69 14.532 2.220 6.067 0.071 13.113 -4.815

FRAME ELEMENT JOINT FORCES

ELEMENT ID 50 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
70	-26.705	-7.97	-2.644	-.005	8.728	-2.495
71	26.705	.797	2.644	.005	7.134	-2.286
ELEMENT ID 51 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
71	-15.829	-2.027	-7.033	-.149	12.194	-3.755
72	15.829	2.027	7.033	.149	15.939	-4.353
ELEMENT ID 52 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
73	-26.661	.804	-2.644	.004	8.733	2.511
74	26.661	-.804	2.644	-.004	7.133	2.310
ELEMENT ID 53 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
74	-15.758	1.993	-7.032	.159	12.189	3.683
75	15.758	-1.993	7.032	-.159	15.939	4.290
ELEMENT ID 54 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
76	-5.226	.877	-2.460	-.012	7.797	2.692
77	5.226	-.877	2.460	.012	6.961	2.568
ELEMENT ID 55 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
77	-14.626	2.312	-6.061	.071	11.147	4.267
78	14.626	-2.312	6.061	-.071	13.097	4.982
ELEMENT ID 56 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
79	-1.857	1.673	-4.870	.067	9.758	3.373
80	1.857	-1.673	4.870	-.067	9.721	3.319
ELEMENT ID 57 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
81	-12.931	-2.083	-2.875	-.302	6.152	-3.493
82	12.931	2.083	2.875	.302	5.349	-4.840
ELEMENT ID 58 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
83	-37.765	-2.309	-2.626	-.122	5.951	-4.463
84	37.765	2.309	2.626	.122	4.555	-4.774
ELEMENT ID 59 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
85	-37.766	2.285	-2.623	.121	5.944	4.415
86	37.766	-2.285	2.623	-.121	4.548	4.727

FRAME ELEMENT JOINT FORCES

ELEMENT ID 60						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
87	-12.925	2.067	-2.875	.303	6.151	3.461
88	12.925	-2.067	2.875	-.303	5.350	4.809
ELEMENT ID 61						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	-8.969	-.025	-6.050	.027	-13.741	.177
25	8.969	.025	6.050	.032	-7.784	-.177
ELEMENT ID 62						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
2	-15.965	.008	5.083	-.009	-19.345	.082
26	15.965	-.008	-5.083	-.011	-18.970	-.082
ELEMENT ID 63						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
3	-6.276	.029	-21.940	-.032	-11.673	.126
27	6.276	-.029	21.940	-.037	-3.390	-.126
ELEMENT ID 64						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
4	-3.433	-.184	15.668	.131	-9.423	.197
28	3.433	.184	-15.668	.309	1.183	-.197
ELEMENT ID 65						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
5	-10.791	-.033	-24.556	.033	-15.894	.251
29	10.791	.033	24.556	.045	-10.005	-.251
ELEMENT ID 66						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
6	-11.544	.006	10.482	-.007	-16.562	.172
30	11.544	-.006	-10.482	-.007	-11.144	-.172
ELEMENT ID 67						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
7	-7.668	-.005	-17.395	-.006	-13.536	.206
31	7.668	.005	17.395	.018	-4.866	-.206
ELEMENT ID 68						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
8	-3.518	-1.164	-47.165	.915	-10.256	.452
32	3.518	1.164	47.165	1.879	1.813	-.452
ELEMENT ID 69						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
9	-13.111	-.014	-44.606	.017	-18.837	.084
33	13.111	.014	44.606	.017	-12.629	-.084

FRAME ELEMENT JOINT FORCES

ELEMENT ID 70						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
10	-10.117	.002	23.721	-0.004	-16.556	.153
34	10.117	-0.002	-23.721	-0.001	-7.726	-.153

ELEMENT ID 71						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
11	-10.304	-0.025	-13.557	.008	-16.786	.021
35	10.304	.025	13.557	.051	-7.942	-.021

ELEMENT ID 72						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
12	-3.890	-1.029	-108.428	.809	-11.716	.333
36	3.890	1.029	108.428	1.661	2.379	-.333

ELEMENT ID 73						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
13	-13.116	-0.004	-44.625	.007	-18.841	-.084
37	13.116	.004	44.625	.002	-12.637	.084

ELEMENT ID 74						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
14	-10.097	-0.004	23.677	.003	-16.540	-.163
38	10.097	.004	-23.677	.008	-7.692	.163

ELEMENT ID 75						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
15	-10.302	.040	-13.545	-.045	-16.786	-.026
39	10.302	-.040	13.545	-.050	-7.939	.026

ELEMENT ID 76						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
16	-3.876	1.029	-108.911	-.831	-11.705	-.339
40	3.876	-1.029	108.911	-1.639	2.403	.339

ELEMENT ID 77						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
17	-10.770	.013	-24.575	-0.008	-15.861	-.252
41	10.770	-.013	24.575	-.024	-9.986	.252

ELEMENT ID 78						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
18	-11.501	-.018	10.765	.013	-16.512	-.087
42	11.501	.018	-10.765	.029	-11.090	.087

ELEMENT ID 79						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
19	-7.713	.023	-16.769	-.034	-13.557	-.146
43	7.713	-.023	16.769	-.022	-4.955	.146

FRAME ELEMENT JOINT FORCES

ELEMENT ID 80						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
20	-3.480	1.149	-47.504	-.924	-10.211	-.427
44	3.480	-1.149	47.504	-1.832	1.858	.427
ELEMENT ID 81						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
21	-8.990	.005	-6.034	-.002	-13.770	-.164
45	8.990	-.005	6.034	-.010	-7.807	.164
ELEMENT ID 82						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
22	-15.981	.010	4.874	-.008	-19.370	-.091
46	15.981	-.010	-4.874	-.015	-18.984	.091
ELEMENT ID 83						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
23	-6.334	-.011	-22.457	-.007	-11.731	-.127
47	6.334	.011	22.457	.034	-3.471	.127
ELEMENT ID 84						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
24	-3.482	.137	16.220	-.116	-9.473	-.193
48	3.482	-.137	-16.220	-.212	1.116	.193
ELEMENT ID 85						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
27	-8.344	.116	-20.074	-.134	-12.673	.156
49	8.344	-.116	20.074	-.144	-7.354	-.156
ELEMENT ID 86						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
28	-6.859	-.185	12.448	.255	-9.152	-.001
50	6.859	.185	-12.448	.190	-7.310	.001
ELEMENT ID 87						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
30	-9.712	.031	-11.433	-.034	-16.905	.216
51	9.712	-.031	11.433	-.039	-6.405	-.216
ELEMENT ID 88						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
31	-10.118	.021	-15.873	-.031	-13.946	.126
52	10.118	-.021	15.873	-.019	-10.337	-.126
ELEMENT ID 89						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
32	-3.597	-2.211	-30.215	2.658	-5.347	.277
53	3.597	2.211	30.215	2.649	-3.287	-.277

FRAME ELEMENT JOINT FORCES

ELEMENT ID 90						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
34	-7.344	.031	-20.922	-.035	-13.817	.368
54	7.344	-.031	20.922	-.038	-3.809	-.368
ELEMENT ID 91						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
35	-17.396	.016	-8.526	-.010	-21.803	.133
55	17.396	-.016	8.526	-.029	-19.947	-.133
ELEMENT ID 92						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
36	-3.527	-1.719	-79.649	2.156	-5.481	.282
56	3.527	1.719	79.649	1.970	-2.982	-.282
ELEMENT ID 93						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
38	-7.347	.040	-21.000	-.044	-13.818	-.363
57	7.347	-.040	21.000	-.052	-3.815	.363
ELEMENT ID 94						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
39	-17.426	.096	-8.522	-.123	-21.842	-.119
58	17.426	-.096	8.522	-.106	-19.981	.119
ELEMENT ID 95						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
40	-3.526	1.835	-80.159	-2.335	-5.485	-.251
59	3.526	-1.835	80.159	-2.070	-2.978	.251
ELEMENT ID 96						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
42	-9.663	-.455	-11.338	-.020	-16.801	.316
60	9.663	.455	11.338	-.022	-6.391	.650
ELEMENT ID 97						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
43	-10.151	-.570	-15.750	-.102	-13.989	.346
61	10.151	.570	15.750	-.105	-10.373	.669
ELEMENT ID 98						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
44	-3.654	1.325	-30.739	-3.047	-5.390	-.126
62	3.654	-1.325	30.739	-3.206	-3.379	.492
ELEMENT ID 99						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
47	-8.375	-.009	-20.080	.004	-12.680	-.158
63	8.375	.009	20.080	.019	-7.420	.158

FRAME ELEMENT JOINT FORCES

ELEMENT ID 100 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
48	-6.858	.315	13.282	-.406	-9.127	.012
64	6.858	-.315	-13.282	-.350	-7.333	-.012

ELEMENT ID 101 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
49	-4.207	.097	-10.260	-.091	-.994	.335
65	4.207	-.097	10.260	-.141	-9.104	-.335

ELEMENT ID 102 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
30	-5.699	-.464	6.298	.508	-3.338	.391
66	5.699	.464	-6.298	.606	-10.341	-.391

ELEMENT ID 103 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
51	-2.636	-.036	-7.585	.042	1.230	.288
67	2.636	.036	7.585	.044	-7.556	-.288

ELEMENT ID 104 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
52	-9.612	.020	-11.392	.020	-7.947	.271
68	9.612	-.020	11.392	-.068	-15.123	-.271

ELEMENT ID 105 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
53	-3.222	-1.639	-15.979	2.289	-.984	.280
69	3.222	1.639	15.979	1.645	-6.748	-.280

ELEMENT ID 106 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
54	-3.082	-.034	-16.809	.045	1.419	.220
70	3.082	.034	16.809	.038	-8.816	-.220

ELEMENT ID 107 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
55	-18.115	-.055	-3.881	.063	-18.698	.417
71	18.115	.055	3.881	.069	-24.779	-.417

ELEMENT ID 108 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
56	-2.967	-1.890	-52.989	2.204	-.694	.280
72	2.967	1.890	52.989	2.333	-6.427	-.280

ELEMENT ID 109 -----

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
57	-3.081	-.049	-16.887	.055	1.422	-.201
73	3.081	.049	16.887	.062	-8.816	.201

FRAME ELEMENT JOINT FORCES

ELEMENT ID 110						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
58	-18.136	.048	-3.882	-.038	-18.717	-.417
74	18.136	-.048	3.882	-.076	-24.809	.417
ELEMENT ID 111						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
59	-2.960	1.634	-53.013	-1.810	-.676	-.302
75	2.960	-1.634	53.013	-2.111	-6.429	.302
ELEMENT ID 112						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
60	-2.654	.291	-7.501	.050	1.133	-.494
76	2.654	-.291	7.501	.003	-7.502	.228
ELEMENT ID 113						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
61	-9.689	.440	-11.439	.021	-8.073	-.752
77	9.689	-.440	11.439	.067	-15.181	-.217
ELEMENT ID 114						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
62	-3.183	2.282	-16.211	-2.307	-.957	-.407
78	3.183	-2.282	16.211	-1.548	-6.682	.089
ELEMENT ID 115						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
63	-4.256	-.105	-10.156	.123	-1.092	-.346
79	4.256	.105	10.156	.130	-9.123	.346
ELEMENT ID 116						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
64	-5.742	.291	6.519	-.231	-3.413	-.421
80	5.742	-.291	-6.519	-.469	-10.368	.421
ELEMENT ID 117						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
68	-4.549	.521	-8.590	-.473	-4.833	-.212
81	4.549	-.521	8.590	-.777	-6.085	.212
ELEMENT ID 118						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
69	-2.154	-1.858	-3.757	1.791	.341	.112
82	2.154	1.858	3.757	2.669	-5.511	-.112
ELEMENT ID 119						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
71	-4.708	.087	-17.294	-.041	-5.338	.179
83	4.708	-.087	17.294	-.168	-5.961	-.179

FRAME ELEMENT JOINT FORCES

ELEMENT ID 140							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
16	-17.971	.000	-17.971	-11.681	.000	11.681	
20	-17.971	.000	-17.971	11.681	.000	-11.681	
ELEMENT ID 141							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
17	.000	.000	.000	.000	.000	.000	
21	.000	.000	.000	.000	.000	.000	
ELEMENT ID 142							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
18	.000	.000	.000	.000	.000	.000	
22	.000	.000	.000	.000	.000	.000	
ELEMENT ID 143							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
19	.000	.000	.000	.000	.000	.000	
23	.000	.000	.000	.000	.000	.000	
ELEMENT ID 144							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
20	-8.986	.000	-8.986	-2.920	.000	2.920	
24	-8.986	.000	-8.986	2.920	.000	-2.920	
ELEMENT ID 145							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
25	-.759	.677	-.029	-.033	.027	.882	
29	.759	-.677	.029	.024	-.027	-.599	
ELEMENT ID 146							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
26	-1.959	-.407	.014	.013	-2.018	2.090	
30	1.969	.407	-.014	-.015	2.018	-1.749	
ELEMENT ID 147							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
27	-1.564	1.404	.049	.030	-1.155	1.675	
31	1.564	-1.404	-.049	-.065	.155	-1.375	
ELEMENT ID 148							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
28	-8.774	-1.902	-7.041	-1.509	-.585	3.198	
32	-9.197	1.902	-10.930	5.300	.585	-3.610	
ELEMENT ID 149							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	M(Z)
29	-1.148	1.224	-.303	-.002	-.064	.130	
33	.148	-1.224	.003	-.009	.064	-.448	

FRAME ELEMENT JOINT FORCES

ELEMENT ID 150 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
30	-.186	-.375	.006	.012	-.682	.344
34	.186	.375	-.006	.013	.682	.381

ELEMENT ID 151 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
31	-.338	1.430	.033	.058	-.035	.484
35	.338	-1.430	-.033	.070	.035	.834

ELEMENT ID 152 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
32	-17.506	-1.762	-17.138	-10.021	-.405	10.662
36	-18.436	1.762	-18.805	13.272	.405	-12.475

ELEMENT ID 153 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
33	-.000	1.533	-.002	-.003	.000	-.128
37	.000	-1.533	.002	-.005	-.000	.129

ELEMENT ID 154 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
34	-.010	-.621	.002	.005	-.003	-.219
38	.010	.621	-.002	.007	.003	.267

ELEMENT ID 155 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
35	-.005	1.772	.012	.041	-.000	-.023
39	.005	-1.772	-.012	.017	.000	.049

ELEMENT ID 156 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
36	-22.125	-1.560	-22.105	-17.247	-.002	17.193
40	-22.112	1.560	-22.132	17.313	.002	-17.163

ELEMENT ID 157 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
37	.156	1.185	-.001	.000	.066	-.464
41	-.156	-1.185	.001	-.006	-.066	-.146

ELEMENT ID 158 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
38	.304	-.440	.005	.006	.685	-.522
42	-.304	.440	-.005	.012	-.685	-.666

ELEMENT ID 159 -----						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
39	.426	1.332	.002	-.000	.049	-.944
43	-.426	-1.332	-.002	.010	-.049	-.717

FRAME ELEMENT JOINT FORCES

ELEMENT ID 160						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
40	-18.398	-1.864	-18.757	-13.183	.408	12.432
44	-17.544	1.864	-17.185	10.118	-.408	-10.765
ELEMENT ID 161						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
41	.703	.729	.016	.010	-.035	-.519
45	-.703	-.729	-.016	.020	.035	-.853
ELEMENT ID 162						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
42	2.286	-.496	-.004	.010	2.014	-2.235
46	-2.286	.496	.004	-.018	-2.014	-2.222
ELEMENT ID 163						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
43	1.774	1.660	.083	.062	.137	-1.693
47	-1.774	-1.660	-.083	.099	-.137	-1.765
ELEMENT ID 164						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
44	-9.151	-1.253	-10.666	-5.059	.592	3.524
48	-8.820	1.253	-7.305	1.781	-.592	-3.201
ELEMENT ID 165						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
49	-1.067	3.530	.067	.035	.529	1.133
52	1.067	-3.530	-.067	.096	-.529	.947
ELEMENT ID 166						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
50	-8.384	-2.390	-7.315	-1.810	-.673	3.343
53	-9.587	2.390	-10.656	5.067	.673	-4.516
ELEMENT ID 167						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
51	-.624	2.237	-.001	-.003	-.584	1.342
54	.624	-2.237	.001	-.001	.584	1.090
ELEMENT ID 168						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
52	-1.255	3.091	.032	.067	.316	2.278
55	1.255	-3.091	-.032	.059	-.316	2.616
ELEMENT ID 169						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
53	-17.984	-4.407	-17.249	-10.185	-.493	11.597
56	-17.959	4.407	-18.693	13.000	.493	-11.549

FRAME ELEMENT JOINT FORCES

ELEMENT ID 170						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
54	-.010	2.711	-.001	-.002	-.002	-.782
57	.010	-2.711	.001	-.003	.002	.828

ELEMENT ID 171						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
55	.002	3.799	.011	.030	-.001	-.235
58	-.002	-3.799	-.011	.024	.001	.225

ELEMENT ID 172						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
56	-22.100	-5.282	-22.080	-17.300	-.003	16.724
59	-22.137	5.282	-22.157	17.485	.003	-16.812

ELEMENT ID 173						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
57	.674	2.381	.003	.002	.584	-1.166
60	-.674	-2.381	-.003	.011	-.584	-1.528

ELEMENT ID 174						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
58	1.208	3.241	.005	.010	-.297	-2.589
61	-1.208	-3.241	-.005	.008	.297	-2.241

ELEMENT ID 175						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
59	-18.409	-4.055	-19.115	-13.496	.491	12.093
62	-18.455	4.055	-17.749	10.765	-.491	-12.187

ELEMENT ID 176						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
61	1.146	3.052	.109	.070	-.543	-.963
63	-1.146	-3.052	-.109	.132	.543	-1.157

ELEMENT ID 177						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
62	-9.227	-3.510	-10.413	-5.042	.722	4.415
64	-7.823	3.510	-6.636	1.548	-.722	-3.116

ELEMENT ID 178						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
65	-3.655	3.738	-.197	-.200	.156	3.537
68	3.655	-3.738	.197	-.185	-.156	3.590

ELEMENT ID 179						
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
66	-10.540	-5.145	-8.412	-2.423	-1.168	5.234
69	-7.432	5.145	-9.559	3.541	1.168	-2.203

FRAME ELEMENT JOINT FORCES

ELEMENT ID 180									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
67	-1.267	1.782	-.007	-.011	-.294	2.531			
70	1.267	-1.782	.007	-.015	.294	2.409			
ELEMENT ID 181									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
68	-1.642	8.014	-.003	-.032	.097	3.171			
71	1.642	-8.014	.003	.019	-.097	3.233			
ELEMENT ID 182									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
69	-18.554	-7.810	-17.508	-10.927	-.499	12.710			
72	-17.388	7.810	-18.434	12.733	.499	-10.436			
ELEMENT ID 183									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
70	.005	2.544	-.001	-.005	-.001	-1.142			
73	-.005	-2.544	.001	.001	.001	1.116			
ELEMENT ID 184									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
71	-.001	9.102	.001	.017	.001	-.870			
74	.001	-9.102	-.001	-.011	-.001	.874			
ELEMENT ID 185									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
72	-22.124	-10.082	-22.134	-17.322	-.000	16.335			
75	-22.112	10.082	-22.103	17.248	.000	-16.306			
ELEMENT ID 186									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
73	1.192	1.692	-.012	-.012	.285	-2.350			
76	-1.192	-1.692	.012	-.036	-.285	-2.299			
ELEMENT ID 187									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
74	1.598	8.048	.005	-.015	-.097	-3.202			
77	-1.598	-8.048	-.005	.035	.097	-3.031			
ELEMENT ID 188									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
75	-17.413	-8.140	-18.458	-12.795	.503	10.453			
78	-18.529	8.140	-17.484	10.897	-.503	-12.630			
ELEMENT ID 189									
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)			
77	3.518	3.900	.200	.189	-.156	-3.389			
79	-3.518	-3.900	-.200	-.201	.156	-3.472			

FRAME ELEMENT JOINT FORCES

ELEMENT ID 190								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
78	-7.464	-4.611	-9.646	-3.583	1.169	2.267		
80	-10.507	4.611	-8.325	2.295	-1.169	-5.235		
ELEMENT ID 191								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
81	-1.627	5.432	-.211	-.491	-.029	3.512		
83	1.627	-5.432	.211	-.331	.029	2.834		
ELEMENT ID 192								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
82	-18.310	-10.547	-17.226	-10.024	.169	12.150		
84	-17.633	10.547	-18.717	12.932	-.169	-10.830		
ELEMENT ID 193								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
83	-.006	7.829	-.000	-.049	.001	-1.139		
85	.006	-7.829	.000	.048	-.001	1.168		
ELEMENT ID 194								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
84	-22.125	-14.501	-22.117	-17.428	.001	16.296		
86	-22.112	14.501	-22.120	17.436	-.001	-16.267		
ELEMENT ID 195								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
85	1.640	5.455	.210	.330	.029	-2.862		
87	-1.640	-5.455	-.210	.490	-.029	-3.536		
ELEMENT ID 196								
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)		
86	-17.621	-10.530	-18.719	-12.932	-.170	10.804		
88	-18.321	10.530	-17.224	10.017	.170	-12.170		

LEMBAGA PENELITIAN - ITB
 PROGRAM: SAP90/FILE: STRUKI.FEF
 TINJAUAN PENGARUH GAYA ANGIN HALUAN TERHADAP KONSTRUKSI BANGUNAN ATAS
 KAPAL MENGGUNAKAN SAP - 90

SHELL ELEMENT JOINT FORCES

ELEMENT ID 1							
JOINT	FO(X)	F(Y)	F(Z)	MO(X)	M(Y)	M(Z)	
1	.000	-.245	.000	.042	.000	-.411	
2	.000	.200	.000	.009	.000	-.382	
25	.000	-.349	.000	.050	.000	-.925	
26	.000	.395	.000	.009	.000	-.661	
ELEMENT ID 2							
JOINT	FO(X)	F(Y)	F(Z)	MO(X)	M(Y)	M(Z)	
2	.000	-.010	.000	-.072	.000	-.223	
3	.000	.169	.000	-.104	.000	-.206	
26	.000	-.204	.000	-.084	.000	-.375	
27	.000	.046	.000	-.121	.000	-.484	
ELEMENT ID 3							
JOINT	FO(X)	F(Y)	F(Z)	MO(X)	M(Y)	M(Z)	
3	.000	-.373	.000	.071	.000	-.488	
4	.000	-.063	.000	.210	.000	-.510	
27	.000	-.376	.000	.213	.000	-.500	
28	.000	.812	.000	.534	.000	-1.097	
ELEMENT ID 4							
JOINT	FO(X)	F(Y)	F(Z)	MO(X)	M(Y)	M(Z)	
30	.000	-.406	.00	-.140	.000	-1.466	
31	.000	.623	.000	-.136	.000	-1.570	
51	.000	-.722	.000	-.137	.000	-1.941	
52	.000	.504	.000	-.108	.000	-1.789	
ELEMENT ID 5							
JOINT	FO(X)	F(Y)	F(Z)	MO(X)	M(Y)	M(Z)	
27	.000	-.845	.000	-.016	.000	-1.633	
28	.000	.648	.000	.355	.000	-1.803	
49	.000	-.984	.000	-.089	.000	-2.049	
50	.000	1.180	.000	.221	.000	-1.829	
ELEMENT ID 6							
JOINT	FO(X)	F(Y)	F(Z)	MO(X)	M(Y)	M(Z)	
51	.000	-1.012	.000	.143	.000	-2.844	
52	.000	.944	.000	.118	.000	-2.733	
67	.000	-1.039	.000	.032	.000	-3.444	
68	.000	1.107	.000	-.131	.000	-3.285	

SHELL ELEMENT JOINT FORCES

ELEMENT ID 14

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
60	.000	.504	.021	.173	-.076	1.833
61	.000	-7.51	-.031	.127	-.083	1.992
76	.000	1.105	.046	.100	-.126	3.014
77	.000	-.858	-.036	.195	-.117	2.815

ELEMENT ID 15

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
63	.000	1.795	.000	.003	.000	3.490
64	.000	-1.270	.000	-.309	.000	3.188
79	.000	2.122	.000	-.185	.000	4.553
80	.000	-2.647	.000	-.769	.000	4.437

ELEMENT ID 16

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
77	.000	4.531	.000	-.830	.000	6.879
78	.000	-.782	.000	-2.848	.000	8.192
87	.000	2.866	.000	-.992	.000	6.178
88	.000	-6.615	.000	-4.326	.000	8.341

ELEMENT ID 17

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
4	-3.323	.000	.000	.000	-13.190	.110
8	-6.249	.000	.000	.000	-13.824	-.344
28	3.682	.000	.000	.000	1.750	.355
32	5.890	.000	.000	.000	2.290	-.822

ELEMENT ID 18

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
8	-8.764	.000	.000	.000	-29.405	-.532
12	-11.640	.000	.000	.000	-30.916	-.489
32	9.549	.000	.000	.000	5.330	-1.190
36	10.855	.000	.000	.000	6.020	-.852

ELEMENT ID 19

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
12	-13.174	.000	.000	.000	-39.573	.008
16	-13.151	.000	.000	.000	-39.562	.008
36	13.163	.000	.000	.000	7.963	-.854
40	13.162	.000	.000	.000	7.991	.888

ELEMENT ID 20

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
16	-1.572	.000	.000	.000	-30.854	.45
20	-8.388	.000	.000	.000	-29.311	.483
40	10.650	.000	.000	.000	6.107	.814
44	9.410	.000	.000	.000	5.434	1.062

SHELL ELEMENT JOINT FORCES

ELEMENT ID 21							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
20	-6.164	.000	.000	.000	-13.807	.299	
24	-3.424	.000	.000	.000	-13.215	-1.116	
44	5.883	.000	.000	.000	2.302	.721	
48	3.705	.000	.000	.000	1.708	-.355	

ELEMENT ID 22							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
28	-6.918	.000	.000	.000	-10.830	.496	
32	-7.482	.000	.000	.000	-9.121	-1.627	
50	8.299	.000	.000	.000	-8.246	.674	
53	6.101	.000	.000	.000	-6.361	-2.236	

ELEMENT ID 23							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
32	-7.409	.000	.000	.000	-14.815	-1.197	
36	-12.211	.000	.000	.000	-14.975	-.817	
53	8.173	.000	.000	.000	-8.808	-.666	
56	11.447	.000	.000	.000	-8.491	-.300	

ELEMENT ID 24							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
35	-11.938	.000	.000	.000	-18.561	-.879	
40	-11.968	.000	.000	.000	-18.566	.964	
55	11.958	.000	.000	.000	-10.127	-1.603	
59	11.948	.000	.000	.000	-10.121	1.521	

ELEMENT ID 25							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
40	-12.319	.000	.000	.000	-15.131	-.782	
44	-7.534	.000	.000	.000	-15.081	1.436	
59	11.651	.000	.000	.000	-8.680	.209	
62	8.303	.000	.000	.000	-8.996	1.015	

ELEMENT ID 26							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
44	-7.452	.000	.000	.000	-8.936	1.890	
48	-6.659	.000	.000	.000	-10.707	-.452	
62	5.997	.000	.000	.000	-6.218	2.687	
64	8.113	.000	.000	.000	-8.005	-.689	

ELEMENT ID 27							
JOINT	FOX	F(Y)	F(Z)	MOX	M(Y)	M(Z)	
50	-4.655	.000	.000	.000	-3.433	1.796	
53	-7.630	.000	.000	.000	-2.565	-1.08	
66	3.036	.000	.000	.000	-12.673	2.029	
69	9.249	.000	.000	.000	-10.812	-.060	

SHELL ELEMENT JOINT FORCES

ELEMENT ID 28

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
53	-6.925	.000	.000	.000	-2.485	.485
56	-10.120	.000	.000	.000	-2.221	.80
69	5.919	.000	.000	.000	-18.249	1.111
72	11.125	.000	.000	.000	-17.952	1.476

ELEMENT ID 29

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
56	-10.026	.000	.000	.000	-2.385	-1.603
59	-10.065	.000	.000	.000	-2.383	1.523
72	10.047	.000	.000	.000	-21.795	-2.325
75	10.044	.000	.000	.000	-21.738	2.308

ELEMENT ID 30

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
59	-10.209	.000	.000	.000	-2.119	-.938
62	-6.769	.000	.000	.000	-2.304	-.699
75	11.176	.000	.000	.000	-17.999	-1.505
78	5.801	.000	.000	.000	-18.324	-1.309

ELEMENT ID 31

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
62	-7.91	.000	.000	.000	-2.619	1.295
64	-4.430	.000	.000	.000	-3.400	-1.958
78	9.314	.000	.000	.000	-10.722	-.143
80	2.908	.000	.000	.000	-12.591	-2.942

ELEMENT ID 32

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
69	-4.781	.000	.000	.000	4.756	1.453
72	-.883	.000	.000	.000	9.051	1.850
82	3.225	.000	.000	.000	-14.034	1.077
84	2.439	.000	.000	.000	-13.367	1.690

ELEMENT ID 33

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
72	.29	.000	.000	.000	15.911	-2.292
75	.70	.000	.000	.000	15.929	2.341
84	-3.50	.000	.000	.000	-15.086	-2.358
86	-.349	.000	.000	.000	-15.076	2.407

ELEMENT ID 34

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
75	-.891	.000	.000	.000	9.065	-1.856
78	-4.768	.000	.000	.000	4.738	-1.364
86	2.425	.000	.000	.000	-13.354	-1.699
88	3.233	.000	.000	.000	-14.030	-1.065

SHELL ELEMENT JOINT FORCES

ELEMENT ID 35							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
27	-14.257	.000	.000	.000	-18.166	2.543	
31	-19.168	.000	.000	.000	-18.457	2.090	
49	.786	.000	.000	.000	-11.366	2.226	
52	15.638	.000	.000	.000	-13.029	1.858	
ELEMENT ID 36							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
49	-9.276	.000	.000	.000	-4.509	3.298	
52	-9.755	.000	.000	.000	-7.861	3.096	
65	1.252	.000	.000	.000	-15.351	4.638	
68	17.779	.000	.000	.000	-17.953	4.615	
ELEMENT ID 37							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
43	-17.742	.000	.000	.000	-18.182	-1.984	
47	-16.256	.000	.000	.000	-18.018	-2.488	
61	15.749	.000	.000	.000	-12.744	-1.581	
63	9.250	.000	.000	.000	-11.052	-2.134	
ELEMENT ID 38							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
61	-9.747	.000	.000	.000	-7.838	-3.441	
63	-9.199	.000	.000	.000	-4.535	-3.84	
77	17.826	.000	.000	.000	-17.804	-4.904	
79	1.120	.000	.000	.000	-15.294	-4.799	
ELEMENT ID 39							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
30	-23.222	.000	.000	.000	-43.668	1.089	
34	-23.754	.000	.000	.000	-40.792	1.097	
51	21.854	.000	.000	.000	-15.312	1.758	
54	25.121	.000	.000	.000	-12.970	1.389	
ELEMENT ID 40							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
34	-24.903	.000	.000	.000	-46.745	-.369	
38	-24.896	.000	.000	.000	-46.746	.450	
54	24.870	.000	.000	.000	3.009	-1.318	
57	24.929	.000	.000	.000	-13.017	1.397	
ELEMENT ID 41							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
38	-2.869	.000	.000	.000	-40.922	-1.195	
42	-2.295	.000	.000	.000	-43.867	-.534	
57	25.531	.000	.000	.000	-13.101	-1.499	
60	21.633	.000	.000	.000	-15.304	-1.089	

SHELL ELEMENT JOINT FORCES

ELEMENT ID 42 -----

J	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
JOINT 1	-7.032	.000	.000	.000	3.429	2.960
54	-8.717	.000	.000	.000	3.724	2.561
57	3.839	.000	.000	.000	-21.836	3.581
70	11.910	.000	.000	.000	-23.115	3.351

ELEMENT ID 43 -----

J	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
JOINT 4	-10.447	.000	.000	.000	4.719	-1.339
57	-10.444	.000	.000	.000	4.722	1.376
70	10.440	.000	.000	.000	-29.790	-1.904
73	10.451	.000	.000	.000	-29.790	1.901

ELEMENT ID 44 -----

JOINT	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
57	-8.806	.000	.000	.000	3.847	-2.588
60	-6.899	.000	.000	.000	3.534	-3.315
73	11.942	.000	.000	.000	-23.165	-3.378
75	3.764	.000	.000	.000	-21.910	-3.635

ELEMENT ID 45 -----

JOINT	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
58	-1.532	.000	.000	.000	-13.754	5.411
81	-9.963	.000	.000	.000	-14.271	5.374
81	10.009	.000	.000	.000	-16.664	5.878
83	15.486	.000	.000	.000	-16.498	4.875

ELEMENT ID 46 -----

JOINT	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
71	-15.962	.000	.000	.000	-18.094	-1.459
74	-15.939	.000	.000	.000	-18.088	1.480
83	15.951	.000	.000	.000	-20.194	-1.927
84	15.951	.000	.000	.000	-20.187	1.962

ELEMENT ID 47 -----

J	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
JOINT 1	-9.925	.000	.000	.000	-14.262	-5.374
74	-15.487	.000	.000	.000	-13.750	-5.247
75	15.462	.000	.000	.000	-16.486	-4.870
84	10.016	.000	.000	.000	-16.658	-5.844

ELEMENT ID 48 -----

JOINT	FO(X)	F(Y)	F(Z)	MO(X)	MO(Y)	M(Z)
JOINT 1	-12.409	.000	.000	.000	-19.894	.486
25	-14.802	.000	.000	.000	-20.871	.353
25	11.119	.000	.000	.000	-11.755	1.011
29	16.092	.000	.000	.000	-12.786	.667

SHELL ELEMENT JOINT FORCES

ELEMENT ID 49

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
5	-30.989	.000	.000	.000	-46.417	.132
9	-34.840	.000	.000	.000	-49.146	.193
29	3.739	.000	.000	.000	-30.022	.088
33	35.090	.000	.000	.000	-32.404	.562

ELEMENT ID 50

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
9	-44.447	.000	.000	.000	-63.800	.000
13	-44.453	.000	.000	.000	-63.805	.0
33	44.447	.000	.000	.000	-42.874	-.217
37	44.454	.000	.000	.000	-42.883	.218

ELEMENT ID 51

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
13	-34.839	.000	.000	.000	-49.125	-.202
17	-3.945	.000	.000	.000	-46.361	-.141
37	35.103	.000	.000	.000	-32.401	-.581
41	30.681	.000	.000	.000	-29.995	-.105

ELEMENT ID 52

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
17	-4.777	.000	.000	.000	-20.853	-.310
21	2.434	.000	.000	.000	-19.908	-.467
4	15.972	.000	.000	.000	-12.780	-.74
45	11.239	.000	.000	.000	-11.765	-.980

ELEMENT ID 53

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
25	.000	.000	-4.973	-.050	12.159	.000
26	.000	.000	4.841	-.006	7.499	.000
29	.000	.000	-5.4	-.131	12.023	.000
30	.000	.000	5.916	.006	11.709	.000

ELEMENT ID 54

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
26	.000	.000	-2.761	.080	5.867	.000
27	.000	.000	3.030	.03	11.362	.000
30	.000	.000	-3.478	.134	9.793	.000
31	.000	.000	3.209	.206	10.412	.000

ELEMENT ID 55

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
29	.000	.000	-15.435	.009	30.610	.000
30	.000	.000	15.445	.020	31.085	.000
33	.000	.000	-16.934	-.005	32.360	.000
34	.000	.000	16.924	.017	35.421	.000

SHELL ELEMENT JOINT FORCES

ELEMENT ID 56							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
33	.000	.000	-22.736	.000	42.813	.000	
34	.000	.000	22.739	.006	48.130	.000	
37	.000	.000	-22.743	-.003	42.819	.000	
38	.000	.000	22.740	.009	48.154	.000	
ELEMENT ID 57							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
37	.000	.000	-16.940	.008	32.359	.000	
38	.000	.000	16.948	.010	35.453	.000	
41	.000	.000	-15.435	-.002	30.590	.000	
42	.000	.000	15.426	.018	31.095	.000	
ELEMENT ID 58							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
41	.000	.000	-5.889	.028	12.015	.000	
42	.000	.000	5.922	.029	11.715	.000	
45	.000	.000	-4.963	.022	12.168	.000	
46	.000	.000	4.931	-.016	7.512	.000	
ELEMENT ID 59							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
42	.000	.000	-3.249	.117	9.778	.000	
43	.000	.000	3.583	.190	10.349	.000	
46	.000	.000	-2.969	.089	5.848	.000	
47	.000	.000	2.635	.256	11.334	.000	
ELEMENT ID 60							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
67	.000	.000	-6.922	-.072	21.934	.000	
68	.000	.000	6.879	-.110	19.410	.000	
70	.000	.000	-.041	-.019	23.248	.000	
71	.000	.000	7.083	.037	19.174	.000	
ELEMENT ID 61							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
70	.000	.000	-8.922	.005	29.453	.000	
71	.000	.000	8.923	.044	24.076	.000	
73	.000	.000	-8.922	-.009	29.461	.000	
74	.000	.000	8.920	-.034	24.073	.000	
ELEMENT ID 62							
JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
73	.000	.000	-7.102	-.048	23.192	.000	
74	.000	.000	7.074	-.063	19.195	.000	
76	.000	.000	-6.891	-.056	22.025	.000	
77	.000	.000	6.920	.055	19.450	.000	

SHELL ELEMENT JOINT FORCES

ELEMENT ID 63

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
81	.000	.000	-7.296	.571	16.626	.000
82	.000	.000	8.802	2.712	14.028	.000
83	.000	.000	-7.804	.616	16.584	.000
84	.000	.000	6.298	1.974	13.160	.000

ELEMENT ID 64

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
83	.000	.000	-8.867	.054	20.090	.000
84	.000	.000	8.871	.559	15.384	.000
85	.000	.000	-8.866	-.047	20.083	.000
86	.000	.000	8.862	-.545	15.375	.000

ELEMENT ID 65

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
85	.000	.000	-7.798	-.619	16.573	.050
86	.000	.000	6.286	-1.975	13.147	.050
87	.000	.000	-7.293	-.578	16.620	.000
88	.000	.000	8.805	2.727	14.024	.000

ELEMENT ID 66

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
65	.000	.000	-6.974	.096	14.524	.000
66	.000	.000	8.038	.48	14.43	.000
68	.000	.000	-8.049	.232	14.203	.000
69	.000	.000	6.985	.999	16.930	.000

ELEMENT ID 67

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
77	.000	.000	-8.122	-.267	14.186	.000
78	.000	.000	6.818	-1.073	16.904	.000
79	.000	.000	-6.878	-.212	14.504	.000
80	.000	.000	8.183	-.991	14.407	.000



LAMPIRAN D

File STRUK1.F4F *

Shell Element Forces

LEMBAGA PENELITIAN - ITB
 PROGRAM:SAP90/FILE: STRUK1.F4F
 TINJAUAN MENGENAI PENGARUH GAYA ANGIN HALUAN TERHADAP KONSTRUKSI
 BANGUNAN ATAS KAPAL BARANG 3800 DWT

by : AMBRY IRAWAN (FTK 94310002)

SHELL ELEMENT FORCES

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
 BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	0.0000E+00	-3.8560E-02	1.9077E-01	1.7246E-01	-2.1102E-01	42.11
2	0.0000E+00	1.3096E-02	8.8859E-02	9.5647E-02	-8.2552E-02	47.11
25	-1.1135E+00	4.4826E-02	1.8948E-01	7.5033E-02	-1.1437E+00	80.94
26	8.6886E-01	-1.5438E-02	8.7564E-02	8.7745E-01	-2.4025E-02	5.60

ELEMENT ID 2 -----
 LOADCOMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	0.0000E+00	1.3096E-02	8.8859E-02	9.5647E-02	-8.2552E-02	47.11
3	0.0000E+00	4.5387E-02	1.3655E-01	1.6112E-01	-1.1573E-01	49.72
26	-4.9847E-01	-1.5438E-02	8.8346E-02	2.1309E-04	-5.1412E-01	79.95
27	5.7477E-01	-5.2827E-02	1.3604E-01	6.0299E-01	-8.1045E-02	11.72

ELEMENT ID 3 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	0.0000E+00	4.5387E-02	1.3655E-01	1.6112E-01	-1.1573E-01	49.72
4	0.0000E+00	-1.8599E-01	2.1272E-01	1.3917E-01	-3.2515E-01	33.19
27	-1.1565E+00	-5.2825E-02	1.7517E-01	-2.5689E-02	-1.1837E+00	81.19
28	1.3393E+00	4.3608E-01	2.5135E-01	1.4046E+00	3.7085E-01	14.55

ELEMENT ID 4 -----
 LOADCOMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	-9.4620E-01	4.8459E-02	2.3673E-01	1.0193E-01	-9.9967E-01	77.27
31	1.0038E+00	4.3625E-02	1.3970E-01	1.0237E+00	2.3712E-02	8.11
51	-1.8927E+00	-5.4999E-02	2.3905E-01	-2.4413E-02	-1.9233E+00	82.71
52	1.7950E+00	-2.6916E-02	1.4202E-01	1.8060E+00	-3.7921E-02	4.43

ELEMENT ID 5 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	-1.1565E+00	1.8983E-01	2.0740E-01	2.2105E-01	-1.1878E+00	81.44
28	1.3394E+00	-3.5939E-01	3.7762E-02	1.3402E+00	-3.6023E-01	1.27
49	-1.9119E+00	-2.0298E-01	1.9583E-01	-1.8083E-01	-1.9340E+00	83.55
50	1.6876E+00	2.6910E-01	2.6189E-02	1.6880E+00	2.6861E-01	1.06

ELEMENT ID 6 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	-1.8927E+00	-5.8627E-02	3.1692E-01	-5.4073E-03	-1.9459E+00	80.47
52	1.7950E+00	-2.8578E-02	2.9880E-01	1.8427E+00	-7.6287E-02	9.07
67	-3.3467E+00	6.2691E-02	3.0407E-01	8.9597E-02	-3.3736E+00	84.94
68	3.2200E+00	-9.5786E-02	2.8595E-01	3.2445E+00	-1.2026E-01	4.89

ELEMENT ID 7 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	-1.9119E+00	1.2826E-01	3.8880E-01	1.9985E-01	-1.9835E+00	79.57
50	1.6876E+00	-7.1793E-01	4.4963E-01	1.7689E+00	-7.9923E-01	10.25
65	-4.6971E+00	-1.9897E-01	4.2006E-01	-1.6008E-01	-4.7360E+00	84.71
66	4.6188E+00	8.5567E-01	4.8088E-01	4.6792E+00	7.9519E-01	7.17

ELEMENT ID 8 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
68	-5.7246E+00	6.6950E-01	-1.5180E-01	6.7310E-01	-5.7282E+00	-88.64
69	6.7763E+00	-2.5326E+00	1.9803E-01	6.7805E+00	-2.5368E+00	1.22
81	-4.9187E+00	-1.0967E+00	9.7393E-02	-1.0942E+00	-4.9212E+00	88.54
82	6.8100E+00	3.7666E+00	4.4722E-01	6.8744E+00	3.7022E+00	8.19

ELEMENT ID 9 -----
 LOADCOMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	0.0000E+00	2.4496E-03	-1.7694E-01	1.7817E-01	-1.7572E-01	-45.20
22	0.0000E+00	1.1307E-02	-9.7804E-02	1.0362E-01	-9.2314E-02	-46.65
45	1.0875E+00	-1.3418E-02	-1.7683E-01	1.1152E+00	-4.1123E-02	-8.90
46	-8.9757E-01	-2.1525E-02	-9.7688E-02	-1.0764E-02	-9.0833E-01	-83.71

ELEMENT ID 10 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	0.0000E+00	1.1307E-02	-9.7804E-02	1.0362E-01	-9.2314E-02	-46.65
23	0.0000E+00	1.0148E-02	-1.3748E-01	1.4264E-01	-1.3250E-01	-46.06
46	5.4375E-01	-2.1525E-02	-9.0919E-02	5.5802E-01	-3.5789E-02	-8.92
47	-6.0723E-01	4.8449E-02	-1.3059E-01	7.3501E-02	-6.3228E-01	-79.14

ELEMENT ID 11 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	0.0000E+00	1.0148E-02	-1.3748E-01	1.4264E-01	-1.3250E-01	-46.06
24	0.0000E+00	1.6485E-01	-2.0861E-01	3.0673E-01	-1.4188E-01	-55.78
47	1.1467E+00	4.8447E-02	-1.6645E-01	1.1714E+00	2.3774E-02	-8.43
48	-1.3174E+00	-2.9945E-01	-2.3759E-01	-2.4673E-01	-1.3701E+00	-77.49

ELEMENT ID 12 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
42	1.0184E+00	2.8359E-02	-4.1474E-01	1.1691E+00	-1.2242E-01	-19.98

43	-1.1950E+00	1.4427E-01	-2.5582E-01	1.9147E-01	-1.2422E+00	-79.55
60	2.7704E+00	-3.1406E-02	-4.1489E-01	2.8306E+00	-9.1551E-02	-8.25
61	-2.6926E+00	-1.4889E-01	-2.5597E-01	-1.2339E-01	-2.7181E+00	-84.31

ELEMENT ID 13

LOADCOMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	1.1467E+00	-5.3349E-03	-1.9969E-01	1.1803E+00	-3.8968E-02	-9.56
48	-1.3174E+00	5.7371E-01	-1.5520E-02	5.7383E-01	-1.3176E+00	-89.53
63	1.9546E+00	2.6453E-02	-1.9096E-01	1.9733E+00	7.7233E-03	-5.60
64	-1.6833E+00	-4.9435E-01	-6.7840E-03	-4.9431E-01	-1.6833E+00	-89.67

ELEMENT ID 14

LOADCOMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
60	7.1312E-01	-7.0283E-02	-5.8447E-01	1.0250E+00	-3.8217E-01	-28.09
61	-8.0492E-01	-2.9556E-02	-4.4901E-01	1.7598E-01	-1.0105E+00	-65.40
76	3.3257E+00	4.4187E-03	-5.7142E-01	3.4213E+00	-9.1142E-02	-9.49
77	-3.2006E+00	9.3941E-02	-4.3596E-01	1.5065E-01	-3.2573E+00	-82.59

ELEMENT ID 15

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	1.9546E+00	-1.7367E-01	-3.9362E-01	2.0250E+00	-2.4413E-01	-10.15
64	-1.6833E+00	3.2660E-01	-4.7471E-01	4.3308E-01	-1.7898E+00	-77.36
79	4.7477E+00	1.8373E-01	-4.4528E-01	4.7908E+00	1.4070E-01	-5.52
80	-4.6711E+00	-6.6098E-01	-5.2637E-01	-5.9304E-01	-4.7390E+00	-82.65

ELEMENT ID 16

LOADCOMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	6.0073E+00	-6.6980E-01	2.0370E-01	6.0136E+00	-6.7601E-01	1.75
78	-7.0107E+00	2.5086E+00	-1.6718E-01	2.5116E+00	-7.0136E+00	-88.99
87	4.8732E+00	1.0956E+00	-4.7130E-02	4.8738E+00	1.0950E+00	-71
88	-6.7667E+00	-3.7549E+00	-4.1800E-01	-3.6980E+00	-6.8236E+00	-82.24

ELEMENT ID 17

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	0.0000E+00	1.3268E+01	2.1272E-01	1.3271E+01	-3.4096E-03	89.08
8	0.0000E+00	1.4439E+01	4.8870E-01	1.4456E+01	-1.6521E-02	88.06
28	3.8767E-01	1.6301E+00	8.4516E-01	2.0578E+00	-4.0008E-02	63.16
32	9.7097E-01	2.5141E+00	1.1211E+00	3.1035E+00	3.8157E-01	62.27

ELEMENT ID 18

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
8	0.0000E+00	1.4439E+01	4.8870E-01	1.4456E+01	-1.6521E-02	88.06
12	0.0000E+00	1.6494E+01	3.5968E-01	1.6502E+01	-7.8396E-03	88.75
32	-1.4347E+00	2.5141E+00	9.2677E-01	2.7208E+00	-1.6414E+00	77.43
36	1.1171E+00	3.3068E+00	7.9775E-01	3.5666E+00	8.5732E-01	71.96

ELEMENT ID 19 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 12 0.0000E+00 1.6494E+01 3.5968E-01 1.6502E+01 -7.8396E-03 88.75
 16 0.0000E+00 1.6479E+01 -3.6648E-01 1.6487E+01 -8.1465E-03 -88.73
 36 -7.0493E-01 3.3068E+00 3.6202E-01 3.3392E+00 -7.3733E-01 84.88
 40 -7.4739E-01 3.3409E+00 -3.6414E-01 3.3731E+00 -7.7957E-01 -84.95

ELEMENT ID 20 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 16 0.0000E+00 1.6479E+01 -3.6648E-01 1.6487E+01 -8.1465E-03 -88.73
 20 0.0000E+00 1.4375E+01 -4.6091E-01 1.4390E+01 -1.4763E-02 -88.17
 40 1.0564E+00 3.3409E+00 -8.0754E-01 3.5975E+00 7.9980E-01 -72.37
 44 -1.2889E+00 2.5777E+00 -9.0196E-01 2.7777E+00 -1.4889E+00 -77.49

ELEMENT ID 21 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 20 0.0000E+00 1.4375E+01 -4.6091E-01 1.4390E+01 -1.4763E-02 -88.17
 24 0.0000E+00 1.3340E+01 -2.0861E-01 1.3343E+01 -3.2617E-03 -89.10
 44 8.4944E-01 2.5777E+00 -1.1001E+00 3.1125E+00 3.1463E-01 -64.07
 48 3.9262E-01 1.5358E+00 -8.4784E-01 1.9868E+00 -5.8301E-02 -61.99

ELEMENT ID 22 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 28 3.8767E-01 1.2919E+01 6.3157E-01 1.2951E+01 3.5592E-01 87.12
 32 9.7098E-01 7.5443E+00 9.3161E-01 7.6738E+00 8.4150E-01 82.09
 50 5.8746E-01 -1.0332E+01 7.2607E-01 6.3553E-01 -1.0380E+01 3.79
 53 2.2483E+00 -4.6497E+00 1.0261E+00 2.3977E+00 -4.7991E+00 8.28

ELEMENT ID 23 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 32 -1.4347E+00 7.5443E+00 7.3725E-01 7.6044E+00 -1.4949E+00 85.34
 36 1.1172E+00 7.7324E+00 7.4270E-01 7.8148E+00 1.0348E+00 83.67
 53 -1.1777E-01 -4.6497E+00 8.3208E-01 3.0178E-02 -4.7976E+00 10.08
 56 -1.8640E-01 -4.2215E+00 8.3753E-01 -1.9466E-02 -4.3884E+00 11.27

ELEMENT ID 24 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 36 -7.0493E-01 7.7324E+00 3.0697E-01 7.7436E+00 -7.1608E-01 87.92
 40 -7.4740E-01 7.7372E+00 -2.6866E-01 7.7457E+00 -7.5590E-01 -88.19
 56 -1.3634E+00 -4.2215E+00 3.0835E-01 -1.3305E+00 -4.2544E+00 6.09
 59 -1.2402E+00 -4.2152E+00 -2.6728E-01 -1.2164E+00 -4.2390E+00 -5.09

ELEMENT ID 25 -----
 LOAD COMBO 1
 JOINT M11 M22 M12 MMAX MMIN ANGLE
 40 1.0564E+00 7.7372E+00 -7.1206E-01 7.8123E+00 9.8139E-01 -83.98

44	-1.2889E+00	7.6594E+00	-6.3494E-01	7.7042E+00	-1.3337E+00	-85.96
59	-2.7398E-01	-4.2152E+00	-8.0201E-01	-1.1703E-01	-4.3722E+00	-11.07
62	-1.4188E-01	-4.7295E+00	-1.0070E+00	6.9440E-02	-4.9408E+00	-11.85

ELEMENT ID 26

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
44	8.4945E-01	7.6759E+00	-8.7765E-01	7.7869E+00	7.3842E-01	-82.79
48	3.9262E-01	1.2884E+01	-6.2577E-01	1.2915E+01	3.6135E-01	-87.14
62	2.5174E+00	-4.7087E+00	-1.3117E+00	2.7482E+00	-4.9395E+00	-9.98
64	6.7707E-01	-1.0363E+01	-7.6683E-01	7.3008E-01	-1.0416E+01	-3.95

ELEMENT ID 27

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
50	5.8746E-01	4.7411E+00	1.1495E+00	5.0380E+00	2.9055E-01	75.52
53	2.2483E+00	1.4113E+00	1.0290E+00	2.9407E+00	7.1891E-01	33.93
66	3.2672E+00	-1.4578E+01	1.6848E+00	3.4249E+00	-1.4736E+01	5.35
69	-1.0245E+00	-9.5087E+00	1.5643E+00	-7.4531E-01	-9.7879E+00	10.12

ELEMENT ID 28

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	-1.1776E-01	1.4113E+00	8.3499E-01	1.7789E+00	-4.8536E-01	66.24
56	-1.8641E-01	1.0019E+00	8.3502E-01	1.4326E+00	-6.1709E-01	62.72
69	1.4480E+00	-9.5087E+00	8.4170E-01	1.5123E+00	-9.5730E+00	4.37
72	-1.7521E+00	-9.0557E+00	8.4173E-01	-1.6563E+00	-9.1514E+00	6.49

ELEMENT ID 29

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
56	-1.3634E+00	1.0019E+00	3.0585E-01	1.0408E+00	-1.4023E+00	82.75
59	-1.2402E+00	9.7610E-01	-3.2262E-01	1.0221E+00	-1.2862E+00	-81.88
72	-1.9102E+00	-9.0557E+00	3.0238E-01	-1.8974E+00	-9.0685E+00	2.42
75	-1.9503E+00	-9.0576E+00	-3.2608E-01	-1.9354E+00	-9.0726E+00	-2.62

ELEMENT ID 30

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
59	-2.7399E-01	9.7610E-01	-8.5734E-01	1.4121E+00	-7.0994E-01	-63.05
62	-1.4188E-01	1.3186E+00	-9.5921E-01	1.7939E+00	-6.1719E-01	-63.64
75	-1.7284E+00	-9.0576E+00	-8.6952E-01	-1.6266E+00	-9.1594E+00	-6.67
78	1.3352E+00	-9.4802E+00	-7.1566E-01	1.3824E+00	-9.5274E+00	-3.77

ELEMENT ID 31

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	2.5175E+00	1.2978E+00	-1.1531E+00	3.2121E+00	6.0317E-01	-31.06
64	6.7706E-01	4.8465E+00	-1.2348E+00	5.1847E+00	3.3882E-01	-74.68
78	-9.3486E-01	-9.5402E+00	-1.4828E+00	-6.8654E-01	-9.7885E+00	-9.51
80	3.2681E+00	-1.4617E+01	-1.7174E+00	3.4315E+00	-1.4781E+01	-5.44

ELEMENT ID 32 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
69	1.4480E+00	-4.5880E-01	6.6075E-01	1.6546E+00	-6.6538E-01	17.36
72	-1.7521E+00	-6.6220E+00	5.6597E-01	-1.6872E+00	-6.6869E+00	6.54
82	6.6054E-01	-7.7612E+00	-6.1137E-02	6.6099E-01	-7.7617E+00	-.42
84	-1.1979E+00	-6.2903E+00	-1.5591E-01	-1.1931E+00	-6.2951E+00	-1.75

ELEMENT ID 33 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
72	-1.9102E+00	-6.6220E+00	2.6633E-02	-1.9101E+00	-6.6222E+00	.32
75	-1.9503E+00	-6.6445E+00	-2.8538E-02	-1.9501E+00	-6.6447E+00	-.35
84	-1.9645E+00	-6.2903E+00	2.5433E-02	-1.9644E+00	-6.2904E+00	.34
86	-2.0063E+00	-6.2774E+00	-2.9737E-02	-2.0061E+00	-6.2776E+00	-.40

ELEMENT ID 34 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	-1.7284E+00	-6.6445E+00	-5.7197E-01	-1.6627E+00	-6.7102E+00	-6.55
78	1.3353E+00	-4.3391E-01	-6.3397E-01	1.5390E+00	-6.3763E-01	-17.81
86	-1.2339E+00	-6.2774E+00	1.5454E-01	-1.2292E+00	-6.2821E+00	1.75
88	6.8817E-01	-7.7657E+00	9.2534E-02	6.8919E-01	-7.7667E+00	.63

ELEMENT ID 35 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	2.3700E+00	1.7879E+01	3.3620E-01	1.7886E+01	2.3628E+00	88.76
31	-1.9485E+00	1.9684E+01	3.0384E-01	1.9688E+01	-1.9528E+00	89.20
49	1.6040E+00	-1.0406E+01	-4.0305E-01	1.6175E+00	-1.0420E+01	-1.92
52	-1.3418E+00	-1.4613E+01	-4.3542E-01	-1.3276E+00	-1.4628E+01	-1.88

ELEMENT ID 36 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	1.6040E+00	1.4353E+00	-2.1009E-01	1.7461E+00	1.2933E+00	-34.06
52	-1.3419E+00	1.1251E+01	-2.7866E-01	1.1258E+01	-1.3480E+00	-88.73
65	5.0090E+00	-1.2827E+01	1.9344E-01	5.0111E+00	-1.2829E+01	.62
68	-5.0844E+00	-2.1331E+01	1.2488E-01	-5.0834E+00	-2.1332E+01	.44

ELEMENT ID 37 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
43	-2.3987E+00	1.9781E+01	5.8411E-02	1.9781E+01	-2.3988E+00	89.85
47	2.4995E+00	1.7889E+01	-3.1829E-01	1.7895E+01	2.4929E+00	-88.82
61	-1.3667E+00	-1.4718E+01	5.3998E-02	-1.3664E+00	-1.4718E+01	.23
63	1.6389E+00	-1.0500E+01	4.1624E-01	1.6532E+00	-1.0514E+01	1.96

ELEMENT ID 38 -----

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	-1.3667E+00	1.1475E+01	-1.2875E-01	1.1477E+01	-1.3680E+00	-89.43

63	1.6389E+00	1.5723E+00	2.1359E-01	1.8218E+00	1.3895E+00	40.57
77	-4.7995E+00	-2.1432E+01	6.5799E-02	-4.7993E+00	-2.1432E+01	.23
79	4.9173E+00	-1.2855E+01	-2.0517E-01	4.9197E+00	-1.2857E+01	-.66

ELEMENT ID 39

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	4.8426E-01	2.3836E+01	9.7083E-01	2.3876E+01	4.4397E-01	87.62
34	-5.3634E-01	1.9477E+01	1.1354E+00	1.9541E+01	-6.0055E-01	86.76
51	1.8882E+00	-9.0858E+00	8.6458E-01	1.9559E+00	-9.1535E+00	4.48
54	-1.5351E+00	-5.4173E+00	1.0292E+00	-1.2792E+00	-5.6733E+00	13.97

ELEMENT ID 40

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	-3.0720E-01	1.9477E+01	4.0113E-01	1.9485E+01	-3.1533E-01	88.84
38	-3.7513E-01	1.9478E+01	-3.8883E-01	1.9486E+01	-3.8274E-01	-88.88
54	-1.0986E+00	-5.4173E+00	4.0013E-01	-1.0619E+00	-5.4540E+00	5.25
57	-1.1636E+00	-5.4265E+00	-3.8982E-01	-1.1283E+00	-5.4619E+00	-5.18

ELEMENT ID 41

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
38	-7.3450E-01	1.9478E+01	-1.1324E+00	1.9541E+01	-7.9774E-01	-86.80
42	9.3675E-01	2.3784E+01	-6.8083E-01	2.3804E+01	9.1648E-01	-88.29
57	-1.6421E+00	-5.4266E+00	-1.0226E+00	-1.3835E+00	-5.6852E+00	-14.19
60	2.1504E+00	-9.0093E+00	-1.2793E+00	2.2951E+00	-9.1541E+00	-6.46

ELEMENT ID 42

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	1.8883E+00	-1.7032E+00	9.4245E-01	2.1205E+00	-1.9355E+00	13.85
54	-1.5351E+00	-1.9648E+00	8.6847E-01	-8.5533E-01	-2.6446E+00	38.05
67	3.5623E+00	-1.0639E+01	6.2934E-01	3.5902E+00	-1.0667E+01	2.53
70	-3.3913E+00	-1.2413E+01	5.5537E-01	-3.3572E+00	-1.2447E+01	3.51

ELEMENT ID 43

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
54	-1.0986E+00	-1.9648E+00	2.3943E-01	-1.0369E+00	-2.0266E+00	14.47
57	-1.1636E+00	-1.9690E+00	-2.1483E-01	-1.1099E+00	-2.0228E+00	-14.04
70	-1.6036E+00	-1.2413E+01	2.3891E-01	-1.5983E+00	-1.2418E+01	1.27
73	-1.5671E+00	-1.2413E+01	-2.1534E-01	-1.5629E+00	-1.2417E+01	-1.14

ELEMENT ID 44

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
57	-1.6421E+00	-1.9690E+00	-8.4758E-01	-9.4240E-01	-2.6688E+00	-39.54
60	2.1504E+00	-1.6387E+00	-1.1377E+00	2.4657E+00	-1.9541E+00	-15.49
73	-3.3085E+00	-1.2413E+01	-5.2439E-01	-3.2784E+00	-1.2443E+01	-3.29
76	3.2362E+00	-1.0615E+01	-6.0431E-01	3.2625E+00	-1.0641E+01	-2.49

ELEMENT ID 45 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
68	4.4644E+00	6.8301E+00	-3.3342E-01	6.8752E+00	4.4183E+00	-82.13
71	-4.5512E+00	7.5414E+00	8.9190E-02	7.5421E+00	-4.5518E+00	89.58
81	4.9431E+00	-8.5891E+00	-1.9756E-01	4.9460E+00	-8.5920E+00	-84
83	-3.9897E+00	-8.4173E+00	2.2505E-01	-3.9783E+00	-8.4287E+00	2.90

ELEMENT ID 46 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
71	-1.2219E+00	7.5414E+00	1.9303E-01	7.5457E+00	-1.2262E+00	88.74
74	-1.2272E+00	7.5346E+00	-2.0284E-01	7.5393E+00	-1.2318E+00	-88.67
83	-1.6003E+00	-8.4173E+00	1.9332E-01	-1.5948E+00	-8.4228E+00	1.62
85	-1.6405E+00	-8.4081E+00	-2.0254E-01	-1.6345E+00	-8.4141E+00	-1.71

ELEMENT ID 47 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	-4.5069E+00	7.5346E+00	-9.7043E-02	7.5353E+00	-4.5077E+00	-89.54
77	4.2671E+00	6.8305E+00	3.8497E-01	6.8870E+00	4.2105E+00	81.64
85	-4.0292E+00	-8.4081E+00	-2.3314E-01	-4.0168E+00	-8.4204E+00	-3.04
87	4.9758E+00	-8.5886E+00	2.4886E-01	4.9804E+00	-8.5932E+00	1.05

ELEMENT ID 48 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	0.0000E+00	1.9385E+01	1.9077E-01	1.9387E+01	-1.8773E-03	89.44
5	0.0000E+00	2.2426E+01	2.7148E-01	2.2429E+01	-3.2860E-03	89.31
25	1.2471E+00	-1.1017E+01	1.6152E-01	1.2493E+00	-1.1019E+01	.75
29	-8.4979E-01	-1.4153E+01	2.4222E-01	-8.4539E-01	-1.4157E+01	1.04

ELEMENT ID 49 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
5	0.0000E+00	2.2426E+01	2.7148E-01	2.2429E+01	-3.2860E-03	89.31
9	0.0000E+00	2.6581E+01	9.0473E-02	2.6581E+01	-3.0794E-04	89.81
29	1.8397E-01	-1.4153E+01	3.4039E-01	1.9204E-01	-1.4161E+01	1.36
33	-6.2953E-01	-1.7860E+01	1.5938E-01	-6.2805E-01	-1.7862E+01	.53

ELEMENT ID 50 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	0.0000E+00	2.6581E+01	9.0473E-02	2.6581E+01	-3.0794E-04	89.81
13	0.0000E+00	2.6587E+01	-9.0547E-02	2.6588E+01	-3.0837E-04	-89.81
33	-1.8022E-01	-1.7860E+01	8.9939E-02	-1.7976E-01	-1.7861E+01	.29
37	-1.8182E-01	-1.7871E+01	-9.1079E-02	-1.8135E-01	-1.7872E+01	-.29

ELEMENT ID 51 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
13	0.0000E+00	2.6587E+01	-9.0547E-02	2.6588E+01	-3.0837E-04	-89.81

17	0.0000E+00	2.2380E+01	-2.7221E-01	2.2383E+01	-3.3105E-03	-89.30
37	-6.5273E-01	-1.7871E+01	-1.6170E-01	-6.5121E-01	-1.7873E+01	-54
41	2.0555E-01	-1.4126E+01	-3.4337E-01	2.1377E-01	-1.4134E+01	-1.37

ELEMENT ID 52

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	0.0000E+00	2.2380E+01	-2.7221E-01	2.2383E+01	-3.3105E-03	-89.30
21	0.0000E+00	1.9426E+01	-1.7694E-01	1.9427E+01	-1.6116E-03	-89.48
41	-7.3682E-01	-1.4126E+01	-2.3425E-01	-7.3272E-01	-1.4130E+01	-1.00
45	1.2058E+00	-1.1048E+01	-1.3898E-01	1.2074E+00	-1.1050E+01	-65

ELEMENT ID 53

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
25	1.0345E+01	4.6411E-02	2.7978E-02	1.0345E+01	4.6335E-02	.16
26	-5.6402E+00	-1.8291E-02	-2.1814E+00	7.2883E-01	-6.3873E+00	-71.09
29	1.4457E+01	-3.3917E-02	2.6843E-02	1.4457E+01	-3.3966E-02	.11
30	-1.4060E+01	2.1295E-02	-2.1825E+00	3.5180E-01	-1.4391E+01	-81.39

ELEMENT ID 54

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
26	5.0878E+00	-1.8291E-02	-2.1806E+00	5.8923E+00	-8.2279E-01	-20.25
27	-9.5315E+00	-4.2477E-02	-1.6794E-01	-3.9506E-02	-9.5345E+00	-88.99
30	1.0974E+01	2.1295E-02	-2.1768E+00	1.1391E+01	-3.9546E-01	-10.84
31	-1.2801E+01	9.2279E-02	-1.6411E-01	9.4367E-02	-1.2803E+01	-89.27

ELEMENT ID 55

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
29	1.4457E+01	2.2482E-03	-7.1349E-02	1.4457E+01	1.8960E-03	-28
30	-1.4060E+01	-1.6659E-02	-7.3984E-01	2.2210E-02	-1.4099E+01	-86.99
33	1.7835E+01	-1.2584E-02	-6.8382E-02	1.7835E+01	-1.2846E-02	-22
34	-2.0045E+01	1.8463E-02	-7.3687E-01	4.5489E-02	-2.0072E+01	-87.90

ELEMENT ID 56

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	1.7835E+01	3.6892E-03	1.0440E-03	1.7835E+01	3.6892E-03	.00
34	-2.0046E+01	-6.9839E-03	-2.5805E-03	-6.9836E-03	-2.0046E+01	-89.99
37	1.7845E+01	-6.7972E-03	2.7173E-03	1.7845E+01	-6.7976E-03	.01
38	-2.0073E+01	9.4532E-03	-9.0722E-04	9.4532E-03	-2.0073E+01	-90.00

ELEMENT ID 57

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
37	1.7845E+01	-6.0858E-04	7.3333E-02	1.7845E+01	-9.0993E-04	.24
38	-2.0073E+01	-8.6056E-03	7.4269E-01	1.8848E-02	-2.0100E+01	87.88
41	1.4437E+01	-8.8297E-03	7.7624E-02	1.4437E+01	-9.2468E-03	.31
42	-1.4054E+01	1.6808E-02	7.4697E-01	5.6351E-02	-1.4094E+01	86.97

ELEMENT ID 58 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
41	1.4437E+01	-1.4711E-02	-3.1494E-02	1.4437E+01	-1.4779E-02	-12
42	-1.4054E+01	-1.3739E-02	2.1831E+00	3.1788E-01	-1.4386E+01	81.36
45	1.0366E+01	2.8203E-02	-3.7887E-02	1.0366E+01	2.8064E-02	-21
46	-5.6650E+00	-2.5053E-02	2.1767E+00	7.1732E-01	-6.4074E+00	71.17

ELEMENT ID 59 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
42	1.0939E+01	-1.3739E-02	2.1762E+00	1.1356E+01	-4.3028E-01	10.84
43	-1.2726E+01	-8.8582E-02	1.4714E-01	-8.6869E-02	-1.2728E+01	89.33
46	5.0878E+00	-2.5052E-02	2.1835E+00	5.8934E+00	-8.3060E-01	20.25
47	-9.5126E+00	1.3986E-01	1.5444E-01	1.4233E-01	-9.5150E+00	89.08

ELEMENT ID 60 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
67	1.0900E+01	1.5530E-02	-3.2525E-01	1.0910E+01	5.8196E-03	-1.71
68	-9.7604E+00	4.5220E-02	9.7513E-02	4.6190E-02	-9.7613E+00	89.43
70	1.2270E+01	-2.0603E-02	-3.1275E-01	1.2278E+01	-2.8556E-02	-1.46
71	-1.0031E+01	2.6621E-02	1.1001E-01	2.7824E-02	-1.0032E+01	89.37

ELEMENT ID 61 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
70	1.2270E+01	7.1472E-03	3.6909E-03	1.2270E+01	7.1461E-03	.02
71	-1.0031E+01	-2.3527E-02	6.1758E-03	-2.3523E-02	-1.0031E+01	89.96
73	1.2277E+01	1.7837E-03	-6.0250E-03	1.2277E+01	1.7808E-03	-.03
74	-1.0030E+01	-1.6122E-02	-3.5400E-03	-1.6121E-02	-1.0030E+01	-89.98

ELEMENT ID 62 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
73	1.2277E+01	1.6334E-02	3.0301E-01	1.2285E+01	8.8504E-03	1.41
74	-1.0030E+01	2.0396E-02	-1.0934E-01	2.1585E-02	-1.0032E+01	-89.38
76	1.0962E+01	-5.0126E-02	3.1989E-01	1.0971E+01	-5.9410E-02	1.66
77	-9.7874E+00	4.9716E-02	-9.2454E-02	5.0584E-02	-9.7883E+00	-89.46

ELEMENT ID 63 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
81	8.6573E+00	6.9057E-01	2.9496E-01	8.6682E+00	6.7966E-01	2.12
82	-7.5292E+00	-2.3321E+00	5.0836E-01	-2.2829E+00	-7.5784E+00	84.47
83	8.3737E+00	-4.6568E-01	1.0082E-01	8.3749E+00	-4.6683E-01	.65
84	-6.4133E+00	1.7605E+00	3.1422E-01	1.7726E+00	-6.4254E+00	87.80

ELEMENT ID 64 -----
 LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
83	8.3738E+00	6.8455E-02	1.3255E-01	8.3759E+00	6.6340E-02	.91

84	-6.4134E+00	-3.7498E-01	1.3289E-01	-3.7206E-01	-6.4163E+00	88.74
85	8.3646E+00	6.7734E-02	-1.3003E-01	8.3666E+00	6.5697E-02	-90
86	-6.4025E+00	-3.6410E-01	-1.2969E-01	-3.6131E-01	-6.4053E+00	-88.77

ELEMENT ID 65

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
85	8.3646E+00	-4.6440E-01	-9.9426E-02	8.3658E+00	-4.6552E-01	-65
86	-6.4026E+00	1.7614E+00	-3.1397E-01	1.7734E+00	-6.4147E+00	-87.80
87	8.6570E+00	6.9003E-01	-2.9599E-01	8.6680E+00	6.7904E-01	-2.12
88	-7.5317E+00	-2.3421E+00	-5.1053E-01	-2.2924E+00	-7.5814E+00	-84.43

ELEMENT ID 66

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	1.3758E+01	2.8286E-01	2.2667E-01	1.3762E+01	2.7905E-01	.96
66	-1.3717E+01	-7.0501E-01	-1.2039E+00	-5.9456E-01	-1.3827E+01	-84.76
68	1.5705E+01	-2.6233E-01	2.4523E-01	1.5709E+01	-2.6610E-01	.88
69	-1.8454E+01	8.7777E-01	-1.1853E+00	9.5018E-01	-1.8526E+01	-86.50

ELEMENT ID 67

LOAD COMBO 1

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	1.5692E+01	-2.6827E-01	-2.4461E-01	1.5696E+01	-2.7202E-01	-88
78	-1.8431E+01	9.3838E-01	1.1866E+00	1.0108E+00	-1.8504E+01	86.51
79	1.3734E+01	2.8432E-01	-2.4016E-01	1.3738E+01	2.8003E-01	-1.02
80	-1.3682E+01	-8.8573E-01	1.1910E+00	-7.7582E-01	-1.3792E+01	84.73

The background features a large, faint watermark of the Universitas Padjadjaran logo. The logo is a yellow shield with a red and white triangle in the center, containing a white figure. The text 'UNIVERSITAS PADJADJARAN' is written around the shield, and 'WALAYA PERSADIA' is written at the bottom.

LAMPIRAN E

File STRUK1E.STL

Axial Load and Biaxial Moment Interaction
Stress Check (Part 1, Elastic)

LEMBAGA PENELITIAN - ITB
 PROGRAM: SAPSIL/FILE: SIRUK1.E.SIL
 TINJAUAN MENGENAI PENGARUH GAYA ANGIN HALUAN TERHADAP KONSTRUKSI
 BANGUNAN ATAS KAPAL BARANG 3800 DWT

AISC SPECIFICATIONS, PART 1 (ELASTIC)
 AXIAL LOAD & BIAxIAL MOMENT INTERACTION STRESS CHECK

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL + B33 + B22 RATIO	STATION COMBO LOCATION NO	AISC EQUATION
19	R	(T)	.119 .005 .104 .010	.00 1	(TENSION)
20	R	(T)	.110 .009 .096 .005	6.00 1	(TENSION)
21	R	(T)	.266 .004 .250 .012	4.00 1	(TENSION)
22	R	(T)	.176 .015 .146 .015	.00 1	(TENSION)
23	R	(T)	.148 .010 .129 .009	6.00 1	(TENSION)
24	R	(T)	.312 .007 .279 .026	4.00 1	(TENSION)
25	R	(T)	.235 .024 .202 .009	4.00 1	(TENSION)
26	R	(T)	.168 .012 .151 .005	.00 1	(TENSION)
27	R	(T)	.342 .011 .316 .016	4.00 1	(TENSION)
28	R	(T)	.236 .024 .203 .010	4.00 1	(TENSION)
29	R	(T)	.169 .012 .151 .005	.00 1	(TENSION)
30	R	(T)	.343 .011 .316 .016	4.00 1	(TENSION)
31	R	(T)	.174 .015 .146 .014	.00 1	(TENSION)
32	R	(T)	.145 .010 .129 .006	6.00 1	(TENSION)
33	R	(T)	.309 .007 .279 .023	4.00 1	(TENSION)
34	R	(T)	.119 .005 .105 .010	.00 1	(TENSION)
35	R	(T)	.110 .009 .096 .005	6.00 1	(TENSION)
36	R	(T)	.266 .004 .250 .012	4.00 1	(TENSION)
37	R	(T)	.354 .001 .337 .017	.00 1	(TENSION)
38	R	(T)	.273 .006 .251 .017	.00 1	(TENSION)
39	R	(T)	.393 .007 .345 .041	4.00 1	(TENSION)
40	R	(T)	.302 .009 .275 .018	.00 1	(TENSION)

ELEM SECTION ID	TYPE	CHK TYPE	STRESS = AXI + B33 + B22 RATIO	STATION COMBO LOCATION NO	AISC EQUATION	
41	R	(T)	.416 .009 .375 .031	4.00 1	(TENSION)	
42	R	(T)	.303 .009 .275 .019	.00 1	(TENSION)	
43	R	(T)	.416 .010 .376 .031	4.00 1	(TENSION)	
44	R	(T)	.271 .005 .250 .015	.00 1	(TENSION)	
45	R	(T)	.394 .007 .344 .042	4.00 1	(TENSION)	
46	R	(T)	.353 .001 .335 .017	.00 1	(TENSION)	
47	R	(T)	.181 .000 .139 .042	.00 1	(TENSION)	
48	R	(T)	.141 .001 .110 .030	.00 1	(TENSION)	
49	R	(T)	.250 .004 .186 .060	4.00 1	(TENSION)	
50	R	(T)	.162 .007 .124 .031	.00 1	(TENSION)	
51	R	(T)	.285 .004 .226 .054	4.00 1	(TENSION)	
52	R	(T)	.162 .007 .124 .031	.00 1	(TENSION)	
53	R	(T)	.284 .004 .226 .054	4.00 1	(TENSION)	
54	R	(T)	.146 .001 .111 .034	.00 1	(TENSION)	
55	R	(T)	.252 .004 .186 .062	4.00 1	(TENSION)	
56	R	(T)	.181 .000 .139 .042	.00 1	(TENSION)	
57	R	(T)	.140 .003 .076 .060	4.00 1	(TENSION)	
58	R	(T)	.150 .010 .085 .056	.00 1	(TENSION)	
59	R	(T)	.149 .010 .084 .055	.00 1	(TENSION)	
60	R	(T)	.139 .003 .076 .060	4.00 1	(TENSION)	
61	R	(T)	.197 .002 .195 .000	.00 1	(TENSION)	
62	R	(T)	.172 .006 .166 .000	.00 1	(TENSION)	
64	R	(C)	THE VALUE OF K/I ² IS GREATER THAN Cc			
65	R	(T)	.233 .006 .226 .000	.00 1	(TENSION)	
66	R	(C)	THE VALUE OF K/I ² IS GREATER THAN Cc			

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL + B33 + B22 RATIO				STATION LOCATION	COMBO NO	AISC EQUATION
67	R	(T)	.197	.005	.192	.000	.00	1	(TENSION)
68	R	(T)	.169	.012	.146	.011	.00	1	(TENSION)
69	R	(T)	.279	.012	.268	.000	.00	1	(TENSION)
70	R	(C)	THE VALUE OF k/l_r IS GREATER THAN C_c						
71	R	(T)	.242	.004	.238	.000	.00	1	(TENSION)
72	R	(T)	.205	.028	.166	.010	.00	1	(TENSION)
73	R	(T)	.279	.012	.268	.000	.00	1	(TENSION)
74	R	(C)	THE VALUE OF k/l_r IS GREATER THAN C_c						
75	R	(T)	.243	.004	.238	.001	.00	1	(TENSION)
76	R	(T)	.205	.028	.166	.010	.00	1	(TENSION)
77	R	(T)	.232	.006	.225	.000	.00	1	(TENSION)
78	R	(C)	THE VALUE OF k/l_r IS GREATER THAN C_c						
79	R	(T)	.197	.004	.193	.000	.00	1	(TENSION)
80	R	(T)	.169	.012	.145	.012	.00	1	(TENSION)
81	R	(T)	.197	.002	.196	.000	.00	1	(TENSION)
82	R	(C)	THE VALUE OF k/l_r IS GREATER THAN C_c						
83	R	(T)	.173	.006	.167	.000	.00	1	(TENSION)
84	R	(C)	THE VALUE OF k/l_r IS GREATER THAN C_c						
85	R	(T)	.187	.005	.180	.002	.00	1	(TENSION)
86	R	(C)	THE VALUE OF k/l_r IS GREATER THAN C_c						
87	R	(T)	.244	.003	.240	.000	.00	1	(TENSION)
88	R	(T)	.203	.004	.198	.000	.00	1	(TENSION)
89	R	(T)	.117	.008	.076	.033	.00	1	(TENSION)
90	R	(T)	.202	.005	.196	.000	.00	1	(TENSION)
91	R	(T)	.312	.002	.310	.000	.00	1	(TENSION)
92	R	(T)	.126	.021	.078	.027	.00	1	(TENSION)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AX1 + B33 + B22 RATIO				STATION COMBO LOCATION NO	AISC EQUATION
93	R	(T)	.202	.005	.196	.001	.00 1	(TENSION)
94	R	(T)	.314	.002	.310	.002	.00 1	(TENSION)
95	R	(T)	.128	.021	.078	.029	.00 1	(TENSION)
96	R	(T)	.242	.003	.239	.000	.00 1	(TENSION)
97	R	(T)	.204	.004	.199	.001	.00 1	(TENSION)
98	R	(T)	.122	.008	.076	.038	.00 1	(TENSION)
99	R	(T)	.185	.005	.180	.000	.00 1	(TENSION)
100	R		(C) THE VALUE OF kl/r IS GREATER THAN C_c					
101	R	(T)	.134	.003	.129	.002	2.40 1	(TENSION)
102	R		(C) THE VALUE OF kl/r IS GREATER THAN C_c					
103	R	(T)	.110	.002	.107	.001	2.40 1	(TENSION)
104	R	(T)	.219	.003	.215	.001	2.40 1	(TENSION)
105	R	(T)	.121	.004	.096	.021	2.40 1	(TENSION)
106	R	(T)	.130	.004	.125	.000	2.40 1	(TENSION)
107	R	(T)	.354	.001	.352	.001	2.40 1	(TENSION)
108	R	(T)	.134	.014	.091	.029	2.40 1	(TENSION)
109	R	(T)	.130	.004	.125	.001	2.40 1	(TENSION)
110	R	(T)	.354	.001	.352	.001	2.40 1	(TENSION)
111	R	(T)	.132	.014	.091	.026	2.40 1	(TENSION)
112	R	(T)	.108	.002	.106	.000	2.40 1	(TENSION)
113	R	(T)	.219	.003	.216	.001	2.40 1	(TENSION)
114	R	(T)	.118	.004	.095	.019	2.40 1	(TENSION)
115	R	(T)	.134	.003	.130	.002	2.40 1	(TENSION)
116	R		(C) THE VALUE OF kl/r IS GREATER THAN C_c					
117	R	(T)	.098	.002	.086	.010	2.40 1	(TENSION)
118	R	(T)	.113	.001	.078	.033	2.40 1	(TENSION)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL + B33 + B22 RATIO				STATION LOCATION	COMBO NO	AISC EQUATION
119	R	(T)	.091	.005	.085	.002	2.40	1	(TENSION)
120	R	(T)	.099	.006	.067	.026	.00	1	(TENSION)
121	R	(T)	.091	.005	.085	.002	2.40	1	(TENSION)
122	R	(T)	.100	.006	.067	.027	.00	1	(TENSION)
123	R	(T)	.098	.002	.086	.010	2.40	1	(TENSION)
124	R	(T)	.113	.001	.078	.033	2.40	1	(TENSION)
128	R	(T)	.078	.000	.041	.037	1.95	1	(BENDING)
132	R	(T)	.312	.000	.166	.146	3.90	1	(BENDING)
136	R	(T)	.473	.000	.251	.221	4.80	1	(BENDING)
140	R	(T)	.312	.000	.166	.146	3.90	1	(BENDING)
144	R	(T)	.078	.000	.041	.037	1.95	1	(BENDING)
145	R	(C)	.013	.000	.013	.000	.00	1	(TENSION)
146	R	(T)	.030	.000	.030	.000	.00	1	(TENSION)
147	R	(C)	.025	.001	.024	.000	.00	1	(TENSION)
148	R	(T)	.118	.000	.051	.066	1.95	1	(TENSION)
149	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c						
150	R	(T)	.006	.000	.005	.000	3.90	1	(TENSION)
151	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c						
152	R	(T)	.344	.000	.177	.166	3.90	1	(TENSION)
153	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c						
154	R	(T)	.004	.000	.004	.000	4.80	1	(TENSION)
155	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c						
156	R	(T)	.461	.000	.244	.216	4.80	1	(TENSION)
157	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c						
158	R	(T)	.010	.000	.009	.000	3.90	1	(TENSION)
159	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c						

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL + B33 + B22 RATIO				STATION LOCATION	COMBO NO	AISC EQUATION
160	R	(T)	.342	.000	.177	.165	.00	1	(TENSION)
161	R	(C)	.013	.000	.012	.000	1.95	1	(TENSION)
162	R	(T)	.032	.000	.032	.000	.00	1	(TENSION)
163	R	(C)	.027	.001	.025	.001	1.95	1	(TENSION)
164	R	(T)	.114	.000	.050	.063	.00	1	(TENSION)
165	R	(C)	.018	.001	.016	.000	.00	1	(TENSION)
166	R	(T)	.128	.001	.064	.063	1.95	1	(TENSION)
167	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
168	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
169	R	(T)	.328	.001	.164	.162	3.90	1	(TENSION)
170	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
171	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
172	R	(T)	.459	.001	.239	.219	4.80	1	(TENSION)
173	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
174	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
175	R	(T)	.342	.001	.172	.169	.00	1	(TENSION)
176	R	(C)	.019	.001	.016	.002	1.85	1	(TENSION)
177	R	(T)	.127	.001	.063	.063	.00	1	(TENSION)
178	R	(C)	.055	.001	.051	.002	1.95	1	(TENSION)
179	R	(T)	.106	.001	.074	.030	.00	1	(TENSION)
180	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
181	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
182	R	(T)	.319	.002	.181	.137	.00	1	(TENSION)
183	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
184	R	(C)	THE VALUE OF kl/r IS GREATER THAN C_c						
185	R	(T)	.451	.003	.232	.217	.00	1	(TENSION)



LAMPIRAN F

File STRUK1P.STL

Axial Load and Biaxial Moment Interaction
Stress Check (Part 2, Plastic)

LEMBAGA PENELITIAN - IIB
 PROGRAM: SAPSTL/FILE: STRUKIP.STL
 TINJAUAN MENGENAI PENGARUH GAYA ANGIN HALUAN TERHADAP KONSTRUKSI
 BANGUNAN ATAS KAPAL BARANG 3800 DWT

AISC SPECIFICATIONS, PART 2 (PLASTIC)
 AXIAL LOAD & BIAxIAL MOMENT INTERACTION STRESS CHECK

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL +B33 +B22 RATIO	STATION LOCATION	COMBO NO	AISC EQUATION
19	R	(T)	.054 .003 .046 .005 .00	.00	1	(TENSION)
20	R	(T)	.050 .005 .042 .003 .600	6.00	1	(TENSION)
21	R	(T)	.119 .002 .110 .006 .400	4.00	1	(TENSION)
22	R	(T)	.081 .009 .064 .008 .00	.00	1	(TENSION)
23	R	(T)	.067 .006 .057 .004 .600	6.00	1	(TENSION)
24	R	(T)	.140 .004 .123 .013 .400	4.00	1	(TENSION)
25	R	(T)	.108 .014 .089 .004 .400	4.00	1	(TENSION)
26	R	(T)	.076 .007 .066 .002 .00	.00	1	(TENSION)
27	R	(T)	.153 .006 .139 .008 .400	4.00	1	(TENSION)
28	R	(T)	.108 .015 .089 .005 .400	4.00	1	(TENSION)
29	R	(T)	.076 .007 .066 .003 .00	.00	1	(TENSION)
30	R	(T)	.154 .006 .139 .008 .400	4.00	1	(TENSION)
31	R	(T)	.080 .009 .064 .007 .00	.00	1	(TENSION)
32	R	(T)	.066 .006 .057 .003 .600	6.00	1	(TENSION)
33	R	(T)	.138 .004 .123 .011 .400	4.00	1	(TENSION)
34	R	(T)	.054 .003 .046 .005 .00	.00	1	(TENSION)
35	R	(T)	.050 .005 .042 .003 .600	6.00	1	(TENSION)
36	R	(T)	.118 .002 .110 .006 .400	4.00	1	(TENSION)
37	R	(T)	.157 .001 .148 .008 .00	.00	1	(TENSION)
38	R	(T)	.122 .003 .110 .008 .00	.00	1	(TENSION)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS - AX1+B3+B2 RATIO	STATION LOCATION	COMBO NO	AISC EQUATION
39	R	(T)	.177 .004 .152 .020 4.00	4.00	1	(TENSION)
40	R	(T)	.136 .006 .121 .009 .00	.00	1	(TENSION)
41	R	(T)	.186 .006 .165 .016 4.00	4.00	1	(TENSION)
42	R	(T)	.136 .006 .121 .009 .00	.00	1	(TENSION)
43	R	(T)	.186 .006 .165 .015 4.00	4.00	1	(TENSION)
44	R	(T)	.121 .003 .110 .008 .00	.00	1	(TENSION)
45	R	(T)	.177 .004 .152 .021 4.00	4.00	1	(TENSION)
46	R	(T)	.156 .000 .147 .009 .00	.00	1	(TENSION)
47	R	(T)	.082 .000 .061 .021 .00	.00	1	(TENSION)
48	R	(T)	.064 .001 .048 .015 .00	.00	1	(TENSION)
49	R	(T)	.114 .002 .082 .030 4.00	4.00	1	(TENSION)
50	R	(T)	.074 .004 .055 .016 .00	.00	1	(TENSION)
51	R	(T)	.129 .002 .100 .027 4.00	4.00	1	(TENSION)
52	R	(T)	.074 .004 .055 .016 .00	.00	1	(TENSION)
53	R	(T)	.129 .002 .100 .027 4.00	4.00	1	(TENSION)
54	R	(T)	.066 .001 .049 .017 .00	.00	1	(TENSION)
55	R	(T)	.115 .002 .082 .031 4.00	4.00	1	(TENSION)
56	R	(T)	.082 .000 .061 .021 .00	.00	1	(TENSION)
57	R	(T)	.066 .002 .033 .030 4.00	4.00	1	(TENSION)
58	R	(T)	.071 .006 .037 .028 .00	.00	1	(TENSION)
59	R	(T)	.071 .006 .037 .028 .00	.00	1	(TENSION)
60	R	(T)	.066 .002 .033 .030 4.00	4.00	1	(TENSION)
61	R	(T)	.087 .001 .086 .000 .00	.00	1	(TENSION)
62	R	(C)	THE VALUE OF k/t IS GREATER THAN C_c			
63	R	(T)	.077 .003 .073 .000 .00	.00	1	(TENSION)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL + B33 + B22 RATIO	STATION LOCATION	COMBO NO	AISC EQUATION
64	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
65	R	(T)	.103 .004 .099 .000	.00	1	(TENSION)
66	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
67	R	(T)	.087 .003 .085 .000	.00	1	(TENSION)
68	R	(T)	.077 .007 .064 .006	.00	1	(TENSION)
69	R	(T)	.125 .007 .118 .000	.00	1	(TENSION)
70	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
71	R	(T)	.107 .002 .105 .000	.00	1	(TENSION)
72	R	(T)	.095 .017 .073 .005	.00	1	(TENSION)
73	R	(T)	.125 .007 .118 .000	.00	1	(TENSION)
74	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
75	R	(T)	.107 .002 .105 .000	.00	1	(TENSION)
76	R	(T)	.095 .017 .073 .005	.00	1	(TENSION)
77	R	(T)	.103 .004 .099 .000	.00	1	(TENSION)
78	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
79	R	(T)	.088 .003 .085 .000	.00	1	(TENSION)
80	R	(T)	.077 .007 .064 .006	.00	1	(TENSION)
81	R	(T)	.087 .001 .086 .000	.00	1	(TENSION)
82	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
83	R	(T)	.077 .004 .073 .000	.00	1	(TENSION)
84	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
85	R	(T)	.083 .003 .079 .001	.00	1	(TENSION)
86	R		(C) THE VALUE OF k/lr IS GREATER THAN C_c			
87	R	(T)	.108 .002 .106 .000	.00	1	(TENSION)
88	R	(T)	.090 .002 .087 .000	.00	1	(TENSION)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS = AXL + B33 + B22 RATIO				STATION LOCATION	COMBO NO	AISC EQUATION
89	R	(T)	.055	.005	.033	.017	.00	1	(TENSION)
90	R	(T)	.090	.003	.086	.000	.00	1	(TENSION)
91	R	(T)	.138	.001	.136	.000	.00	1	(TENSION)
92	R	(T)	.060	.012	.034	.013	.00	1	(TENSION)
93	R	(T)	.090	.003	.086	.000	.00	1	(TENSION)
94	R	(T)	.139	.001	.137	.001	.00	1	(TENSION)
95	R	(T)	.061	.013	.034	.015	.00	1	(TENSION)
96	R	(T)	.107	.002	.105	.000	.00	1	(TENSION)
97	R	(T)	.091	.002	.087	.001	.00	1	(TENSION)
98	R	(T)	.057	.005	.034	.019	.00	1	(TENSION)
99	R	(T)	.082	.003	.079	.000	.00	1	(TENSION)
100	R	(C) THE VALUE OF kl/r IS GREATER THAN C_c							
101	R	(T)	.059	.002	.057	.001	2.40	1	(TENSION)
102	R	(C) THE VALUE OF kl/r IS GREATER THAN C_c							
103	R	(T)	.049	.001	.047	.000	2.40	1	(TENSION)
104	R	(T)	.097	.002	.095	.000	2.40	1	(TENSION)
105	R	(T)	.055	.002	.042	.010	2.40	1	(TENSION)
106	R	(T)	.058	.003	.055	.000	2.40	1	(TENSION)
107	R	(T)	.156	.001	.155	.000	2.40	1	(TENSION)
108	R	(T)	.063	.008	.040	.015	2.40	1	(TENSION)
109	R	(T)	.058	.003	.055	.000	2.40	1	(TENSION)
110	R	(T)	.156	.001	.155	.000	2.40	1	(TENSION)
111	R	(T)	.062	.008	.040	.013	2.40	1	(TENSION)
112	R	(T)	.048	.001	.047	.000	2.40	1	(TENSION)
113	R	(T)	.097	.002	.095	.000	2.40	1	(TENSION)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS - AXI + B33 + B22 RATIO	STATION LOCATION	COMBO NO	AISC EQUATION
114	R	(T)	.054 .003 .042 .010	2.40	1	(TENSION)
115	R	(T)	.059 .002 .057 .001	2.40	1	TENSION)
116	R	(C) THE VALUE OF K/LR IS GREATER THAN Cc				
117	R	(T)	.044 .001 .038 .005	2.40	1	(TENSION)
118	R	(T)	.052 .001 .034 .017	2.40	1	(TENSION)
119	R	(T)	.041 .003 .037 .001	2.40	1	(TENSION)
120	R	(T)	.046 .003 .029 .013	.00	1	(TENSION)
121	R	(T)	.041 .003 .037 .001	2.40	1	(TENSION)
122	R	(T)	.047 .003 .030 .014	.00	1	(TENSION)
123	R	(T)	.044 .001 .038 .005	2.40	1	(TENSION)
124	R	(T)	.052 .001 .034 .017	2.40	1	(TENSION)
128	R	(T)	.037 .000 .018 .018	1.95	1	(TENSION)
132	R	(T)	.146 .000 .073 .073	3.90	1	(TENSION)
136	R	(T)	.221 .000 .111 .111	4.80	1	(TENSION)
140	R	(T)	.146 .000 .073 .073	3.90	1	(TENSION)
144	R	(T)	.037 .000 .018 .018	1.95	1	(TENSION)
145	R	(C)	.006 .000 .006 .000	.00	1	(BENDING)
146	R	(T)	.013 .000 .013 .000	.00	1	(TENSION)
147	R	(C)	.011 .000 .010 .000	.00	1	(BENDING)
148	R	(T)	.056 .000 .023 .033	1.95	1	(TENSION)
149	R	(C) THE VALUE OF K/LR IS GREATER THAN Cc				
150	R	(T)	.003 .000 .002 .000	3.90	1	(TENSION)
151	R	(C) THE VALUE OF K/LR IS GREATER THAN Cc				
152	R	(T)	.161 .000 .078 .083	3.90	1	(TENSION)
153	R	(C) THE VALUE OF K/LR IS GREATER THAN Cc				

ELEM ID	SECTION TYPE	CHK TYPE	STRESS - AXL + B33 + H22 RATIO	STATION LOCATION	COMBO NO	AISC EQUATION
154	R	(T)	.002 .000 .002 .000	4.80	1	(TENSION)
155	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
156	R	(T)	.216 .000 .107 .108	4.80	1	(TENSION)
157	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
158	R	(T)	.004 .000 .004 .000	3.90	1	(TENSION)
159	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
160	R	(T)	.160 .000 .078 .082	.00	1	(TENSION)
161	R	(C)	.005 .000 .005 .000	1.95	1	(BENDING)
162	R	(T)	.014 .000 .014 .000	.00	1	(TENSION)
163	R	(C)	.012 .000 .011 .001	1.95	1	(BENDING)
164	R	(T)	.054 .000 .022 .032	.00	1	(TENSION)
165	R	(C)	.008 .001 .007 .000	.00	1	(2.4-2)
166	R	(T)	.060 .000 .028 .032	1.95	1	(TENSION)
167	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
168	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
169	R	(T)	.154 .001 .072 .081	3.90	1	(TENSION)
170	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
171	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
172	R	(T)	.215 .001 .105 .109	4.80	1	(TENSION)
173	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
174	R	(C)	THE VALUE OF k_l/r IS GREATER THAN C_c			
175	R	(T)	.161 .001 .076 .084	.00	1	(TENSION)
176	R	(C)	.008 .001 .007 .001	1.85	1	(2.4-2)
177	R	(T)	.060 .001 .028 .032	.00	1	(TENSION)
178	R	(C)	.024 .000 .022 .001	1.95	1	(BENDING)

ELEM ID	SECTION TYPE	CHK TYPE	STRESS - AXL + B33 + B22 RATIO	STATION LOCATION	COMBO NO	AISC EQUATION
179	R	(T)	.049 .001 .033 .015	.00	1	(TENSION)
180	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
181	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
182	R	(T)	.149 .001 .079 .068	.00	1	(TENSION)
183	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
184	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
185	R	(T)	.212 .002 .102 .108	.00	1	(TENSION)
186	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
187	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
188	R	(T)	.148 .001 .079 .068	3.90	1	(TENSION)
189	R	(C)	.023 .000 .022 .001	1.95	1	(BENDING)
190	R	(T)	.048 .001 .033 .014	1.95	1	(TENSION)
191	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
192	R	(T)	.150 .002 .068 .081	3.90	1	(TENSION)
193	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
194	R	(T)	.213 .002 .102 .109	.00	1	(TENSION)
195	R	(C)	THE VALUE OF kI/r IS GREATER THAN C_c			
196	R	(T)	.150 .002 .068 .081	.00	1	(TENSION)

