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 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387
 AUTH. NAME AUTHOR AFFILIATION
 CURTIS, N.W. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 SCHWENCER, A. Licensing Branch 2

SUBJECT: Forwards responses to NRC questions re small bore pipe.
 Twelve oversize drawings encl, including three illegible.
 Aperture cards are available in PDR.

DISTRIBUTION CODE: B001S COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 700x9
 TITLE: Licensing Submittal: PSAR/FSAR Amdts & Related Correspondence

NOTES: Limited Dist

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NRR/DE/HGEB 30	2 2	NRR/DE/MEB 18	1 1
NRR/DE/MTEB 17	1 1	NRR/DE/QAB 21	1 1
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NRR/DHFS/HFEB40	1 1	NRR/DHFS/LQB 32	1 1
NRR/DHFS/OLB 34	1 1	NRR/DHFS/PTRB20	1 1
NRR/DSI/AEB 26	1 1	NRR/DSI/ASB 27	1 1
NRR/DSI/CPB 10	1 1	NRR/DSI/CSB 09	1 1
NRR/DSI/ETSB 12	1 1	NRR/DSI/ICSB 16	1 1
NRR/DSI/PSB 19	1 1	NRR/DSI/RAB 22	1 1
NRR/DSI/RSB 23	1 1	NRR/DST/LGB 33	1 1
REG FILE 04	1 1	RGN1	2 1
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EXTERNAL: ACRS 41	10 1	BNL (AMDTs ONLY)	1 1
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Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis
Vice President-Engineering & Construction-Nuclear
215 / 770-5381

SEP 15 1982

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
SMALL BORE PIPE QUESTIONS
ER 100450 FILE 285
PLA-1298

Docket No. 50-387

Dear Mr. Schwencer:

Attached are the responses to questions received from your staff during telephone conversations.

If you have any additional questions please contact us.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

CTC/mks

Attachment

cc: R. L. Perch - NRC

Boo!

Limited Dist

ELEMENT DATA

ME101/12

DATE 040182

PAGE 93

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO1

ELEMENT FROM TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
5 10	TNGT	SA376-TP304	.41	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
10 15	TNGT	SA376-TP304	1.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
15 20	TNGT	SA376-TP304	.88	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20 25	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
25 30	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
30 35	TNGT	SA376-TP304	.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
35 40	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20 45 B	TNGT	SA376-TP304	1.12	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
45 B 45 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
45 E 50	TNGT	SA376-TP304	.19	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
50 55	TNGT	SA376-TP304	1.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
55 60	TNGT	SA376-TP304	1.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
60 65	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
65 70	TNGT	SA376-TP304	.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
70 75	TNGT	SA376-TP304	1.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
75 80 B	TNGT	SA376-TP304	.34	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
80 B 80 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
80 E 85	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
85 90	TNGT	SA376-TP304	2.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
90 95	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
95 100 B	TNGT	SA376-TP304	.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
100 B 100 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
100 E 105	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
105 110	TNGT	SA376-TP304	.43	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
110 115	TNGT	SA376-TP304	.51	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
115 120 B	TNGT	SA376-TP304	1.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
120 B 120 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
120 E 125	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
125 130	TNGT	SA376-TP304	.40	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130 130A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130A 135	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135 135A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135A 137	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137 138	TNGT	SA376-TP304	.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137 140	TNGT	SA376-TP304	1.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140 140A	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140A 145	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145 145A	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145A 150	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

8209200228



ELEMENT DATA

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ELEMENT FROM	ELEMENT TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
150	155	TNGT	SA376-TP304	.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
155	160	TNGT	SA376-TP304	2.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
160	165	TNGT	SA376-TP304	2.94	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
165	170	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
170	175	TNGT	SA376-TP304	.27	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
175	180	B TNGT	SA376-TP304	.99	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
180	B 180	E BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
180	E 185	TNGT	SA376-TP304	4.04	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185	185A	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185A	190	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190	190A	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190A	195	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
195	200	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
200	205	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205	205A	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205A	210	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210	210A	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210A	215	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215	215A	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215A	220	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
220	225	B TNGT	SA376-TP304	2.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
225	B 225	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
225	E 230	TNGT	SA376-TP304	2.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230	230A	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230A	235	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235	235A	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235A	240	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
240	245	TNGT	SA376-TP304	3.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
245	250	TNGT	SA376-TP304	.53	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
250	255	B TNGT	SA376-TP304	1.14	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
255	B 255	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
255	E 260	TNGT	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
260	265	B TNGT	SA376-TP304	4.10	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
265	B 265	E BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
265	E 270	TNGT	SA376-TP304	1.21	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
270	275	TNGT	SA376-TP304	1.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
275	280	TNGT	SA376-TP304	4.90	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
280	285	TNGT	SA376-TP304	.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
285	290	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290	290A	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290A	295	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
295	300	TNGT	SA376-TP304	.77	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
300	305	TNGT	SA376-TP304	.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
305	310	B TNGT	SA376-TP304	.08	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
310	B 310	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
310	E 315	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
315	320	B TNGT	SA376-TP304	.46	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
320	B 320	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
320	E 500	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

RESTRAINT DESCRIPTION

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO1

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT			TRANSLATIONAL FLEXIBILITY (IN/LB)	TORSIONAL FLEXIBILITY (RAD/LB-IN)
				X	Y	Z		
5	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
5	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
5	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
25	RAD			.3908	.0000	.9205	.000000000000	
50	RAD			.0000	1.0000	.0000	.000000000000	
65	RAD			1.0000	.0000	.0000	.000000000000	
65	RAD			.0000	1.0000	.0000	.000000000000	
85	RAD			1.0000	.0000	.0000	.000000000000	
85	RAD			.0000	.0000	1.0000	.000000000000	
95	RAD			.0000	1.0000	.0000	.000000000000	
105	RAD			1.0000	.0000	.0000	.000000000000	
115	RAD			.0000	1.0000	.0000	.000000000000	
115	RAD			.0000	.0000	1.0000	.000000000000	
130	RAD			1.0000	.0000	.0000	.000000000000	
130	RAD			.0000	.0000	1.0000	.000000000000	
135	RAD			1.0000	.0000	.0000	.000000000000	
135	RAD			.0000	.0000	1.0000	.000000000000	
140	RAD			1.0000	.0000	.0000	.000000000000	
140	RAD			.0000	.0000	1.0000	.000000000000	
145	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
145	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
145	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
150	RAD			1.0000	.0000	.0000	.000000000000	
150	RAD			.0000	.0000	1.0000	.000000000000	
160	RAD			.0000	.0000	1.0000	.000000000000	
170	RAD			.0000	.0000	1.0000	.000000000000	
185	RAD			1.0000	.0000	.0000	.000000000000	
185	RAD			.0000	.0000	1.0000	.000000000000	
190	RAD			1.0000	.0000	.0000	.000000000000	
190	RAD			.0000	.0000	1.0000	.000000000000	
195	RAD			1.0000	.0000	.0000	.000000000000	



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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000



TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO1

SEISMIC RESPONSE SPECTRA ANALYSIS:

TITLE OF SPECTRA : ENVELOPE OF OBERBC719
 TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
 MAXIMUM NUMBER OF MODES : 35
 MINIMUM PERIOD : .010
 EIGENVALUE EXTRACTION FLAG: 3 DETERMINANT SEARCH OR SUBSPACE ITERATION.
 MODAL SYNTHESIS OPTION : 4 X+Y+Z, LOCAL AND GLOBAL FORCE SUPERPOSITION.
 COEFFICIENT : SRSS

DIRECTION OF SPECTRA : X

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.000
.9200	1.0870	.449
1.7000	.5882	.973
2.2500	.4444	1.225
2.3000	.4348	1.630
2.3500	.4255	2.345
2.5000	.4000	2.345
2.8000	.3571	5.360
4.2000	.2381	5.360
4.3000	.2326	4.981
5.5000	.1818	1.609
5.7000	.1754	1.665
6.3000	.1587	2.563
7.3000	.1370	4.850
12.0000	.0833	4.850
13.2000	.0758	2.760
14.0000	.0714	2.070
15.0000	.0667	2.070
20.0000	.0500	1.175
24.0000	.0417	1.020
25.0000	.0400	.869
26.0000	.0385	.780
27.2000	.0368	.780
28.0000	.0357	.661
28.9000	.0346	.610
33.9500	.0295	.404

DIRECTION OF SPECTRA : Y

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.015
.1150	8.6957	.018
.4000	2.5000	.172
3.5000	.2857	.440
3.8000	.2632	.789
4.3000	.2326	1.504
5.1000	.1961	2.960
5.8000	.1724	2.960
6.8000	.1471	3.258
6.9000	.1449	3.320
10.5000	.0952	3.320
12.0000	.0833	3.331
12.5000	.0800	3.960
19.8000	.0505	3.960
20.8300	.0480	2.718
23.0000	.0435	1.148
25.0000	.0400	1.060
28.0000	.0357	1.060
30.0000	.0333	.557
31.0000	.0323	.421
32.0000	.0313	.330
33.0000	.0303	.330
34.0000	.0294	.290
100.0000	.0100	.290
100.0010	.0100	.289
100.0020	.0100	.290

DIRECTION OF SPECTRA : Z

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.000
.8000	1.2500	.306
1.2900	.7752	.419
2.1660	.4617	.864
2.2500	.4444	1.204
2.3000	.4348	1.630
2.3500	.4255	2.345
2.7000	.3704	2.345
3.2000	.3125	3.560
4.8000	.2083	3.560
5.0000	.2000	2.982
5.7000	.1754	1.677
5.8500	.1709	1.706
6.7500	.1481	1.930
10.0000	.1000	1.930
11.0000	.0909	1.214
11.5000	.0870	1.103
12.2000	.0820	1.400
18.0000	.0556	1.400
19.2000	.0521	.929
30.0000	.0333	.580
35.0000	.0286	.279
37.0000	.0270	.250
100.0000	.0100	.250
100.0010	.0100	.250
100.0020	.0100	.250

DESCRIPTION OF LOAD

SEISO1

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35.0000 .0286 .373
100.0000 .0100 .373
100.0010 .0100 .372
100.0020 .0100 .374

100.0030 .0100 .373
100.0040 .0100 .372
100.0050 .0100 .372
100.0060 .0100 .372
100.0070 .0100 .372

100.0080 .0100 .372
100.0090 .0100 .372

100.0030 .0100 .289
100.0040 .0100 .291
100.0050 .0100 .289
100.0060 .0100 .290

100.0070 .0100 .291
100.0080 .0100 .289
100.0090 .0100 .290
100.0100 .0100 .291
100.0110 .0100 .289

100.0120 .0100 .289
100.0130 .0100 .291

100.0030 .0100 .250
100.0040 .0100 .250
100.0050 .0100 .250
100.0060 .0100 .250

100.0070 .0100 .250
100.0080 .0100 .250
100.0090 .0100 .250
100.0100 .0100 .250
100.0110 .0100 .250

100.0120 .0100 .250
100.0130 .0100 .250



DIAGNOSTIC MESSAGE ANALYSIS

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PAGE 99

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : *ALL*

LEVEL TAG TO DIAGNOSTIC MESSAGE

LOAD CASE(S) : SEISO1

+WRN+ 145
 +WRN+
 +WRN+

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
 BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .056 SEC.
 SUBSPACE ITERATION USED. SAP CORE SIZE = 100 K



DIAGNOSTIC MESSAGE ANALYSIS

ME101/I2

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#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.134	14.280	.000	.173	.035	.009	.105	.031	.398	2.393	.032	23.591

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***
 CHECKPOINT

@XQT,K *ME101.ME101I . SEISO2

ME101I ME101I/FEB05

*** CORE CHANGED FROM	42600 TO	48600 DECIMAL WORDS ***
*** CORE CHANGED FROM	48600 TO	78741 DECIMAL WORDS ***
*** CORE CHANGED FROM	78741 TO	79253 DECIMAL WORDS ***
*** CORE CHANGED FROM	79253 TO	48797 DECIMAL WORDS ***
*** CORE CHANGED FROM	48797 TO	48600 DECIMAL WORDS ***
*** CORE CHANGED FROM	48600 TO	51327 DECIMAL WORDS ***
*** CORE CHANGED FROM	51327 TO	51585 DECIMAL WORDS ***
*** CORE CHANGED FROM	51585 TO	55358 DECIMAL WORDS ***

RESTRAINT DESCRIPTION

ME101/I2

DATE 040182

PAGE 101

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEIS02

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT			TRANSLATIONAL FLEXIBILITY (IN/LB)	TORSIONAL FLEXIBILITY (RAD/LB-IN)
				X	Y	Z		
5	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
5	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
5	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
25	RAD			.3908	.0000	.9205	.000000000000	
50	RAD			.0000	1.0000	.0000	.000000000000	
65	RAD			1.0000	.0000	.0000	.000000000000	
65	RAD			.0000	1.0000	.0000	.000000000000	
85	RAD			1.0000	.0000	.0000	.000000000000	
85	RAD			.0000	.0000	1.0000	.000000000000	
95	RAD			.0000	1.0000	.0000	.000000000000	
105	RAD			1.0000	.0000	.0000	.000000000000	
115	RAD			.0000	1.0000	.0000	.000000000000	
115	RAD			.0000	.0000	1.0000	.000000000000	
130	RAD			1.0000	.0000	.0000	.000000000000	
130	RAD			.0000	.0000	1.0000	.000000000000	
135	RAD			1.0000	.0000	.0000	.000000000000	
135	RAD			.0000	.0000	1.0000	.000000000000	
140	RAD			1.0000	.0000	.0000	.000000000000	
140	RAD			.0000	.0000	1.0000	.000000000000	
145	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
145	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
145	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
150	RAD			1.0000	.0000	.0000	.000000000000	
150	RAD			.0000	.0000	1.0000	.000000000000	
160	RAD			.0000	.0000	1.0000	.000000000000	
170	RAD			.0000	.0000	1.0000	.000000000000	
185	RAD			1.0000	.0000	.0000	.000000000000	
185	RAD			.0000	.0000	1.0000	.000000000000	
190	RAD			1.0000	.0000	.0000	.000000000000	
190	RAD			.0000	.0000	1.0000	.000000000000	
195	RAD			1.0000	.0000	.0000	.000000000000	



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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO2

SEISMIC RESPONSE SPECTRA ANALYSIS:

TITLE OF SPECTRA : ENVELOPE OF SSERBC719
 TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
 MAXIMUM NUMBER OF MODES : 35
 MINIMUM PERIOD : .010
 EIGENVALUE EXTRACTION FLAG: 3 DETERMINANT SEARCH OR SUBSPACE ITERATION.
 MODAL SYNTHESIS OPTION : 4 X+Y+Z LOCAL AND GLOBAL FORCE SUPERPOSITION.
 COEFFICIENT : SRSS

DIRECTION OF SPECTRA : X

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.030
.1200	8.3333	.048
1.2000	.8333	.651
1.6700	.5988	.875
1.7000	.5882	.900
2.0000	.5000	.990
2.5000	.4000	2.170
2.9000	.3448	2.790
4.3000	.2326	2.790
5.0000	.2000	1.561
5.3000	.1887	1.601
6.0000	.1667	1.921
7.2000	.1389	3.480
7.4000	.1351	3.640
12.0000	.0833	3.640
14.0000	.0714	1.857
14.5000	.0690	1.660
17.2000	.0581	1.174
22.0000	.0455	.860
25.0000	.0400	.860
28.0000	.0357	.576
31.2500	.0320	.473
43.0000	.0233	.473
43.0010	.0233	.473
43.0020	.0233	.473
43.0030	.0233	.473

DIRECTION OF SPECTRA : Y

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.024
.1200	8.3333	.045
.4000	2.5000	.211
1.2900	.7752	.390
2.2000	.4545	.473
2.7000	.3704	.736
3.3000	.3030	1.046
3.5000	.2857	1.160
5.1000	.1961	2.190
6.7000	.1493	2.190
7.2000	.1389	2.250
12.0000	.0833	2.250
12.5000	.0800	1.868
13.0000	.0769	1.940
19.2000	.0521	1.940
21.0000	.0476	1.700
23.0000	.0435	.823
24.0000	.0417	.750
25.0000	.0400	.700
26.6600	.0375	.570
28.0000	.0357	.570
29.5000	.0339	.467
32.5000	.0308	.413
100.0000	.0100	.413
100.0010	.0100	.413
100.0020	.0100	.412

DIRECTION OF SPECTRA : Z

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.030
.1200	8.3333	.043
.2330	4.2918	.126
.5660	1.7668	.259
.7500	1.3333	.304
.9500	1.0526	.373
.9800	1.0204	.383
1.2000	.8333	.471
1.4500	.6897	.694
1.6700	.5988	.875
1.7000	.5882	.900
2.0000	.5000	.990
2.5000	.4000	2.170
2.8000	.3571	2.170
3.3000	.3030	2.310
4.8000	.2083	2.310
5.0000	.2000	1.868
5.3000	.1887	1.601
6.0000	.1667	1.685
8.8000	.1136	1.685
12.5000	.0800	.913
14.0000	.0714	.860
14.8000	.0676	.780
18.0000	.0556	.780
20.5000	.0488	.610
23.3300	.0429	.610



DESCRIPTION OF LOAD

SEIS02

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43.0040	.0233	.473
43.0050	.0233	.473
43.0060	.0233	.473
43.0070	.0233	.473
43.0080	.0233	.473
43.0090	.0233	.473
100.0010	.0100	.473

100.0030	.0100	.413
100.0040	.0100	.413
100.0050	.0100	.413
100.0060	.0100	.413
100.0070	.0100	.413
100.0080	.0100	.413
100.0090	.0100	.413

30.0000	.0333	.365
31.2500	.0320	.332
32.0000	.0313	.323
100.0000	.0100	.323
100.0010	.0100	.323
100.0020	.0100	.323
100.0030	.0100	.323



DIAGNOSTIC MESSAGE ANALYSIS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : *ALL*

LEVEL TAG TO DIAGNOSTIC MESSAGE

LOAD CASE(S) : SEISO2

+WRN+
 +WRN+
 +WRN+

145

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
 BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .057 SEC.
 SUBSPACE ITERATION USED. SAP CORE SIZE = 100 K

DIAGNOSTIC MESSAGE ANALYSIS

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#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.128	11.270	.000	.174	.035	.009	.105	.031	.410	.766	.032	18.961

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***
 CHECKPOINT

EXQT,K *ME101.ME101I . SEISO3

ME101I ME101I/FEB05

*** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***
 *** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***
 *** CORE CHANGED FROM 79253 TO 48797 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48797 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 51327 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51327 TO 51585 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51585 TO 55358 DECIMAL WORDS ***

RESTRAINT DESCRIPTION

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO3

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT			TRANSLATIONAL FLEXIBILITY (IN/LB)	TORSIONAL FLEXIBILITY (RAD/LB-IN)
				X	Y	Z		
5	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
5	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
5	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
25	RAD			.3908	.0000	.9205	.000000000000	
50	RAD			.0000	1.0000	.0000	.000000000000	
65	RAD			1.0000	.0000	.0000	.000000000000	
65	RAD			.0000	1.0000	.0000	.000000000000	
85	RAD			1.0000	.0000	.0000	.000000000000	
85	RAD			.0000	.0000	1.0000	.000000000000	
95	RAD			.0000	1.0000	.0000	.000000000000	
105	RAD			1.0000	.0000	.0000	.000000000000	
115	RAD			.0000	1.0000	.0000	.000000000000	
115	RAD			.0000	.0000	1.0000	.000000000000	
130	RAD			1.0000	.0000	.0000	.000000000000	
130	RAD			.0000	.0000	1.0000	.000000000000	
135	RAD			1.0000	.0000	.0000	.000000000000	
135	RAD			.0000	.0000	1.0000	.000000000000	
140	RAD			1.0000	.0000	.0000	.000000000000	
140	RAD			.0000	.0000	1.0000	.000000000000	
145	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
145	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
145	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
150	RAD			1.0000	.0000	.0000	.000000000000	
150	RAD			.0000	.0000	1.0000	.000000000000	
160	RAD			.0000	.0000	1.0000	.000000000000	
170	RAD			.0000	.0000	1.0000	.000000000000	
185	RAD			1.0000	.0000	.0000	.000000000000	
185	RAD			.0000	.0000	1.0000	.000000000000	
190	RAD			1.0000	.0000	.0000	.000000000000	
190	RAD			.0000	.0000	1.0000	.000000000000	
195	RAD			1.0000	.0000	.0000	.000000000000	

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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000



TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEIS03

SEISMIC RESPONSE SPECTRA ANALYSIS:

TITLE OF SPECTRA : ENVELOPE OF SRVRBC719
 TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
 MAXIMUM NUMBER OF MODES : 35
 MINIMUM PERIOD : .010
 EIGENVALUE EXTRACTION FLAG: 3 DETERMINANT SEARCH OR SUBSPACE ITERATION.
 MODAL SYNTHESIS OPTION : 4 X+Y+Z LOCAL AND GLOBAL FORCE SUPERPOSITION.
 COEFFICIENT : CS4, CLOSE : 10.00 PERCENT.

DIRECTION OF SPECTRA : X

FREQUENCY (CPS) PERIOD (SEC) ACCEL. (G)

.1000 10.0000 .008
 1.7000 .5882 .008
 2.6087 .3833 .015
 2.7000 .3704 .025
 3.2000 .3125 .075

3.8000 .2632 .080
 4.4000 .2273 .275
 5.6000 .1786 .275
 6.2000 .1613 .234
 6.5000 .1538 .234

7.0000 .1429 .406
 9.2000 .1087 .406
 10.7000 .0935 .250
 11.5000 .0870 .208
 12.1739 .0821 .234

12.5000 .0800 .250
 15.5000 .0645 .578
 19.9800 .0501 .594
 23.0000 .0435 .641
 24.3478 .0411 .667

26.0000 .0385 .750
 32.0000 .0313 1.594
 42.5000 .0235 1.594
 48.0000 .0208 1.000
 54.5000 .0183 .875

57.0000 .0175 .875

DIRECTION OF SPECTRA : Y

FREQUENCY (CPS) PERIOD (SEC) ACCEL. (G)

.1000 10.0000 .016
 1.7000 .5882 .016
 2.3000 .4348 .020
 3.0000 .3333 .031
 3.2500 .3077 .031

3.5000 .2857 .035
 4.0500 .2469 .106
 4.4000 .2273 .106
 4.7826 .2091 .138
 5.4050 .1850 .138

5.6522 .1769 .151
 5.7565 .1737 .170
 6.0870 .1643 .174
 6.5217 .1533 .174
 6.9000 .1449 .274

6.9565 .1438 .289
 7.3044 .1369 .475
 7.3913 .1353 .505
 9.7750 .1023 .505
 10.3500 .0966 .470

10.4075 .0961 .451
 10.4348 .0958 .443
 11.3043 .0885 .633
 11.5000 .0870 .671
 11.7381 .0852 .720

11.7500 .0851 .721

DIRECTION OF SPECTRA : Z

FREQUENCY (CPS) PERIOD (SEC) ACCEL. (G)

.1000 10.0000 .016
 1.7000 .5882 .016
 3.2200 .3106 .018
 3.4500 .2899 .019
 3.4783 .2875 .019

3.7950 .2635 .019
 4.0000 .2500 .019
 5.0000 .2000 .028
 7.0000 .1429 .047
 10.0000 .1000 .078

13.0435 .0767 .160
 16.0000 .0625 .250
 19.0000 .0526 .453
 20.7000 .0483 .470
 21.7391 .0460 .524

26.0000 .0385 .750
 32.0000 .0313 1.594
 42.5000 .0235 1.594
 48.0000 .0208 1.000
 54.5000 .0183 .875

57.0000 .0175 .875
 64.0000 .0156 .672
 70.0000 .0143 .672
 74.9000 .0134 .406
 86.0000 .0116 .281

100.0040 .0100 .250

DESCRIPTION OF LOAD

SEIS03

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64.0000	.0156	.672	12.1739	.0821	.901	100.0540	.0100	.250
70.0000	.0143	.672	12.8696	.0777	1.570	100.0550	.0100	.250
74.9000	.0134	.406	13.0435	.0767	1.690	100.0560	.0100	.250
80.5000	.0124	.341	17.2500	.0580	1.690	100.0570	.0100	.250
86.0000	.0116	.328	17.9130	.0558	1.421	100.0580	.0100	.250
92.0010	.0109	.328	17.9400	.0557	1.410	100.0590	.0100	.250
100.0010	.0100	.273	18.4000	.0543	1.150	100.0600	.0100	.250
100.0540	.0100	.273	19.3913	.0516	.786	100.0610	.0100	.250
100.0550	.0100	.273	20.0000	.0500	.682	100.0620	.0100	.250
100.0560	.0100	.273	20.7000	.0483	.623	100.0630	.0100	.250
100.0570	.0100	.273	22.7700	.0439	.623	100.0640	.0100	.250
100.0580	.0100	.273	23.0000	.0435	.613	100.0650	.0100	.250
100.0590	.0100	.273	23.6900	.0422	.566	100.0660	.0100	.250
100.0600	.0100	.273	24.1500	.0414	.505	100.0670	.0100	.250
100.0610	.0100	.273	25.1850	.0397	.408	100.0680	.0100	.250
100.0620	.0100	.273	25.2500	.0396	.406	100.0690	.0100	.250
100.0630	.0100	.273	28.5000	.0351	.359	100.0700	.0100	.250
100.0640	.0100	.273	34.0000	.0294	.344	100.0710	.0100	.250
100.0650	.0100	.273	42.0000	.0238	.234	100.0720	.0100	.250
100.0660	.0100	.273	45.9000	.0218	.227	100.0730	.0100	.250
100.0670	.0100	.273	57.0000	.0175	.219	100.0740	.0100	.250
100.0680	.0100	.273	68.0000	.0147	.219	100.0750	.0100	.250
100.0690	.0100	.273	72.6800	.0138	.179	100.0760	.0100	.250
100.0700	.0100	.273	74.5000	.0134	.166	100.0770	.0100	.250
100.0710	.0100	.273	80.0000	.0125	.164	100.0780	.0100	.250
100.0720	.0100	.273	85.0000	.0118	.164	100.0790	.0100	.250
100.0730	.0100	.273	100.0070	.0100	.141	100.0800	.0100	.250
100.0740	.0100	.273	100.0480	.0100	.141	100.0810	.0100	.250

DIAGNOSTIC MESSAGE ANALYSIS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : *ALL*

LEVEL TAG TO DIAGNOSTIC MESSAGE

LOAD CASE(S) : SEISO3

+WRN+
 +WRN+
 +WRN+

145

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
 BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .057 SEC.
 SUBSPACE ITERATION USED. SAP CORE SIZE = 100 K

DIAGNOSTIC MESSAGE ANALYSIS

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#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.130	11.264	.000	.175	.035	.010	.106	.031	.400	.910	.032	19.092

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***
 CHECKPOINT

@XQT,K *ME101.ME101I . SEIS04

ME101I ME101I/FEB05

*** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***
 *** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***
 *** CORE CHANGED FROM 79253 TO 48797 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48797 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 51327 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51327 TO 51585 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51585 TO 55358 DECIMAL WORDS ***



RESTRAINT DESCRIPTION

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO4

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT	TRANSLATIONAL FLEXIBILITY	TORSIONAL FLEXIBILITY
				X Y Z	(IN/LB)	(RAD/LB-IN)
5	ANCH		-A-	1.0000 .0000 .0000	.000000000000	.000000000000
5	ANCH		-B-	.0000 1.0000 .0000	.000000000000	.000000000000
5	ANCH		-C-	.0000 .0000 1.0000	.000000000000	.000000000000
25	RAD			.3908 .0000 .9205	.000000000000	
50	RAD			.0000 1.0000 .0000	.000000000000	
65	RAD			1.0000 .0000 .0000	.000000000000	
65	RAD			.0000 1.0000 .0000	.000000000000	
85	RAD			1.0000 .0000 .0000	.000000000000	
85	RAD			.0000 .0000 1.0000	.000000000000	
95	RAD			.0000 1.0000 .0000	.000000000000	
105	RAD			1.0000 .0000 .0000	.000000000000	
115	RAD			.0000 1.0000 .0000	.000000000000	
115	RAD			.0000 .0000 1.0000	.000000000000	
130	RAD			1.0000 .0000 .0000	.000000000000	
130	RAD			.0000 .0000 1.0000	.000000000000	
135	RAD			1.0000 .0000 .0000	.000000000000	
135	RAD			.0000 .0000 1.0000	.000000000000	
140	RAD			1.0000 .0000 .0000	.000000000000	
140	RAD			.0000 .0000 1.0000	.000000000000	
145	ANCH		-A-	1.0000 .0000 .0000	.000000000000	.000000000000
145	ANCH		-B-	.0000 1.0000 .0000	.000000000000	.000000000000
145	ANCH		-C-	.0000 .0000 1.0000	.000000000000	.000000000000
150	RAD			1.0000 .0000 .0000	.000000000000	
150	RAD			.0000 .0000 1.0000	.000000000000	
160	RAD			.0000 .0000 1.0000	.000000000000	
170	RAD			.0000 .0000 1.0000	.000000000000	
185	RAD			1.0000 .0000 .0000	.000000000000	
185	RAD			.0000 .0000 1.0000	.000000000000	
190	RAD			1.0000 .0000 .0000	.000000000000	
190	RAD			.0000 .0000 1.0000	.000000000000	
195	RAD			1.0000 .0000 .0000	.000000000000	

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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO4

SEISMIC RESPONSE SPECTRA ANALYSIS:

TITLE OF SPECTRA : ENVELOPE OF CHGCRBC719
 TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
 MAXIMUM NUMBER OF MODES : 35
 MINIMUM PERIOD : .010
 EIGENVALUE EXTRACTION FLAG: 3 DETERMINANT SEARCH OR SUBSPACE ITERATION.
 MODAL SYNTHESIS OPTION : 4 X+Y+Z LOCAL AND GLOBAL FORCE SUPERPOSITION.
 COEFFICIENT : CS4, CLOSE : 10.00 PERCENT.

DIRECTION OF SPECTRA : X

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
1.7391	.5750	.005
1.9130	.5227	.006
2.0870	.4792	.007
2.2609	.4423	.008
2.3000	.4348	.009
2.4348	.4107	.010
2.6087	.3833	.012
2.8696	.3485	.013
2.9900	.3344	.017
3.0000	.3333	.017
3.1304	.3194	.022
3.4783	.2875	.022
3.7950	.2635	.029
3.8261	.2614	.030
4.0870	.2447	.051
4.3478	.2300	.089
5.6522	.1769	.089
5.7500	.1739	.092
6.0870	.1643	.139
6.5217	.1533	.139
6.9000	.1449	.191
6.9565	.1438	.202
7.3913	.1353	.218
9.7750	.1023	.218
10.3500	.0966	.212
10.4348	.0958	.212

DIRECTION OF SPECTRA : Y

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
1.7391	.5750	.007
2.0870	.4792	.009
2.3000	.4348	.010
2.4000	.4167	.011
2.5300	.3953	.011
2.7600	.3623	.013
2.9900	.3344	.016
3.1510	.3174	.017
3.4783	.2875	.019
3.7950	.2635	.028
3.8261	.2614	.029
4.1400	.2415	.044
4.6000	.2174	.135
4.8522	.2061	.192
5.2174	.1917	.192
5.6522	.1769	.197
5.7565	.1737	.239
6.5217	.1533	.239
6.9000	.1449	.344
7.3044	.1369	.640
7.4750	.1338	.645
9.6600	.1035	.645
10.0000	.1000	.608
10.3500	.0966	.538
10.4075	.0961	.559
11.3043	.0885	.933

DIRECTION OF SPECTRA : Z

FREQUENCY (CPS)	PERIOD (SEC)	ACCEL. (G)
.1000	10.0000	.005
1.7391	.5750	.005
1.9130	.5227	.006
2.0870	.4792	.007
2.2609	.4423	.008
2.3000	.4348	.009
2.4348	.4107	.010
2.6087	.3833	.012
2.8696	.3485	.013
3.0000	.3333	.017
3.1304	.3194	.022
3.4783	.2875	.022
3.7950	.2635	.029
3.8261	.2614	.030
4.0870	.2447	.051
4.3478	.2300	.089
5.6522	.1769	.089
5.7500	.1739	.092
6.0870	.1643	.139
6.5217	.1533	.139
6.9000	.1449	.191
6.9565	.1438	.202
7.3913	.1353	.218
9.7750	.1023	.218
10.3500	.0966	.212
10.4348	.0958	.212



DESCRIPTION OF LOAD

SEISO4

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11.3043	.0885	.223	11.7391	.0852	1.520	11.3043	.0885	.223
12.1739	.0821	.255	12.1739	.0821	1.520	12.1739	.0821	.255
13.0435	.0767	.306	12.6500	.0791	2.144	13.0435	.0767	.306
13.2250	.0756	.317	12.8696	.0777	2.460	13.8000	.0725	.365
13.8000	.0725	.365	17.0200	.0588	2.460	13.9130	.0719	.376
13.9130	.0719	.376	17.2500	.0580	2.260	15.6522	.0639	.613
15.6522	.0639	.613	17.9130	.0558	2.260	17.3913	.0575	.961
17.3913	.0575	.961	18.2609	.0548	2.022	19.1304	.0523	1.601
18.6957	.0535	1.418	19.0435	.0525	1.564	21.7391	.0460	3.122
19.1304	.0523	1.601	19.3913	.0516	1.377	24.3478	.0411	5.630
19.2174	.0520	1.648	20.7000	.0483	1.080	26.0870	.0383	6.910
20.4348	.0489	2.368	21.3900	.0468	1.080	34.5000	.0290	6.910
21.7391	.0460	3.122	21.7350	.0460	1.010	34.7826	.0288	6.885
24.3478	.0411	5.630	22.1950	.0451	1.000	36.9565	.0271	6.702
26.0870	.0383	6.910	22.7700	.0439	1.000	37.9500	.0264	6.622
34.5000	.0290	6.910	23.0000	.0435	.982	40.2500	.0248	5.728
34.7826	.0288	6.885	24.1500	.0414	.755	43.1250	.0232	4.058
36.9565	.0271	6.702	25.3000	.0395	.680	43.4783	.0230	3.975
37.9500	.0264	6.622	26.0870	.0383	.652	46.0000	.0217	3.848
40.2500	.0248	5.728	28.4348	.0352	.583	48.8750	.0205	3.398
43.1250	.0232	4.058	33.4650	.0299	.583	51.7500	.0193	3.797
43.1304	.0232	4.056	34.5000	.0290	.607	52.1739	.0192	3.873
43.4783	.0230	3.975	34.7826	.0288	.614	52.5550	.0190	3.905
44.9650	.0222	3.870	36.9565	.0271	.671	56.5217	.0177	4.224
46.0000	.0217	3.848	39.1304	.0256	.697	60.3750	.0166	4.817
48.8750	.0205	3.398	43.4783	.0230	.697	60.5217	.0165	4.839
51.7500	.0193	3.797	45.6522	.0219	.770	60.8696	.0164	4.890
52.1739	.0192	3.873	47.8261	.0209	.841	61.0650	.0164	4.890
56.5217	.0177	4.224	57.5000	.0174	.841	63.2500	.0158	4.890
60.3750	.0166	4.817	60.3750	.0166	.848	80.5000	.0124	4.890
60.8696	.0164	4.890	60.8696	.0164	.854	86.2500	.0116	4.694
63.2500	.0158	4.890	80.5000	.0124	.854	92.0000	.0109	4.694
80.5000	.0124	4.890	86.2500	.0116	.841	100.0000	.0100	4.349
86.2500	.0116	4.694	92.0000	.0109	.724	100.0010	.0100	4.329
92.0000	.0109	4.694	100.0030	.0100	.701	100.0020	.0100	4.359
100.0000	.0100	4.349	100.0180	.0100	.701	100.0030	.0100	4.356
100.0010	.0100	4.329	100.0190	.0100	.701	100.0040	.0100	4.329
100.0020	.0100	4.359	100.0200	.0100	.701	100.0050	.0100	4.356
100.0030	.0100	4.356	100.0210	.0100	.701	100.0060	.0100	4.359
100.0040	.0100	4.329	100.0220	.0100	.701	100.0070	.0100	4.329
100.0050	.0100	4.356	100.0230	.0100	.701	100.0080	.0100	4.356
100.0060	.0100	4.359	100.0240	.0100	.701	100.0090	.0100	4.359
100.0070	.0100	4.329	100.0250	.0100	.701	100.0100	.0100	4.329
100.0080	.0100	4.356	100.0260	.0100	.701	100.0110	.0100	4.356
100.0090	.0100	4.359	100.0270	.0100	.701	100.0120	.0100	4.356
100.0100	.0100	4.329	100.0280	.0100	.701	100.0130	.0100	4.359
100.0110	.0100	4.356	100.0290	.0100	.701	100.0140	.0100	4.329
100.0120	.0100	4.356	100.0300	.0100	.701	100.0150	.0100	4.356
100.0130	.0100	4.359	100.0310	.0100	.701	100.0160	.0100	4.359
100.0140	.0100	4.329	100.0320	.0100	.701	100.0170	.0100	4.329

DESCRIPTION OF LOAD

SEISO4

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100.0150	.0100	4.356
100.0160	.0100	4.359
100.0170	.0100	4.349
100.0210	.0100	4.349
100.0220	.0100	4.349
100.0230	.0100	4.349
100.0240	.0100	4.349
100.0250	.0100	4.349

100.0330	.0100	.701
100.0340	.0100	.701
100.0350	.0100	.701
100.0360	.0100	.701
100.0370	.0100	.701
100.0380	.0100	.701
100.0390	.0100	.701
100.0400	.0100	.701

100.0180	.0100	4.356
100.0190	.0100	4.356
100.0200	.0100	4.331
100.0210	.0100	4.356
100.0220	.0100	4.356
100.0230	.0100	4.359
100.0240	.0100	4.349
100.0680	.0100	4.349

DIAGNOSTIC MESSAGE ANALYSIS

ME101/I2

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : *ALL*

LEVEL	TAG TO	DIAGNOSTIC MESSAGE
-------	--------	--------------------

LOAD CASE(S) : SEISO4

+WRN+
 +WRN+
 +WRN+

145

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
 BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .056 SEC.
 SUBSPACE ITERATION USED. SAP CORE SIZE = 100 K

DIAGNOSTIC MESSAGE ANALYSIS

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#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.120	11.236	.000	.173	.035	.010	.105	.031	.399	1.122	.031	19.264

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***

CHECKPOINT

@XQT *ME101.ME101C0

DESCRIPTION OF LOAD SEISO1

ME101/I2

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SEISO1

STATIC SEISMIC ANALYSIS

TITLE OF SPECTRA : ENVELOPE OF OBERBC719
TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
NOTE : EFFECTIVE ACCELERATION REPORT WILL NOT INCLUDE ZPA ACCELERATION

DIRECTION OF SPECTRA : X			DIRECTION OF SPECTRA : Y			DIRECTION OF SPECTRA : Z		
FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)
100.0000	.0100	.373	100.0000	.0100	.290	100.0000	.0100	.250

DESCRIPTION OF LOAD SEISO2

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SEISO2

STATIC SEISMIC ANALYSIS

TITLE OF SPECTRA : ENVELOPE OF SSERBC719
TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
NOTE : EFFECTIVE ACCELERATION REPORT WILL NOT INCLUDE ZPA ACCELERATION

DIRECTION OF SPECTRA : X			DIRECTION OF SPECTRA : Y			DIRECTION OF SPECTRA : Z		
FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)
100.0000	.0100	.473	100.0000	.0100	.413	100.0000	.0100	.323

DESCRIPTION OF LOAD SEIS03

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SEIS03

STATIC SEISMIC ANALYSIS

TITLE OF SPECTRA : ENVELOPE OF SRVRBC719
TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
NOTE : EFFECTIVE ACCELERATION REPORT WILL NOT INCLUDE ZPA ACCELERATION

DIRECTION OF SPECTRA : X			DIRECTION OF SPECTRA : Y			DIRECTION OF SPECTRA : Z		
FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)
100.0000	.0100	.273	100.0000	.0100	.141	100.0000	.0100	.250

DESCRIPTION OF LOAD SEISO4

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SEISO4

STATIC SEISMIC ANALYSIS

TITLE OF SPECTRA : ENVELOPE OF CHGCRBC719
TYPE OF INTERPOLATION : 3 LOGARITHMIC, FREQUENCY-AMPLITUDE.
NOTE : EFFECTIVE ACCELERATION REPORT WILL NOT INCLUDE ZPA ACCELERATION

DIRECTION OF SPECTRA : X			DIRECTION OF SPECTRA : Y			DIRECTION OF SPECTRA : Z		
FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)	FREQUENCY (CPS)	PERIOD (SEC)	ZPA ACCEL. (G)
100.0000	.0100	4.349	100.0000	.0100	.701	100.0000	.0100	4.349

THE FOLLOWING INFORMATION CONTROLS THIS DATA DECK:

WRN COEF OF SEISO3 = CS4 IS DIFFERENT FROM COEF OF SEISO1 = SRSS
WRN COEF OF SEISO3 = CS4 IS DIFFERENT FROM COEF OF SEISO2 = SRSS
WRN COEF OF SEISO4 = CS4 IS DIFFERENT FROM COEF OF SEISO1 = SRSS
WRN COEF OF SEISO4 = CS4 IS DIFFERENT FROM COEF OF SEISO2 = SRSS

SAP JOB	LOADCASE	SAP LOAD
1	1 STSE01	1
2	1 STSE02	2
3	1 STSE03	3
4	1 STSE04	4
5	2 WTO1	1
6	1 THRM01	5
7	1 SAM01	6
8	1 SAM02	7
9	3 SEISO1	1
10	3 SEISO2	2
11	4 SEISO3	1
12	4 SEISO4	2

1. DEFINE LOADCASE SEISO1 AS FOLLOWS:
2. PUT LOADCASE SEISO1 IN T\$\$\$01.
3. FIND THE RESULTANT MAX OF LOADCASE STSE01 AND THE RESULT OF STEP 2.
4. STORE THE RESULT OF STEP 3 IN LOADCASE SEISO1.

1. DEFINE LOADCASE SEISO2 AS FOLLOWS:
2. PUT LOADCASE SEISO2 IN T\$\$\$01.
3. FIND THE RESULTANT MAX OF LOADCASE STSE02 AND THE RESULT OF STEP 2.
4. STORE THE RESULT OF STEP 3 IN LOADCASE SEISO2.

1. DEFINE LOADCASE SEISO3 AS FOLLOWS:
2. PUT LOADCASE SEISO3 IN T\$\$\$01.
3. FIND THE RESULTANT MAX OF LOADCASE STSE03 AND THE RESULT OF STEP 2.
4. STORE THE RESULT OF STEP 3 IN LOADCASE SEISO3.

1. DEFINE LOADCASE SEISO4 AS FOLLOWS:
2. PUT LOADCASE SEISO4 IN T\$\$\$01.
3. FIND THE RESULTANT MAX OF LOADCASE STSE04 AND THE RESULT OF STEP 2.
4. STORE THE RESULT OF STEP 3 IN LOADCASE SEISO4.

1. DEFINE LOADCASE SEISUP AS FOLLOWS:
2. PUT LOADCASE SEISO1 IN T\$\$\$01.
3. TAKE THE SQUARE ROOT OF SUM OF SQUARES OF LOADCASE SEISO3 AND THE RESULT OF STEP 2.
4. STORE THE RESULT OF STEP 3 IN LOADCASE SEISUP.

1. DEFINE LOADCASE SEISO5 AS FOLLOWS:
2. PUT LOADCASE SEISO1 IN T\$\$\$01.
3. FIND THE RESULTANT MAX OF LOADCASE SEISO2 AND THE RESULT OF STEP 2.
4. STORE THE RESULT OF STEP 3 IN LOADCASE SEISO5.

1. DEFINE LOADCASE SEISEM AS FOLLOWS:
2. PUT LOADCASE SEISO3 IN T\$\$\$01.
3. TAKE THE SQUARE ROOT OF SUM OF SQUARES OF LOADCASE SEISO4 AND THE RESULT OF STEP 2.
4. TAKE THE SQUARE ROOT OF SUM OF SQUARES OF LOADCASE SEISO5 AND THE RESULT OF STEP 3.
5. STORE THE RESULT OF STEP 4 IN LOADCASE SEISEM.

THE FOLLOWING 1 RESTRAINT LOAD SUMMARIES WILL
BE PRINTED:

REPORT 1

WTO1
THRM01
SEISUP
SEISEM
SAM01
SAM02

CODE 205 CARD 494 CASE WTO1 ADDED TO STRESS CHECK

⊙ADD,LP 94.

⊙ . END OF CONTROLLER

⊙XQT *ME101.ME101T . SAP TRANSLATOR

ME101T VERSION/MAY01
SIZE OF BLANK COMMON: 33561
SIZE OF BLANK COMMON: 40366
EXECUTION TIME: 9.813 SEC.

STOP NORMAL

⊙ADD,ELP SAPDATA. . OUTPUT OF SAP TRANSLATOR

⊙XQT *ME101.ME101S . STSE01

ME101S VERSION/SEP21 (SAP) 4 261.0 254.5
CORE CHANGED FROM 28.37 TO 34.36
TIME FOR ABOVE = 174.143 . NOW START *** NODAL POINT INPUT ***
CORE CHANGED FROM 34.36 TO 47.91
TIME FOR ABOVE = .647 . NOW START *** BOUNDARY ELEMENT STIFFNESSES ***
CORE CHANGED FROM 47.91 TO 34.36
CORE CHANGED FROM 34.36 TO 49.51



TIME FOR ABOVE = 4.196 . NOW START *** BEAM ELEMENT STIFFNESSES ***
 CORE CHANGED FROM 49.51 TO 34.36
 CORE CHANGED FROM 34.36 TO 49.50
 TIME FOR ABOVE = 22.863 . NOW START *** CURVED ELEMENT STIFFNESSES ***
 CORE CHANGED FROM 49.50 TO 34.36
 ***** EQUATION SOLUTION PARAMETERS ***** TOTAL NUMBER OF EQUATIONS 534
 MAXIMUM BANDWIDTH 18 NUMBER OF EQUATIONS PER BLOCK 534
 NUMBER OF BLOCKS 1 VALUE OF MTOT 226155
 CORE CHANGED FROM 34.36 TO 69.92
 TIME FOR ABOVE = 3.388 . NOW START *** INPUT OF NODAL LOADS AND MASSES ***
 CORE CHANGED FROM 69.92 TO 34.36
 TIME FOR ABOVE = .977 . NOW START *** COMPUTATION OF INDEXES ***
 CORE CHANGED FROM 34.36 TO 77.99
 TIME FOR ABOVE = 10.087 . NOW START *** ASSEMBLY OF EQUATIONS ***
 CORE CHANGED FROM 77.99 TO 128.30
 TIME FOR ABOVE = 1.837 . NOW START *** EQUATION REDUCTION - SESOL ***
 TIME FOR ABOVE = .008 . NOW START *** SESOL *** BLOCK 1 OF 1 BLOCKS. @@
 TIME FOR ABOVE = 3.219 . NOW START *** BACKSUBSTITUTION ***
 CORE CHANGED FROM 128.30 TO 82.40
 CORE CHANGED FROM 82.40 TO 83.44
 EXECUTION TIME: NODE ELEMENTS NODE LOADS ASSEMBLY SOLUTION PARTICULAR TOTAL
 .648 30.585 .984 11.788 6.448 .011 50.465
 TIME FOR ABOVE = 3.102 . NOW START *** E N D S-A P ***

@XQT *ME101.ME101P1 . SAM02

ME101P1 VERSION/SEP21

SRSS

.00000

0

PARAMETERS

NEQB	LL	NUMNP	NEQ	LB	NBLOCK	NUMN1	NRES	NDISPR	NMODPR	IFIR	N224WD	NELTYP	MAXELK	MDOF	NF
534	25	89	534	25	1	1	0	25	25	0	28	3	78	12	0

NCURVE MBAND MTSAV
 1 18 162855
 STATIC

LB= 25

*** CORE CHANGED FROM 33043 TO 159392 DECIMAL WORDS ***
 P1TEMP CASE 1 DI AD
 #TIME FOR ME101P1# 25.584

@XQT *ME101.ME101P2 . SAM02

ME101P2 VERSION/MAR04

*** CORE CHANGED FROM 33763 TO 39763 DECIMAL WORDS ***
 *** CORE CHANGED FROM 39763 TO 43365 DECIMAL WORDS ***
 *** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
 *** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
 *** CORE CHANGED FROM 40800 TO 39763 DECIMAL WORDS ***
 *** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
 *** CORE CHANGED FROM 40800 TO 39763 DECIMAL WORDS ***

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
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*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
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*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : THRM01

			GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
DATA PT	TYPE	TITLE	FX	FY	FZ	MX	MY	MZ
5	ANC		55.	-52.	-51.	-1.	-32.	69.
25	RAD		-11.	0.	-25.	0.	0.	0.
50	RAD		0.	37.	0.	0.	0.	0.
65	RAD		-52.	0.	0.	0.	0.	0.
65	RAD		0.	-5.	0.	0.	0.	0.
85	RAD		14.	0.	0.	0.	0.	0.
85	RAD		0.	0.	68.	0.	0.	0.
95	RAD		0.	30.	0.	0.	0.	0.
105	RAD		19.	0.	0.	0.	0.	0.
115	RAD		0.	-30.	0.	0.	0.	0.
115	RAD		0.	0.	-17.	0.	0.	0.
130	RAD		-22.	0.	0.	0.	0.	0.
130	RAD		0.	0.	17.	0.	0.	0.
135	RAD		-4.	0.	0.	0.	0.	0.
135	RAD		0.	0.	9.	0.	0.	0.
140	RAD		1.	0.	0.	0.	0.	0.
140	RAD		0.	0.	-2.	0.	0.	0.
145	ANC		-6.	10.	0.	-1.	3.	12.
150	RAD		-5.	0.	0.	0.	0.	0.
150	RAD		0.	0.	1.	0.	0.	0.
160	RAD		0.	0.	-4.	0.	0.	0.
170	RAD		0.	0.	1.	0.	0.	0.
185	RAD		17.	0.	0.	0.	0.	0.
185	RAD		0.	0.	0.	0.	0.	0.
190	RAD		-7.	0.	0.	0.	0.	0.
190	RAD		0.	0.	12.	0.	0.	0.
195	RAD		1.	0.	0.	0.	0.	0.
195	RAD		0.	0.	-91.	0.	0.	0.
205	RAD		2.	0.	0.	0.	0.	0.
205	RAD		0.	2.	0.	0.	0.	0.
210	RAD		-9.	0.	0.	0.	0.	0.
210	RAD		0.	10.	0.	0.	0.	0.
215	RAD		21.	0.	0.	0.	0.	0.
215	RAD		0.	-2.	0.	0.	0.	0.
220	RAD		-116.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	0.	0.	0.	0.	0.
230	RAD		0.	0.	0.	0.	0.	0.
230	RAD		0.	0.	94.	0.	0.	0.
235	RAD		0.	-0.	0.	0.	0.	0.
235	RAD		0.	0.	-14.	0.	0.	0.
240	RAD		0.	4.	0.	0.	0.	0.
240	RAD		0.	0.	-22.	0.	0.	0.
250	RAD		75.	0.	0.	0.	0.	0.
250	RAD		0.	-4.	0.	0.	0.	0.
260	RAD		0.	-8.	0.	0.	0.	0.
260	RAD		0.	0.	14.	0.	0.	0.
275	RAD		28.	0.	0.	0.	0.	0.
275	RAD		0.	0.	11.	0.	0.	0.
290	RAD		-5.	0.	0.	0.	0.	0.
290	RAD		0.	0.	-3.	0.	0.	0.
295	RAD		28.	0.	0.	0.	0.	0.
295	RAD		0.	0.	12.	0.	0.	0.
305	RAD		0.	-13.	0.	0.	0.	0.
500	ANC		-26.	21.	-11.	19.	20.	9.

ACTIONS ON SUPPORTS AND ANCHORS

ME101/12

DATE 040182

PAGE 130

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : THRM01

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		55	-52	-51	-1	-32	69	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		-27	0	0	0	0	0	.391	.000	.920						
50	RAD		37	0	0	0	0	0	.000	1.00	.000						
65	RAD		-52	0	0	0	0	0	1.00	.000	.000						
65	RAD		-5	0	0	0	0	0	.000	1.00	.000						
85	RAD		14	0	0	0	0	0	1.00	.000	.000						
85	RAD		68	0	0	0	0	0	.000	.000	1.00						
95	RAD		30	0	0	0	0	0	.000	1.00	.000						
105	RAD		19	0	0	0	0	0	1.00	.000	.000						
115	RAD		-30	0	0	0	0	0	.000	1.00	.000						
115	RAD		-17	0	0	0	0	0	.000	.000	1.00						
130	RAD		-22	0	0	0	0	0	1.00	.000	.000						
130	RAD		17	0	0	0	0	0	.000	.000	1.00						
135	RAD		-4	0	0	0	0	0	1.00	.000	.000						
135	RAD		9	0	0	0	0	0	.000	.000	1.00						
140	RAD		1	0	0	0	0	0	1.00	.000	.000						
140	RAD		-2	0	0	0	0	0	.000	.000	1.00						
145	ANC		-6	10	0	-1	3	12	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		-5	0	0	0	0	0	1.00	.000	.000						
150	RAD		1	0	0	0	0	0	.000	.000	1.00						
160	RAD		-4	0	0	0	0	0	.000	.000	1.00						
170	RAD		1	0	0	0	0	0	.000	.000	1.00						
185	RAD		17	0	0	0	0	0	1.00	.000	.000						
185	RAD		0	0	0	0	0	0	.000	.000	1.00						
190	RAD		-7	0	0	0	0	0	1.00	.000	.000						
190	RAD		12	0	0	0	0	0	.000	.000	1.00						
195	RAD		1	0	0	0	0	0	1.00	.000	.000						
195	RAD		-91	0	0	0	0	0	.000	.000	1.00						
205	RAD		2	0	0	0	0	0	1.00	.000	.000						
205	RAD		2	0	0	0	0	0	.000	1.00	.000						
210	RAD		-9	0	0	0	0	0	1.00	.000	.000						
210	RAD		10	0	0	0	0	0	.000	1.00	.000						
215	RAD		21	0	0	0	0	0	1.00	.000	.000						
215	RAD		-2	0	0	0	0	0	.000	1.00	.000						
220	RAD		-116	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		0	0	0	0	0	0	.000	1.00	.000						
230	RAD		0	0	0	0	0	0	.000	1.00	.000						
230	RAD		94	0	0	0	0	0	.000	.000	1.00						
235	RAD		-0	0	0	0	0	0	.000	1.00	.000						
235	RAD		-14	0	0	0	0	0	.000	.000	1.00						
240	RAD		4	0	0	0	0	0	.000	1.00	.000						
240	RAD		-22	0	0	0	0	0	.000	.000	1.00						
250	RAD		75	0	0	0	0	0	1.00	.000	.000						
250	RAD		-4	0	0	0	0	0	.000	1.00	.000						
260	RAD		-8	0	0	0	0	0	.000	1.00	.000						
260	RAD		14	0	0	0	0	0	.000	.000	1.00						
275	RAD		28	0	0	0	0	0	1.00	.000	.000						
275	RAD		11	0	0	0	0	0	.000	.000	1.00						
290	RAD		-5	0	0	0	0	0	1.00	.000	.000						
290	RAD		-3	0	0	0	0	0	.000	.000	1.00						
295	RAD		28	0	0	0	0	0	1.00	.000	.000						
295	RAD		12	0	0	0	0	0	.000	.000	1.00						
305	RAD		-13	0	0	0	0	0	.000	1.00	.000						
500	ANC		-26	21	-11	19	20	9	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

JOINT DISPLACEMENTS FOR THE THRM01 LOAD CASE

ME101/I2

DATE 040182

PAGE 132

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : THRM01

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		-.045	.021	.019	.000000	.000000	.000000
10		-.051	.018	.020	-.000293	-.000635	.001483
15		-.071	-.012	.012	-.002377	-.001044	.003143
20		-.084	-.023	.011	-.004957	.000050	.001741
25		-.077	-.028	.033	-.005055	.000050	.001782
30		-.069	-.032	.055	-.005055	.000050	.001782
35		-.056	-.040	.091	-.005055	.000050	.001782
40		-.042	-.049	.130	-.005055	.000050	.001782
45 B		-.090	-.008	-.063	-.004936	.002840	-.000290
45 E		-.070	.015	-.079	-.002813	.004028	.000068
50		-.061	.021	-.076	-.002283	.004140	.000240
55		-.012	.035	-.062	-.000104	.003074	.001214
60		-.003	.005	-.026	.001702	.001032	.001345
65		.000	.000	-.022	.001819	.000863	.001257
70		.005	-.018	-.012	.001695	.000196	.000965
75		.004	-.032	.001	.000402	-.000209	.000607
80 B		.003	-.032	.006	-.000323	-.000242	.000485
80 E		.001	-.023	.005	-.001616	-.000185	.000239
85		.000	-.019	.000	-.001722	-.000131	.000111
90		.007	.013	-.031	.000138	.000411	-.000174
95		.014	.000	-.011	.000739	.000216	.000534
100 B		.015	-.004	-.004	.000508	-.000036	.000757
100 E		.009	-.000	.003	.000430	-.000536	.001011
105		.000	.008	.007	.000589	-.001164	.001407
110		-.008	.014	.011	.000806	-.001580	.001856
115		-.015	.000	.000	.001213	-.001898	.002623
120 B		-.039	-.076	-.034	.002666	-.000357	.003608
120 E		-.041	-.107	-.027	.003057	.001184	.002912
125		.003	-.158	-.007	.001727	.002772	.000738
130		.000	-.153	.000	.001134	.002681	.000437
130A		-.003	-.132	.007	-.000192	.002317	-.000074
135		.000	-.111	.000	-.000347	.001953	-.000134
135A		.001	-.091	-.003	-.000015	.001589	-.000006
137		.001	-.070	-.002	.000120	.001226	.000046
138		.014	-.071	.010	.000120	.001226	.000046

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	-.052	.000	.000082	.000919	.000031
140A		-.000	-.026	.000	-.000020	.000460	-.000008
145		.000	.000	.000	.000000	.000000	.000000
145A		-.019	.040	-.001	-.000021	-.000013	.000526
150		.000	.080	.000	.000083	-.000025	-.002116
155		.012	.086	.000	.000102	-.000027	-.002744
160		.044	-.034	.000	.000209	.000107	-.004895
165		.082	-.183	-.001	.000340	-.000304	-.002668
170		.085	-.190	.000	.000350	-.000399	-.002270
175		.089	-.196	.001	.000362	-.000521	-.001759
180 B		.090	-.190	.013	.000220	-.000545	.000211
180 E		.088	-.186	.016	.000104	-.000492	.000715
185		.000	-.133	.000	-.000442	-.000288	.001239
185A		-.009	-.108	-.007	-.000066	-.000192	-.000216
190		.000	-.083	.000	.000710	-.000095	-.000361
190A		.003	-.056	.020	.000442	.000011	.000049
195		.000	-.028	.000	-.002500	.000117	.000161
200		-.002	-.017	-.028	-.002580	.000159	.000151
205		.000	.000	-.019	-.001364	.000185	.000143
205A		.003	.009	.003	.000231	.000058	.000125
210		.000	.000	.024	.000421	-.000422	.000108
210A		-.015	-.004	.055	-.000074	-.000335	.000083
215		.000	.000	.085	-.000124	.001775	.000058
215A		.095	.001	.127	.000029	.001534	.000024
220		.000	.000	.170	.000006	-.007943	-.000011
225 B		-.205	.001	.196	-.000083	-.004432	-.000032
225 E		-.212	.001	.206	-.000124	.001187	-.000041
230		-.179	.000	.000	-.000311	.006858	-.000024
230A		-.140	-.000	-.081	-.000527	-.001149	.000007
235		-.101	.000	.000	-.000744	-.002232	-.000006
235A		-.062	-.000	.039	-.000962	.000042	-.000011
240		-.023	.000	.000	-.001180	.002062	.000049
245		.017	-.009	-.038	-.001397	-.001949	-.000892
250		.000	.000	-.031	-.001394	-.002877	-.001346
255 B		-.037	.018	-.016	-.001304	-.002145	-.002316
255 E		-.040	.012	-.003	-.001269	-.001049	-.002807
260		-.035	.000	.000	-.001224	-.000605	-.003031
265 B		.018	-.156	-.013	-.000671	-.000273	-.002035
265 E		.021	-.161	-.010	-.000597	-.000590	-.001607
270		.022	-.162	.011	-.000526	-.001200	.000440
275		.000	-.141	.000	-.000416	-.001382	.001235
280		-.014	-.077	.008	.000066	-.001937	-.000091
285		.000	-.077	.000	-.000019	-.001959	.000019
290		.000	-.074	.000	-.000027	-.001955	.000057

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		-.005	-.042	-.001	-.000037	-.001917	.000126
295		.000	-.010	.000	.000174	-.001879	-.000564
300		.006	.000	.002	.000085	-.001867	-.000460
305		.015	.000	-.004	-.000032	-.001720	-.000057
310 B		.017	.000	-.005	-.000042	-.001659	.000019
310 E		.019	-.002	-.017	.000197	-.000949	.000441
315		.008	-.006	-.022	.000677	-.000224	.000182
320 B		.007	.000	-.018	.000813	.000135	-.000038
320 E		.005	.003	-.009	.000672	.000444	.000085
500		.000	.000	.000	.000000	.000000	.000000

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : THRM01

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	-55	52	51	1	32	-69
		-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	55	-52	-51	-9	-22	50
10 15	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	-55	52	51	9	22	-50
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	55	-52	-51	-34	10	-10
15 20	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	-55	52	51	34	-10	10
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	55	-52	-51	-52	33	-52
20 25	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	-11	0	-25	9	0	-4
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	11	0	25	0	0	0
25 30	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
30 35	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
35 40	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
20 45 B	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-44	52	76	43	-33	56
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	44	-52	-76	43	33	-6
45 B 45 M	BEND	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-44	52	76	-43	-33	6
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	44	-52	-76	59	27	7
45 M 45 E	BEND	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	-44	52	76	-59	-27	-7
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	44	-52	-76	53	14	12
45 E 50	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-44	52	76	-53	-14	-12
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	44	-52	-76	44	6	12
50 55	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-44	16	76	-44	-6	-12
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	44	-16	-76	27	-41	12
55 60	TNGT	-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	-44	16	76	-27	41	-12
		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	44	-16	-76	10	-6	-5
60 65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-44	16	76	-10	6	5
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	44	-16	-76	6	-17	-5

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	21	76	-6	17	5
70		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-8	-21	-76	-11	-11	-5
70	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	21	76	11	11	5
75		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-8	-21	-76	-33	-3	-5
75	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	21	76	33	3	5
80 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-8	-21	-76	-40	-0	-5
80 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	8	21	76	40	0	5
80 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	-8	-21	-76	-37	2	-6
80 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	8	21	76	37	-2	6
80 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	-8	-21	-76	-17	3	-8
80 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	21	76	17	-3	8
85		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-8	-21	-76	2	3	-10
85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-6	21	8	-2	-3	10
90		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	-21	-8	23	3	6
90	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-6	21	8	-23	-3	-6
95		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	-21	-8	-10	-7	6
95	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-6	-9	8	10	7	-6
100 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	9	-8	-6	-10	6
100 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	-6	-9	8	6	10	-6
100 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	6	9	-8	-2	-12	7
100 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	-6	-9	8	2	12	-7
100 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	6	9	-8	2	-13	9
100 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-6	-9	8	-2	13	-9
105		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	9	-8	7	-13	13
105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-26	-9	8	-7	13	-13
110		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	9	-8	11	-13	23
110	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	-26	-9	8	-11	13	-23
115		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	9	-8	11	-9	28
115	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	-26	21	25	-11	9	-28
120 B		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	-21	-25	11	38	-10
120 B BEND		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	-26	21	25	-11	-38	10
120 M		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	26	-21	-25	8	42	-16
120 M BEND		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	-26	21	25	-8	-42	16
120 E		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	26	-21	-25	2	37	-18

ELEMENT TYPE/TITLE			DIRECTION COSINES							GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)				
FROM	TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120	E	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-26	21	25	-2	-37	18
125			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	26	-21	-25	-31	-3	-18
125		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-26	21	25	31	3	18
130			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	-21	-25	-21	-3	-8
130		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	21	8	21	3	8
130A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	-21	-8	-8	-3	-3
130A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	21	8	8	3	3
135			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	-21	-8	5	-3	2
135		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	21	-1	-5	3	-2
135A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-21	1	3	-3	1
135A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	21	-1	-3	3	-1
137			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-21	1	0	-3	0
137		TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
138			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
137		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	21	-1	-0	3	-0
140			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-21	1	-1	-3	-1
140		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	21	1	1	3	1
140A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-21	-1	-0	-3	-0
140A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	21	1	0	3	0
145			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-21	-1	1	-3	0
145		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	11	0	0	0	-12
145A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-6	-11	-0	0	0	-6
145A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	11	0	-0	0	6
150			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-6	-11	-0	1	0	-24
150		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	11	-1	-1	0	24
155			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-10	-11	1	1	0	-28
155		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	11	-1	-1	0	28
160			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-10	-11	1	1	2	-3
160		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	11	3	-1	-2	3
165			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-10	-11	-3	1	-7	29
165		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	11	3	-1	7	-29
170			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-10	-11	-3	1	-7	31
170		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	11	2	-1	7	-31
175			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-10	-11	-2	1	-8	34

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175 TNGT	180 B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	10	11	2	-1	8	-34
180 B		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	-10	-11	-2	-5	-1	26
180 B BEND	180 M	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	10	11	2	5	1	-26
180 M		.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	-10	-11	-2	-6	0	25
180 M BEND	180 E	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	10	11	2	6	-0	-25
180 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	-10	-11	-2	-6	1	23
180 E TNGT	185	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	11	2	6	-1	-23
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-10	-11	-2	2	1	-19
185 TNGT	185A	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-6	11	2	-2	-1	19
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	-11	-2	5	1	-7
185A TNGT	190	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-6	11	2	-5	-1	7
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	-11	-2	9	1	5
190 TNGT	190A	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	11	-10	-9	-1	-5
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-11	10	-13	1	2
190A TNGT	195	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	11	-10	13	-1	-2
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-11	10	-35	1	-0
195 TNGT	200	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	11	80	35	-1	0
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-11	-80	32	1	-0
200 TNGT	205	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-0	11	80	-32	-1	0
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	-11	-80	24	1	-0
205 TNGT	205A	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-2	9	80	-24	-1	0
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	-9	-80	9	-3	-0
205A TNGT	210	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-2	9	80	-9	3	0
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	-9	-80	-5	-7	-0
210 TNGT	210A	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	-1	80	5	7	0
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-6	1	-80	-2	8	-0
210A TNGT	215	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	-1	80	2	-8	0
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-6	1	-80	1	23	-0
215 TNGT	215A	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-15	0	80	-1	-23	0
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	-0	-80	0	-26	-0
215A TNGT	220	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-15	0	80	-0	26	0
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	-0	-80	-1	-74	-0
220 TNGT	225 B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	101	0	80	1	74	0
225 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-101	-0	-80	-1	133	-0

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	101	0	80	1	-133	0
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	-101	-0	-80	-1	153	-0
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	101	0	80	1	-153	0
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	-101	-0	-80	-1	141	0
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	101	0	80	1	-141	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-101	-0	-80	-1	-66	0
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	101	0	-13	1	66	-0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-101	0	13	-1	-26	0
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	101	0	-13	1	26	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-101	0	13	-1	14	-0
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	101	0	0	1	-14	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-101	-0	-0	-1	12	0
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	101	0	0	1	-12	-0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-101	-0	-0	-1	11	1
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	101	-4	22	1	-11	-1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-101	4	-22	-1	-57	-11
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	101	-4	22	1	57	11
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-101	4	-22	1	-3	-11
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	25	-0	22	-1	3	11
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-25	0	-22	2	25	-11
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	25	-0	22	-2	-25	11
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	-25	0	-22	2	30	-11
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	25	-0	22	-2	-30	11
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	-25	0	-22	2	27	-11
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	25	-0	22	-2	-27	11
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-25	0	-22	2	19	-12
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	25	8	9	-2	-19	12
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-25	-8	-9	2	-16	20
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	25	8	9	-2	16	-20
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	-25	-8	-9	2	-17	21
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	25	8	9	-2	17	-21
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	-25	-8	-9	1	-16	22
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	25	8	9	-1	16	-22
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	-25	-8	-9	-6	-1	29

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	25	8	9	6	1	-29
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-25	-8	-9	8	-1	-12
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	8	-3	-8	1	12
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	-8	3	-5	-1	2
280	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	-3	8	-3	5	1	-2
285		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	3	-8	3	-0	0	2
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	8	-3	0	-0	-2
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	-8	3	-1	0	3
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	1	1	-0	-3
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-2	-8	-1	1	0	-2
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	1	-1	-0	2
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-2	-8	-1	2	0	-8
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-26	8	-11	-2	-0	8
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	-8	11	-6	0	12
300	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	-26	8	-11	6	-0	-12
305		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	26	-8	11	-3	11	12
305	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	-26	21	-11	3	-11	-12
310 B		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	26	-21	11	-1	14	12
310 B	BEND	.000	.000	-1.000	-1.000	.000	.000	.000	1.000	.000	-26	21	-11	1	-14	-12
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	26	-21	11	5	20	10
310 M	BEND	-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	-26	21	-11	-5	-20	-10
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	26	-21	11	8	20	3
310 E	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	-26	21	-11	-8	-20	-3
315		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	-21	11	8	10	-14
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-26	21	-11	-8	-10	14
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	-21	11	3	10	-2
320 B	BEND	.000	1.000	.000	-.707	.000	.707	.707	.000	.707	-26	21	-11	-3	-10	2
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	26	-21	11	-3	7	3
320 M	BEND	-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	-26	21	-11	3	-7	-3
320 E		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	26	-21	11	-8	-0	2
320 E	TNGT	-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	-26	21	-11	8	0	-2
500		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	26	-21	11	-19	-20	-9

STRESSES AND LOCAL FORCES AND MOMENTS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : THRM01

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
5	TNGT	70	-52	26	-28	-32	-63	6265.	1.000	1.000	1.000	SC374
10		-70	52	-26	28	22	42	5855.	1.300	1.000	1.000	2
10	TNGT	70	-52	26	-28	-22	-42	5855.	1.300	1.000	1.000	SC374
15		-70	52	-26	28	-10	-22	3933.	1.300	1.000	1.000	2
15	TNGT	70	-52	26	-28	10	22	3933.	1.300	1.000	1.000	SC374
20		-70	52	-26	28	-33	-68	8585.	1.300	1.000	1.000	2
20	TNGT	0	25	-11	0	4	9	1069.	1.300	1.000	1.000	SC374
25		0	-25	11	0	0	0	0.	1.000	1.000	1.000	2
25	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
30		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
30	TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
35		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
35	TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
40		0	0	0	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	52	76	-44	-33	56	43	8280.	1.300	1.000	1.000	SC374
45 B		-52	-76	44	33	-6	43	4495.	1.000	1.000	1.000	2
45 B	BEND	52	76	-44	-33	6	-43	4495.	1.000	1.000	1.000	SC374
45 M		-91	-17	44	24	-15	59	5412.	1.000	1.000	1.000	2
45 M	BEND	91	17	-44	-24	15	-59	5412.	1.000	1.000	1.000	SC374
45 E		-76	52	44	12	-14	53	4655.	1.000	1.000	1.000	2
45 E	TNGT	76	-52	-44	-12	14	-53	4655.	1.000	1.000	1.000	SC374
50		-76	52	44	12	-6	44	3753.	1.000	1.000	1.000	2
50	TNGT	76	-16	-44	-12	6	-44	3753.	1.000	1.000	1.000	SC374
55		-76	16	44	12	41	27	5358.	1.300	1.000	1.000	2
55	TNGT	85	-16	23	10	-41	-28	5358.	1.300	1.000	1.000	SC374
60		-85	16	-23	-10	6	4	1350.	1.300	1.000	1.000	2
60	TNGT	76	-16	-44	5	-6	-10	1350.	1.300	1.000	1.000	SC374
65		-76	16	44	-5	17	6	1540.	1.000	1.000	1.000	2
65	TNGT	76	-21	8	5	-17	-6	1540.	1.000	1.000	1.000	SC374
70		-76	21	-8	-5	11	-11	1740.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
70 75	TNGT	76 -76	-21 21	8 -8	5 -5	-11 3	11 -33	1740. 3537.	1.300 1.300	1.000 1.000	1.000 1.000	SC374 2
75 80 B	TNGT	76 -76	-21 21	8 -8	5 -5	-3 0	33 -40	3537. 3302.	1.300 1.000	1.000 1.000	1.000 1.000	SC374 2
80 B 80 M	BEND	76 -69	21 39	-8 8	5 -3	0 5	-40 37	3302. 3062.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
80 M 80 E	BEND	69 -21	-39 76	-8 8	3 3	-5 8	-37 17	3062. 1545.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
80 E 85	TNGT	21 -21	76 -76	8 -8	-3 3	8 -10	17 2	1545. 861.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
85 90	TNGT	21 -21	8 -8	-6 6	-3 3	10 6	-2 23	861. 2580.	1.000 1.300	1.000 1.000	1.000 1.000	SC374 2
90 95	TNGT	8 -8	-21 21	-6 6	-6 6	3 7	-23 -10	2580. 1130.	1.300 1.000	1.000 1.000	1.000 1.000	SC374 2
95 100 B	TNGT	8 -8	9 -9	-6 6	-6 6	-7 10	10 -6	1130. 1078.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
100 B 100 M	BEND	8 0	-9 12	6 -6	-6 -4	10 -13	-6 2	1078. 1146.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
100 M 100 E	BEND	-0 9	-12 8	6 -6	4 -13	13 -9	-2 -2	1146. 1273.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
100 E 105	TNGT	-9 9	8 -8	-6 6	13 -13	-9 13	-2 7	1273. 1584.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
105 110	TNGT	-9 9	8 -8	-26 26	13 -13	-13 23	-7 11	1584. 3075.	1.000 1.300	1.000 1.000	1.000 1.000	SC374 2
110 115	TNGT	26 -26	9 -9	8 -8	11 -11	-13 9	-23 28	3075. 2565.	1.300 1.000	1.000 1.000	1.000 1.000	SC374 2
115 120 B	TNGT	26 -26	-21 21	25 -25	11 -11	-9 -38	-28 -10	2565. 3303.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
120 B 120 M	BEND	26 -36	25 0	21 -21	11 -17	10 -5	-38 42	3303. 3736.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
120 M 120 E	BEND	36 -25	-0 26	21 -21	17 -18	5 2	-42 37	3736. 3426.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
120 E 125	TNGT	25 -25	-21 21	-26 26	18 -18	37 3	-2 -31	3426. 3828.	1.000 1.300	1.000 1.000	1.000 1.000	SC374 2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
125	TNGT	21	25	-26	3	18	31	3828.	1.300	1.000	1.000	SC374
130		-21	-25	26	-3	-8	-21	1843.	1.000	1.000	1.000	2
130	TNGT	21	8	-3	3	8	21	1843.	1.000	1.000	1.000	SC374
130A		-21	-8	3	-3	-3	-8	750.	1.000	1.000	1.000	2
130A	TNGT	21	8	-3	3	3	8	750.	1.000	1.000	1.000	SC374
135		-21	-8	3	-3	2	5	481.	1.000	1.000	1.000	2
135	TNGT	21	-1	1	3	-2	-5	481.	1.000	1.000	1.000	SC374
135A		-21	1	-1	-3	1	3	335.	1.000	1.000	1.000	2
135A	TNGT	21	-1	1	3	-1	-3	335.	1.000	1.000	1.000	SC374
137		-21	1	-1	-3	0	0	252.	1.000	1.000	1.000	2
137	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
138		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
137	TNGT	21	-1	1	3	-0	-0	252.	1.000	1.000	1.000	SC374
140		-21	1	-1	-3	-1	-1	278.	1.000	1.000	1.000	2
140	TNGT	21	1	-0	-3	1	1	278.	1.000	1.000	1.000	SC374
140A		-21	-1	0	-3	-0	-0	251.	1.000	1.000	1.000	2
140A	TNGT	21	1	-0	3	0	0	251.	1.000	1.000	1.000	SC374
145		-21	-1	0	-3	0	1	257.	1.000	1.000	1.000	2
145	TNGT	11	0	6	0	-12	0	973.	1.000	1.000	1.000	SC374
145A		-11	-0	-6	0	-6	0	488.	1.000	1.000	1.000	2
145A	TNGT	11	0	6	0	6	-0	488.	1.000	1.000	1.000	SC374
150		-11	-0	-6	0	-24	1	1949.	1.000	1.000	1.000	2
150	TNGT	11	-1	10	0	24	-1	1949.	1.000	1.000	1.000	SC374
155		-11	1	-10	0	-28	1	2999.	1.300	1.000	1.000	2
155	TNGT	10	11	-1	-1	0	28	2999.	1.300	1.000	1.000	SC374
160		-10	-11	1	1	2	-3	266.	1.000	1.000	1.000	2
160	TNGT	10	11	3	-1	-2	3	266.	1.000	1.000	1.000	SC374
165		-10	-11	-3	1	-7	29	2412.	1.000	1.000	1.000	2
165	TNGT	10	11	3	-1	7	-29	2412.	1.000	1.000	1.000	SC374
170		-10	-11	-3	1	-7	31	2619.	1.000	1.000	1.000	2
170	TNGT	10	11	2	-1	7	-31	2619.	1.000	1.000	1.000	SC374
175		-10	-11	-2	1	-8	34	3715.	1.300	1.000	1.000	2
175	TNGT	9	-6	10	-18	-30	-1	3715.	1.300	1.000	1.000	SC374
180 B		-9	6	-10	18	19	-5	2222.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	9	6	-10	-18	19	-5	2222.	1.000	1.000	1.000	SC374
180 M	-11	-2	10	10	-23	6	2121.	1.000	1.000	1.000	2
180 M BEND	11	2	-10	-10	23	-6	2121.	1.000	1.000	1.000	SC374
180 E	-11	2	10	1	-23	6	1989.	1.000	1.000	1.000	2
180 E TNGT	11	2	10	-1	-23	6	1989.	1.000	1.000	1.000	SC374
185	-11	-2	-10	1	-19	2	1561.	1.000	1.000	1.000	2
185 TNGT	11	2	-6	-1	19	-2	1561.	1.000	1.000	1.000	SC374
185A	-11	-2	6	1	-7	5	728.	1.000	1.000	1.000	2
185A TNGT	11	2	-6	-1	7	-5	728.	1.000	1.000	1.000	SC374
190	-11	-2	6	1	5	9	814.	1.000	1.000	1.000	2
190 TNGT	11	-10	1	-1	-5	-9	814.	1.000	1.000	1.000	SC374
190A	-11	10	-1	1	2	-13	1098.	1.000	1.000	1.000	2
190A TNGT	11	-10	1	-1	-2	13	1098.	1.000	1.000	1.000	SC374
195	-11	10	-1	1	-0	-35	2884.	1.000	1.000	1.000	2
195 TNGT	11	80	-0	-1	0	35	2884.	1.000	1.000	1.000	SC374
200	-11	-80	0	1	-0	32	3399.	1.300	1.000	1.000	2
200 TNGT	80	-11	-0	0	1	-32	3399.	1.300	1.000	1.000	SC374
205	-80	11	0	-0	-1	24	1963.	1.000	1.000	1.000	2
205 TNGT	80	-9	-2	0	1	-24	1963.	1.000	1.000	1.000	SC374
205A	-80	9	2	-0	3	9	806.	1.000	1.000	1.000	2
205A TNGT	80	-9	-2	0	-3	-9	806.	1.000	1.000	1.000	SC374
210	-80	9	2	-0	7	-5	712.	1.000	1.000	1.000	2
210 TNGT	80	1	6	0	-7	5	712.	1.000	1.000	1.000	SC374
210A	-80	-1	-6	-0	-8	-2	689.	1.000	1.000	1.000	2
210A TNGT	80	1	6	0	8	2	689.	1.000	1.000	1.000	SC374
215	-80	-1	-6	-0	-23	1	1903.	1.000	1.000	1.000	2
215 TNGT	80	-0	-15	0	23	-1	1903.	1.000	1.000	1.000	SC374
215A	-80	0	15	-0	26	0	2110.	1.000	1.000	1.000	2
215A TNGT	80	-0	-15	0	-26	-0	2110.	1.000	1.000	1.000	SC374
220	-80	0	15	-0	74	-1	6121.	1.000	1.000	1.000	2
220 TNGT	80	-0	101	0	-74	1	6121.	1.000	1.000	1.000	SC374
225 B	-80	0	-101	-0	-133	-1	10926.	1.000	1.000	1.000	2
225 B BEND	80	101	0	0	1	-133	10926.	1.000	1.000	1.000	SC374
225 M	-128	-14	-0	-1	-1	153	12555.	1.000	1.000	1.000	2

STRESSES AND LOCAL FORCES AND MOMENTS

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ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
225 M	BEND	128	14	0	1	1	-153	12555.	1.000	1.000	1.000	SC374
225 E		-101	80	-0	-1	0	141	11620.	1.000	1.000	1.000	2
225 E	TNGT	101	0	80	1	-141	0	11620.	1.000	1.000	1.000	SC374
230		-101	-0	-80	-1	-66	0	5425.	1.000	1.000	1.000	2
230	TNGT	101	0	-13	1	66	-0	5425.	1.000	1.000	1.000	SC374
230A		-101	0	-13	-1	-26	0	2151.	1.000	1.000	1.000	2
230A	TNGT	101	0	-13	1	26	0	2151.	1.000	1.000	1.000	SC374
235		-101	0	13	-1	14	-0	1128.	1.000	1.000	1.000	2
235	TNGT	101	0	0	1	-14	0	1128.	1.000	1.000	1.000	SC374
235A		-101	-0	-0	-1	12	0	1010.	1.000	1.000	1.000	2
235A	TNGT	101	0	0	1	-12	-0	1010.	1.000	1.000	1.000	SC374
240		-101	-0	-0	-1	11	1	892.	1.000	1.000	1.000	2
240	TNGT	101	-4	22	1	-11	-1	892.	1.000	1.000	1.000	SC374
245		-101	4	-22	-1	-57	-11	6179.	1.300	1.000	1.000	2
245	TNGT	22	4	101	-11	-57	1	6179.	1.300	1.000	1.000	SC374
250		-22	-4	-101	-11	3	1	971.	1.000	1.000	1.000	2
250	TNGT	22	0	25	11	-3	-1	971.	1.000	1.000	1.000	SC374
255 B		-22	-0	-25	-11	-25	2	2292.	1.000	1.000	1.000	2
255 B	BEND	22	25	-0	11	-2	-25	2292.	1.000	1.000	1.000	SC374
255 M		-34	-2	0	-7	9	30	2652.	1.000	1.000	1.000	2
255 M	BEND	34	2	-0	7	-9	-30	2652.	1.000	1.000	1.000	SC374
255 E		-25	22	0	2	11	27	2386.	1.000	1.000	1.000	2
255 E	TNGT	25	-0	22	-2	-27	11	2386.	1.000	1.000	1.000	SC374
260		-25	0	-22	2	19	-12	1843.	1.000	1.000	1.000	2
260	TNGT	25	8	9	-2	-19	12	1843.	1.000	1.000	1.000	SC374
265 B		-25	-8	-9	2	-16	20	2124.	1.000	1.000	1.000	2
265 B	BEND	25	9	-8	-2	-20	-16	2124.	1.000	1.000	1.000	SC374
265 M		-27	2	8	10	19	17	2230.	1.000	1.000	1.000	2
265 M	BEND	27	-2	-8	-10	-19	-17	2230.	1.000	1.000	1.000	SC374
265 E		-24	12	8	16	15	16	2241.	1.000	1.000	1.000	2
265 E	TNGT	24	8	-12	-16	16	-15	2241.	1.000	1.000	1.000	SC374
270		-24	-8	12	16	-1	24	3143.	1.300	1.000	1.000	2
270	TNGT	8	9	25	1	-29	6	3143.	1.300	1.000	1.000	SC374
275		-8	-9	-25	-1	-12	8	1183.	1.000	1.000	1.000	2

ELEMENT FROM TO	TYPE/TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IN/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	8	-3	-3	1	12	-8	1183.	1.000	1.000	1.000	SC374
280		-8	3	3	-1	2	-5	594.	1.300	1.000	1.000	2
280	TNGT	3	8	-3	2	1	5	594.	1.300	1.000	1.000	SC374
285		-3	-8	3	-2	0	-0	269.	1.300	1.000	1.000	2
285	TNGT	8	-3	-3	-0	-2	0	269.	1.300	1.000	1.000	SC374
290		-8	3	3	0	3	-1	270.	1.000	1.000	1.000	2
290	TNGT	8	1	2	-0	-3	1	270.	1.000	1.000	1.000	SC374
290A		-8	-1	-2	0	-2	1	190.	1.000	1.000	1.000	2
290A	TNGT	8	1	2	-0	2	-1	190.	1.000	1.000	1.000	SC374
295		-8	-1	-2	0	-8	2	647.	1.000	1.000	1.000	2
295	TNGT	8	-11	-26	-0	8	-2	647.	1.000	1.000	1.000	SC374
300		-8	11	26	0	12	-6	1462.	1.300	1.000	1.000	2
300	TNGT	11	8	-26	12	-0	6	1462.	1.300	1.000	1.000	SC374
305		-11	-8	26	-12	11	-3	1390.	1.000	1.000	1.000	2
305	TNGT	11	21	-26	12	-11	3	1390.	1.000	1.000	1.000	SC374
310 B		-11	-21	26	-12	14	-1	1498.	1.000	1.000	1.000	2
310 B	BEND	11	26	21	12	-1	-14	1498.	1.000	1.000	1.000	SC374
310 M		-26	-10	-21	-10	3	20	1848.	1.000	1.000	1.000	2
310 M	BEND	26	10	21	10	-3	-20	1848.	1.000	1.000	1.000	SC374
310 E		-26	11	-21	-8	3	20	1748.	1.000	1.000	1.000	2
310 E	TNGT	26	-21	-11	8	20	-3	1748.	1.000	1.000	1.000	SC374
315		-26	21	11	-8	-10	-14	2037.	1.300	1.000	1.000	2
315	TNGT	21	-11	-26	-10	14	-8	2037.	1.300	1.000	1.000	SC374
320 B		-21	11	26	10	-2	3	897.	1.000	1.000	1.000	2
320 B	BEND	21	10	-26	-10	3	-0	897.	1.000	1.000	1.000	SC374
320 M		-22	8	26	8	-2	1	684.	1.000	1.000	1.000	2
320 M	BEND	22	-8	-26	-8	2	-1	684.	1.000	1.000	1.000	SC374
320 E		-10	21	26	7	0	-4	701.	1.000	1.000	1.000	2
320 E	TNGT	10	-21	-26	-7	-0	4	701.	1.000	1.000	1.000	SC374
500		-10	21	26	7	20	-20	2401.	1.000	1.000	1.000	2

*** AT THE MEMBER END 225 M OF ELEMENT FROM 225 M TO 225 E , MAX. STRESS (PSI) IS 12555.
 *** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
 *** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAMO1

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
5	ANC		20.	17.	19.	6.	13.	24.
25	RAD		5.	0.	12.	0.	0.	0.
50	RAD		0.	-10.	0.	0.	0.	0.
65	RAD		17.	0.	0.	0.	0.	0.
65	RAD		0.	3.	0.	0.	0.	0.
85	RAD		3.	0.	0.	0.	0.	0.
85	RAD		0.	0.	32.	0.	0.	0.
95	RAD		0.	12.	0.	0.	0.	0.
105	RAD		2.	0.	0.	0.	0.	0.
115	RAD		0.	10.	0.	0.	0.	0.
115	RAD		0.	0.	3.	0.	0.	0.
130	RAD		7.	0.	0.	0.	0.	0.
130	RAD		0.	0.	3.	0.	0.	0.
135	RAD		9.	0.	0.	0.	0.	0.
135	RAD		0.	0.	3.	0.	0.	0.
140	RAD		5.	0.	0.	0.	0.	0.
140	RAD		0.	0.	1.	0.	0.	0.
145	ANC		1.	2.	0.	0.	0.	2.
150	RAD		0.	0.	0.	0.	0.	0.
150	RAD		0.	0.	0.	0.	0.	0.
160	RAD		0.	0.	0.	0.	0.	0.
170	RAD		0.	0.	0.	0.	0.	0.
185	RAD		0.	0.	0.	0.	0.	0.
185	RAD		0.	0.	0.	0.	0.	0.
190	RAD		0.	0.	0.	0.	0.	0.
190	RAD		0.	0.	0.	0.	0.	0.
195	RAD		0.	0.	0.	0.	0.	0.
195	RAD		0.	0.	0.	0.	0.	0.
205	RAD		0.	0.	0.	0.	0.	0.
205	RAD		0.	0.	0.	0.	0.	0.
210	RAD		0.	0.	0.	0.	0.	0.
210	RAD		0.	0.	0.	0.	0.	0.
215	RAD		0.	0.	0.	0.	0.	0.
215	RAD		0.	0.	0.	0.	0.	0.
220	RAD		0.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	1.	0.	0.	0.	0.
230	RAD		0.	1.	0.	0.	0.	0.
230	RAD		0.	0.	0.	0.	0.	0.
235	RAD		0.	0.	0.	0.	0.	0.
235	RAD		0.	0.	0.	0.	0.	0.
240	RAD		0.	0.	0.	0.	0.	0.
240	RAD		0.	0.	1.	0.	0.	0.
250	RAD		3.	0.	0.	0.	0.	0.
250	RAD		0.	0.	0.	0.	0.	0.
260	RAD		0.	1.	0.	0.	0.	0.
260	RAD		0.	0.	0.	0.	0.	0.
275	RAD		5.	0.	0.	0.	0.	0.
275	RAD		0.	0.	1.	0.	0.	0.
290	RAD		3.	0.	0.	0.	0.	0.
290	RAD		0.	0.	1.	0.	0.	0.
295	RAD		1.	0.	0.	0.	0.	0.
295	RAD		0.	0.	1.	0.	0.	0.
305	RAD		0.	0.	0.	0.	0.	0.
500	ANC		0.	0.	0.	0.	0.	0.

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAM01

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		20	17	19	6	13	24	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		13	0	0	0	0	0	.391	.000	.920						
50	RAD		10	0	0	0	0	0	.000	1.00	.000						
65	RAD		17	0	0	0	0	0	1.00	.000	.000						
65	RAD		3	0	0	0	0	0	.000	1.00	.000						
85	RAD		3	0	0	0	0	0	1.00	.000	.000						
85	RAD		32	0	0	0	0	0	.000	.000	1.00						
95	RAD		12	0	0	0	0	0	.000	1.00	.000						
105	RAD		2	0	0	0	0	0	1.00	.000	.000						
115	RAD		10	0	0	0	0	0	.000	1.00	.000						
115	RAD		3	0	0	0	0	0	.000	.000	1.00						
130	RAD		7	0	0	0	0	0	1.00	.000	.000						
130	RAD		3	0	0	0	0	0	.000	.000	1.00						
135	RAD		9	0	0	0	0	0	1.00	.000	.000						
135	RAD		3	0	0	0	0	0	.000	.000	1.00						
140	RAD		5	0	0	0	0	0	1.00	.000	.000						
140	RAD		1	0	0	0	0	0	.000	.000	1.00						
145	ANC		1	2	0	0	0	2	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		0	0	0	0	0	0	1.00	.000	.000						
150	RAD		0	0	0	0	0	0	.000	.000	1.00						
160	RAD		0	0	0	0	0	0	.000	.000	1.00						
170	RAD		0	0	0	0	0	0	.000	.000	1.00						
185	RAD		0	0	0	0	0	0	1.00	.000	.000						
185	RAD		0	0	0	0	0	0	.000	.000	1.00						
190	RAD		0	0	0	0	0	0	1.00	.000	.000						
190	RAD		0	0	0	0	0	0	.000	.000	1.00						
195	RAD		0	0	0	0	0	0	1.00	.000	.000						
195	RAD		0	0	0	0	0	0	.000	.000	1.00						
205	RAD		0	0	0	0	0	0	1.00	.000	.000						
205	RAD		0	0	0	0	0	0	.000	1.00	.000						
210	RAD		0	0	0	0	0	0	1.00	.000	.000						
210	RAD		0	0	0	0	0	0	.000	1.00	.000						
215	RAD		0	0	0	0	0	0	1.00	.000	.000						
215	RAD		0	0	0	0	0	0	.000	1.00	.000						
220	RAD		0	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		1	0	0	0	0	0	.000	1.00	.000						
230	RAD		1	0	0	0	0	0	.000	1.00	.000						
230	RAD		0	0	0	0	0	0	.000	.000	1.00						
235	RAD		0	0	0	0	0	0	.000	1.00	.000						
235	RAD		0	0	0	0	0	0	.000	.000	1.00						
240	RAD		0	0	0	0	0	0	.000	1.00	.000						
240	RAD		1	0	0	0	0	0	.000	.000	1.00						
250	RAD		3	0	0	0	0	0	1.00	.000	.000						
250	RAD		0	0	0	0	0	0	.000	1.00	.000						
260	RAD		1	0	0	0	0	0	.000	1.00	.000						
260	RAD		0	0	0	0	0	0	.000	.000	1.00						
275	RAD		5	0	0	0	0	0	1.00	.000	.000						
275	RAD		1	0	0	0	0	0	.000	.000	1.00						
290	RAD		3	0	0	0	0	0	1.00	.000	.000						
290	RAD		1	0	0	0	0	0	.000	.000	1.00						
295	RAD		1	0	0	0	0	0	1.00	.000	.000						
295	RAD		1	0	0	0	0	0	.000	.000	1.00						
305	RAD		0	0	0	0	0	0	.000	1.00	.000						
500	ANC		0	0	0	0	0	0	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAMO1

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.007	.000	.007	.000000	.000000	.000000
10		.007	.001	.007	.000255	.000266	.000538
15		.008	.011	.012	.001390	.000534	.001265
20		.009	.014	.016	.002543	.000342	.001020
25		.008	.014	.007	.002590	.000342	.001039
30		.010	.014	.018	.002590	.000342	.001039
35		.016	.014	.037	.002590	.000342	.001039
40		.023	.014	.057	.002590	.000342	.001039
45 B		.017	.014	.045	.002568	.000919	.000713
45 E		.020	.004	.054	.001737	.001311	.000787
50		.020	.000	.054	.001516	.001351	.000831
55		.025	.013	.054	.000611	.001065	.001159
60		.031	.002	.052	.000109	.000486	.001172
65		.032	.002	.052	.000117	.000402	.001118
70		.034	.002	.052	.000041	.000164	.000943
75		.034	.002	.052	.000296	.000182	.000734
80 B		.034	.003	.052	.000473	.000203	.000665
80 E		.033	.006	.054	.000714	.000207	.000552
85		.032	.006	.056	.000645	.000208	.000510
90		.032	.005	.060	.000224	.000259	.000177
95		.031	.002	.060	.000192	.000262	.000067
100 B		.031	.002	.060	.000140	.000249	.000114
100 E		.031	.002	.059	.000199	.000211	.000180
105		.032	.002	.058	.000259	.000172	.000228
110		.033	.002	.057	.000276	.000147	.000262
115		.033	.002	.056	.000294	.000109	.000263
120 B		.033	.007	.055	.000381	.000121	.000445
120 E		.032	.008	.056	.000417	.000237	.000651
125		.026	.004	.056	.000281	.000346	.001241
130		.032	.004	.056	.000237	.000335	.001364
130A		.060	.004	.060	.000248	.000289	.001498
135		.084	.004	.064	.000169	.000244	.000845
135A		.092	.004	.065	.000007	.000199	.000037
137		.088	.004	.065	.000058	.000153	.000292
138		.087	.004	.065	.000058	.000153	.000292

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.084	.004	.064	.000040	.000115	.000198
140A		.083	.004	.064	.000010	.000057	.000049
145		.084	.004	.064	.000000	.000000	.000000
145A		.084	.004	.064	.000000	.000000	.000000
150		.084	.004	.064	.000000	.000000	.000000
155		.084	.004	.064	.000000	.000000	.000000
160		.084	.004	.064	.000000	.000000	.000001
165		.084	.004	.064	.000000	.000000	.000000
170		.084	.004	.064	.000000	.000000	.000000
175		.084	.004	.064	.000000	.000000	.000000
180 B		.084	.004	.064	.000000	.000001	.000000
180 E		.084	.004	.064	.000000	.000001	.000000
185		.084	.004	.064	.000000	.000003	.000000
185A		.084	.004	.064	.000000	.000004	.000000
190		.084	.004	.064	.000001	.000004	.000001
190A		.084	.004	.064	.000001	.000005	.000001
195		.084	.004	.064	.000005	.000006	.000004
200		.084	.004	.064	.000005	.000007	.000008
205		.084	.004	.064	.000003	.000005	.000017
205A		.084	.004	.064	.000001	.000001	.000036
210		.084	.004	.064	.000005	.000002	.000055
210A		.084	.004	.064	.000004	.000001	.000082
215		.084	.004	.064	.000023	.000005	.000109
215A		.084	.003	.064	.000020	.000004	.000146
220		.084	.004	.064	.000103	.000021	.000183
225 B		.085	.008	.064	.000164	.000020	.000207
225 E		.085	.009	.064	.000161	.000010	.000211
230		.085	.015	.064	.000133	.000002	.000119
230A		.085	.016	.064	.000102	.000004	.000022
235		.085	.015	.064	.000070	.000013	.000031
235A		.085	.015	.064	.000038	.000011	.000007
240		.085	.015	.064	.000007	.000056	.000005
245		.085	.015	.064	.000026	.000078	.000017
250		.084	.015	.064	.000029	.000144	.000028
255 B		.082	.015	.064	.000031	.000176	.000052
255 E		.081	.015	.064	.000037	.000105	.000064
260		.081	.015	.064	.000043	.000068	.000070
265 B		.081	.019	.062	.000163	.000122	.000105
265 E		.081	.019	.062	.000174	.000164	.000114
270		.078	.020	.062	.000208	.000255	.000176
275		.084	.020	.064	.000170	.000309	.000497
280		.133	.020	.071	.000087	.000473	.000690
285		.137	.020	.071	.000064	.000467	.000490
290		.138	.020	.071	.000055	.000453	.000426

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.142	.020	.071	.000015	.000307	.000071
295		.138	.020	.071	.000036	.000160	.000138
300		.137	.020	.071	.000051	.000114	.000095
305		.137	.020	.071	.000055	.000093	.000065
310 B		.138	.020	.071	.000055	.000088	.000060
310 E		.138	.020	.071	.000049	.000055	.000023
315		.138	.020	.071	.000040	.000028	.000003
320 B		.138	.020	.071	.000033	.000016	.000008
320 E		.138	.020	.071	.000015	.000005	.000009
500		.138	.020	.071	.000000	.000000	.000000

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAMO1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	20	17	19	6	13	24
		-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	20	17	19	8	9	18
10 15	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	20	17	19	8	9	18
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	20	17	19	16	3	4
15 20	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	20	17	19	16	3	4
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	20	17	19	22	11	16
20 25	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	5	0	12	4	0	2
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	5	0	12	0	0	0
25 30	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
30 35	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
35 40	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	0	0	0	0	0
20 45 B	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	17	30	17	11	18
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	17	30	17	11	1
45 B 45 M	BEND	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	17	30	17	11	1
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	15	17	30	23	9	4
45 M 45 E	BEND	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	15	17	30	23	9	4
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	17	30	22	5	6
45 E 50	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	17	30	22	5	6
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	17	30	19	2	6
50 55	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	8	30	19	2	6
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	8	30	11	14	6
55 60	TNGT	-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	15	8	30	11	14	6
		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	15	8	30	3	7	3
60 65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	8	30	3	7	3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	8	30	1	7	3

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65 70	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	30	1	7	3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	30	3	5	3
70 75	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	30	3	5	3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	30	8	2	3
75 80 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	30	8	2	3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	30	10	1	3
80 B 80 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	3	5	30	10	1	3
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	3	5	30	7	0	3
80 M 80 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	3	5	30	7	0	3
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	3	5	30	1	1	3
80 E 85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	5	30	1	1	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	5	30	9	1	3
85 90	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	5	2	9	1	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	5	2	3	1	2
90 95	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	5	2	3	1	2
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	5	2	4	0	2
95 100 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	8	2	4	0	2
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	8	2	1	1	2
100 B 100 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	1	8	2	1	1	2
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	1	8	2	2	1	2
100 M 100 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	1	8	2	2	1	2
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	1	8	2	2	1	1
100 E 105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	8	2	2	1	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	8	2	1	1	1
105 110	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	2	1	1	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	2	1	1	2
110 115	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	2	8	2	1	1	2
		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	2	8	2	1	2	3
115 120 B	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	2	2	2	1	2	3
		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	2	2	2	1	3	4
120 B 120 M	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	2	2	2	1	3	4
		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	2	2	2	1	3	5
120 M 120 E	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	2	2	2	1	3	5
		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	2	2	2	1	3	5

ELEMENT TYPE/TITLE			DIRECTION COSINES							GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)				
FROM		TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120	E	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	2	2	1	3	5
125			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	2	2	4	0	5
125		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	2	2	4	0	5
130			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	2	2	4	0	6
130		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	2	2	4	0	6
130A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	2	2	1	0	3
130A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	2	2	1	0	3
135			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	2	2	2	0	11
135		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	2	1	2	0	11
135A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	2	1	1	0	6
135A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	2	1	0	0	6
137			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
138			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
137		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	2	1	0	0	1
140			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	2	1	1	0	3
140		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	2	0	1	0	3
140A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	2	0	0	0	1
140A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	2	0	0	0	1
145			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
145A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
145A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
150			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
155			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
155		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
160			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
160		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
165			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
165		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
170			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
170		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0



ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	0	0	0	0	0	0
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	0	0	0	0	0	0
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	0	0	0	0	0	0
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	0	0	0	0	0	0
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	0	0	0	0	0	0
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	0	0	0	0	0	0
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
200		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	1	0	0
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	1	0	0
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	0	0	0	0	0	0
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	0	0	0	0	0	0
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	0	0	0	0	0	0
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	0	0	0	0	0	0
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	1
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	1	0
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	1	0	1	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	1	0	2	0
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	1	0	2	0
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	1	0	2	0
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	0	1	0	2	0
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	0	1	0	1	0
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	3	0	1	0	1	0
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	3	0	1	0	2	0
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	3	0	1	0	2	0
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	3	0	1	0	2	0
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	0	1	0	2	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	0	1	0	2	0
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	0	1	0	2	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	0	1	0	2	1
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	3	0	1	0	2	1
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	0	1	0	2	1
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	0	1	0	2	1
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	3	0	1	0	2	1
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	3	0	1	0	2	1
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	3	0	1	0	0	1

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	0	1	0	0	1
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	0	1	1	0	6
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	0	0	1	0	6
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	0	0	1	0	5
280	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	0	0	1	0	5
285		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	0	0	1	1	5
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	0	0	1	1	5
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	0	0	1	1	5
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	1	1	5
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	0	1	2
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	0	1	2
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	1	1	1
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	1	1	1
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	1	1
300	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	0	0	0	1	1
305		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	0	0	0	1	1
305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	0	0	0	1	1
310 B		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	0	0	0	1	1
310 B BEND		.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	0	0	0	0	1	1
310 M		-.707	.000	-.707	-.707	.000	-.707	.000	1.000	.000	0	0	0	0	1	1
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	0	0	0	0	1	1
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	0	0	0	0	1	1
310 E TNGT		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	1.000	0	0	0	0	0	0
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	1.000	0	0	0	0	0	0
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	0	0	0	0	0	0
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	0	0	0	0	0	0
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	0	0	0	0	0	0
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	0	0	0	0	0	0
320 E TNGT		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	0	0	0	0	0	0
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	0	0	0	0	0	0

STRESSES AND LOCAL FORCES AND MOMENTS

ME101/12

DATE 040182

PAGE 160

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAM01

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
5	TNGT	25	17	9	14	13	20	2313.	1.000	1.000	1.000	SC374
		10	25	17	9	14	13	2324.	1.300	1.000	1.000	2
10	TNGT	25	17	10	14	9	13	2324.	1.300	1.000	1.000	SC374
		15	25	17	10	14	3	1784.	1.300	1.000	1.000	2
15	TNGT	25	17	10	14	3	8	1784.	1.300	1.000	1.000	SC374
		20	25	17	10	14	11	3109.	1.300	1.000	1.000	2
20	TNGT	0	12	5	0	2	4	513.	1.300	1.000	1.000	SC374
		25	0	12	0	0	0	0.	1.000	1.000	1.000	2
25	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
		30	0	0	0	0	0	0.	1.300	1.000	1.000	2
30	TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
		35	0	0	0	0	0	0.	1.300	1.000	1.000	2
35	TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
		40	0	0	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	17	30	15	11	18	17	2893.	1.300	1.000	1.000	SC374
		45 B	17	30	11	1	17	1638.	1.000	1.000	1.000	2
45 B	BEND	17	30	15	11	1	17	1638.	1.000	1.000	1.000	SC374
		45 M	33	9	9	4	23	2089.	1.000	1.000	1.000	2
45 M	BEND	33	9	15	9	4	23	2090.	1.000	1.000	1.000	SC374
		45 E	30	17	6	5	22	1916.	1.000	1.000	1.000	2
45 E	TNGT	30	17	15	6	5	22	1916.	1.000	1.000	1.000	SC374
		50	30	17	6	2	19	1635.	1.000	1.000	1.000	2
50	TNGT	30	8	15	6	2	19	1635.	1.000	1.000	1.000	SC374
		55	30	8	6	14	11	1998.	1.300	1.000	1.000	2
55	TNGT	32	8	11	4	14	12	1998.	1.300	1.000	1.000	SC374
		60	32	8	4	7	1	836.	1.300	1.000	1.000	2
60	TNGT	30	8	15	3	7	3	836.	1.300	1.000	1.000	SC374
		65	30	8	3	7	1	651.	1.000	1.000	1.000	2
65	TNGT	30	5	3	3	7	1	651.	1.000	1.000	1.000	SC374
		70	30	5	3	5	3	700.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
70	TNGT	30	5	3	3	5	3	700.	1.300	1.000	1.000	SC374
75		30	5	3	3	2	8	933.	1.300	1.000	1.000	2
75	TNGT	30	5	3	3	2	8	933.	1.300	1.000	1.000	SC374
80 B		30	5	3	3	1	10	831.	1.000	1.000	1.000	2
80 B	BEND	30	5	3	3	1	10	831.	1.000	1.000	1.000	SC374
80 M		25	18	3	2	2	7	649.	1.000	1.000	1.000	2
80 M	BEND	25	18	3	2	2	7	649.	1.000	1.000	1.000	SC374
80 E		5	30	3	1	3	1	253.	1.000	1.000	1.000	2
80 E	TNGT	5	30	3	1	3	1	253.	1.000	1.000	1.000	SC374
85		5	30	3	1	3	9	743.	1.000	1.000	1.000	2
85	TNGT	5	2	1	1	3	9	743.	1.000	1.000	1.000	SC374
90		5	2	1	1	2	3	415.	1.300	1.000	1.000	2
90	TNGT	2	5	1	2	1	3	415.	1.300	1.000	1.000	SC374
95		2	5	1	2	0	4	376.	1.000	1.000	1.000	2
95	TNGT	2	8	1	2	0	4	376.	1.000	1.000	1.000	SC374
100 B		2	8	1	2	1	1	158.	1.000	1.000	1.000	2
100 B	BEND	2	8	1	2	1	1	158.	1.000	1.000	1.000	SC374
100 M		7	4	1	2	1	2	213.	1.000	1.000	1.000	2
100 M	BEND	7	4	1	2	1	2	213.	1.000	1.000	1.000	SC374
100 E		8	2	1	1	1	2	228.	1.000	1.000	1.000	2
100 E	TNGT	8	2	1	1	1	2	228.	1.000	1.000	1.000	SC374
105		8	2	1	1	1	1	148.	1.000	1.000	1.000	2
105	TNGT	8	2	2	1	1	1	148.	1.000	1.000	1.000	SC374
110		8	2	2	1	2	1	230.	1.300	1.000	1.000	2
110	TNGT	2	8	2	1	1	2	230.	1.300	1.000	1.000	SC374
115		2	8	2	1	2	3	301.	1.000	1.000	1.000	2
115	TNGT	2	2	2	1	2	3	301.	1.000	1.000	1.000	SC374
120 B		2	2	2	1	3	4	434.	1.000	1.000	1.000	2
120 B	BEND	2	2	2	1	4	3	434.	1.000	1.000	1.000	SC374
120 M		3	1	2	4	3	3	476.	1.000	1.000	1.000	2
120 M	BEND	3	1	2	4	3	3	476.	1.000	1.000	1.000	SC374
120 E		2	2	2	5	1	3	474.	1.000	1.000	1.000	2
120 E	TNGT	2	2	2	5	3	1	474.	1.000	1.000	1.000	SC374
125		2	2	2	5	0	4	692.	1.300	1.000	1.000	2



ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
125	TNGT	2	2	2	0	5	4	692.	1.300	1.000	1.000	SC374
130		2	2	2	0	6	4	597.	1.000	1.000	1.000	2
130	TNGT	2	2	5	0	6	4	597.	1.000	1.000	1.000	SC374
130A		2	2	5	0	3	1	260.	1.000	1.000	1.000	2
130A	TNGT	2	2	5	0	3	1	260.	1.000	1.000	1.000	SC374
135		2	2	5	0	11	2	953.	1.000	1.000	1.000	2
135	TNGT	2	1	3	0	11	2	953.	1.000	1.000	1.000	SC374
135A		2	1	3	0	6	1	518.	1.000	1.000	1.000	2
135A	TNGT	2	1	3	0	6	1	518.	1.000	1.000	1.000	SC374
137		2	1	3	0	1	0	88.	1.000	1.000	1.000	2
137	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
138		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
137	TNGT	2	1	3	0	1	0	88.	1.000	1.000	1.000	SC374
140		2	1	3	0	3	1	286.	1.000	1.000	1.000	2
140	TNGT	2	0	1	0	3	1	286.	1.000	1.000	1.000	SC374
140A		2	0	1	0	1	0	78.	1.000	1.000	1.000	2
140A	TNGT	2	0	1	0	1	0	78.	1.000	1.000	1.000	SC374
145		2	0	1	0	2	0	145.	1.000	1.000	1.000	2
145	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
145A		0	0	0	0	0	0	0.	1.000	1.000	1.000	2
145A	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
150		0	0	0	0	0	0	0.	1.000	1.000	1.000	2
150	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
155		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
155	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
160		0	0	0	0	0	0	0.	1.000	1.000	1.000	2
160	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
165		0	0	0	0	0	0	1.	1.000	1.000	1.000	2
165	TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
170		0	0	0	0	0	0	1.	1.000	1.000	1.000	2
170	TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
175		0	0	0	0	0	0	1.	1.300	1.000	1.000	2
175	TNGT	0	0	0	0	0	0	1.	1.300	1.000	1.000	SC374
180 B		0	0	0	0	0	0	1.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
180 M	0	0	0	0	0	0	1.	1.000	1.000	1.000	2
180 M BEND	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
180 E	0	0	0	0	0	0	1.	1.000	1.000	1.000	2
180 E TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
185	0	0	0	0	0	0	1.	1.000	1.000	1.000	2
185 TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
185A	0	0	0	0	0	0	1.	1.000	1.000	1.000	2
185A TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
190	0	0	0	0	0	0	2.	1.000	1.000	1.000	2
190 TNGT	0	0	0	0	0	0	2.	1.000	1.000	1.000	SC374
190A	0	0	0	0	0	0	3.	1.000	1.000	1.000	2
190A TNGT	0	0	0	0	0	0	3.	1.000	1.000	1.000	SC374
195	0	0	0	0	0	0	7.	1.000	1.000	1.000	2
195 TNGT	0	0	0	0	0	0	7.	1.000	1.000	1.000	SC374
200	0	0	0	0	0	0	17.	1.300	1.000	1.000	2
200 TNGT	0	0	0	0	0	0	17.	1.300	1.000	1.000	SC374
205	0	0	0	0	0	0	15.	1.000	1.000	1.000	2
205 TNGT	0	0	0	0	0	0	15.	1.000	1.000	1.000	SC374
205A	0	0	0	0	0	0	13.	1.000	1.000	1.000	2
205A TNGT	0	0	0	0	0	0	13.	1.000	1.000	1.000	SC374
210	0	0	0	0	0	0	15.	1.000	1.000	1.000	2
210A	0	0	0	0	0	0	15.	1.000	1.000	1.000	SC374
210A TNGT	0	0	0	0	0	0	15.	1.000	1.000	1.000	2
215	0	0	0	0	0	0	28.	1.000	1.000	1.000	SC374
215A	0	0	0	0	0	0	31.	1.000	1.000	1.000	2
215A TNGT	0	0	0	0	0	0	31.	1.000	1.000	1.000	SC374
220	0	0	0	0	0	1	82.	1.000	1.000	1.000	2
220 TNGT	0	0	0	0	0	1	82.	1.000	1.000	1.000	SC374
225 B	0	0	0	0	0	0	23.	1.000	1.000	1.000	2
225 B BEND	0	0	0	0	0	0	23.	1.000	1.000	1.000	SC374
225 M	0	0	0	0	0	0	25.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
225 M	BEND	0	0	0	0	0	0	25.	1.000	1.000	1.000	SC374
225 E		0	0	0	0	0	0	24.	1.000	1.000	1.000	2
225 E	TNGT	0	0	0	0	0	0	24.	1.000	1.000	1.000	SC374
230		0	0	0	0	0	1	99.	1.000	1.000	1.000	2
230	TNGT	0	0	0	0	0	1	99.	1.000	1.000	1.000	SC374
230A		0	0	0	0	0	0	37.	1.000	1.000	1.000	2
230A	TNGT	0	0	0	0	0	0	37.	1.000	1.000	1.000	SC374
235		0	0	0	0	0	0	32.	1.000	1.000	1.000	2
235	TNGT	0	0	0	0	0	0	32.	1.000	1.000	1.000	SC374
235A		0	0	0	0	0	0	22.	1.000	1.000	1.000	2
235A	TNGT	0	0	0	0	0	0	22.	1.000	1.000	1.000	SC374
240		0	0	0	0	1	0	48.	1.000	1.000	1.000	2
240	TNGT	0	0	1	0	1	0	48.	1.000	1.000	1.000	SC374
245		0	0	1	0	2	0	226.	1.300	1.000	1.000	2
245	TNGT	1	0	0	0	2	0	226.	1.300	1.000	1.000	SC374
250		1	0	0	0	2	0	182.	1.000	1.000	1.000	2
250	TNGT	1	0	3	0	2	0	182.	1.000	1.000	1.000	SC374
255 B		1	0	3	0	1	0	107.	1.000	1.000	1.000	2
255 B	BEND	1	3	0	0	0	1	107.	1.000	1.000	1.000	SC374
255 M		3	2	0	0	0	2	171.	1.000	1.000	1.000	2
255 M	BEND	3	2	0	0	0	2	171.	1.000	1.000	1.000	SC374
255 E		3	1	0	0	0	2	181.	1.000	1.000	1.000	2
255 E	TNGT	3	0	1	0	2	0	181.	1.000	1.000	1.000	SC374
260		3	0	1	0	2	0	158.	1.000	1.000	1.000	2
260	TNGT	3	0	1	0	2	1	158.	1.000	1.000	1.000	SC374
265 B		3	1	0	0	1	2	201.	1.000	1.000	1.000	2
265 B	BEND	3	1	0	0	1	2	201.	1.000	1.000	1.000	SC374
265 M		3	0	0	1	1	2	207.	1.000	1.000	1.000	2
265 M	BEND	3	0	0	1	1	2	207.	1.000	1.000	1.000	SC374
265 E		3	1	0	1	0	2	197.	1.000	1.000	1.000	2
265 E	TNGT	3	0	1	1	2	0	197.	1.000	1.000	1.000	SC374
270		3	0	1	1	0	1	136.	1.300	1.000	1.000	2
270	TNGT	0	1	3	0	1	0	136.	1.300	1.000	1.000	SC374
275		0	1	3	0	6	1	500.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
275 TNGT	0	0	2	0	6	1	500.	1.000	1.000	1.000	SC374
280	0	0	2	0	5	1	491.	1.300	1.000	1.000	2
280 TNGT	0	0	2	5	0	1	491.	1.300	1.000	1.000	SC374
285	0	0	2	5	1	1	497.	1.300	1.000	1.000	2
285 TNGT	0	0	2	1	5	1	497.	1.300	1.000	1.000	SC374
290	0	0	2	1	5	1	422.	1.000	1.000	1.000	2
290 TNGT	0	0	1	1	5	1	422.	1.000	1.000	1.000	SC374
290A	0	0	1	1	2	0	177.	1.000	1.000	1.000	2
290A TNGT	0	0	1	1	2	0	177.	1.000	1.000	1.000	SC374
295	0	0	1	1	1	1	118.	1.000	1.000	1.000	2
295 TNGT	0	0	0	1	1	1	118.	1.000	1.000	1.000	SC374
300	0	0	0	1	1	0	130.	1.300	1.000	1.000	2
300 TNGT	0	0	0	1	1	0	104.	1.000	1.000	1.000	SC374
305	0	0	0	1	1	0	104.	1.000	1.000	1.000	2
305 TNGT	0	0	0	1	1	0	104.	1.000	1.000	1.000	SC374
310 B	0	0	0	1	0	1	104.	1.000	1.000	1.000	SC374
310 B BEND	0	0	0	1	1	1	101.	1.000	1.000	1.000	2
310 M	0	0	0	1	1	1	101.	1.000	1.000	1.000	SC374
310 M BEND	0	0	0	0	1	1	86.	1.000	1.000	1.000	2
310 E	0	0	0	0	1	1	86.	1.000	1.000	1.000	SC374
310 E TNGT	0	0	0	0	0	0	53.	1.300	1.000	1.000	2
315	0	0	0	0	0	0	53.	1.300	1.000	1.000	SC374
315 TNGT	0	0	0	0	0	0	46.	1.000	1.000	1.000	2
320 B	0	0	0	0	0	0	46.	1.000	1.000	1.000	SC374
320 B BEND	0	0	0	0	0	0	46.	1.000	1.000	1.000	2
320 M	0	0	0	0	0	0	46.	1.000	1.000	1.000	SC374
320 M BEND	0	0	0	0	0	0	37.	1.000	1.000	1.000	2
320 E	0	0	0	0	0	0	37.	1.000	1.000	1.000	SC374
320 E TNGT	0	0	0	0	0	0	32.	1.000	1.000	1.000	2
500	0	0	0	0	0	0					

*** AT THE MEMBER END 20 OF ELEMENT FROM 15 TO 20 , MAX. STRESS (PSI) IS 3109.
 *** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
 *** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : SAM02

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
5	ANC		24.	21.	23.	7.	16.	29.
25	RAD		6.	0.	15.	0.	0.	0.
50	RAD		0.	12.	0.	0.	0.	0.
65	RAD		20.	0.	0.	0.	0.	0.
65	RAD		0.	4.	0.	0.	0.	0.
85	RAD		4.	0.	0.	0.	0.	0.
85	RAD		0.	0.	39.	0.	0.	0.
95	RAD		0.	15.	0.	0.	0.	0.
105	RAD		3.	0.	0.	0.	0.	0.
115	RAD		0.	11.	0.	0.	0.	0.
115	RAD		0.	0.	4.	0.	0.	0.
130	RAD		9.	0.	0.	0.	0.	0.
130	RAD		0.	0.	4.	0.	0.	0.
135	RAD		11.	0.	0.	0.	0.	0.
135	RAD		0.	0.	3.	0.	0.	0.
140	RAD		6.	0.	0.	0.	0.	0.
140	RAD		0.	0.	1.	0.	0.	0.
145	ANC		2.	3.	0.	0.	0.	2.
150	RAD		0.	0.	0.	0.	0.	0.
150	RAD		0.	0.	0.	0.	0.	0.
160	RAD		0.	0.	0.	0.	0.	0.
170	RAD		0.	0.	0.	0.	0.	0.
185	RAD		0.	0.	0.	0.	0.	0.
185	RAD		0.	0.	0.	0.	0.	0.
190	RAD		0.	0.	0.	0.	0.	0.
190	RAD		0.	0.	0.	0.	0.	0.
195	RAD		0.	0.	0.	0.	0.	0.
195	RAD		0.	0.	0.	0.	0.	0.
205	RAD		0.	0.	0.	0.	0.	0.
205	RAD		0.	0.	0.	0.	0.	0.
210	RAD		0.	0.	0.	0.	0.	0.
210	RAD		0.	0.	0.	0.	0.	0.
215	RAD		0.	0.	0.	0.	0.	0.
215	RAD		0.	0.	0.	0.	0.	0.
220	RAD		0.	0.	0.	0.	0.	0.

DATA. PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	1.	0.	0.	0.	0.
230	RAD		0.	1.	0.	0.	0.	0.
230	RAD		0.	0.	0.	0.	0.	0.
235	RAD		0.	0.	0.	0.	0.	0.
235	RAD		0.	0.	0.	0.	0.	0.
240	RAD		0.	0.	0.	0.	0.	0.
240	RAD		0.	0.	1.	0.	0.	0.
250	RAD		4.	0.	0.	0.	0.	0.
250	RAD		0.	0.	0.	0.	0.	0.
260	RAD		0.	1.	0.	0.	0.	0.
260	RAD		0.	0.	0.	0.	0.	0.
275	RAD		6.	0.	0.	0.	0.	0.
275	RAD		0.	0.	2.	0.	0.	0.
290	RAD		4.	0.	0.	0.	0.	0.
290	RAD		0.	0.	1.	0.	0.	0.
295	RAD		2.	0.	0.	0.	0.	0.
295	RAD		0.	0.	1.	0.	0.	0.
305	RAD		0.	0.	0.	0.	0.	0.
500	ANC		0.	1.	1.	0.	0.	0.

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAM02

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		24	21	23	7	16	29	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		16	0	0	0	0	0	.391	.000	.920						
50	RAD		12	0	0	0	0	0	.000	1.00	.000						
65	RAD		20	0	0	0	0	0	1.00	.000	.000						
65	RAD		4	0	0	0	0	0	.000	1.00	.000						
85	RAD		4	0	0	0	0	0	1.00	.000	.000						
85	RAD		39	0	0	0	0	0	.000	.000	1.00						
95	RAD		15	0	0	0	0	0	.000	1.00	.000						
105	RAD		3	0	0	0	0	0	1.00	.000	.000						
115	RAD		11	0	0	0	0	0	.000	1.00	.000						
115	RAD		4	0	0	0	0	0	.000	.000	1.00						
130	RAD		9	0	0	0	0	0	1.00	.000	.000						
130	RAD		4	0	0	0	0	0	.000	.000	1.00						
135	RAD		11	0	0	0	0	0	1.00	.000	.000						
135	RAD		3	0	0	0	0	0	.000	.000	1.00						
140	RAD		6	0	0	0	0	0	1.00	.000	.000						
140	RAD		1	0	0	0	0	0	.000	.000	1.00						
145	ANC		2	3	0	0	0	2	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		0	0	0	0	0	0	1.00	.000	.000						
150	RAD		0	0	0	0	0	0	.000	.000	1.00						
160	RAD		0	0	0	0	0	0	.000	.000	1.00						
170	RAD		0	0	0	0	0	0	.000	.000	1.00						
185	RAD		0	0	0	0	0	0	1.00	.000	.000						
185	RAD		0	0	0	0	0	0	.000	.000	1.00						
190	RAD		0	0	0	0	0	0	1.00	.000	.000						
190	RAD		0	0	0	0	0	0	.000	.000	1.00						
195	RAD		0	0	0	0	0	0	1.00	.000	.000						
195	RAD		0	0	0	0	0	0	.000	.000	1.00						
205	RAD		0	0	0	0	0	0	1.00	.000	.000						
205	RAD		0	0	0	0	0	0	.000	1.00	.000						
210	RAD		0	0	0	0	0	0	1.00	.000	.000						
210	RAD		0	0	0	0	0	0	.000	1.00	.000						
215	RAD		0	0	0	0	0	0	1.00	.000	.000						
215	RAD		0	0	0	0	0	0	.000	1.00	.000						
220	RAD		0	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		1	0	0	0	0	0	.000	1.00	.000						
230	RAD		1	0	0	0	0	0	.000	1.00	.000						
230	RAD		0	0	0	0	0	0	.000	.000	1.00						
235	RAD		0	0	0	0	0	0	.000	1.00	.000						
235	RAD		0	0	0	0	0	0	.000	.000	1.00						
240	RAD		0	0	0	0	0	0	.000	1.00	.000						
240	RAD		1	0	0	0	0	0	.000	.000	1.00						
250	RAD		4	0	0	0	0	0	1.00	.000	.000						
250	RAD		0	0	0	0	0	0	.000	1.00	.000						
260	RAD		1	0	0	0	0	0	.000	1.00	.000						
260	RAD		0	0	0	0	0	0	.000	.000	1.00						
275	RAD		6	0	0	0	0	0	1.00	.000	.000						
275	RAD		2	0	0	0	0	0	.000	.000	1.00						
290	RAD		4	0	0	0	0	0	1.00	.000	.000						
290	RAD		1	0	0	0	0	0	.000	.000	1.00						
295	RAD		2	0	0	0	0	0	1.00	.000	.000						
295	RAD		1	0	0	0	0	0	.000	.000	1.00						
305	RAD		0	0	0	0	0	0	.000	1.00	.000						
500	ANC		0	1	1	0	0	0	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAMO2

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.008	.001	.008	.000000	.000000	.000000
10		.008	.001	.009	.000307	.000321	.000649
15		.009	.013	.015	.001676	.000644	.001526
20		.010	.017	.019	.003067	.000412	.001230
25		.009	.017	.008	.003124	.000412	.001254
30		.012	.017	.022	.003124	.000412	.001254
35		.019	.017	.044	.003124	.000412	.001254
40		.028	.017	.069	.003124	.000412	.001254
45 B		.020	.017	.054	.003097	.001107	.000859
45 E		.024	.004	.065	.002095	.001580	.000949
50		.024	.001	.065	.001828	.001628	.001002
55		.031	.016	.065	.000738	.001283	.001399
60		.038	.002	.063	.000133	.000586	.001414
65		.039	.002	.063	.000142	.000485	.001349
70		.042	.003	.063	.000050	.000198	.001137
75		.042	.003	.063	.000358	.000219	.000885
80 B		.041	.004	.063	.000571	.000244	.000802
80 E		.040	.007	.066	.000862	.000248	.000664
85		.039	.007	.068	.000780	.000250	.000614
90		.039	.007	.073	.000270	.000310	.000211
95		.038	.002	.073	.000234	.000313	.000082
100 B		.038	.003	.073	.000172	.000296	.000140
100 E		.038	.003	.072	.000243	.000251	.000222
105		.039	.003	.070	.000315	.000204	.000280
110		.040	.003	.069	.000337	.000174	.000322
115		.040	.002	.068	.000358	.000128	.000323
120 B		.040	.009	.067	.000464	.000147	.000539
120 E		.039	.009	.068	.000507	.000287	.000788
125		.032	.005	.068	.000337	.000420	.001504
130		.039	.005	.068	.000277	.000406	.001652
130A		.073	.005	.072	.000281	.000351	.001815
135		.102	.005	.077	.000194	.000296	.001024
135A		.111	.005	.079	.000009	.000241	.000045
137		.107	.005	.078	.000067	.000185	.000354
138		.105	.005	.078	.000067	.000185	.000354

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.102	.005	.077	.000046	.000139	.000240
140A		.101	.005	.077	.000011	.000070	.000059
145		.102	.005	.077	.000000	.000000	.000000
145A		.102	.005	.077	.000000	.000000	.000000
150		.102	.005	.077	.000000	.000000	.000000
155		.102	.005	.077	.000000	.000000	.000000
160		.102	.005	.077	.000000	.000000	.000001
165		.102	.005	.077	.000000	.000000	.000000
170		.102	.005	.077	.000000	.000000	.000000
175		.102	.005	.077	.000000	.000001	.000000
180 B		.102	.005	.077	.000000	.000001	.000000
180 E		.102	.005	.077	.000000	.000001	.000000
185		.102	.005	.077	.000000	.000003	.000000
185A		.102	.005	.077	.000000	.000004	.000000
190		.102	.005	.077	.000001	.000005	.000001
190A		.102	.005	.077	.000001	.000006	.000001
195		.102	.005	.077	.000005	.000007	.000004
200		.102	.005	.077	.000006	.000008	.000010
205		.102	.005	.077	.000004	.000006	.000020
205A		.102	.005	.077	.000001	.000001	.000043
210		.102	.005	.077	.000006	.000002	.000065
210A		.102	.005	.077	.000005	.000001	.000097
215		.102	.005	.077	.000027	.000006	.000128
215A		.102	.004	.077	.000024	.000005	.000173
220		.102	.005	.077	.000122	.000025	.000217
225 B		.103	.009	.077	.000194	.000024	.000245
225 E		.103	.011	.077	.000190	.000012	.000250
230		.103	.018	.077	.000157	.000002	.000141
230A		.103	.020	.077	.000120	.000004	.000026
235		.103	.018	.077	.000082	.000016	.000037
235A		.103	.018	.077	.000045	.000012	.000008
240		.103	.018	.077	.000008	.000066	.000005
245		.103	.018	.077	.000032	.000092	.000021
250		.102	.018	.077	.000035	.000171	.000034
255 B		.099	.018	.077	.000037	.000209	.000062
255 E		.098	.018	.077	.000045	.000124	.000077
260		.098	.018	.077	.000052	.000081	.000085
265 B		.098	.023	.075	.000197	.000146	.000126
265 E		.098	.023	.075	.000210	.000195	.000136
270		.095	.024	.075	.000251	.000303	.000209
275		.102	.024	.077	.000209	.000366	.000589
280		.161	.024	.086	.000110	.000561	.000817
285		.165	.024	.086	.000081	.000554	.000580
290		.166	.024	.086	.000070	.000537	.000505

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.171	.024	.087	.000019	.000364	.000084
295		.166	.024	.086	.000043	.000190	.000164
300		.165	.024	.086	.000061	.000135	.000113
305		.165	.024	.086	.000065	.000110	.000078
310 B		.165	.024	.086	.000065	.000105	.000071
310 E		.166	.024	.086	.000058	.000066	.000028
315		.166	.024	.086	.000047	.000034	.000004
320 B		.166	.024	.086	.000039	.000019	.000009
320 E		.166	.024	.086	.000018	.000006	.000011
500		.166	.024	.086	.000000	.000000	.000000
*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***							

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAMO2

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000-1.000	.000	.391	.000	.920		24	21	23	7	16	29
		-.920	.000	.391	.000-1.000	.000	.391	.000	.920		24	21	23	10	11	22
10 15	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		24	21	23	10	11	22
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		24	21	23	19	4	5
15 20	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		24	21	23	19	4	5
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		24	21	23	26	13	19
20 25	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			6	0	15	5	0	2
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			6	0	15	0	0	0
25 30	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			0	0	0	0	0	0
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			0	0	0	0	0	0
30 35	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			0	0	0	0	0	0
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			0	0	0	0	0	0
35 40	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			0	0	0	0	0	0
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			0	0	0	0	0	0
20 45 B	TNGT	.000 1.000	.000	.000	.000 .000	1.000	1.000	.000	.000		18	21	36	21	13	21
		.000 1.000	.000	.000	.000 .000	1.000	1.000	.000	.000		18	21	36	20	13	1
45 B 45 M	BEND	.000 1.000	.000	.000	.000 .000	1.000	1.000	.000	.000		18	21	36	20	13	1
		.000 .707	.707	.000	.000 -.707	.707	1.000	.000	.000		18	21	36	28	11	5
45 M 45 E	BEND	.000 .707	.707	.000	.000 -.707	.707	1.000	.000	.000		18	21	36	28	11	5
		.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	21	36	27	6	7
45 E 50	TNGT	.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	21	36	27	6	7
		.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	21	36	23	3	7
50 55	TNGT	.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	9	36	23	3	7
		.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	9	36	13	17	7
55 60	TNGT	-.707 .000	.707	.000	.000-1.000	.000	.707	.000	.707		18	9	36	13	17	7
		-.707 .000	.707	.000	.000-1.000	.000	.707	.000	.707		18	9	36	3	8	4
60 65	TNGT	.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	9	36	3	8	4
		.000 .000	1.000	.000	.000-1.000	.000	1.000	.000	.000		18	9	36	1	9	4

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65 70	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	4	6	36	1	9	4
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	4	6	36	4	6	4
70 75	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	4	6	36	4	6	4
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	4	6	36	10	2	4
75 80 B	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	4	6	36	10	2	4
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	4	6	36	12	1	4
80 B 80 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	4	6	36	12	1	4
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	4	6	36	9	1	3
80 M 80 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	4	6	36	9	1	3
		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	4	6	36	1	1	3
80 E 85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	6	36	1	1	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	6	36	10	1	4
85 90	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	6	3	10	1	4
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	6	3	4	1	2
90 95	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	1	6	3	4	1	2
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	1	6	3	5	1	2
95 100 B	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	1	9	3	5	1	2
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	1	9	3	1	1	2
100 B 100 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	1	9	3	1	1	2
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	1	9	3	2	1	2
100 M 100 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	1	9	3	2	1	2
		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	1	9	3	3	1	2
100 E 105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	9	3	3	1	2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	9	3	1	1	1
105 110	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	9	3	1	1	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	9	3	1	1	2
110 115	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	2	9	3	1	1	2
		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	2	9	3	1	2	4
115 120 B	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	2	3	2	1	2	4
		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	2	3	2	1	4	5
120 B 120 M	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	2	3	2	1	4	5
		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	2	3	2	1	4	6
120 M 120 E	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	2	3	2	1	4	6
		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	2	3	2	1	3	6

ELEMENT TYPE/TITLE			DIRECTION COSINES							GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)				
FROM TO			COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E TNGT 125			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	3	2	1	3	6
			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	3	2	5	0	6
125 TNGT 130			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	3	2	5	0	6
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	3	2	5	0	7
130 TNGT 130A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	3	2	5	0	7
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	3	2	2	0	3
130A TNGT 135			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	3	2	2	0	3
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	3	2	3	0	14
135 TNGT 135A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	3	1	3	0	14
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	3	1	1	0	7
135A TNGT 137			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	3	1	1	0	7
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	3	1	0	0	1
137 TNGT 138			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
137 TNGT 140			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	3	1	0	0	1
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	3	1	1	0	4
140 TNGT 140A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	3	0	1	0	4
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	3	0	0	0	1
140A TNGT 145			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	3	0	0	0	1
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	3	0	0	0	2
145 TNGT 145A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
145A TNGT 150			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
150 TNGT 155			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
155 TNGT 160			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
160 TNGT 165			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
165 TNGT 170			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
170 TNGT 175			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	0	0	0	0	0	0
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	0	0	0	0	0	0
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	0	0	0	0	0	0
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	0	0	0	0	0	0
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	0	0	0	0	0	0
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	0	0	0	0	0	0
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	0	0	0	0
200		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	0	0	0	0
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	1	0	1	0	0
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	1	0	0	0	0
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	1	0	0	0	0

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	0	1	0	0	0	0
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	0	1	0	0	0	0
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	0	1	0	0	0	0
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	0	1	0	0	0	0
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	1	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	1	0	0	0	1
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	1
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	0	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	0	0	1	0
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	1	0	1	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	0	1	0	2	0
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	1	0	2	0
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	1	0	3	0
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	0	1	0	3	0
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	0	1	0	1	0
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	4	0	1	0	1	0
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	4	0	1	0	2	0
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	4	0	1	0	2	0
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	4	0	1	1	3	0
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	0	1	1	3	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	0	1	1	2	0
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	0	1	1	2	0
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	0	1	1	3	1
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	4	0	1	1	3	1
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	4	0	1	1	3	1
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	4	0	1	1	3	1
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	4	0	1	0	3	1
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	4	0	1	0	3	1
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	4	0	1	0	1	1

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	0	1	0	1	1
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	0	1	2	1	7
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	0	0	2	1	7
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	0	0	1	1	5
280	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	0	0	1	1	5
285		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	0	0	1	1	5
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	0	0	1	1	5
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	0	0	1	1	6
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	1	1	6
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	0	1	2
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	0	1	1
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	0	1	1	1
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	1	1	1	1
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	0	1	0	1	1
300	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	0	1	0	1	1
305		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	0	1	0	1	1
305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	1	1	0	1	1
310 B		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	0	1	1	0	1	1
310 B BEND		.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	0	1	1	0	1	1
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	0	1	1	0	1	1
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	0	1	1	0	1	1
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	0	1	1	0	1	1
310 E TNGT		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	1.000	0	1	1	0	0	0
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	1.000	0	1	1	0	0	0
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	1	1	0	0	0
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	1	1	0	0	0
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	0	1	1	0	0	0
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	0	1	1	1	0	0
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	0	1	1	1	0	0
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	0	1	1	0	0	0
320 E TNGT		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	0	1	1	0	0	0
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	0	1	1	0	0	0

STRESSES AND LOCAL FORCES AND MOMENTS

ME101/12

DATE 040182

PAGE 179

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SAMO2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
.5 10	TNGT	31	21	11	17	16	25	2790.	1.000	1.000	1.000	SC374
		31	21	11	17	11	16	2803.	1.300	1.000	1.000	2
10 15	TNGT	31	21	11	17	11	16	2803.	1.300	1.000	1.000	SC374
		31	21	11	17	4	10	2151.	1.300	1.000	1.000	2
15 20	TNGT	31	21	11	17	4	10	2151.	1.300	1.000	1.000	SC374
		31	21	11	17	13	27	3750.	1.300	1.000	1.000	2
20 25	TNGT	0	15	6	0	2	5	619.	1.300	1.000	1.000	SC374
		0	15	6	0	0	0	0.	1.000	1.000	1.000	2
25 30	TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
30 35	TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
		0	0	0	0	0	0	0.	1.300	1.000	1.000	2
35 40	TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
		0	0	0	0	0	0	0.	1.000	1.000	1.000	2
20 45 B	TNGT	21	36	18	13	21	21	3488.	1.300	1.000	1.000	SC374
		21	36	18	13	1	20	1976.	1.000	1.000	1.000	2
45 B 45 M	BEND	21	36	18	13	1	20	1976.	1.000	1.000	1.000	SC374
		40	11	18	11	5	28	2520.	1.000	1.000	1.000	2
45 M 45 E	BEND	40	11	18	11	5	28	2520.	1.000	1.000	1.000	SC374
		36	21	18	7	6	27	2311.	1.000	1.000	1.000	2
45 E 50	TNGT	36	21	18	7	6	27	2311.	1.000	1.000	1.000	SC374
		36	21	18	7	3	23	1972.	1.000	1.000	1.000	2
50 55	TNGT	36	9	18	7	3	23	1972.	1.000	1.000	1.000	SC374
		36	9	18	7	17	13	2410.	1.300	1.000	1.000	2
55 60	TNGT	38	9	14	5	17	14	2410.	1.300	1.000	1.000	SC374
		38	9	14	5	8	1	1008.	1.300	1.000	1.000	2
60 65	TNGT	36	9	18	4	8	3	1008.	1.300	1.000	1.000	SC374
		36	9	18	4	9	1	785.	1.000	1.000	1.000	2
65 70	TNGT	36	6	4	4	9	1	785.	1.000	1.000	1.000	SC374
		36	6	4	4	6	4	844.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS	FLEX.	FACTOR	CODE
FROM	TO	FA	FB	FC	MA	MB	MC	IM/Z	INT.FAC.	IN	OUT	AND
									(I)	PLANE	PLANE	CLASS
70	TNGT	36	6	4	4	6	4	844.	1.300	1.000	1.000	SC374
75		36	6	4	4	2	10	1127.	1.300	1.000	1.000	2
75	TNGT	36	6	4	4	2	10	1127.	1.300	1.000	1.000	SC374
80 B		36	6	4	4	1	12	1003.	1.000	1.000	1.000	2
80 B	BEND	36	6	4	4	1	12	1003.	1.000	1.000	1.000	SC374
80 M		30	22	4	2	3	9	783.	1.000	1.000	1.000	2
80 M	BEND	30	22	4	2	3	9	783.	1.000	1.000	1.000	SC374
80 E		6	36	4	1	3	1	305.	1.000	1.000	1.000	2
80 E	TNGT	6	36	4	1	3	1	305.	1.000	1.000	1.000	SC374
85		6	36	4	1	4	10	896.	1.000	1.000	1.000	2
85	TNGT	6	3	1	1	4	10	896.	1.000	1.000	1.000	SC374
90		6	3	1	1	2	4	504.	1.300	1.000	1.000	2
90	TNGT	3	6	1	2	1	4	504.	1.300	1.000	1.000	SC374
95		3	6	1	2	1	5	452.	1.000	1.000	1.000	2
95	TNGT	3	9	1	2	1	5	452.	1.000	1.000	1.000	SC374
100 B		3	9	1	2	1	1	192.	1.000	1.000	1.000	2
100 B	BEND	3	9	1	2	1	1	192.	1.000	1.000	1.000	SC374
100 M		8	5	1	2	1	2	257.	1.000	1.000	1.000	2
100 M	BEND	8	5	1	2	1	2	257.	1.000	1.000	1.000	SC374
100 E		9	3	1	1	2	3	276.	1.000	1.000	1.000	2
100 E	TNGT	9	3	1	1	2	3	276.	1.000	1.000	1.000	SC374
105		9	3	1	1	1	1	181.	1.000	1.000	1.000	2
105	TNGT	9	3	2	1	1	1	181.	1.000	1.000	1.000	SC374
110		9	3	2	1	2	1	278.	1.300	1.000	1.000	2
110	TNGT	2	9	3	1	1	2	278.	1.300	1.000	1.000	SC374
115		2	9	3	1	2	4	360.	1.000	1.000	1.000	2
115	TNGT	2	3	2	1	2	4	360.	1.000	1.000	1.000	SC374
120 B		2	3	2	1	4	5	526.	1.000	1.000	1.000	2
120 B	BEND	2	2	3	1	5	4	526.	1.000	1.000	1.000	SC374
120 M		3	1	3	5	3	4	576.	1.000	1.000	1.000	2
120 M	BEND	3	1	3	5	3	4	576.	1.000	1.000	1.000	SC374
120 E		2	2	3	6	1	3	574.	1.000	1.000	1.000	2
120 E	TNGT	2	3	2	6	3	1	574.	1.000	1.000	1.000	SC374
125		2	3	2	6	0	5	833.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
125 TNGT	3	2	2	0	6	5	833.	1.300	1.000	1.000	SC374
130	3	2	2	0	7	5	720.	1.000	1.000	1.000	2
130 TNGT	3	2	7	0	7	5	720.	1.000	1.000	1.000	SC374
130A	3	2	7	0	3	2	316.	1.000	1.000	1.000	2
130A TNGT	3	2	7	0	3	2	316.	1.000	1.000	1.000	SC374
135	3	2	7	0	14	3	1152.	1.000	1.000	1.000	2
135 TNGT	3	1	4	0	14	3	1152.	1.000	1.000	1.000	SC374
135A	3	1	4	0	7	1	626.	1.000	1.000	1.000	2
135A TNGT	3	1	4	0	7	1	626.	1.000	1.000	1.000	SC374
137	3	1	4	0	1	0	106.	1.000	1.000	1.000	2
137 TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
138	0	0	0	0	0	0	0.	1.300	1.000	1.000	2
137 TNGT	3	1	4	0	1	0	106.	1.000	1.000	1.000	SC374
140	3	1	4	0	4	1	346.	1.000	1.000	1.000	2
140 TNGT	3	0	2	0	4	1	346.	1.000	1.000	1.000	SC374
140A	3	0	2	0	1	0	94.	1.000	1.000	1.000	2
140A TNGT	3	0	2	0	1	0	94.	1.000	1.000	1.000	SC374
145	3	0	2	0	2	0	176.	1.000	1.000	1.000	2
145 TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
145A	0	0	0	0	0	0	0.	1.000	1.000	1.000	2
145A TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
150	0	0	0	0	0	0	0.	1.000	1.000	1.000	2
150 TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
155	0	0	0	0	0	0	0.	1.300	1.000	1.000	2
155 TNGT	0	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
160	0	0	0	0	0	0	0.	1.000	1.000	1.000	2
160 TNGT	0	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
165	0	0	0	0	0	0	1.	1.000	1.000	1.000	2
165 TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
170	0	0	0	0	0	0	1.	1.000	1.000	1.000	2
170 TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
175	0	0	0	0	0	0	1.	1.300	1.000	1.000	2
175 TNGT	0	0	0	0	0	0	1.	1.300	1.000	1.000	SC374
180 B	0	0	0	0	0	0	1.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI IM/Z)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
180 B	BEND	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
180 M		0	0	0	0	0	0	1.	1.000	1.000	1.000	2
180 M	BEND	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
180 E		0	0	0	0	0	0	1.	1.000	1.000	1.000	2
180 E	TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
185		0	0	0	0	0	0	1.	1.000	1.000	1.000	2
185	TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
185A		0	0	0	0	0	0	1.	1.000	1.000	1.000	2
185A	TNGT	0	0	0	0	0	0	1.	1.000	1.000	1.000	SC374
190		0	0	0	0	0	0	2.	1.000	1.000	1.000	2
190	TNGT	0	0	0	0	0	0	2.	1.000	1.000	1.000	SC374
190A		0	0	0	0	0	0	3.	1.000	1.000	1.000	2
190A	TNGT	0	0	0	0	0	0	3.	1.000	1.000	1.000	SC374
195		0	0	0	0	0	0	8.	1.000	1.000	1.000	2
195	TNGT	0	0	0	0	0	0	8.	1.000	1.000	1.000	SC374
200		0	0	0	0	0	0	20.	1.300	1.000	1.000	2
200	TNGT	0	0	0	0	0	0	20.	1.300	1.000	1.000	SC374
205		0	0	0	0	0	0	18.	1.000	1.000	1.000	2
205	TNGT	0	0	0	0	0	0	18.	1.000	1.000	1.000	SC374
205A		0	0	0	0	0	0	16.	1.000	1.000	1.000	2
205A	TNGT	0	0	0	0	0	0	16.	1.000	1.000	1.000	SC374
210		0	0	0	0	0	0	17.	1.000	1.000	1.000	2
210	TNGT	0	0	0	0	0	0	17.	1.000	1.000	1.000	SC374
210A		0	0	0	0	0	0	18.	1.000	1.000	1.000	2
210A	TNGT	0	0	0	0	0	0	18.	1.000	1.000	1.000	SC374
215		0	0	0	0	0	0	33.	1.000	1.000	1.000	2
215	TNGT	0	0	0	0	0	0	33.	1.000	1.000	1.000	SC374
215A		0	0	0	0	0	0	36.	1.000	1.000	1.000	2
215A	TNGT	0	0	0	0	0	0	36.	1.000	1.000	1.000	SC374
220		0	0	0	0	0	1	97.	1.000	1.000	1.000	2
220	TNGT	0	1	0	0	0	1	97.	1.000	1.000	1.000	SC374
225 B		0	1	0	0	0	0	27.	1.000	1.000	1.000	2
225 B	BEND	0	0	1	0	0	0	27.	1.000	1.000	1.000	SC374
225 M		0	0	1	0	0	0	29.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	0	0	1	0	0	0	29.	1.000	1.000	1.000	SC374
225 E	0	0	1	0	0	0	29.	1.000	1.000	1.000	2
225 E TNGT	0	1	0	0	0	0	29.	1.000	1.000	1.000	SC374
230	0	1	0	0	0	1	117.	1.000	1.000	1.000	2
230 TNGT	0	0	0	0	0	1	117.	1.000	1.000	1.000	SC374.
230A	0	0	0	0	0	1	44.	1.000	1.000	1.000	2
230A TNGT	0	0	0	0	0	1	44.	1.000	1.000	1.000	SC374
235	0	0	0	0	0	0	38.	1.000	1.000	1.000	2
235 TNGT	0	0	0	0	0	0	38.	1.000	1.000	1.000	SC374
235A	0	0	0	0	0	0	26.	1.000	1.000	1.000	2
235A TNGT	0	0	0	0	0	0	26.	1.000	1.000	1.000	SC374
240	0	0	0	0	1	0	57.	1.000	1.000	1.000	2
240 TNGT	0	0	1	0	1	0	57.	1.000	1.000	1.000	SC374
245	0	0	1	0	2	0	267.	1.300	1.000	1.000	2
245 TNGT	1	0	0	0	2	0	267.	1.300	1.000	1.000	SC374
250	1	0	0	0	3	0	216.	1.000	1.000	1.000	2
250 TNGT	1	0	4	0	3	0	216.	1.000	1.000	1.000	SC374
255 B	1	0	4	0	1	0	128.	1.000	1.000	1.000	2
255 B BEND	1	4	0	0	0	1	128.	1.000	1.000	1.000	SC374
255 M	3	2	0	0	0	2	203.	1.000	1.000	1.000	2
255 M BEND	3	2	0	0	0	2	203.	1.000	1.000	1.000	SC374
255 E	4	1	0	1	0	3	214.	1.000	1.000	1.000	2
255 E TNGT	4	0	1	1	3	0	214.	1.000	1.000	1.000	SC374
260	4	0	1	1	2	0	188.	1.000	1.000	1.000	2
260 TNGT	4	0	1	1	2	0	188.	1.000	1.000	1.000	SC374
265 B	4	0	1	1	3	1	239.	1.000	1.000	1.000	2
265 B BEND	4	1	0	1	1	3	239.	1.000	1.000	1.000	SC374
265 M	4	0	0	1	1	3	246.	1.000	1.000	1.000	2
265 M BEND	4	0	0	1	1	3	246.	1.000	1.000	1.000	SC374
265 E	3	2	0	1	1	3	234.	1.000	1.000	1.000	2
265 E TNGT	3	0	2	1	3	1	234.	1.000	1.000	1.000	SC374
270	3	0	2	1	1	1	161.	1.300	1.000	1.000	2
270 TNGT	0	1	4	1	1	0	161.	1.300	1.000	1.000	SC374
275	0	1	4	1	7	2	593.	1.000	1.000	1.000	2

ELEMENT FROM TO	TYPE/TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	0	0	3	1	7	2	593.	1.000	1.000	1.000	SC374
280		0	0	3	1	5	1	583.	1.300	1.000	1.000	2
280	TNGT	0	0	3	5	1	1	583.	1.300	1.000	1.000	SC374
285		0	0	3	5	1	1	590.	1.300	1.000	1.000	2
285	TNGT	0	0	3	1	5	1	590.	1.300	1.000	1.000	SC374
290		0	0	3	1	6	1	501.	1.000	1.000	1.000	2
290	TNGT	0	0	1	1	6	1	501.	1.000	1.000	1.000	SC374
290A		0	0	1	1	2	0	210.	1.000	1.000	1.000	2
290A	TNGT	0	0	1	1	2	0	210.	1.000	1.000	1.000	SC374
295		0	0	1	1	1	1	140.	1.000	1.000	1.000	2
295	TNGT	0	1	0	1	1	1	140.	1.000	1.000	1.000	SC374
300		0	1	0	1	1	0	154.	1.300	1.000	1.000	2
300	TNGT	1	0	0	1	1	0	154.	1.300	1.000	1.000	SC374
305		1	0	0	1	1	0	123.	1.000	1.000	1.000	2
305	TNGT	1	1	0	1	1	0	123.	1.000	1.000	1.000	SC374
310 B		1	1	0	1	1	0	124.	1.000	1.000	1.000	2
310 B	BEND	1	0	1	1	0	1	124.	1.000	1.000	1.000	SC374
310 M		1	0	1	1	1	1	119.	1.000	1.000	1.000	2
310 M	BEND	1	0	1	1	1	1	119.	1.000	1.000	1.000	SC374
310 E		0	1	1	0	1	1	102.	1.000	1.000	1.000	2
310 E	TNGT	0	1	1	0	1	1	102.	1.000	1.000	1.000	SC374
315		0	1	1	0	0	0	63.	1.300	1.000	1.000	2
315	TNGT	1	1	0	0	0	0	63.	1.300	1.000	1.000	SC374
320 B		1	1	0	0	0	0	54.	1.000	1.000	1.000	2
320 B	BEND	1	0	1	0	0	0	54.	1.000	1.000	1.000	SC374
320 M		1	0	1	0	0	0	55.	1.000	1.000	1.000	2
320 M	BEND	1	0	1	0	0	0	55.	1.000	1.000	1.000	SC374
320 E		0	1	1	0	0	0	44.	1.000	1.000	1.000	2
320 E	TNGT	0	1	1	0	0	0	44.	1.000	1.000	1.000	SC374
500		0	1	1	0	0	0	38.	1.000	1.000	1.000	2

*** AT THE MEMBER END 20 OF ELEMENT FROM 15 TO 20 , MAX. STRESS (PSI) IS 3750.

TIME FOR ME101P2 29.645

*XQT *ME101.ME101S . WTO1

ME101S VERSION/SEP21 (SAP) 4 261.0 254.5

CORE CHANGED FROM 28.37 TO 34.36
 TIME FOR ABOVE = 279.866 . NOW START *** NODAL POINT INPUT ***

CORE CHANGED FROM 34.36 TO 47.50
 TIME FOR ABOVE = .644 . NOW START *** BOUNDARY ELEMENT STIFFNESSES ***

CORE CHANGED FROM 47.50 TO 34.36
 CORE CHANGED FROM 34.36 TO 49.15
 TIME FOR ABOVE = 2.807 . NOW START *** BEAM ELEMENT STIFFNESSES ***

CORE CHANGED FROM 49.15 TO 34.36
 CORE CHANGED FROM 34.36 TO 49.14
 TIME FOR ABOVE = 17.116 . NOW START *** CURVED ELEMENT STIFFNESSES ***

CORE CHANGED FROM 49.14 TO 34.36

***** EQUATION SOLUTION PARAMETERS	***** TOTAL NUMBER OF EQUATIONS	534
MAXIMUM BANDWIDTH	18 NUMBER OF EQUATIONS PER BLOCK	534
NUMBER OF BLOCKS	1 VALUE OF MTOT	226155

CORE CHANGED FROM 34.36 TO 70.84
 TIME FOR ABOVE = 3.097 . NOW START *** INPUT OF NODAL LOADS AND MASSES ***

CORE CHANGED FROM 70.84 TO 34.36
 TIME FOR ABOVE = .400 . NOW START *** COMPUTATION OF INDEXES ***

CORE CHANGED FROM 34.36 TO 79.11
 TIME FOR ABOVE = 10.388 . NOW START *** ASSEMBLY OF EQUATIONS ***

CORE CHANGED FROM 79.11 TO 131.50
 TIME FOR ABOVE = 1.878 . NOW START *** EQUATION REDUCTION - SESOL ***

TIME FOR ABOVE = .008 . NOW START *** SESOL *** BLOCK 1 OF 1 BLOCKS. **

TIME FOR ABOVE = 3.314 . NOW START *** BACKSUBSTITUTION ***

CORE CHANGED FROM 131.50 TO 84.54
 CORE CHANGED FROM 84.54 TO 85.60

EXECUTION TIME: NODE	ELEMENTS	NODE LOADS	ASSEMBLY	SOLUTION	PARTICULAR	TOTAL
.646	23.156	.408	12.130	6.533	.011	42.885

TIME FOR ABOVE = 3.092 . NOW START *** E N D S A P ***

*XQT *ME101.ME101P1 . WTO1

ME101P1 VERSION/SEP21
 SRSS
 .00000 0

PARAMETERS

NEQB	LL	NUMNP	NEQ	LB	NBLOCK	NUMN1	NRES	NDISPR	NMODPR	IFIR	N224WD	NELTYP	MAXELK	MDOF	NF
534	26	89	534	26	1	1	0	26	26	0	28	3	78	12	0

NCURVE MBAND MTSAV
 1 18 162855

STATIC

LB= 26

*** CORE CHANGED FROM 33043 TO 164363 DECIMAL WORDS ***
 P1TEMP CASE 2 DI AE
 #TIME FOR ME101P1# 26.451

STRESSES AND LOCAL FORCES AND MOMENTS

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•XQT •ME101.ME101P2

. WTO1

ME101P2 VERSION/MARO4

*** CORE CHANGED FROM 33763 TO 39763 DECIMAL WORDS ***

*** CORE CHANGED FROM 39763 TO 43365 DECIMAL WORDS ***

*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : WTO1

			GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
DATA PT	TYPE	TITLE	FX	FY	FZ	MX	MY	MZ	
5	ANC		-8.	-16.	4.	6.	0.	14.	
25	RAD		4.	0.	9.	0.	0.	0.	
50	RAD		0.	-62.	0.	0.	0.	0.	
65	RAD		2.	0.	0.	0.	0.	0.	
65	RAD		0.	-68.	0.	0.	0.	0.	
85	RAD		3.	0.	0.	0.	0.	0.	
85	RAD		0.	0.	4.	0.	0.	0.	
95	RAD		0.	-96.	0.	0.	0.	0.	
105	RAD		2.	0.	0.	0.	0.	0.	
115	RAD		0.	27.	0.	0.	0.	0.	
115	RAD		0.	0.	-24.	0.	0.	0.	
130	RAD		-2.	0.	0.	0.	0.	0.	
130	RAD		0.	0.	12.	0.	0.	0.	
135	RAD		-1.	0.	0.	0.	0.	0.	
135	RAD		0.	0.	-11.	0.	0.	0.	
140	RAD		0.	0.	0.	0.	0.	0.	
140	RAD		0.	0.	5.	0.	0.	0.	
145	ANC		-1.	-91.	0.	-1.	0.	1.	
150	RAD		0.	0.	0.	0.	0.	0.	
150	RAD		0.	0.	0.	0.	0.	0.	
160	RAD		0.	0.	0.	0.	0.	0.	
165	SPD		0.	-26.	0.	0.	0.	0.	
170	RAD		0.	0.	-3.	0.	0.	0.	
185	RAD		0.	0.	0.	0.	0.	0.	
185	RAD		0.	0.	3.	0.	0.	0.	
190	RAD		-0.	0.	0.	0.	0.	0.	
190	RAD		0.	0.	1.	0.	0.	0.	
195	RAD		0.	0.	0.	0.	0.	0.	
195	RAD		0.	0.	-0.	0.	0.	0.	
205	RAD		-0.	0.	0.	0.	0.	0.	
205	RAD		0.	-33.	0.	0.	0.	0.	
210	RAD		0.	0.	0.	0.	0.	0.	
210	RAD		0.	-6.	0.	0.	0.	0.	
215	RAD		0.	0.	0.	0.	0.	0.	
215	RAD		0.	-17.	0.	0.	0.	0.	

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		1.	0.	0.	0.	0.	0.
220	RAD		0.	-17.	0.	0.	0.	0.
230	RAD		0.	-15.	0.	0.	0.	0.
230	RAD		0.	0.	-1.	0.	0.	0.
235	RAD		0.	-17.	0.	0.	0.	0.
235	RAD		0.	0.	0.	0.	0.	0.
240	RAD		0.	-13.	0.	0.	0.	0.
240	RAD		0.	0.	1.	0.	0.	0.
250	RAD		2.	0.	0.	0.	0.	0.
250	RAD		0.	-9.	0.	0.	0.	0.
260	RAD		0.	-9.	0.	0.	0.	0.
260	RAD		0.	0.	0.	0.	0.	0.
275	RAD		-3.	0.	0.	0.	0.	0.
275	RAD		0.	0.	-2.	0.	0.	0.
290	RAD		1.	0.	0.	0.	0.	0.
290	RAD		0.	0.	-3.	0.	0.	0.
295	RAD		-1.	0.	0.	0.	0.	0.
295	RAD		0.	0.	1.	0.	0.	0.
305	RAD		0.	-50.	0.	0.	0.	0.
500	ANC		1.	-4.	3.	1.	-6.	1.

ACTIONS ON SUPPORTS AND ANCHORS

ME101/I2

DATE 040182

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : W01

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		-8	-16	4	6	0	14	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		10	0	0	0	0	0	.391	.000	.920						
50	RAD		-62	0	0	0	0	0	.000	1.00	.000						
65	RAD		2	0	0	0	0	0	1.00	.000	.000						
65	RAD		-68	0	0	0	0	0	.000	1.00	.000						
85	RAD		3	0	0	0	0	0	1.00	.000	.000						
85	RAD		4	0	0	0	0	0	.000	.000	1.00						
95	RAD		-96	0	0	0	0	0	.000	1.00	.000						
105	RAD		2	0	0	0	0	0	1.00	.000	.000						
115	RAD		27	0	0	0	0	0	.000	1.00	.000						
115	RAD		-24	0	0	0	0	0	.000	.000	1.00						
130	RAD		-2	0	0	0	0	0	1.00	.000	.000						
130	RAD		12	0	0	0	0	0	.000	.000	1.00						
135	RAD		-1	0	0	0	0	0	1.00	.000	.000						
135	RAD		-11	0	0	0	0	0	.000	.000	1.00						
140	RAD		0	0	0	0	0	0	1.00	.000	.000						
140	RAD		5	0	0	0	0	0	.000	.000	1.00						
145	ANC		-1	-91	0	-1	0	1	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		0	0	0	0	0	0	1.00	.000	.000						
150	RAD		0	0	0	0	0	0	.000	.000	1.00						
160	RAD		0	0	0	0	0	0	.000	.000	1.00						
165	SPD		-26	0	0	0	0	0	.000	1.00	.000						
170	RAD		-3	0	0	0	0	0	.000	.000	1.00						
185	RAD		0	0	0	0	0	0	1.00	.000	.000						
185	RAD		3	0	0	0	0	0	.000	.000	1.00						
190	RAD		-0	0	0	0	0	0	1.00	.000	.000						
190	RAD		1	0	0	0	0	0	.000	.000	1.00						
195	RAD		0	0	0	0	0	0	1.00	.000	.000						
195	RAD		-0	0	0	0	0	0	.000	.000	1.00						
205	RAD		-0	0	0	0	0	0	1.00	.000	.000						
205	RAD		-33	0	0	0	0	0	.000	1.00	.000						
210	RAD		0	0	0	0	0	0	1.00	.000	.000						
210	RAD		-6	0	0	0	0	0	.000	1.00	.000						
215	RAD		0	0	0	0	0	0	1.00	.000	.000						
215	RAD		-17	0	0	0	0	0	.000	1.00	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		1	0	0	0	0	0	1.00	.000	.000						
220	RAD		-17	0	0	0	0	0	.000	1.00	.000						
230	RAD		-15	0	0	0	0	0	.000	1.00	.000						
230	RAD		-1	0	0	0	0	0	.000	.000	1.00						
235	RAD		-17	0	0	0	0	0	.000	1.00	.000						
235	RAD		0	0	0	0	0	0	.000	.000	1.00						
240	RAD		-13	0	0	0	0	0	.000	1.00	.000						
240	RAD		1	0	0	0	0	0	.000	.000	1.00						
250	RAD		2	0	0	0	0	0	1.00	.000	.000						
250	RAD		-9	0	0	0	0	0	.000	1.00	.000						
260	RAD		-9	0	0	0	0	0	.000	1.00	.000						
260	RAD		0	0	0	0	0	0	.000	.000	1.00						
275	RAD		-3	0	0	0	0	0	1.00	.000	.000						
275	RAD		-2	0	0	0	0	0	.000	.000	1.00						
290	RAD		1	0	0	0	0	0	1.00	.000	.000						
290	RAD		-3	0	0	0	0	0	.000	.000	1.00						
295	RAD		-1	0	0	0	0	0	1.00	.000	.000						
295	RAD		1	0	0	0	0	0	.000	.000	1.00						
305	RAD		-50	0	0	0	0	0	.000	1.00	.000						
500	ANC		1	-4	3	1	-6	1	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : WTO1

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.000	-.001	.000	.000108	.000009	.000261
15		.000	-.007	.000	.000104	.000003	.000271
20		.000	-.008	.000	.000020	-.000029	.000089
25		.000	-.008	-.000	.000057	-.000029	.000073
30		.001	-.008	-.000	.000057	-.000029	.000073
35		.001	-.008	-.001	.000057	-.000029	.000073
40		.002	-.008	-.001	.000057	-.000029	.000073
45 B		-.001	-.008	-.003	-.000693	-.000103	.000066
45 E		-.002	-.003	-.008	-.001171	-.000131	-.000093
50		-.002	.000	-.008	-.001084	-.000119	-.000152
55		-.003	.008	-.008	-.000136	.000098	-.000484
60		-.000	.006	-.005	.001941	.000142	-.000844
65		.000	.000	-.005	.002314	.000083	-.000786
70		.000	-.026	-.005	.002448	-.000045	-.000596
75		-.001	-.047	-.005	.001051	-.000086	-.000361
80 B		-.001	-.051	-.005	.000687	-.000071	-.000282
80 E		-.000	-.054	-.002	.000702	.000015	-.000155
85		.000	-.054	.000	.000739	.000054	-.000127
90		-.001	-.054	-.007	-.002260	.000439	.000284
95		.008	.000	-.007	-.001908	.000556	.000767
100 B		.012	.007	-.007	-.000686	.000563	.000920
100 E		.009	.009	-.007	.000144	.000568	.001102
105		.000	.009	-.005	.000394	.000549	.001280
110		-.007	.009	-.003	.000331	.000537	.001422
115		-.007	.000	.000	.000091	.000396	.001390
120 B		-.007	-.021	.003	-.000764	.000063	.000607
120 E		-.006	-.019	.003	-.000991	.000221	.000472
125		.001	-.000	.003	-.000789	.000401	.000138
130		.000	-.000	.000	-.000543	.000387	.000087
130A		-.001	-.000	-.002	.000139	.000335	-.000015
135		.000	-.000	.000	-.000026	.000282	-.000027
135A		.000	-.000	-.004	-.000211	.000230	-.000001
137		.000	-.000	-.003	.000414	.000177	.000009
138		.002	-.009	-.003	.000925	.000177	.000009

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	-.000	.000	.000055	.000133	.000006
140A		.000	-.000	.000	-.000013	.000066	-.000002
145		.000	.000	.000	.000000	.000000	.000000
145A		-.002	.000	-.001	-.000027	.000013	.000062
150		.000	.000	.000	.000107	.000025	-.000251
155		.001	.000	.001	.000137	.000027	-.000320
160		.001	-.007	.000	.000371	.000005	-.000006
165		.001	.000	.000	.000654	.000016	.000070
170		.001	.000	.000	.000676	.000023	-.000007
175		.001	.000	.000	.000702	.000026	-.000031
180 B		.002	-.006	.005	.000522	.000024	.000006
180 E		.002	-.006	.007	.000372	.000024	.000015
185		.000	-.006	.000	-.000236	.000021	.000024
185A		-.000	-.006	-.002	.000019	.000019	-.000004
190		.000	-.006	.000	.000157	.000017	-.000008
190A		.000	-.006	.004	.000060	.000015	.000000
195		.000	-.006	.000	-.000401	.000014	.000008
200		-.000	-.006	-.005	-.000678	.000013	.000015
205		.000	.000	-.005	-.000556	.000009	.000027
205A		.000	.003	-.005	.000087	-.000002	.000056
210		.000	.000	-.005	.000202	-.000002	.000084
210A		.000	-.003	-.005	-.000083	.000001	.000124
215		.000	.000	-.005	.000135	-.000002	.000164
215A		-.000	-.011	-.005	-.000026	-.000003	.000219
220		.000	.000	-.005	-.000030	.000012	.000275
225 B		-.000	-.008	-.005	.000458	-.000065	.000311
225 E		-.001	-.009	-.005	.000440	-.000121	.000326
230		-.001	.000	.000	.000323	-.000127	.000007
230A		-.001	-.006	.002	.000188	.000021	.000013
235		-.001	.000	.000	.000053	.000041	-.000060
235A		-.001	-.009	-.001	-.000084	-.000001	-.000037
240		-.001	.000	.000	-.000220	-.000036	.000209
245		-.001	-.002	.000	-.000356	.000086	-.000238
250		.000	.000	.000	-.000345	.000128	-.000357
255 B		.002	.005	.000	-.000369	.000098	-.000611
255 E		.002	.003	-.000	-.000451	-.000007	-.000746
260		.002	.000	.000	-.000493	-.000065	-.000809
265 B		.002	-.024	.012	-.001005	-.000234	.000088
265 E		.002	-.022	.012	-.001036	-.000206	.000137
270		.000	-.010	.014	-.000921	-.000164	.000102
275		.000	-.010	.000	-.000575	-.000186	-.000026
280		-.002	-.010	-.001	.000667	-.000253	.000014
285		.000	-.005	-.001	.000601	-.000263	-.000015
290		.000	-.005	.000	.000471	-.000269	-.000024

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.001	-.005	.000	-.000226	-.000338	-.000032
295		.000	-.005	.000	.000442	-.000406	.000152
300		-.002	-.005	.006	.000920	-.000428	.000225
305		.001	.000	.006	.000974	-.000443	.000267
310 B		.001	.001	.006	.000938	-.000447	.000275
310 E		.003	.004	.004	.000676	-.000471	.000283
315		.003	.001	-.001	.000332	-.000411	.000219
320 B		.002	.001	.001	.000204	-.000326	.000159
320 E		.001	.000	.001	.000074	-.000201	.000070
500		.000	.000	.000	.000000	.000000	.000000

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***

DIRECTION COSINES AND GLOBAL FORCES AND MOMENTS

ME101/I2

DATE 040182

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : WTO1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	8	16	-4	-6	-0	-14
		-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	-8	-15	4	3	0	8
10 15	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	8	15	-4	-3	-0	-8
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	-8	-12	4	-3	-0	-7
15 20	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	8	-8	-4	3	0	7
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	-8	11	4	0	-1	0
20 25	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	4	47	9	-3	0	1
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	-4	-46	-9	0	0	0
25 30	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	46	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	-45	0	0	0	0
30 35	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	25	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	-24	0	0	0	0
35 40	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	4	0	0	0	0
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	0	-2	0	0	0	0
20 45 B	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	-58	-13	3	1	-2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-4	61	13	-18	-1	-3
45 B 45 M	BEND	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	-61	-13	18	1	3
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	-4	62	13	-15	-0	-4
45 M 45 E	BEND	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	4	-62	-13	15	0	4
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-4	63	13	2	1	-4
45 E 50	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	-63	-13	-2	-1	4
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-4	63	13	14	1	-4
50 55	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	-2	-13	-14	-1	4
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-4	5	13	17	6	-4
55 60	TNGT	-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	4	-5	-13	-17	-6	4
		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	-4	9	13	24	-5	3
60 65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	-9	-13	-24	5	-3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-4	10	13	27	-4	3

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65 70	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	59	-13	-27	4	-3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-2	-57	.13	-21	-2	3
70 75	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	7	-13	21	2	-3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-2	-4	13	-26	0	3
75 80 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	-46	-13	26	-0	-3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-2	47	13	-10	1	3
80 B 80 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	2	-47	-13	10	-1	-3
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	-2	48	13	2	2	3
80 M 80 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	2	-48	-13	-2	-2	-3
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	-2	49	13	4	2	2
80 E 85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	-49	-13	-4	-2	-2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-2	50	13	1	2	2
85 90	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-50	-17	-1	-2	-2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	56	17	-42	2	4
90 95	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-1	-56	-17	42	-2	-4
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	61	17	51	1	4
95 100 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-1	36	-17	-51	-1	-4
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	-34	17	33	0	4
100 B 100 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	-1	34	-17	-33	0	-4
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	1	-33	17	21	-0	4
100 M 100 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	-1	33	-17	-21	0	-4
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	1	-32	17	12	-0	4
100 E 105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	32	-17	-12	0	-4
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	-31	17	1	-0	5
105 110	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	31	-17	-1	0	-5
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	-29	17	-6	-0	6
110 115	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	-3	29	-17	6	0	-6
		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	3	-28	17	-6	-9	-8
115 120 B	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	-3	1	7	6	9	8
		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	3	4	-7	-6	3	-5
120 B 120 M	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	-3	-4	7	6	-3	5
		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	3	5	-7	-6	4	-3
120 M 120 E	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	-3	-5	7	6	-4	3
		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	3	6	-7	-4	4	-3

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E TNGT 125		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	-3	-6	7	4	-4	3
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	3	11	-7	9	-0	-3
125 TNGT 130		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	-11	7	-9	0	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	12	-7	12	-0	-2
130 TNGT 130A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-12	-6	-12	0	2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	16	6	3	-0	-1
130A TNGT 135		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-16	-6	-3	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	20	6	-6	-0	0
135 TNGT 135A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-20	6	6	0	-0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	25	-6	2	-0	0
135A TNGT 137		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-25	6	-2	0	-0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	29	-6	11	-0	0
137 TNGT 138		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	0	23	0	-19	0	0
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	0	-20	0	0	0	0
137 TNGT 140		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-52	6	8	0	0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	55	-6	-1	-0	-0
140 TNGT 140A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-55	0	1	0	0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	61	-0	-0	-0	0
140A TNGT 145		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-61	0	0	0	0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	66	-0	0	-0	0
145 TNGT 145A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	24	0	1	0	-1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-16	-0	0	0	-1
145A TNGT 150		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	16	0	-0	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-8	-0	1	0	-3
150 TNGT 155		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	8	0	-1	0	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	-6	-0	1	0	-3
155 TNGT 160		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	6	0	-1	0	3
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-0	0	-0	1	-0	5
160 TNGT 165		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	-0	-0	-1	0	-5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-0	8	0	1	0	-8
165 TNGT 170		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	17	-0	-1	-0	8
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-0	-17	0	1	1	-4
170 TNGT 175		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	0	17	3	-1	-1	4
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-0	-16	-3	1	-0	1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	0	16	3	-1	0	-1
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	-0	-13	-3	-7	0	1
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	0	13	3	7	0	-1
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	-0	-13	-3	-8	0	0
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	0	13	3	8	0	-0
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	-0	-12	-3	-8	0	0
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	12	3	8	0	-0
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	-1	-3	3	0	-0
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	1	-1	-3	0	0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	4	1	2	0	-0
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	-4	-1	-2	0	0
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	9	1	1	0	0
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-9	-1	-1	0	0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	15	1	-2	0	0
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-15	-1	2	0	0
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	21	1	-5	0	0
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	-21	-1	5	0	0
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	23	1	-6	0	0
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-0	-23	-1	6	0	-0
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	25	1	12	-0	0
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	8	-1	-12	0	-0
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	-3	1	3	0	0
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	3	-1	-3	0	-0
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	1	1	1	0	0
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	5	-1	-1	0	-0
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	2	1	-3	0	0
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	-2	-1	3	0	-0
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	8	1	8	0	0
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	9	-1	-8	0	-0
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	0	1	-5	0	0
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	-0	-1	5	0	-0
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	9	1	10	0	0
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-1	8	-1	-10	-0	-0
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	-2	1	0	-1	0

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	-1	2	-1	0	1	-0
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	1	-1	1	-0	-2	0
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	-1	1	-1	0	2	-0
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	1	-0	1	-1	-1	1
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-1	0	-1	1	1	-1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	1	7	1	-1	1	-8
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-1	8	0	1	-1	8
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	1	0	-0	-1	0	4
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-1	-0	0	-1	-0	-4
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	1	8	-0	-1	-0	-9
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-1	9	0	1	0	9
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	1	-0	0	-1	-0	5
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-1	0	0	1	0	-5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	1	8	0	-1	-0	-6
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-1	5	-1	1	0	6
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	1	3	1	-1	2	-3
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-1	-3	-1	1	-2	3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	4	1	1	1	-3
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	-3	4	-1	-1	-1	3
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	-1	1	-2	-2	-3
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	-3	1	-1	2	2	3
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	3	0	1	-2	-3	-3
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	-3	0	-1	2	3	3
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	3	1	1	-2	-3	-3
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-3	-1	-1	2	3	3
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	2	1	-2	-3	-3
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	-3	7	-1	2	3	3
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	4	1	-2	1	3
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	-3	-4	-1	2	-1	-3
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	4	1	-2	2	3
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	-3	-4	-1	2	-2	-3
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	3	5	1	-1	1	2
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	-3	-5	-1	1	-1	-2
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	3	8	1	5	-0	-4

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-3	-8	-1	-5	0	4
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	13	1	3	-0	1
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-13	1	-3	0	-1
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	26	-1	6	-0	-1
280	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	0	-26	1	-6	0	1
285		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	-0	28	-1	-10	-0	-1
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	-28	1	10	0	1
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-0	28	-1	-10	-0	-1
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-28	4	10	0	1
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	35	-4	-0	-0	1
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	-35	4	0	0	-1
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	42	-4	10	-0	2
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	-42	3	-10	0	-2
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	44	-3	12	-0	1
300	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	1	-44	3	-12	0	-1
305		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	-1	45	-3	-8	-1	1
305	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	1	5	3	8	1	-1
310 B		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	-1	-5	-3	-7	-1	1
310 B BEND		.000	.000	-1.000	-1.000	.000	.000	.000	1.000	.000	1	5	3	7	1	-1
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	-1	-4	-3	-6	-1	1
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	4	3	6	1	-1
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	-1	-3	-3	-5	0	-0
310 E TNGT		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	1	3	3	5	0	0
315		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	-1	-1	-3	-5	2	-2
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	1	3	5	-2	2
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	-1	0	-3	-4	2	-2
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	1	-0	3	4	-2	2
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	-1	1	-3	-3	3	-3
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	1	-1	3	3	-3	3
320 E		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	-1	2	-3	-2	4	-2
320 E TNGT		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	1	-2	3	2	-4	2
500		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	-1	4	-3	-1	6	-1

STRESSES AND LOCAL FORCES AND MOMENTS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : W101

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) .75IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
5	TNGT	-9	-16	-1	0	0	-15	1248.	1.000	1.000	1.000	SC374
10		9	15	1	0	-0	9	721.	1.300	1.000	1.000	2
10	TNGT	-9	-15	-1	0	0	-9	721.	1.300	1.000	1.000	SC374
15		9	12	1	0	0	-8	647.	1.300	1.000	1.000	2
15	TNGT	-9	8	-1	0	-0	8	647.	1.300	1.000	1.000	SC374
20		9	-11	1	0	1	0	77.	1.300	1.000	1.000	2
20	TNGT	-47	-9	4	0	-1	-3	307.	1.300	1.000	1.000	SC374
25		46	9	-4	0	0	0	0.	1.000	1.000	1.000	2
25	TNGT	-46	0	0	0	0	0	0.	1.000	1.000	1.000	SC374
30		45	0	0	0	0	0	0.	1.300	1.000	1.000	2
30	TNGT	-25	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
35		24	0	0	0	0	0	0.	1.300	1.000	1.000	2
35	TNGT	-4	0	0	0	0	0	0.	1.300	1.000	1.000	SC374
40		2	0	0	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	-58	-13	4	1	-2	3	323.	1.300	1.000	1.000	SC374
45 B		61	13	-4	-1	-3	-18	1527.	1.000	1.000	1.000	2
45 B	BEND	-61	-13	4	1	3	18	1527.	1.000	1.000	1.000	SC374
45 M		53	-34	-4	-3	-2	-15	1252.	1.000	1.000	1.000	2
45 M	BEND	-53	34	4	3	2	15	1252.	1.000	1.000	1.000	SC374
45 E		13	-63	-4	-4	-1	2	382.	1.000	1.000	1.000	2
45 E	TNGT	-13	63	4	4	1	-2	382.	1.000	1.000	1.000	SC374
50		13	-63	-4	-4	-1	14	1194.	1.000	1.000	1.000	2
50	TNGT	-13	2	4	4	1	-14	1194.	1.000	1.000	1.000	SC374
55		13	-5	-4	-4	-6	17	1531.	1.300	1.000	1.000	2
55	TNGT	-12	5	-7	15	6	-9	1531.	1.300	1.000	1.000	SC374
60		12	-9	7	-15	5	19	2061.	1.300	1.000	1.000	2
60	TNGT	-13	9	4	-3	-5	-24	2061.	1.300	1.000	1.000	SC374
65		13	-10	-4	3	4	27	2234.	1.000	1.000	1.000	2
65	TNGT	-13	-59	2	-3	-4	-27	2234.	1.000	1.000	1.000	SC374
70		13	57	-2	3	2	-21	1737.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) .75IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
70 75	TNGT	-13 13	-7 4	2 -2	-3 3	-2 -0	21 -26	1737. 2167.	1.300 1.300	1.000 1.000	1.000 1.000	SC374 2
75 80 B	TNGT	-13 13	46 -47	2 -2	-3 3	0 -1	26 -10	2167. 878.	1.300 1.000	1.000 1.000	1.000 1.000	SC374 2
80 B 80 M	BEND	-13 43	-47 24	-2 2	-3 3	-1 -1	-10 -2	878. 326.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
80 M 80 E	BEND	-43 49	-24 -13	-2 2	-3 2	1 -2	2 -4	326. 419.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
80 E 85	TNGT	-49 50	-13 13	2 -2	-2 2	-2 2	-4 1	419. 224.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
85 90	TNGT	-50 56	-17 17	-1 1	-2 2	-2 4	-1 -42	224. 3472.	1.000 1.300	1.000 1.000	1.000 1.000	SC374 2
90 95	TNGT	-17 17	56 -61	-1 1	-4 4	2 -1	42 51	3472. 4187.	1.300 1.000	1.000 1.000	1.000 1.000	SC374 2
95 100 B	TNGT	-17 17	-36 34	-1 1	-4 4	1 0	-51 33	4187. 2758.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
100 B 100 M	BEND	-17 -11	34 -36	1 -1	-4 3	0 -3	33 -21	2758. 1780.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
100 M 100 E	BEND	11 -32	36 -17	1 -1	-3 -0	3 -4	21 -12	1780. 1066.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
100 E 105	TNGT	32 -31	-17 17	-1 1	0 -0	-4 5	-12 1	1066. 427.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
105 110	TNGT	31 -29	-17 17	-3 3	0 -0	-5 6	-1 -6	427. 729.	1.000 1.300	1.000 1.000	1.000 1.000	SC374 2
110 115	TNGT	3 -3	-29 28	-17 17	-6 6	-0 9	-6 -8	729. 1137.	1.300 1.000	1.000 1.000	1.000 1.000	SC374 2
115 120 B	TNGT	3 -3	-1 -4	7 -7	-6 6	-9 -3	8 -5	1137. 690.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
120 B 120 M	BEND	3 -7	7 -3	-4 5	-6 1	5 -6	-3 4	690. 651.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
120 M 120 E	BEND	7 -7	3 3	-5 6	-1 -3	6 -4	-4 4	651. 530.	1.000 1.000	1.000 1.000	1.000 1.000	SC374 2
120 E 125	TNGT	7 -7	6 -11	-3 3	3 -3	4 0	4 9	530. 806.	1.000 1.300	1.000 1.000	1.000 1.000	SC374 2

STRESSES AND LOCAL FORCES AND MOMENTS

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ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) .75IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
125	TNGT	-11	7	-3	0	3	-9	806.	1.300	1.000	1.000	SC374
130		12	-7	3	-0	-2	12	995.	1.000	1.000	1.000	2
130	TNGT	-12	-6	-1	0	2	-12	995.	1.000	1.000	1.000	SC374
130A		16	6	1	-0	-1	3	239.	1.000	1.000	1.000	2
130A	TNGT	-16	-6	-1	0	1	-3	239.	1.000	1.000	1.000	SC374
135		20	6	1	-0	0	-6	527.	1.000	1.000	1.000	2
135	TNGT	-20	6	0	0	-0	6	527.	1.000	1.000	1.000	SC374
135A		25	-6	-0	-0	0	2	200.	1.000	1.000	1.000	2
135A	TNGT	-25	6	0	0	-0	-2	200.	1.000	1.000	1.000	SC374
137		29	-6	-0	-0	0	11	919.	1.000	1.000	1.000	2
137	TNGT	0	-23	0	0	0	-19	1602.	1.000	1.000	1.000	SC374
138		0	20	0	0	0	0	0.	1.300	1.000	1.000	2
137	TNGT	-52	6	0	0	0	8	686.	1.000	1.000	1.000	SC374
140		55	-6	-0	-0	-0	-1	85.	1.000	1.000	1.000	2
140	TNGT	-55	0	0	0	0	1	85.	1.000	1.000	1.000	SC374
140A		61	-0	0	-0	0	-0	41.	1.000	1.000	1.000	2
140A	TNGT	-61	0	0	0	0	0	41.	1.000	1.000	1.000	SC374
145		66	-0	0	-0	0	0	53.	1.000	1.000	1.000	2
145	TNGT	24	0	1	0	-1	1	126.	1.000	1.000	1.000	SC374
145A		-16	-0	-1	0	-1	0	63.	1.000	1.000	1.000	2
145A	TNGT	16	0	1	0	1	-0	63.	1.000	1.000	1.000	SC374
150		-8	-0	-1	0	-3	1	251.	1.000	1.000	1.000	2
150	TNGT	8	0	0	0	3	-1	251.	1.000	1.000	1.000	SC374
155		-6	-0	-0	0	-3	1	260.	1.300	1.000	1.000	2
155	TNGT	0	6	0	-1	0	3	260.	1.300	1.000	1.000	SC374
160		-0	0	-0	1	-0	5	400.	1.000	1.000	1.000	2
160	TNGT	0	-0	-0	-1	0	-5	400.	1.000	1.000	1.000	SC374
165		-0	8	0	1	0	-8	646.	1.000	1.000	1.000	2
165	TNGT	0	17	-0	-1	-0	8	646.	1.000	1.000	1.000	SC374
170		-0	-17	0	1	1	-4	334.	1.000	1.000	1.000	2
170	TNGT	0	17	3	-1	-1	4	334.	1.000	1.000	1.000	SC374
175		-0	-16	-3	1	-0	1	118.	1.300	1.000	1.000	2
175	TNGT	13	-9	0	-0	-1	-1	118.	1.300	1.000	1.000	SC374
180 B		-11	8	-0	0	0	-7	592.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) .75IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
180 B	BEND	11	8	-0	-0	0	-7	592.	1.000	1.000	1.000	SC374
180 M		-13	-2	0	0	-0	8	660.	1.000	1.000	1.000	2
180 M	BEND	13	2	-0	-0	0	-8	660.	1.000	1.000	1.000	SC374
180 E		-12	3	0	0	-0	8	658.	1.000	1.000	1.000	2
180 E	TNGT	12	3	0	0	-0	8	658.	1.000	1.000	1.000	SC374
185		-1	-3	-0	0	-0	3	234.	1.000	1.000	1.000	2
185	TNGT	1	-1	-0	0	0	-3	234.	1.000	1.000	1.000	SC374
185A		4	1	0	0	-0	2	145.	1.000	1.000	1.000	2
185A	TNGT	-4	-1	-0	0	0	-2	145.	1.000	1.000	1.000	SC374
190		9	1	0	0	0	1	58.	1.000	1.000	1.000	2
190	TNGT	-9	-1	0	0	0	-1	58.	1.000	1.000	1.000	SC374
190A		15	1	0	0	0	-2	188.	1.000	1.000	1.000	2
190A	TNGT	-15	-1	0	0	0	2	188.	1.000	1.000	1.000	SC374
195		21	1	0	0	0	-5	434.	1.000	1.000	1.000	2
195	TNGT	-21	-1	-0	0	0	5	434.	1.000	1.000	1.000	SC374
200		23	1	0	0	0	-6	502.	1.300	1.000	1.000	2
200	TNGT	-1	23	-0	-0	0	6	502.	1.300	1.000	1.000	SC374
205		1	-25	0	0	0	12	981.	1.000	1.000	1.000	2
205	TNGT	-1	-8	0	-0	-0	-12	981.	1.000	1.000	1.000	SC374
205A		1	3	0	0	0	3	222.	1.000	1.000	1.000	2
205A	TNGT	-1	-3	0	-0	0	-3	222.	1.000	1.000	1.000	SC374
210		1	-1	0	0	0	1	80.	1.000	1.000	1.000	2
210	TNGT	-1	-5	0	-0	0	-1	80.	1.000	1.000	1.000	SC374
210A		1	-2	0	0	0	-3	223.	1.000	1.000	1.000	2
210A	TNGT	-1	2	0	-0	0	3	223.	1.000	1.000	1.000	SC374
215		1	-8	0	0	0	8	692.	1.000	1.000	1.000	2
215	TNGT	-1	-9	0	-0	0	-8	692.	1.000	1.000	1.000	SC374
215A		1	-0	0	0	0	-5	434.	1.000	1.000	1.000	2
215A	TNGT	-1	0	0	-0	0	5	434.	1.000	1.000	1.000	SC374
220		1	-9	0	0	-0	10	829.	1.000	1.000	1.000	2
220	TNGT	-1	-8	-1	-0	0	-10	829.	1.000	1.000	1.000	SC374
225 B		1	2	1	0	1	0	117.	1.000	1.000	1.000	2
225 B	BEND	-1	-1	2	-0	0	1	117.	1.000	1.000	1.000	SC374
225 M		1	-0	-1	0	-1	-2	134.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) .75IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	-1	0	1	0	1	2	134.	1.000	1.000	1.000	SC374
225 E	1	-1	-0	-1	-1	-1	128.	1.000	1.000	1.000	2
225 E TNGT	-1	0	-1	1	1	-1	128.	1.000	1.000	1.000	SC374
230	1	7	1	-1	1	-8	659.	1.000	1.000	1.000	2
230 TNGT	-1	8	0	1	-1	8	659.	1.000	1.000	1.000	SC374
230A	1	0	-0	-1	0	4	326.	1.000	1.000	1.000	2
230A TNGT	-1	-0	0	1	-0	-4	326.	1.000	1.000	1.000	SC374
235	1	8	-0	-1	-0	-9	726.	1.000	1.000	1.000	2
235 TNGT	-1	9	0	1	0	9	726.	1.000	1.000	1.000	SC374
235A	1	-0	0	-1	-0	5	408.	1.000	1.000	1.000	2
235A TNGT	-1	0	0	1	0	-5	408.	1.000	1.000	1.000	SC374
240	1	8	0	-1	-0	-6	518.	1.000	1.000	1.000	2
240 TNGT	-1	5	-1	1	0	6	518.	1.000	1.000	1.000	SC374
245	1	3	1	-1	2	-3	280.	1.300	1.000	1.000	2
245 TNGT	-1	3	-1	3	2	1	280.	1.300	1.000	1.000	SC374
250	1	-4	1	-3	-1	1	286.	1.000	1.000	1.000	2
250 TNGT	-1	-4	-3	3	1	-1	286.	1.000	1.000	1.000	SC374
255 B	1	1	3	-3	2	-2	323.	1.000	1.000	1.000	2
255 B BEND	-1	-3	1	3	2	2	323.	1.000	1.000	1.000	SC374
255 M	2	2	0	-3	1	-3	363.	1.000	1.000	1.000	2
255 M BEND	-2	-2	0	3	-1	3	363.	1.000	1.000	1.000	SC374
255 E	3	-1	1	-2	3	-3	378.	1.000	1.000	1.000	2
255 E TNGT	-3	-1	-1	2	3	3	378.	1.000	1.000	1.000	SC374
260	3	2	1	-2	-3	-3	392.	1.000	1.000	1.000	2
260 TNGT	-3	7	-1	2	3	3	392.	1.000	1.000	1.000	SC374
265 B	3	4	1	-2	1	3	322.	1.000	1.000	1.000	2
265 B BEND	-3	-1	4	2	-3	1	322.	1.000	1.000	1.000	SC374
265 M	3	-0	-4	-0	-3	-2	276.	1.000	1.000	1.000	2
265 M BEND	-3	0	4	0	-3	2	276.	1.000	1.000	1.000	SC374
265 E	3	-1	-5	1	2	-1	216.	1.000	1.000	1.000	2
265 E TNGT	-3	-5	1	-1	-1	-2	216.	1.000	1.000	1.000	SC374
270	3	8	-1	1	-0	-6	481.	1.300	1.000	1.000	2
270 TNGT	-8	-1	-3	0	4	-5	481.	1.300	1.000	1.000	SC374
275	13	1	3	-0	1	3	248.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI) .75IM/Z	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	-13	1	0	0	-1	-3	248.	1.000	1.000	1.000	SC374
280		26	-1	-0	-0	-1	6	484.	1.300	1.000	1.000	2
280	TNGT	-1	-26	0	-1	0	-6	484.	1.300	1.000	1.000	SC374
285		1	28	-0	1	-0	-10	813.	1.300	1.000	1.000	2
285	TNGT	-28	1	0	0	1	10	813.	1.300	1.000	1.000	SC374
290		28	-1	-0	-0	-1	-10	802.	1.000	1.000	1.000	2
290	TNGT	-28	4	-1	0	1	10	802.	1.000	1.000	1.000	SC374
290A		35	-4	1	-0	1	-0	60.	1.000	1.000	1.000	2
290A	TNGT	-35	4	-1	0	-1	0	60.	1.000	1.000	1.000	SC374
295		42	-4	1	-0	2	10	800.	1.000	1.000	1.000	2
295	TNGT	-42	3	1	0	-2	-10	800.	1.000	1.000	1.000	SC374
300		44	-3	-1	-0	1	12	974.	1.300	1.000	1.000	2
300	TNGT	-3	-44	1	1	0	-12	974.	1.300	1.000	1.000	SC374
305		3	45	-1	-1	-1	-8	643.	1.000	1.000	1.000	2
305	TNGT	-3	5	1	-1	1	8	643.	1.000	1.000	1.000	SC374
310 B		3	-5	-1	-1	-1	-7	610.	1.000	1.000	1.000	2
310 B	BEND	-3	-1	5	1	-7	1	610.	1.000	1.000	1.000	SC374
310 M		3	-1	-4	4	5	-1	494.	1.000	1.000	1.000	2
310 M	BEND	-3	1	4	-4	-5	1	494.	1.000	1.000	1.000	SC374
310 E		1	-3	-3	5	-0	0	449.	1.000	1.000	1.000	2
310 E	TNGT	-1	-3	3	-5	0	0	449.	1.000	1.000	1.000	SC374
315		1	1	-3	5	-2	-2	519.	1.300	1.000	1.000	2
315	TNGT	1	3	1	-2	2	5	519.	1.300	1.000	1.000	SC374
320 B		0	-3	-1	2	-2	-4	441.	1.000	1.000	1.000	2
320 B	BEND	-0	1	3	-2	-1	5	441.	1.000	1.000	1.000	SC374
320 M		-0	-2	-3	2	-2	-4	408.	1.000	1.000	1.000	2
320 M	BEND	0	2	3	-2	2	4	408.	1.000	1.000	1.000	SC374
320 E		-1	-2	-3	0	-4	-3	406.	1.000	1.000	1.000	2
320 E	TNGT	1	2	3	0	4	3	406.	1.000	1.000	1.000	SC374
500		-1	-4	-3	0	-6	-1	468.	1.000	1.000	1.000	2

*** AT THE MEMBER END 95 OF ELEMENT FROM 95 TO 100 B , MAX. STRESS (PSI) IS 4187.

TIME FOR ME101P2 6.627

*XQT *ME101.ME101S . SEISO1

ME101S VERSION/SEP21 (SAP)

4 100.0 93.5

NUMBER OF ITERATION VECTORS (NAD) ***** 46

CORE CHANGED FROM 28.37 TO 34.36

TIME FOR ABOVE = 355.768 . NOW START *** NODAL POINT INPUT ***
 TIME FOR ABOVE = .549 . NOW START *** BOUNDARY ELEMENT STIFFNESSES ***
 TIME FOR ABOVE = 1.110 . NOW START *** BEAM ELEMENT STIFFNESSES ***
 TIME FOR ABOVE = 6.148 . NOW START *** CURVED ELEMENT STIFFNESSES ***

***** EQUATION SOLUTION PARAMETERS ***** TOTAL NUMBER OF EQUATIONS 534
 MAXIMUM BANDWIDTH 18 NUMBER OF EQUATIONS PER BLOCK 129
 NUMBER OF BLOCKS 5 VALUE OF MTOT 65155

TIME FOR ABOVE = 1.101 . NOW START *** INPUT OF NODAL LOADS AND MASSES ***
 TIME FOR ABOVE = .116 . NOW START *** COMPUTATION OF INDEXES ***

CORE CHANGED FROM 34.36 TO 35.00

TIME FOR ABOVE = 3.901 . NOW START *** ASSEMBLY OF EQUATIONS ***

CORE CHANGED FROM 35.00 TO 40.59

TIME FOR ABOVE = 1.019 . NOW START *** FORMING INITIAL VECTORS ***

85	86	51	115	14	39
91	68	15	229	248	231
217	206	219	205	158	195
349	350	381	337	380	303
301	338	291	475	392	393
457	404	477	391	416	513
517	524	519	523	518	525
529					

TIME FOR ABOVE = .322 . NOW START *** FACTOR OF STIFFNESS MATRIX ***
 TIME FOR ABOVE = .008 . NOW START *** DECOMP *** BLOCK 1 OF 5 BLOCKS. **
 TIME FOR ABOVE = .253 . NOW START *** DECOMP *** BLOCK 2 OF 5 BLOCKS. **
 TIME FOR ABOVE = .203 . NOW START *** DECOMP *** BLOCK 3 OF 5 BLOCKS. **
 TIME FOR ABOVE = .200 . NOW START *** DECOMP *** BLOCK 4 OF 5 BLOCKS. **
 TIME FOR ABOVE = .200 . NOW START *** DECOMP *** BLOCK 5 OF 5 BLOCKS. **

CORE CHANGED FROM 40.59 TO 68.99

TIME FOR ABOVE = .064 . NOW START *** SUBSPACE ITERATION EIGENVALUES ***
 TIME FOR ABOVE = .006 . NOW START SUBSPACE ITERATION CYCLE NO. 1 *****
 TIME FOR ABOVE = 83.279 . NOW START SUBSPACE ITERATION CYCLE NO. 2 *****
 TIME FOR ABOVE = 84.865 . NOW START SUBSPACE ITERATION CYCLE NO. 3 *****
 TIME FOR ABOVE = 73.699 . NOW START SUBSPACE ITERATION CYCLE NO. 4 *****
 TIME FOR ABOVE = 69.218 . NOW START SUBSPACE ITERATION CYCLE NO. 5 *****
 TIME FOR ABOVE = 62.438 . NOW START SUBSPACE ITERATION CYCLE NO. 6 *****
 TIME FOR ABOVE = 59.637 . NOW START SUBSPACE ITERATION CYCLE NO. 7 *****
 TIME FOR ABOVE = 57.893 . NOW START SUBSPACE ITERATION CYCLE NO. 8 *****
 TIME FOR ABOVE = 56.908 . NOW START SUBSPACE ITERATION CYCLE NO. 9 *****
 TIME FOR ABOVE = 56.257 . NOW START SUBSPACE ITERATION CYCLE NO. 10 *****
 TIME FOR ABOVE = 55.241 . NOW START SUBSPACE ITERATION CYCLE NO. 11 *****

RELATIVE TOLERANCES REACHED ON EIGENVALUES ARE NOW ...

.23755-017	.47199-017	.32600-017	.00000	.28603-017	.00000	.23174-017	.22454-017	.35472-017	.00000
.49305-017	.48825-016	.43938-016	.46798-017	.26649-015	.10961-017	.57688-014	.85942-013	.14746-014	.15102-014
.25581-011	.40848-011	.61546-011	.43222-011	.60487-010	.60057-011	.12210-008	.29953-010	.17261-009	.20223-007
.65363-008	.24708-006	.78107-006	.22412-006	.45521-005	.20371-005	.86232-004	.29540-004	.17430-005	.12721-003
.69200-002	.46177-002	.13449-001	.42195-003	.22222+000	.18487+000				

EIGENVALUES ARE NOW ...

```

EIGENVALUES ARE NOW ...
.59823+004 .60217+004 .87184+004 .90040+004 .99367+004 .10514+005 .12264+005 .12658+005 .16025+005 .18380+005
.23058+005 .23867+005 .23934+005 .24293+005 .25810+005 .25930+005 .30733+005 .31983+005 .32572+005 .37375+005
.44629+005 .47049+005 .47769+005 .49438+005 .50366+005 .52767+005 .54255+005 .58601+005 .63882+005 .67806+005
.71398+005 .82883+005 .84879+005 .85786+005 .97760+005 .10172+006 .10355+006 .10600+006 .10781+006 .11267+006
.13232+006 .13846+006 .15753+006 .19243+006 .23165+006 .46767+006
CORE CHANGED FROM 68.99 TO 79.08

```

RELATIVE ERROR BOUNDS ON CALCULATED FREQUENCIES

RELATIVE ERROR 800NDS UN CALCULATED FREQUENCIES										
.32198-024	.47104-024	.37500-024	.13438-023	.27451-024	.17951-023	.63100-023	.53052-021	.87065-021	.17702-020	
.28172-017	.19010-015	.15727-015	.54164-017	.64962-015	.56008-017	.19387-014	.81863-013	.14182-014	.19518-015	
.16691-011	.98857-011	.12536-010	.74899-011	.13858-009	.83177-011	.20330-008	.18204-010	.19534-009	.29671-007	
.84301-008	.12249-005	.93315-005	.23582-005	.20287-004						
CORE CHANGED FROM 79.08 TO 37.86										

CHECK APPLIED AT SHIFT .98737197536228+005

TIME FOR ABOVE =	.042	.	NOW START *** DECOMP *** BLOCK	1 OF	5 BLOCKS.	00
TIME FOR ABOVE =	.251	.	NOW START *** DECOMP *** BLOCK	2 OF	5 BLOCKS.	00
TIME FOR ABOVE =	.202	.	NOW START *** DECOMP *** BLOCK	3 OF	5 BLOCKS.	00
TIME FOR ABOVE =	.198	.	NOW START *** DECOMP *** BLOCK	4 OF	5 BLOCKS.	00
TIME FOR ABOVE =	.198	.	NOW START *** DECOMP *** BLOCK	5 OF	5 BLOCKS.	00

WE FOUND THE LOWEST 35 EIGENVALUES

CORE CHANGED FROM 37.86 TO 76.10
TIME FOR ABOVE = .069 . NOW START *** PRINTING MODES AND FREQUENCIES ***

TIME FOR ABOVE = 2.007 . NOW START *** RESPONSE SPECTRUM ANALYSIS ***

```

CORE CHANGED FROM 76.10 TO 77.23
EXECUTION TIME: NODE ELEMENTS NODE LOADS ASSEMBLY SOLUTION PARTICULAR TOTAL
                  .555      8.404      .120      4.871      727.235      1.878      743.063
TIME FOR ABOVE =      1.802 . NOW START *** E N D   S A P ***

```

0XOT *ME101.ME101P1 . SEIS02

ME 101P1 VERSION/SEP21

SRSS	
.00000	0

PARAMETERS

[illegible]

*** CORE CHANGED FROM 33043 TO 88734 DECIMAL WORDS ***

PARAMETERS

[illegible]

RESALL
LB= 36

*** CORE CHANGED FROM 88734 TO 88038 DECIMAL WORDS ***
P1TEMP CASE 3 MS AN
#TIME FOR ME101P1# 172.051

@XQT *ME101.ME101P2 . SEISO2

ME101P2 VERSION/MAR04
*** CORE CHANGED FROM 33763 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

FREQUENCIES AND PERIODS

ME101/I2

DATE 040182

PAGE 209

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO1

EIGEN SOLVER : SUBSPACE ITERATION

FREQUENCIES FOR THE SEISO1 LOAD CASE (CPS)

12.3098587	12.3503901	14.8606527	15.1021134	15.8650482	16.3196061	17.6254971	17.9060431
20.1473808	21.5772645	24.1674564	24.5875411	24.6221735	24.8063874	25.5688066	25.6286385
27.9012747	28.4628479	28.7240040	30.7690053	33.6223626	34.5218897	34.7850065	35.3875790
35.7179842	36.5594482	37.0715466	38.5275764	40.2261105	41.4433136	42.5268760	45.8197966
46.3681765	46.6152406	49.7622313					

PERIODS FOR THE SEISO1 LOAD CASE (SEC)

.0812357	.0809691	.0672918	.0662159	.0630316	.0612760	.0567360	.0558471
.0496342	.0463451	.0413780	.0406710	.0406138	.0403122	.0391102	.0390188
.0358407	.0351335	.0348141	.0325002	.0297421	.0289671	.0287480	.0282585
.0279971	.0273527	.0269749	.0259554	.0248595	.0241293	.0235145	.0218246
.0215665	.0214522	.0200956					

MASS TABLE

ME101/12

DATE 040182

PAGE 210

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

DATA PT	MASSES (LB-SEC**2/IN)			X-DIRECTION	MASSES (LB)	
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION		Y-DIRECTION	Z-DIRECTION
5	.0014	.0014	.0014	.5591	.5591	.5591
10	.0058	.0058	.0058	2.2492	2.2492	2.2492
15	.0595	.0595	.0595	22.9864	22.9864	22.9864
20	.0084	.0084	.0084	3.2515	3.2515	3.2515
25	.0026	.0026	.0026	1.0026	1.0026	1.0026
30	.0554	.0554	.0554	21.4248	21.4248	21.4248
35	.0564	.0564	.0564	21.8115	21.8115	21.8115
40	.0073	.0073	.0073	2.8200	2.8200	2.8200
45 B	.0063	.0063	.0063	2.4467	2.4467	2.4467
45 E	.0030	.0030	.0030	1.1577	1.1577	1.1577
50	.0044	.0044	.0044	1.7187	1.7187	1.7187
55	.0091	.0091	.0091	3.5269	3.5269	3.5269
60	.0062	.0062	.0062	2.4097	2.4097	2.4097
65	.0038	.0038	.0038	1.4752	1.4752	1.4752
70	.1355	.1355	.1355	52.3663	52.3663	52.3663
75	.1338	.1338	.1338	51.7075	51.7075	51.7075
80 B	.0036	.0036	.0036	1.3725	1.3725	1.3725
80 E	.0032	.0032	.0032	1.2436	1.2436	1.2436
85	.0098	.0098	.0098	3.7811	3.7811	3.7811
90	.0145	.0145	.0145	5.6143	5.6143	5.6143
95	.0074	.0074	.0074	2.8644	2.8644	2.8644
100 B	.0041	.0041	.0041	1.5874	1.5874	1.5874
100 E	.0046	.0046	.0046	1.7879	1.7879	1.7879
105	.0038	.0038	.0038	1.4752	1.4752	1.4752
110	.0033	.0033	.0033	1.2890	1.2890	1.2890
115	.0083	.0083	.0083	3.2082	3.2082	3.2082
120 B	.0088	.0088	.0088	3.4063	3.4063	3.4063
120 E	.0080	.0080	.0080	3.0769	3.0769	3.0769
125	.0070	.0070	.0070	2.7212	2.7212	2.7212
130	.0070	.0070	.0070	2.7212	2.7212	2.7212
130A	.0113	.0113	.0113	4.3540	4.3540	4.3540
135	.0113	.0113	.0113	4.3540	4.3540	4.3540

DATA PT	MASSES (LB-SEC**2/IN)			MASSES (LB)		
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
135A	.0113	.0113	.0113	4.3540	4.3540	4.3540
137	.0136	.0136	.0136	5.2706	5.2706	5.2706
138	.0553	.0553	.0553	21.3532	21.3532	21.3532
140	.0119	.0119	.0119	4.5831	4.5831	4.5831
140A	.0142	.0142	.0142	5.4997	5.4997	5.4997
145	.0180	.0180	.0180	6.9606	6.9606	6.9606
145A	.0218	.0218	.0218	8.4215	8.4215	8.4215
150	.0124	.0124	.0124	4.7836	4.7836	4.7836
155	.0101	.0101	.0101	3.8957	3.8957	3.8957
160	.0191	.0191	.0191	7.3616	7.3616	7.3616
165	.0113	.0113	.0113	4.3540	4.3540	4.3540
170	.0018	.0018	.0018	.6875	.6875	.6875
175	.0045	.0045	.0045	1.7393	1.7393	1.7393
180 B	.0047	.0047	.0047	1.8168	1.8168	1.8168
180 E	.0155	.0155	.0155	5.9988	5.9988	5.9988
185	.0212	.0212	.0212	8.1842	8.1842	8.1842
185A	.0136	.0136	.0136	5.2706	5.2706	5.2706
190	.0143	.0143	.0143	5.5141	5.5141	5.5141
190A	.0149	.0149	.0149	5.7575	5.7575	5.7575
195	.0104	.0104	.0104	4.0246	4.0246	4.0246
200	.0056	.0056	.0056	2.1770	2.1770	2.1770
205	.0085	.0085	.0085	3.3012	3.3012	3.3012
205A	.0117	.0117	.0117	4.5402	4.5402	4.5402
210	.0141	.0141	.0141	5.4568	5.4568	5.4568
210A	.0165	.0165	.0165	6.3734	6.3734	6.3734
215	.0198	.0198	.0198	7.6553	7.6553	7.6553
215A	.0231	.0231	.0231	8.9371	8.9371	8.9371
220	.0189	.0189	.0189	7.3043	7.3043	7.3043
225 B	.0097	.0097	.0097	3.7357	3.7357	3.7357
225 E	.0115	.0115	.0115	4.4518	4.4518	4.4518
230	.0198	.0198	.0198	7.6552	7.6552	7.6552
230A	.0212	.0212	.0212	8.2066	8.2066	8.2066
235	.0213	.0213	.0213	8.2425	8.2425	8.2425
235A	.0214	.0214	.0214	8.2783	8.2783	8.2783
240	.0214	.0214	.0214	8.2639	8.2639	8.2639
245	.0126	.0126	.0126	4.8552	4.8552	4.8552
250	.0059	.0059	.0059	2.2916	2.2916	2.2916

DATA PT	MASSES (LB-SEC**2/IN)			X-DIRECTION	MASSES (LB)	
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION		Y-DIRECTION	Z-DIRECTION
255 B	.0064	.0064	.0064	2.4610	2.4610	2.4610
255 E	.0035	.0035	.0035	1.3582	1.3582	1.3582
260	.0158	.0158	.0158	6.0931	6.0931	6.0931
265 B	.0157	.0157	.0157	6.0847	6.0847	6.0847
265 E	.0055	.0055	.0055	2.1176	2.1176	2.1176
270	.0100	.0100	.0100	3.8733	3.8733	3.8733
275	.0231	.0231	.0231	8.9371	8.9371	8.9371
280	.0195	.0195	.0195	7.5335	7.5335	7.5335
285	.0029	.0029	.0029	1.1171	1.1171	1.1171
290	.0095	.0095	.0095	3.6665	3.6665	3.6665
290A	.0173	.0173	.0173	6.7028	6.7028	6.7028
295	.0114	.0114	.0114	4.4113	4.4113	4.4113
300	.0043	.0043	.0043	1.6614	1.6614	1.6614
305	.0019	.0019	.0019	.7161	.7161	.7161
310 B	.0026	.0026	.0026	1.0145	1.0145	1.0145
310 E	.0053	.0053	.0053	2.0457	2.0457	2.0457
315	.0046	.0046	.0046	1.7760	1.7760	1.7760
320 B	.0040	.0040	.0040	1.5301	1.5301	1.5301
320 E	.0050	.0050	.0050	1.9312	1.9312	1.9312
500	.0027	.0027	.0027	1.0312	1.0312	1.0312

NORMALIZED MODE SHAPES

ME101/I2

DATE 040182

PAGE 213

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : SEISO1

MODE SHAPE NUMBER 1

FREQUENCY : 12.3098626

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0016293	.0037626	-.0039465	-.0025514	-.0016041	-.0002239
15	-.0169934	.0026283	-.0405222	-.0069808	-.0028179	.0068371
20	-.0248948	-.0869079	-.0594088	-.0071364	-.0007004	.0189339
25	.0684837	-.0869277	-.0290740	-.0070798	-.0007004	.0234834
30	.1791862	-.0869471	.0031216	-.0075840	-.0007004	.0266850
35	.3832849	-.0869643	.0599280	-.0079771	-.0007004	.0289489
40	.6093857	-.0869664	.1221003	-.0080418	-.0007004	.0292722
45 B	-.2968555	-.0867047	-.1653475	-.0096112	.0045719	.0209721
45 E	-.3707888	-.0283599	-.2193567	-.0124313	.0074312	.0216215
50	-.3532159	.0000000	-.2193420	-.0125451	.0082018	.0217195
55	-.2200769	.1528114	-.2192537	-.0111366	.0127086	.0222748
60	-.0398631	-.0193998	-.0389122	-.0068580	.0136693	.0232564
65	.0000000	.0000000	-.0388885	-.0060522	.0128909	.0237155
70	.1108265	.0441438	-.0388100	-.0026467	.0091386	.0252266
75	.1891585	.0463621	-.0386862	.0022511	.0041334	.0270821
80 B	.2039742	.038252	-.0386350	.0037519	.0033987	.0277133
80 E	.0820525	.0112125	-.0141977	.0049302	.0054638	.0277917
85	.0000000	.0112037	.0000000	.0042990	.0068587	.0266529
90	-.6087618	.0111147	.0462282	.0008078	.0208080	.0150162
95	-.1810211	.0000000	.0461779	-.0007030	.0224469	.0080794
100 B	-.0506393	.0086802	.0461612	-.0022145	.0207644	.0058889
100 E	.0256406	.0234372	.0287337	-.0041128	.0162293	.0034793
105	.0000000	.0234325	-.0078511	-.0051320	.0108132	.0035171
110	-.0192714	.0234292	-.0347443	-.0052603	.0072316	.0038466
115	-.0192985	.0000000	.0000000	-.0051228	.0042447	.0037727
120 B	-.0193940	-.0788469	.0186874	-.0046319	-.0010869	.0035314
120 E	-.0244177	-.0739875	.0131254	-.0044412	-.0006752	.0036161
125	.0189073	-.0001040	.0130635	-.0030709	.0067113	.0040110
130	.0000000	-.0001004	.0000000	-.0023252	.0105098	.0038148
130A	-.0453977	-.0000860	-.0148318	.0003794	.0257035	.0004522
135	.0000000	-.0000717	.0000000	.0007722	.0408972	-.0056658
135A	.1351859	-.0000573	.0078021	.0000890	.0560909	-.0062171
137	.1551765	-.0000429	.0050699	-.0003234	.0712846	.0062314
138	.0000000	.0037422	.0050712	-.0003537	.0793764	.0062314
140	.0000000	-.0000322	.0000000	-.0002345	.0534634	.0085056
140A	-.0520871	-.0000161	-.0014362	.0000578	.0267317	-.0020960
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 2

FREQUENCY : 12.3503940

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0025556	-.0068212	.0061995	.0040980	.0025176	.0006633
15	.0265586	-.0100179	.0633711	.0108287	.0043752	-.0106639
20	.0386156	.1366520	.0922219	.0104726	.0009763	-.0308683
25	-.1139105	.1366834	.0483595	.0101610	.0009763	-.0384043
30	-.2950935	.1367142	.0022977	.0108281	.0009763	-.0436969
35	-.6294680	.1367414	-.0786547	.0113575	.0009763	-.0474383
40	-1.0000000	.1367447	-.1671574	.0114467	.0009763	-.0479722
45 B	.4848586	.1363131	.2500854	.0147274	-.0074524	-.0345659
45 E	.6077045	.0448979	.3339871	.0196338	-.0120596	-.0357334
50	.5791859	.0000000	.3339622	.0198881	-.0133146	-.0359229
55	.3623311	-.2449755	.3338129	.0181422	-.0207826	-.0369970
60	.0659713	.0366283	.0372351	.0127097	-.0225974	-.0386843
65	.0000000	.0000000	.0371957	.0116796	-.0213625	-.0393491
70	-.1840941	-.0934053	.0370656	.0066950	-.0151656	-.0415374
75	-.3120888	-.1268222	.0368795	-.0011610	-.0064463	-.0442244
80 B	-.3344933	-.1168968	.0368074	-.0034541	-.0049809	-.0451385
80 E	-.1328694	-.0946005	.0126649	-.0046430	-.0077029	-.0450335
85	.0000000	-.0945772	.0000000	-.0034690	-.0096993	-.0431299
90	.9587904	-.0943322	-.0177852	-.0030395	-.0296642	-.0219634
95	.3497206	.0000000	-.0176653	-.0038194	-.0318646	-.0073941
100 B	.1650368	.0148786	-.0176270	-.0010608	-.0293205	-.0027932
100 E	.0248072	.0132173	-.0108886	.0025214	-.0223186	.0023318
105	.0000000	.0132308	.0168771	.0042137	-.0140919	.0034785
110	-.0166179	.0132396	.0388523	.0041372	-.0086517	.0027918
115	-.0166552	.0000000	.0000000	.0032804	-.0043247	.0016089
120 B	-.0167870	-.0121524	-.0056731	.0002203	.0012588	.0002660
120 E	-.0137899	-.0124307	-.0010794	-.0006605	.0002792	.0009939
125	.0157309	-.0002539	-.0009740	-.0000097	.0049018	.0031959
130	.0000000	-.0002456	.0000000	.0002441	.0083674	.0032389
130A	-.0396968	-.0002124	.0015596	-.0000397	.0222298	.0004427
135	.0000000	-.0001792	.0000000	-.0000816	.0360922	-.0050508
135A	.1214530	-.0001460	-.0008332	-.0000100	.0499546	-.0056088
137	.1397339	-.0001128	-.0005439	.0000351	.0638170	.0056027
138	.8964913	-.0005318	-.0005440	.0000395	.0711192	.0056027
140	.0000000	-.0000846	.0000000	.0000250	.0478628	.0076625
140A	-.0469303	-.0000423	.0001531	-.0000062	.0239314	-.0018882
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 3

FREQUENCY : 14.8606575

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0036469	-.0000055	.0002696	.0000061	.0000004	.0000828
150	.0000000	-.0000110	.0000000	-.0000246	.0000009	-.0003333
155	.0018533	-.0000118	-.0001368	-.0000298	.0000009	-.0004052
160	.0018553	-.0138976	.0000000	-.0000644	-.0000163	-.0004320
165	.0018570	-.0226796	.0001345	-.0001064	.0000426	-.0000842

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0018571	-.0228805	.0000000	-.0001097	.0000557	-.0000650
175	.0018572	-.0230649	-.0002083	-.0001135	.0000739	-.0000526
180 B	.0030941	-.0222108	-.0010585	-.0000683	.0001545	-.0000066
180 E	.0033251	-.0221270	-.0012315	-.0000305	.0001792	.0000096
185	.0000000	-.0221006	.0000000	-.0001017	.0004763	.0000978
185A	-.0016690	-.0220814	-.0034186	-.0000926	.0006174	.0000215
190	.0000000	-.0220578	.0000000	.0004780	.0007586	-.0001852
190A	.0052129	-.0220272	.0145098	.0003139	.0009127	-.0001061
195	.0000000	-.0219914	.0000000	-.0017503	.0010669	.0006154
200	-.0094118	-.0219757	-.0218343	-.0024486	.0011283	.0014161
205	.0000000	.0000000	-.0218480	-.0022921	.0008368	.0028250
205A	.0055503	.0281194	-.0218760	-.0002484	-.0001391	.0059264
210	.0000000	.0000000	-.0219007	.0033066	-.0002683	.0090280
210A	-.0024350	-.1075035	-.0219302	.0019863	.0000507	.0133818
215	.0000000	.0000000	-.0219533	-.0113369	.0000634	.0177358
215A	-.0004049	.5274071	-.0219752	-.0050805	-.0000397	.0238410
220	.0000000	.0000000	-.0219847	.0317697	.0000965	.0299462
225 B	.0007582	-.9645957	-.0219843	.0419129	-.0001822	.0338206
225 E	-.0005884	-1.0000000	-.0202893	.0408846	-.0004308	.0349375
230	-.0005806	.0000000	.0000000	.0352955	-.0006090	.0243133
230A	-.0005714	.3561221	.0092785	.0288389	.0000823	-.0036268
235	-.0005619	.0000000	.0000000	.0223821	.0002775	-.0097110
235A	-.0005521	-.1312674	-.0046617	.0158690	-.0000288	.0017546
240	-.0005420	.0000000	.0000000	.0093560	-.0001614	.0026480
245	-.0005317	.0151523	.0027491	.0028655	.0000599	-.0002120
250	.0000000	.0000000	.0027492	.0018194	.0000927	.0002216
255 B	.0016660	-.0116770	.0027493	.0002539	.0001848	.0011482
255 E	.0028080	-.0056839	.0014215	.0002525	.0003178	.0014483
260	.0028072	.0000000	.0000000	.0003351	.0003929	.0013427
265 B	.0027965	.0223704	-.0235475	.0013509	.0001880	-.0001139
265 E	.0029707	.0198658	-.0240373	.0014217	.0000873	-.0001349
270	.0026678	.0038570	-.0237360	.0014503	-.0000858	.0000228
275	.0000000	.0038483	.0000000	.0009089	-.0000886	.0001563
280	-.0007514	.0038185	.0010305	-.0004617	-.0000969	-.0000416
285	-.0000805	.0006878	.0010295	-.0004015	-.0000927	-.0000310
290	.0000000	.0006863	.0000000	-.0003448	-.0000879	-.0000270
290A	.0002123	.0006700	-.0028169	.0000815	-.0000372	.0000066
295	.0000000	.0006534	.0000000	.0000156	.0000136	.0000002
300	.0000435	.0006482	-.0003835	-.0001007	.0000296	-.0000099
305	-.0001298	.0000000	-.0003833	-.0001254	.0000363	-.0000180
310 B	-.0001667	-.0001234	-.0003833	-.0001217	.0000375	-.0000196
310 E	-.0003700	-.0005591	-.0001702	-.0000932	.0000444	-.0000260
315	-.0003700	-.0002923	.0002675	-.0000538	.0000403	-.0000249
320 B	-.0002450	-.0002922	.0000142	-.0000394	.0000320	-.0000206

MODE SHAPE NUMBER 4

FREQUENCY : 15.1021181

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0018143	-.0020329	.0044844	.0025709	.0018219	-.0004221
15	.0194318	.0043034	.0466850	.0082486	.0033240	-.0066329
20	.0294918	.0697473	.0708850	.0103537	.0013280	-.0156237
25	-.0544614	.0697712	.0231210	.0118280	.0013280	-.0223499
30	-.1640098	.0697947	-.0328813	.0135638	.0013280	-.0270913
35	-.3762834	.0698155	-.1372666	.0148615	.0013280	-.0304734
40	-.6151063	.0698180	-.2535371	.0150639	.0013280	-.0309645
45 B	.1768611	.0695776	.2015312	.0095460	-.0035507	-.0063817
45 E	.1752327	.0208198	.2500130	.0094742	-.0054542	-.0010047
50	.1623751	.0000000	.2500033	.0088367	-.0059443	.0007544
55	.0745864	-.0649291	.2499394	-.0002162	-.0074217	.0107226
60	.0024347	-.0968796	.1777234	-.0296894	-.0017970	.0200817
65	.0000000	.0000000	.1777018	-.0350630	.0002290	.0198445
70	.0292009	.3962944	.1776265	-.0403092	.0048250	.0190641
75	.0951892	.8046574	.1773459	-.0250836	.0051872	.0181058
80 B	.1152369	.8961047	.1771873	-.0207395	.0045950	.0177797
80 E	.0502369	1.0000000	.0684216	-.0227100	.0039246	.0169565
85	.0000000	.9998191	.0000000	-.0221684	.0037595	.0164835
90	-.3411539	.9978209	.0513536	.0421056	.0021085	.0038143
95	-.3109239	.0000000	.0509789	.0363035	.0009527	-.0125919
100 B	-.3069517	-.1467262	.0508592	.0146182	.0002903	-.0177728
100 E	-.1999877	-.1858614	.0711162	.0003779	-.0019160	-.0236881
105	.0000000	-.1855021	.0526744	-.0037766	-.0040946	-.0277046
110	.1480473	-.1852621	.0341695	-.0027265	-.0055352	-.0301353
115	.1480339	.0000000	.0000000	.0012645	-.0046839	-.0281983
120 B	.1479689	.3983283	-.0453548	.0155179	-.0023546	-.0107159
120 E	.1274150	.3559283	-.0618199	.0191458	-.0051776	-.0081419
125	-.0071345	.0013309	-.0616899	.0148503	-.0074199	-.0020192
130	.0000000	.0012857	.0000000	.0108988	-.0066672	-.0011251
130A	.0043206	.0011050	.0708248	-.0017266	-.0036561	.0003302
135	.0000000	.0009242	.0000000	-.0038314	-.0006451	-.0002265
135A	.0128973	.0007432	-.0417160	-.0006363	.0023659	-.0007783
137	.0173595	.0005621	-.0288887	.0018038	.0053769	.0006286
138	.0841968	-.0212183	-.0289000	.0020622	.0064023	.0006286
140	.0000000	.0004216	.0000000	.0013533	.0040327	.0009783
140A	-.0060542	.0002108	.0083745	-.0003335	.0020163	-.0002411
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 5

FREQUENCY : 15.8650532

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0007518	.0091610	-.0021696	-.0018036	-.0008363	-.0027422
15	-.0069548	.0576891	-.0180131	-.0021476	-.0007910	.0010083
20	-.0060449	-.0064300	-.0167348	.0019860	.0013501	.0140021
25	.0754624	-.0064324	-.0320368	.0046019	.0013501	.0225588
30	.1884209	-.0064348	-.0557915	.0060521	.0013501	.0282987
35	.4127077	-.0064369	-.1044201	.0070618	.0013501	.0323734
40	.6667764	-.0064372	-.1599102	.0072027	.0013501	.0329609
45 B	-.1440252	-.0062393	-.0073546	-.0005388	.0061483	.0072057
45 E	-.1383147	-.0010693	-.0119504	-.0007314	.0080121	.0051028
50	-.1199382	.0000000	-.0119509	-.0000043	.0082444	.0045010
55	-.0195249	-.0218962	-.0119537	.0024306	.0066021	.0010913
60	.0120150	-.0068735	.0194816	-.0015735	-.0028981	-.0070029
65	.0000000	.0000000	.0194809	-.0031220	-.0052176	-.0094990
70	-.0806084	.0500818	.0194782	-.0060184	-.0098020	-.0177156
75	-.1992982	.1164539	.0194520	-.0041883	-.0090309	-.0278043
80 B	-.2351752	.1312678	.0194355	-.0031556	-.0087331	-.0312366
80 E	-.1090096	.1451475	.0064475	-.0023305	-.0123996	-.0360428
85	.0000000	.1451272	.0000000	-.0018909	-.0143588	-.0363508
90	1.0000000	.1448939	.0580411	.0068908	-.0339516	-.0275924
95	.3098441	.0000000	.0580047	.0051099	-.0361866	-.0137295
100 B	.0990435	-.0211277	.0579913	.0022211	-.0336905	-.0093517
100 E	-.0293832	-.0278695	.0623780	.0004286	-.0266867	-.0045086
105	.0000000	-.0278179	.0631990	-.0000427	-.0184025	-.0036761
110	.0202190	-.0277834	.0632061	.0001428	-.0129243	-.0042861
115	.0202062	.0000000	.0000000	.0007506	-.0075809	-.0044748
120 B	.0201578	.0771682	-.0235838	.0029215	.0017072	-.0025852
120 E	.0243341	.0723292	-.0170526	.0035110	.0001566	-.0019480
125	-.0002026	.0001145	-.0168949	.0037739	-.0018720	-.0001735
130	.0000000	.0001102	.0000000	.0030742	-.0017105	.0000099
130A	-.0006289	.0000930	.0201196	-.0004811	-.0010648	.0000271
135	.0000000	.0000759	.0000000	-.0011050	-.0004190	-.0001208
135A	.0032800	.0000586	-.0123702	-.0002056	.0002268	-.0001596
137	.0038745	.0000414	-.0087482	.0005436	.0008726	.0001527
138	.0149831	-.0066043	-.0087520	.0006324	.0010739	.0001527
140	.0000000	.0000311	.0000000	.0004110	.0006544	.0002140
140A	-.0013285	.0000155	.0025518	-.0001013	.0003272	-.0000527
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 6

FREQUENCY : 16.3196111

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0031051	-.0000048	.0002071	.0000045	-.0000021	.0000677
150	.0000000	-.0000096	.0000000	-.0000182	-.0000042	-.0002726
155	.0015093	-.0000103	-.0001012	-.0000223	-.0000045	-.0003288
160	.0015109	-.0108920	.0000000	-.0000544	-.0000007	-.0003165
165	.0015120	-.0161457	-.0000104	-.0000934	-.0000031	-.0000113

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0015121	-.0161544	.0000000	-.0000964	-.0000044	.0000021
175	.0015121	-.0161312	.0000162	-.0001000	-.0000042	.0000084
180 B	.0014052	-.0153782	-.0007333	-.0000601	.0000014	.0000167
180 E	.0013415	-.0153047	-.0008848	-.0000265	.0000017	.0000206
185	.0000000	-.0152818	.0000000	-.0001035	-.0000002	.0000173
185A	-.0001426	-.0152654	-.0033240	-.0000870	-.0000011	-.0000026
190	.0000000	-.0152453	.0000000	.0004572	-.0000021	-.0000068
190A	.0000946	-.0152193	.0137553	.0002917	-.0000031	-.0000002
195	.0000000	-.0151890	.0000000	-.0016394	-.0000040	.0000076
200	-.0000140	-.0151758	-.0194009	-.0019683	-.0000044	-.0000138
205	.0000000	.0000000	-.0194236	-.0012836	.0000150	-.0000675
205A	.0006517	.0080271	-.0194711	.0002383	.0000243	-.0001857
210	.0000000	.0000000	-.0195151	.0003100	-.0001143	-.0003039
210A	-.0043102	.0003102	-.0195713	-.0001637	-.0000870	-.0004698
215	.0000000	.0000000	-.0196206	.0003518	.0004660	-.0006357
215A	.0214358	-.0214917	-.0196785	.0002389	.0001810	-.0008684
220	.0000000	.0000000	-.0197229	-.0013126	-.0011940	-.0011010
225 B	-.0305469	.0379791	-.0197442	-.0015063	-.0009513	-.0012486
225 E	-.0346007	.0388210	-.0162163	-.0012872	-.0005835	-.0012843
230	-.0346016	.0000000	.0000000	-.0002320	-.0009897	-.0010489
230A	-.0345841	-.0188664	.0433283	.0009870	-.0005008	.0000889
235	-.0345469	.0000000	.0000000	.0022061	.0030058	.0006909
235A	-.0344892	.0154247	-.1064332	.0034358	.0009057	.0000044
240	-.0344115	.0000000	.0000000	.0046654	-.0066516	-.0007087
245	-.0343142	.0376832	.1655998	.0058909	.0031235	.0047155
250	.0000000	.0000000	.1656191	.0058383	.0074942	.0072755
255 B	.1560329	-.0882310	.1656505	.0081263	.0150373	.0127470
255 E	.2379138	-.0624965	.0787994	.0127356	.0187207	.0153994
260	.2379164	.0000000	.0000000	.0155710	.0207120	.0156946
265 B	.2378087	.6574648	-.9858216	.0504313	.0060192	.0085699
265 E	.2425553	.6098565	-1.0000000	.0529310	.0019581	.0078428
270	.2140528	.1231933	-.9714399	.0568680	-.0051300	.0101247
275	.0000000	.1229978	.0000000	.0378421	-.0056854	.0093737
280	-.0569191	.1222756	.0377863	-.0169829	-.0073807	-.0024870
285	-.0053851	.0089816	.0377404	-.0145899	-.0072102	-.0020316
290	.0000000	.0089428	.0000000	-.0127414	-.0069567	-.0018435
290A	.0210554	.0085283	-.1198483	.0025676	-.0042600	.0002555
295	.0000000	.0081106	.0000000	.0023708	-.0015632	.0008115
300	-.0062875	.0079778	.0071797	-.0008649	-.0007104	.0004934
305	-.0034717	.0000000	.0071823	-.0016513	-.0003833	.0001518
310 B	-.0031176	-.0016160	.0071828	-.0015901	-.0003312	.0000867
310 E	-.0020913	-.0080233	.0065351	-.0012323	-.0000524	-.0002612
315	-.0020969	-.0048705	.0066892	-.0007751	.0000374	-.0002783
320 B	-.0008417	-.0048656	.0029049	-.0006172	.0000132	-.0001996

MODE SHAPE NUMBER 7

FREQUENCY : 17.6255026

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0025622	-.0069822	-.0055596	-.0023765	-.0023334	.0037095
15	-.0276679	-.0479105	-.0633448	-.0132401	-.0050779	.0062517
20	-.0474794	-.0112004	-.1090714	-.0240370	-.0042242	.0008436
25	-.0550500	-.0112056	.0233709	-.0364828	-.0042242	-.0034567
30	-.0754409	-.0112107	.2075679	-.0464378	-.0042242	-.0055555
35	-.1224754	-.0112153	.5781064	-.0536796	-.0042242	-.0069877
40	-.1776741	-.0112158	1.0000000	-.0547671	-.0042242	-.0071809
45 B	-.0960624	-.0113045	-.2910887	-.0052806	-.0019451	.0055015
45 E	-.1306432	-.0013588	-.3068506	-.0009104	-.0003507	.0064284
50	-.1308108	.0000000	-.3068161	-.0004135	.0002595	.0065725
55	-.0972829	.0018286	-.3066053	-.0007883	.0055383	.0073886
60	-.0103760	-.0309821	-.2193106	-.0093567	.0044335	.0053911
65	.0000000	.0000000	-.2192501	-.0114007	.0025303	.0040059
70	-.0007723	.1215101	-.2190434	-.0100377	-.0021898	-.0005535
75	-.0447889	.1426964	-.2184738	.0090080	-.0043609	-.0061519
80 B	-.0629336	.0873573	-.2181742	.0178176	-.0044496	-.0080565
80 E	-.0352062	-.0292119	-.0852546	.0285889	-.0050750	-.0112348
85	.0000000	-.0292131	.0000000	.0268587	-.0052576	-.0122211
90	.3869381	-.0292175	.3808141	.0024438	-.0070835	-.0093437
95	.2439407	.0000000	.3806352	-.0054401	-.0079670	.0033552
100 B	.1955814	.0424256	.3805639	-.0093535	-.0080822	.0073654
100 E	.1042327	.1034264	.3078504	-.0174648	-.0072518	.0118496
105	.0000000	.1033080	.1498506	-.0223369	-.0065184	.0148669
110	-.0803798	.1032279	.0327984	-.0228141	-.0060334	.0164507
115	-.0803871	.0000000	.0000000	-.0218227	-.0039849	.0165278
120 B	-.0804004	-.2977013	.0169378	-.0182819	.0037111	.0106490
120 E	-.0604689	-.2601907	.0365404	-.0167931	.0040143	.0084369
125	.0128560	-.0005341	.0366081	-.0091260	.0035506	.0032037
130	.0000000	-.0005149	.0000000	-.0063936	.0032545	.0022207
130A	-.0132094	-.0004382	-.0427065	.0009637	.0020702	-.0004168
135	.0000000	-.0003614	.0000000	.0024491	.0008860	-.0005145
135A	.0010555	-.0002845	.0295202	.0005929	-.0002983	.0002353
137	-.0027740	-.0002076	.0220125	-.0013462	-.0014826	-.0000039
138	-.0217941	.0166754	.0220242	-.0016228	-.0018441	-.0000039
140	.0000000	-.0001557	.0000000	-.0010438	-.0011119	-.0001918
140A	.0012004	-.0000779	-.0065334	.0002572	-.0005560	.0000473
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000



MODE SHAPE NUMBER 8

FREQUENCY : 17.9060488

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.2292476	-.0003478	.0219689	.0004559	-.0001808	.0047571
150	.0000000	-.0006954	.0000000	-.0018347	-.0003617	-.0191456
155	.1052587	-.0007427	-.0101404	-.0022222	-.0003863	-.0227599
160	.1054000	-.7144751	.0000000	-.0051580	-.0002198	-.0188812
165	.1055075	-.9345516	.0003928	-.0087265	.0001362	.0029854

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.1055130	-.9251494	.0000000	-.0090049	.0001485	.0036348
175	.1055188	-.9128140	-.0005590	-.0093339	.0002678	.0036729
180 B	.0840131	-.8408588	-.0722614	-.0062563	.0006204	.0025947
180 E	.0761100	-.8328360	-.0896080	-.0036134	.0005950	.0024237
185	.0000000	-.8312413	.0000000	-.0040629	.0003056	.0005996
185A	-.0042903	-.8301171	-.1621811	-.0046908	.0001681	-.0001181
190	.0000000	-.8287571	.0000000	.0231229	.0000307	-.0001196
190A	-.0004682	-.8270022	.6992833	.0146489	-.0001195	.0000764
195	.0000000	-.8249669	.0000000	-.0824937	-.0002697	-.0001903
200	.0030330	-.8240790	-.9884412	-.1032915	-.0003294	-.0004340
205	.0000000	.0000000	-.9894197	-.0717721	-.0003286	-.0007751
205A	-.0043839	.4836988	-.9914220	.0117102	-.0000515	-.0015261
210	.0000000	.0000000	-.9932153	.0239244	.0005388	-.0022771
210A	.0176708	-.2333453	-.9953792	-.0041714	.0003138	-.0033313
215	.0000000	.0000000	-.9971297	-.0070578	-.0018075	-.0043855
215A	-.0794806	.0184512	-.9988863	.0031779	-.0005304	-.0058638
220	.0000000	.0000000	-.9998268	-.0057234	.0039406	-.0073421
225 B	-.0044679	.2440459	-1.0000000	-.0119561	-.0093461	-.0082802
225 E	-.0684582	.2613677	-.9221004	-.0118399	-.0193566	-.0086457
230	-.0681687	.0000000	.0000000	-.0106696	-.0297070	-.0069429
230A	-.0677905	-.1176609	.5304818	-.0093177	.0031299	.0008700
235	-.0673655	.0000000	.0000000	-.0079657	.0171045	.0034398
235A	-.0668899	.0499767	-.3038613	-.0066019	-.0019565	-.0006331
240	-.0663673	.0000000	.0000000	-.0052382	-.0092287	-.0008912
245	-.0658003	-.0238253	.0624412	-.0038792	.0085564	-.0019351
250	.0000000	.0000000	.0624512	-.0035228	.0112834	-.0032051
255 B	.1519302	.0448612	.0624679	-.0034267	.0099034	-.0059194
255 E	.1960757	.0294128	.0229270	-.0045239	.0066316	-.0071955
260	.1960938	.0000000	.0000000	-.0052083	.0048521	-.0074518
265 B	.1961781	-.2518158	.1310765	-.0136232	-.0069588	.0004954
265 E	.1858099	-.2272862	.1559762	-.0141133	-.0071402	.0018477
270	.1100464	-.0399840	.2316925	-.0139303	-.0074635	.0055306
275	.0000000	-.0399137	.0000000	-.0089409	-.0074581	.0048220
280	-.0542366	-.0396503	-.0097080	.0044145	-.0074417	-.0009789
285	-.0026001	-.0098989	-.0096978	.0037926	-.0072228	-.0009525
290	.0000000	-.0098845	.0000000	.0032344	-.0069998	-.0009108
290A	.0135041	-.0097296	.0238735	-.0008691	-.0046282	.0000367
295	.0000000	-.0095703	.0000000	.0002760	-.0022566	.0007626
300	-.0071644	-.0095190	.0086164	.0015723	-.0015066	.0007324
305	-.0000522	.0000000	.0086170	.0018508	-.0012234	.0006041
310 B	.0011460	.0018372	.0086171	.0018201	-.0011794	.0005797
310 E	.0065149	.0081026	.0035720	.0014700	-.0009346	.0004084
315	.0065089	.0042794	-.0046593	.0009450	-.0007196	.0003846
320 B	.0043942	.0042808	-.0000848	.0007148	-.0005811	.0003600



MODE SHAPE NUMBER 9

FREQUENCY : 20.1473873

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0377873	-.0000536	.0049286	.0000940	-.0000346	.0007209
150	.0000000	-.0001071	.0000000	-.0003784	-.0000692	-.0029012
155	.0157617	-.0001144	-.0020684	-.0004487	-.0000739	-.0033658
160	.0157886	-.0970239	.0000000	-.0009751	-.0000555	-.0021505
165	.0158091	-.1001163	.0001837	-.0016149	.0000605	.0011883

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0158101	-.0967518	.0000000	-.0016648	.0000733	.0012243
175	.0158112	-.0928173	-.0002685	-.0017238	.0000986	.0011530
180 B	.0091585	-.0793273	-.0137231	-.0012348	.0000976	.0006742
180 E	.0071323	-.0777042	-.0173205	-.0008075	.0000730	.0005604
185	.0000000	-.0774888	.0000000	-.0000637	-.0001460	-.0000735
185A	.0014055	-.0773432	-.0118330	-.0004519	-.0002500	-.0000212
190	.0000000	-.0771698	.0000000	.0019000	-.0003540	.0001597
190A	-.0044559	-.0769487	.0587838	.0012215	-.0004676	.0000849
195	.0000000	-.0766945	.0000000	-.0068507	-.0005812	-.0005036
200	.0061003	-.0765842	-.0838520	-.0091802	-.0006264	-.0006597
205	.0000000	.0000000	-.0839108	-.0068388	-.0007728	-.0006631
205A	-.0142343	.0465345	-.0840238	.0011065	-.0003073	-.0006705
210	.0000000	.0000000	-.0841144	.0023176	.0020281	-.0006778
210A	.0701074	-.0227789	-.0842037	-.0004149	.0012483	-.0006882
215	.0000000	.0000000	-.0842486	-.0006399	-.0070745	-.0006986
215A	-.2981420	-.0015437	-.0842371	.0003429	-.0012467	-.0007131
220	.0000000	.0000000	-.0841384	-.0007391	.0120886	-.0007276
225 B	.2359744	.0256874	-.0840306	-.0009830	.0043271	-.0007368
225 E	.2485946	.0264232	-.0899513	-.0006402	-.0004586	-.0007379
230	.2485516	.0000000	.0000000	.0010216	.0005858	-.0009375
230A	.2482998	-.0233253	-.1849197	.0029413	.0034759	-.0000094
235	.2478314	.0000000	.0000000	.0048612	-.0145789	.0009753
235A	.2471399	.0231628	.5121571	.0067977	-.0029681	-.0000227
240	.2462290	.0000000	.0000000	.0087343	.0265270	-.0008837
245	.2451039	.0681545	-.3891762	.0106641	-.0285092	.0073528
250	.0000000	.0000000	-.3892626	.0105638	-.0466923	.0110878
255 B	-.7446436	-.1440604	-.3894112	.0111337	-.0547514	.0190704
255 E	-.9991361	-.0943975	-.1533671	.0135391	-.0419879	.0229695
260	-.9992679	.0000000	.0000000	.0149444	-.0348854	.0241170
265 B	-1.0000000	.7682563	.0131613	.0322224	.0273287	-.0072961
265 E	-.9568915	.6845855	-.0888432	.0329120	.0304498	-.0131386
270	-.6044334	.1265988	-.4412077	.0283742	.0362607	-.0304792
275	.0000000	.1263422	.0000000	.0166294	.0375649	-.0265179
280	.3047859	.1253621	.0226266	-.0104382	.0415449	.0055873
285	.0155773	.0533553	.0226115	-.0090329	.0405176	.0056712
290	.0000000	.0533012	.0000000	-.0073725	.0392814	.0054807
290A	-.0837960	.0527092	-.0269248	.0028474	.0261333	-.0002137
295	.0000000	.0520865	.0000000	-.0041279	.0129851	-.0046175
300	.0428402	.0518832	-.0612282	-.0090221	.0088271	-.0043295
305	.0009054	.0000000	-.0612318	-.0099345	.0072665	-.0034975
310 B	-.0062227	-.0098653	-.0612323	-.0097725	.0070268	-.0033390
310 E	-.0384983	-.0429040	-.0306929	-.0078306	.0057080	-.0022589
315	-.0384632	-.0219105	.0201459	-.0048928	.0044776	-.0021272
320 B	-.0266721	-.0219197	-.0033123	-.0036267	.0036318	-.0020161

MODE SHAPE NUMBER 10

FREQUENCY : 21.5772715

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0019389	-.0074562	.0039327	.0032390	.0016819	.0016471
15	.0211009	-.0737278	.0472146	.0103910	.0040155	.0004017
20	.0387452	-.1048264	.0874817	.0137711	.0044367	-.0045222
25	.0215215	-.1049000	-.0091367	.0308449	.0044367	-.0042056
30	.0004810	-.1049720	-.1796943	.0453012	.0044367	-.0053006
35	-.0419610	-.1050358	-.5577375	.0559297	.0044367	-.0061688
40	-.0905669	-.1050436	-1.0000000	.0575595	.0044367	-.0063164
45 B	.1506443	-.1046171	.0359153	-.0146870	.0055126	-.0092562
45 E	.2197723	-.0285459	-.0421121	-.0135976	.0052333	-.0047845
50	.2307053	.0000000	-.0421955	-.0115264	.0042839	-.0029266
55	.2217252	.0827867	-.0426647	-.0031214	-.0076389	.0076010
60	.0414047	-.0204374	-.2238061	-.0060102	-.0146516	.0127269
65	.0000000	.0000000	-.2239094	-.0078221	-.0131195	.0120674
70	-.0959811	.0861896	-.2242386	-.0066417	-.0048436	.0098965
75	-.0678223	.0754492	-.2241581	.0104821	.0090895	.0072309
80 B	-.0219858	.0161173	-.2239679	.0183010	.0127480	.0063240
80 E	.0204214	-.1007426	-.0907153	.0295166	.0167009	.0063886
85	.0000000	-.1007397	.0000000	.0300630	.0178731	.0075019
90	-.4213397	-.1006720	.6318744	.0062703	.0295947	.0196858
95	.1506216	.0000000	.6317732	-.0154011	.0281572	.0275207
100 B	.3104800	.1111858	.6317042	-.0222503	.0248837	.0299949
100 E	.2667585	.2431262	.4834069	-.0337498	.0187182	.0326548
105	.0000000	.2430070	.1887485	-.0410955	.0111744	.0363357
110	-.1928349	.2429219	-.0272970	-.0425544	.0061857	.0388239
115	-.1928459	.0000000	.0000000	-.0426531	.0035819	.0396893
120 B	-.1928393	-.7832109	.0846780	-.0430057	.0056121	.0297604
120 E	-.1565007	-.7083103	.1172654	-.0422441	.0082483	.0237711
125	.0336003	-.0011331	.1171636	-.0280515	.0102970	.0084811
130	.0000000	-.0010769	.0000000	-.0210766	.0095761	.0057888
130A	-.0353954	-.0008519	-.1577085	.0023871	.0066927	-.0010530
135	.0000000	-.0006267	.0000000	.0113059	.0038092	-.0014789
135A	.0059764	-.0004013	.1812985	.0056948	.0009258	.0004726
137	-.0036983	-.0001758	.1578583	-.0093036	-.0019576	.0001375
138	-.0310162	.1255825	.1579847	-.0124258	-.0027288	.0001375
140	.0000000	-.0001319	.0000000	-.0076459	-.0014682	-.0003089
140A	.0019760	-.0000660	-.0489145	.0018841	-.0007341	.0000761
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 11

FREQUENCY : 24.1674640

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0004538	-.0065639	.0009193	.0012624	.0003935	.0021024
15	.0049513	-.0612679	.0110755	.0025466	.0009458	.0024883
20	.0092255	-.0788246	.0208385	.0018784	.0011314	-.0009684
25	.0018333	-.0788940	-.0007783	.0082471	.0011314	-.0026064
30	-.0135728	-.0789620	-.0504489	.0137730	.0011314	-.0042368
35	-.0499476	-.0790223	-.1693770	.0178647	.0011314	-.0054515
40	-.0932270	-.0790297	-.3112677	.0185011	.0011314	-.0056421
45 B	.0217223	-.0786211	-.0548248	-.0105655	.0016602	-.0002076
45 E	.0285618	-.0225377	-.1109453	-.0104952	.0018319	.0021686
50	.0325139	.0000000	-.1109739	-.0092955	.0016304	.0030356
55	.0384460	.0765871	-.1111258	-.0035580	-.0012073	.0079486
60	.0056881	-.0097631	-.1441138	-.0029517	-.0022208	.0092896
65	.0000000	.0000000	-.1441401	-.0036739	-.0016178	.0086772
70	-.0073429	.0370838	-.1442176	-.0022245	.0001126	.0066613
75	.0036056	.0088503	-.1439217	.0079940	.0014226	.0041862
80 B	.0098174	-.0337194	-.1436900	.0127917	.0015622	.0033441
80 E	.0054602	-.1136656	-.0543480	.0186386	.0014856	.0020116
85	.0000000	-.1136466	.0000000	.0165114	.0014648	.0016462
90	-.0143063	-.1134021	.0858518	-.0064321	.0012572	-.0001440
95	.0023707	.0000000	.0857162	-.0016944	.0001541	-.0002798
100 B	.0011368	-.0005073	.0856672	.0007516	-.0006076	-.0003227
100 E	-.0021749	-.0011641	.0814955	-.0022267	-.0020584	-.0004123
105	.0000000	-.0013585	.0535848	-.0043473	-.0037703	-.0000845
110	-.0004471	-.0014869	.0313851	-.0039743	-.0049023	.0002759
115	-.0004442	.0000000	.0000000	-.0022725	-.0048933	-.0019079
120 B	-.0004334	.1629900	-.0695953	.0038054	-.0016541	-.0097837
120 E	-.0061668	.1847127	-.0763046	.0060109	-.0009247	-.0085629
125	-.0148799	-.0052262	-.0762587	.0147405	-.0001949	-.0036198
130	.0000000	-.0052156	.0000000	.0172639	-.0001492	-.0026217
130A	.0171518	-.0051722	.2872061	.0058793	.0000337	.0004262
135	.0000000	-.0051270	.0000000	-.0413286	.0002165	.0008774
135A	-.0081308	-.0050800	-.9997968	-.0430812	.0003993	.0000366
137	-.0044596	-.0050312	-.9989970	.0574809	.0005822	-.0003119
138	.0025381	-.8319415	-1.0000000	.0834284	.0006613	-.0003119
140	.0000000	-.0037745	.0000000	.0490676	.0004366	-.0001988
140A	.0012934	-.0018878	.3192929	-.0120914	.0002183	.0000490
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 12

FREQUENCY : 24.5875490

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.6719162	-.0006588	.1214781	.0018438	-.0005350	.0101984
150	.0000000	-.0013167	.0000000	-.0074206	-.0010701	-.0410448
155	.2148172	-.0014061	-.0391406	-.0082108	-.0011429	-.0441249
160	.2153566	-1.0000000	.0000000	-.0137818	-.0016018	-.0104126
165	.2157652	-.3392024	.0088331	-.0205534	.0028353	.0305542

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.2157857	-.2564305	.0000000	-.0210817	.0036116	.0292717
175	.2158077	-.1649714	-.0132547	-.0217060	.0045094	.0265632
180 B	.0870759	.0065401	-.1845084	-.0163790	.0047643	.0142777
180 E	.0495101	.0284949	-.2342039	-.0117888	.0044347	.0111696
185	.0000000	.0295824	.0000000	.0080553	.0031141	-.0022118
185A	.0176893	.0300742	.0811079	-.0007301	.0024869	.0003832
190	.0000000	.0305500	.0000000	-.0050889	.0018598	.0006549
190A	-.0039116	.0310510	-.0966414	-.0009177	.0011747	-.0001844
195	.0000000	.0315321	.0000000	.0088083	.0004395	.0000924
200	-.0017906	.0317180	.0878225	.0063146	.0002169	.0001514
205	.0000000	.0000000	.0880250	.0023195	.0002742	-.0001408
205A	.0073019	-.0360523	.0884451	.0005789	.0002130	-.0007841
210	.0000000	.0000000	.0888301	-.0046841	-.0011443	-.0014274
210A	-.0399722	.1521415	.0893110	-.0023114	-.0006500	-.0023304
215	.0000000	.0000000	.0897219	.0140286	.0037721	-.0032335
215A	.1421265	-.5228294	.0901796	-.0010563	-.0002665	-.0044998
220	.0000000	.0000000	.0904985	-.0097805	-.0027002	-.0057662
225 B	-.0126753	.0209869	.0906285	.0045952	.0005210	-.0065698
225 E	-.0103035	-.0360942	.0884745	.0050488	.0004590	-.0062213
230	-.0102298	.0000000	.0000000	.0045535	.0070960	.0136558
230A	-.0101322	.6114741	-.2649142	.0039814	.0009153	.0034657
235	-.0100215	.0000000	.0000000	.0034093	-.0107802	-.0276060
235A	-.0098967	-.6330024	.2207510	.0028322	.0017722	.0034391
240	-.0097587	.0000000	.0000000	.0022551	.0036463	.0137619
245	-.0096084	.0090667	.0161594	.0016800	.0005756	-.0053618
250	.0000000	.0000000	.0161837	.0008428	.0022254	-.0043565
255 B	.0383822	.0060326	.0162333	-.0012695	.0027168	-.0022077
255 E	.0501443	.0049873	.0060372	-.0013257	.0016821	-.0013296
260	.0501563	.0000000	.0000000	-.0012817	.0014240	-.0012247
265 B	.0502381	-.0294451	-.0230000	-.0007413	-.0008149	.0006747
265 E	.0488095	-.0255248	-.0197032	-.0006665	-.0010551	.0009787
270	.0347176	-.0065822	-.0056037	.0000105	-.0015645	.0018242
275	.0000000	-.0065656	.0000000	.0002997	-.0018545	.0015172
280	-.0203692	-.0064998	-.0002207	.0001593	-.0027396	-.0003428
285	-.0011453	-.0052447	-.0002216	.0001237	-.0027063	-.0004082
290	.0000000	-.0052410	.0000000	.0000398	-.0026308	-.0004102
290A	.0071592	-.0051986	-.0050190	-.0001596	-.0018284	.0000036
295	.0000000	-.0051518	.0000000	.0006048	-.0010260	.0003957
300	-.0036693	-.0051361	.0071112	.0009272	-.0007722	.0003751
305	.0001181	.0000000	.0071112	.0009662	-.0006787	.0003156
310 B	.0007886	.0009576	.0071112	.0009473	-.0006648	.0003042
310 E	.0039502	.0041427	.0040475	.0007422	-.0005888	.0002218
315	.0039475	.0020465	-.0013587	.0004361	-.0004839	.0002093
320 B	.0028038	.0020470	.0006931	.0003128	-.0003924	.0001952

MODE SHAPE NUMBER 13

FREQUENCY : 24.6221814

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.5981564	.0005828	-.1097074	-.0016615	.0004768	-.0090589
150	.0000000	.0011648	.0000000	.0066868	.0009537	.0364586
155	-.1907299	.0012439	.0352552	.0073923	.0010186	.0391565
160	-.1912124	.8846769	.0000000	.0123539	.0014663	.0090919
165	-.1915791	.2940793	-.0081847	.0183847	-.0026259	-.0271551

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.1915975	.2205407	.0000000	.0188552	-.0033479	-.0259989
175	-.1916174	.1393347	.0122905	.0194113	-.0041803	-.0235787
180 B	-.0793740	-.0141317	.1655319	.0146842	-.0045011	-.0126622
180 E	-.0464689	-.0338317	.2101580	.0106082	-.0042308	-.0099097
185	.0000000	-.0347753	.0000000	-.0075475	-.0033281	.0018445
185A	-.0133036	-.0351944	-.0813520	.0004710	-.0028993	-.0003774
190	.0000000	-.0355946	.0000000	.0056336	-.0024706	-.0003111
190A	-.0039072	-.0360100	.1168820	.0013658	-.0020023	.0002921
195	.0000000	-.0364022	.0000000	-.0111692	-.0015339	-.0008727
200	.0119563	-.0365518	-.1126635	-.0082017	-.0013475	-.0014396
205	.0000000	.0000000	-.1129257	-.0011879	-.0013648	-.0018536
205A	-.0217619	-.0223095	-.1134701	.0016423	-.0003666	-.0027650
210	.0000000	.0000000	-.1139693	-.0055215	.0028623	-.0036764
210A	.0934483	.2169291	-.1145934	-.0038651	.0014257	-.0049558
215	.0000000	.0000000	-.1151275	.0211471	-.0086260	-.0062353
215A	-.3214221	-.8080232	-.1157240	-.0013993	.0006630	-.0080293
220	.0000000	.0000000	-.1161418	-.0155195	.0059596	-.0098234
225 B	.0222523	.0477478	-.1163138	.0064212	-.0015133	-.0109619
225 E	.0152985	-.0411066	-.1101130	.0071887	-.0011247	-.0103894
230	.0151380	.0000000	.0000000	.0067118	-.0085923	.0211903
230A	.0149342	.9606152	.3253826	.0061609	-.0011755	.0055453
235	.0147110	.0000000	.0000000	.0056099	.0133237	-.0435116
235A	.0144664	-1.0000000	-.2746151	.0050542	-.0021701	.0054153
240	.0142026	.0000000	.0000000	.0044984	-.0045878	.0217124
245	.0139210	.0226094	-.0137793	.0039446	-.0010716	-.0076458
250	.0000000	.0000000	-.0138107	.0026183	-.0029003	-.0056308
255 B	-.0435037	-.0074063	-.0138758	-.0007895	-.0027601	-.0013242
255 E	-.0547511	-.0028870	-.0046917	-.0008100	-.0013824	.0005070
260	-.0547636	.0000000	.0000000	-.0007088	-.0010807	.0008320
265 B	-.0548438	.0321516	.0123193	.0005354	.0008356	-.0005674
265 E	-.0534193	.0286982	.0090134	.0005926	.0010422	-.0009224
270	-.0397712	.0075716	-.0046341	.0003901	.0015128	-.0019981
275	.0000000	.0075560	.0000000	.0001724	.0018456	-.0017629
280	.0214196	.0074907	.0006419	-.0003413	.0028613	.0004206
285	.0013235	.0050394	.0006421	-.0002821	.0028293	.0004748
290	.0000000	.0050356	.0000000	-.0001855	.0027490	.0004718
290A	-.0079211	.0049927	.0031435	.0001794	.0018950	-.0000130
295	.0000000	.0049454	.0000000	-.0005391	.0010409	-.0004193
300	.0038298	.0049296	-.0066104	-.0008830	.0007708	-.0003867
305	.0000690	.0000000	-.0066106	-.0009313	.0006697	-.0003194
310 B	-.0005917	-.0009236	-.0066106	-.0009141	.0006542	-.0003066
310 E	-.0036769	-.0039809	-.0036403	-.0007209	.0005662	-.0002157
315	-.0036744	-.0019807	.0015049	-.0004322	.0004572	-.0001972
320 B	-.0026006	-.0019813	-.0005422	-.0003138	.0003683	-.0001824

MODE . S H A P E N U M B E R 14

FREQUENCY : 24.8063953

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0520000	.0000517	-.0088559	-.0001325	.0000509	-.0007782
150	.0000000	.0001033	.0000000	.0005334	.0001019	.0031321
155	-.0163699	.0001103	.0028102	.0005902	.0001088	.0033646
160	-.0164054	.0763066	.0000000	.0010105	.0000571	.0007666
165	-.0164294	.0227130	-.0000722	.0015215	-.0000262	-.0024754

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0164304	.0159912	.0000000	.0015614	-.0000259	-.0023857
175	-.0164314	.0084997	.0000808	.0016085	-.0000212	-.0021915
180 B	-.0014716	-.0042437	.0128055	.0012250	.0001996	-.0012133
180 E	.0026261	-.0058902	.0165414	.0008925	.0002831	-.0009415
185	.0000000	-.0059626	.0000000	-.0006339	.0010730	.0005219
185A	-.0084341	-.0059920	-.0071857	.0000258	.0014482	.0000790
190	.0000000	-.0060180	.0000000	.0005291	.0018233	-.0008431
190A	.0218707	-.0060427	.0114997	.0001462	.0022331	-.0003585
195	.0000000	-.0060635	.0000000	-.0011214	.0026429	.0022959
200	-.0271823	-.0060707	-.0118883	-.0009977	.0028060	.0028805
205	.0000000	.0000000	-.0119095	-.0004084	.0034269	.0027425
205A	.0624021	.0012347	-.0119526	.0001413	.0012876	.0024388
210	.0000000	.0000000	-.0119910	-.0001687	-.0086870	.0021350
210A	-.2900933	.0101920	-.0120365	-.0002257	-.0045014	.0017087
215	.0000000	.0000000	-.0120725	.0010810	.0268851	.0012822
215A	1.0000000	-.0426292	-.0121068	-.0000657	-.0023002	.0006843
220	.0000000	.0000000	-.0121220	-.0008168	-.0176341	.0000864
225 B	-.0283685	.0019014	-.0121219	.0004025	.0068440	-.0002930
225 E	.0036331	-.0020282	-.0406777	.0004810	.0045707	-.0003518
230	.0040939	.0000000	.0000000	.0006739	-.0062558	.0008810
230A	.0046213	.0406767	.2100085	.0008968	-.0003712	.0002362
235	.0051425	.0000000	.0000000	.0011196	.0077493	-.0018317
235A	.0056613	-.0416483	-.1378522	.0013444	-.0016400	.0002423
240	.0061726	.0000000	.0000000	.0015692	-.0011477	.0008563
245	.0066738	.0113138	-.0675512	.0017933	.0004425	.0007256
250	.0000000	.0000000	-.0675649	.0017064	-.0032071	.0013486
255 B	-.0949832	-.0213800	-.0675846	.0015202	-.0087402	.0026802
255 E	-.1373529	-.0136548	-.0273392	.0017350	-.0073563	.0033116
260	-.1373884	.0000000	.0000000	.0018643	-.0063268	.0034955
265 B	-.1376397	.1069046	.0457762	.0034539	.0036749	-.0013938
265 E	-.1317111	.0953528	.0318062	.0034707	.0042337	-.0022768
270	-.0806438	.0288708	-.0192901	.0019779	.0054232	-.0043461
275	.0000000	.0288062	.0000000	.0005891	.0061470	-.0035581
280	.0612725	.0285409	.0028674	-.0014190	.0083561	.0006722
285	.0027375	.0181865	.0028687	-.0012293	.0082368	.0009569
290	.0000000	.0181712	.0000000	-.0008601	.0080116	.0009930
290A	-.0190624	.0179994	.0088857	.0006726	.0056156	.0000375
295	.0000000	.0178117	.0000000	-.0018564	.0032196	-.0011444
300	.0109008	.0177491	-.0232716	-.0031628	.0024619	-.0011392
305	-.0012351	.0000000	-.0232714	-.0033477	.0021877	-.0009915
310 B	-.0033989	-.0033159	-.0232712	-.0032792	.0021482	-.0009634
310 E	-.0136928	-.0145286	-.0132371	-.0025636	.0019422	-.0007462
315	-.0136841	-.0072839	.0047567	-.0014997	.0016210	-.0007335
320 B	-.0096695	-.0072851	-.0022931	-.0010756	.0013224	-.0006883

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
320 E	-.0029847	-.0028952	-.0029781	-.0005258	.0008502	-.0004037
500	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 15

FREQUENCY : 25.5688145

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.2750918	-.0002322	.0508407	-.0007226	-.0002076	.0039096
150	.0000000	-.0004640	.0000000	-.0029080	-.0004153	-.0157348
155	.0813501	-.0004955	-.0151586	-.0031452	-.0004435	-.0165013
160	.0815657	-.3467202	.0000000	-.0047729	-.0006184	-.0023270
165	.0817267	-.0476516	.0034016	-.0067513	.0010920	.0123130

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0817345	-.0144841	.0000000	-.0069057	.0013906	.0116878
175	.0817430	.0219096	-.0050969	-.0070881	.0017245	.0105669
180 B	.0294510	.0779278	-.0610464	-.0053895	.0017233	.0056700
180 E	.0143065	.0851781	-.0775319	-.0039536	.0015712	.0044172
185	.0000000	.0853549	.0000000	.0032887	.0008082	-.0010491
185A	.0100091	.0853620	.0434933	.0001056	.0004459	.0001195
190	.0000000	.0853197	.0000000	-.0037177	.0000835	.0005633
190A	-.0094219	.0852169	-.0886787	-.0012844	-.0003123	.0000534
195	.0000000	.0850553	.0000000	.0089232	-.0007081	-.0007797
200	.0086806	.0849746	.1034631	.0106547	-.0008656	-.0008817
205	.0000000	.0000000	.1035493	.0074520	-.0011175	-.0007647
205A	-.0206124	-.0522262	.1037067	-.0011725	-.0004300	-.0005073
210	.0000000	.0000000	.1038195	-.0026610	.0028740	-.0002499
210A	.0955909	.0269700	.1039025	.0005071	.0014464	.0001115
215	.0000000	.0000000	.1038975	.0006104	-.0087212	.0004729
215A	-.3169686	.0108272	.1037422	-.0004136	.0011138	.0009797
220	.0000000	.0000000	.1034141	.0010532	.0042417	.0014864
225 B	.0145863	-.0344908	.1031165	.0015236	.0027470	.0018080
225 E	.0380748	-.0327691	.0718831	.0015185	.0080215	.0018753
230	.0377351	.0000000	.0000000	.0015692	-.0174845	-.0006360
230A	.0372932	-.0578930	.9654040	.0016277	-.0066332	-.0006027
235	.0367989	.0000000	.0000000	.0016863	.0441854	.0030622
235A	.0362480	.0784157	-1.0000000	.0017453	-.0066360	-.0003203
240	.0356452	.0000000	.0000000	.0018044	-.0174725	-.0017728
245	.0349938	.0119325	-.0551865	.0018632	-.0016662	.0019246
250	.0000000	.0000000	-.0552933	.0018871	-.0083917	.0024261
255 B	-.1450217	-.0260860	-.0555132	.0019258	-.0100418	.0034978
255 E	-.1873631	-.0165339	-.0198292	.0020019	-.0056482	.0040281
260	-.1874130	.0000000	.0000000	.0020312	-.0046577	.0042305
265 B	-.1877583	.1178317	.0770345	.0023919	.0028068	-.0024473
265 E	-.1828212	.1036670	.0656477	.0022822	.0036561	-.0036726
270	-.1332866	.0315236	.0160832	.0001405	.0055812	-.0069848
275	.0000000	.0314515	.0000000	-.0008612	.0069724	-.0058712
280	.0836750	.0311525	.0013666	-.0009124	.0112185	.0013527
285	.0047947	.0242561	.0013701	-.0007067	.0111193	.0016982
290	.0000000	.0242387	.0000000	-.0002986	.0108191	.0017267
290A	-.0313092	.0240408	.0224035	.0007613	.0076262	.0000023
295	.0000000	.0238204	.0000000	-.0027762	.0044332	-.0017358
300	.0161163	.0237461	-.0327636	-.0042840	.0034235	-.0016551
305	-.0007989	.0000000	-.0327636	-.0044629	.0030531	-.0014116
310 B	-.0038196	-.0044217	-.0327635	-.0043731	.0029985	-.0013652
310 E	-.0181760	-.0191706	-.0187904	-.0034161	.0026983	-.0010191
315	-.0181650	-.0094851	.0061098	-.0019934	.0022343	-.0009640
320 B	-.0129197	-.0094871	-.0032507	-.0014260	.0018107	-.0008946

MODE SHAPE NUMBER 16

FREQUENCY : 25.6286464

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0008492	-.0102531	.0022515	.0015630	.0008800	.0034730
15	.0077273	-.0981409	.0192405	.0024705	.0009136	.0049711
20	.0080715	-.1342884	.0206015	.0009465	-.0007549	.0009217
25	-.0048480	-.1344215	.0020582	.0080279	-.0007549	-.0066491
30	-.0483174	-.1345518	-.0490484	.0145368	-.0007549	-.0124946
35	-.1590673	-.1346672	-.1770136	.0193839	-.0007549	-.0168207
40	-.2930695	-.1346814	-.3313561	.0201458	-.0007549	-.0174946
45 B	-.1038419	-.1338641	-.0888747	-.0155269	-.0040250	.0134215
45 E	-.1994817	-.0412339	-.1767061	-.0186278	-.0045726	.0156147
50	-.2094597	.0000000	-.1767218	-.0175203	-.0041458	.0160380
55	-.2262432	.1696814	-.1767920	-.0093987	.0028580	.0184365
60	-.0738631	-.0020990	-.0243781	-.0010292	.0225942	.0168220
65	.0000000	.0000000	-.0243848	-.0004588	.0267146	.0160582
70	.2675932	-.0019770	-.0244052	.0007612	.0197576	.0135441
75	.2871301	-.0175749	-.0243558	.0017430	-.0177591	.0104571
80 B	.1879711	-.0254934	-.0243140	.0021995	-.0286506	.0094069
80 E	-.0048819	-.0388312	-.0093258	.0031717	-.0355495	.0016045
85	.0000000	-.0388183	.0000000	.0028503	-.0358877	-.0060728
90	1.0000000	-.0386680	.0025994	-.0025149	-.0392695	-.0409328
95	.2640643	.0000000	.0025945	.0005655	-.0367747	-.0216509
100 B	.0510282	-.0107610	.0025928	.0026618	-.0338964	-.0155619
100 E	-.0533611	-.0260801	.0184789	.0032140	-.0264839	-.0086321
105	.0000000	-.0261406	.0433785	.0032434	-.0180315	-.0056491
110	.0262028	-.0261797	.0602649	.0033739	-.0124420	-.0046162
115	.0261949	.0000000	.0000000	.0036667	-.0071835	-.0042738
120 B	.0261578	.0971061	-.0227000	.0047127	.0015241	-.0039453
120 E	.0291982	.0909433	-.0172075	.0049557	-.0001021	-.0030650
125	-.0020320	.0005309	-.0170480	.0040344	-.0022890	-.0006220
130	.0000000	.0005238	.0000000	.0028709	-.0021517	-.0003137
130A	.0016389	.0004949	.0080107	-.0010051	-.0016025	.0000719
135	.0000000	.0004659	.0000000	.0012431	-.0010533	.0000193
135A	.0013558	.0004367	.0496318	.0025906	-.0005040	-.0001054
137	.0021341	.0004073	.0545500	-.0030998	.0000452	.0000701
138	.0035702	.0468228	.0546116	-.0047421	.0001704	.0000701
140	.0000000	.0003056	.0000000	-.0026996	.0000339	.0001244
140A	-.0008181	.0001528	-.0177536	.0006652	.0000169	-.0000307
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000



MODE SHAPE NUMBER 17

FREQUENCY : 27.9012835

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0043950	-.0000029	.0061989	.0000729	-.0000293	.0000517
150	.0000000	-.0000057	.0000000	-.0002935	-.0000587	-.0002081
155	.0010404	-.0000061	-.0014733	-.0002956	-.0000627	-.0002064
160	.0010412	-.0037766	.0000000	-.0003083	-.0000178	.0000087
165	.0010406	.0017908	-.0000803	-.0003237	-.0000236	.0002120

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0010405	.0023651	.0000000	-.0003249	-.0000355	.0002050
175	.0010403	.0030162	.0001424	-.0003263	-.0000556	.0001951
180 B	-.0012123	.0056533	-.0024969	-.0002816	-.0001522	.0001195
180 E	-.0018175	.0060498	-.0034326	-.0002467	-.0001782	.0000910
185	.0000000	.0060368	.0000000	.0004576	-.0004745	-.0001268
185A	.0023708	.0060242	.0099981	.0001651	-.0006152	-.0000301
190	.0000000	.0060074	.0000000	-.0011286	-.0007558	.0002493
190A	-.0065091	.0059843	-.0303294	-.0004860	-.0009095	.0001008
195	.0000000	.0059563	.0000000	.0030984	-.0010632	-.0006579
200	.0094331	.0059438	.0314074	.0022578	-.0011244	-.0013599
205	.0000000	.0000000	.0314835	-.0010519	-.0008530	-.0025963
205A	-.0061300	.0542432	.0316393	-.0020353	.0001294	-.0053180
210	.0000000	.0000000	.0317788	.0093666	.0003244	-.0080399
210A	.0036356	-.3307267	.0319473	.0049380	-.0000552	-.0118607
215	.0000000	.0000000	.0320836	-.0293295	-.0001010	-.0156816
215A	.0005029	1.0000000	.0322201	.0073416	.0000539	-.0210394
220	.0000000	.0000000	.0322927	-.0001974	-.0001157	-.0263972
225 B	.0007367	.7451258	.0323056	-.0454311	.0004148	-.0297973
225 E	.0035709	.8191908	.0288587	-.0448751	.0008535	-.0314624
230	.0035550	.0000000	.0000000	-.0383219	.0001852	-.0105979
230A	.0035311	.2107674	.0218173	-.0307515	-.0003888	.0081319
235	.0035012	.0000000	.0000000	-.0231809	.0013799	-.0221396
235A	.0034652	-.7445758	-.0376363	-.0155443	-.0001966	.0013266
240	.0034232	.0000000	.0000000	-.0079078	-.0005884	.0167996
245	.0033756	-.0002791	-.0029832	-.0002976	-.0003179	-.0069729
250	.0000000	.0000000	-.0029882	-.0001787	-.0006721	-.0057050
255 B	-.0099520	.0108443	-.0029984	-.0011556	-.0006288	-.0029953
255 E	-.0125122	.0059676	-.0009229	-.0010038	-.0002976	-.0017160
260	-.0125147	.0000000	.0000000	-.0009165	-.0001817	-.0012981
265 B	-.0125241	.0017216	-.0088228	.0001577	.0003829	.0004577
265 E	-.0119503	.0028989	-.0101947	.0002353	.0003975	.0003683
270	-.0075418	-.0000297	-.0145923	.0006340	.0004543	-.0001581
275	.0000000	-.0000239	.0000000	.0006371	.0005335	-.0004272
280	.0057174	-.0000060	.0004018	-.0001670	.0007753	.0000911
285	.0002956	-.0010290	.0004007	-.0001425	.0007575	.0001058
290	.0000000	-.0010281	.0000000	-.0001461	.0007279	.0001041
290A	-.0014984	-.0010184	-.0028997	-.0000035	.0004139	-.0000124
295	.0000000	-.0010075	.0000000	.0001601	.0000999	-.0000541
300	.0003810	-.0010038	.0015827	.0001876	.0000006	-.0000249
305	.0004880	.0000000	.0015823	.0001800	-.0000402	.0000031
310 B	.0005319	.0001760	.0015822	.0001726	-.0000474	.0000084
310 E	.0008633	.0008009	.0011885	.0001193	-.0000920	.0000363
315	.0008634	.0003652	.0001755	.0000454	-.0000996	.0000443
320 B	.0006335	.0003649	.0003528	.0000233	-.0000837	.0000397

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DISPLACEMENTS

ROTATIONS

DATA
PT

DX

DY

DZ

RX

RY

RZ

320 E
500

.0002037
.0000000

.0001777
.0000000

.0002047
.00000000

.0000154
.0000000

- .0000573
 .0000000

.0000316
.0000000

MODE SHAPE NUMBER 18

FREQUENCY : 28.4628568

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0002327	.0099451	.0006192	-.0011666	.0002290	-.0034900
15	.0012552	.0909380	.0032490	-.0007511	-.0001207	-.0047464
20	-.0012722	.1154262	-.0025564	.0016387	-.0011763	-.0007047
25	-.0001083	.1155674	.0000460	-.0029484	-.0011763	.0012845
30	.0096567	.1157056	.0225416	-.0068604	-.0011763	.0029746
35	.0371102	.1158281	.0859014	-.0097887	-.0011763	.0042404
40	.0710620	.1158431	.1642817	-.0102546	-.0011763	.0044419
45 B	.0198680	.1149595	.1135106	.0142331	-.0033574	-.0030296
45 E	.0193242	.0339442	.1918835	.0156643	-.0044466	-.0064040
50	.0092585	.0000000	.1918932	.0139551	-.0044441	-.0075748
55	-.0381714	-.1141993	.1919232	.0054212	-.0023706	-.0142095
60	-.0211647	.0222266	.2089546	.0066685	.0060891	-.0142062
65	.0000000	.0000000	.2089406	.0083570	.0080722	-.0125814
70	.0880865	-.0844017	.2088768	.0051381	.0067830	-.0072332
75	.0978389	-.0359830	.2080129	-.0144659	-.0054517	-.0006665
80 B	.0674787	.0399804	.2074562	-.0223116	-.0085255	.0015676
80 E	.0068436	.1727272	.0669123	-.0258021	-.0073260	.0029656
85	.0000000	.1727284	.0000000	-.0162168	-.0057947	.0010549
90	.1134404	.1726249	.5998509	.0265075	.0095180	-.0000940
95	.3259370	.0000000	.6001292	-.0115586	.0106918	.0197672
100 B	.3851400	.1096406	.6001560	-.0237898	.0090147	.0260391
100 E	.2739735	.2477772	.4507757	-.0324276	.0074843	.0328680
105	.0000000	.2479585	.1774626	-.0377063	.0054130	.0374398
110	-.1971346	.2480672	-.0222641	-.0399722	.0040433	.0392117
115	-.1971740	.0000000	.0000000	-.0426287	.0035620	.0426740
120 B	-.1972328	-1.0000000	.1054972	-.0521162	.0068411	.0417147
120 E	-.1556118	-.9271191	.1437205	-.0540351	.0092450	.0338423
125	.0518176	-.0041481	.1435991	-.0354736	.0111428	.0128716
130	.0000000	-.0040442	.0000000	-.0247136	.0103903	.0090506
130A	-.0588723	-.0036273	-.1333513	.0055114	.0073805	-.0015243
135	.0000000	-.0032086	.0000000	.0021548	.0043706	-.0028113
135A	.0206837	-.0027883	-.0878189	-.0070304	.0013608	.0002751
137	.0059778	-.0023667	-.1229494	.0069070	-.0016491	.0007269
138	-.0180038	-.1159761	-.1231207	.0119243	-.0024279	.0007269
140	.0000000	-.0017758	.0000000	.0061433	-.0012368	.0001544
140A	-.0010390	-.0008882	.0413283	-.0015139	-.0006184	-.0000381
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

M O D E S H A P E N U M B E R 19

FREQUENCY : 28.7240131

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.1250617	-.0000515	-1.0000000	-.0108497	.0038373	.0013569
150	.0000000	-.0001030	.0000000	.0436658	.0076746	-.0054609
155	.0267004	-.0001099	.2147682	.0421545	.0081967	-.0051496
160	.0267417	-.0792510	.0000000	.0293875	.0046212	.0008107
165	.0267500	.0606713	-.0079966	.0138691	-.0027824	.0046175

NORMALIZED MODE SHAPES

ME101/I2

DATE 040182

PAGE 268

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0267488	.0729741	.0000000	.0126584	-.0030091	.0043207
175	.0267469	.0864208	.0101229	.0112276	-.0031741	.0039496
180 B	-.0276786	.0109381	.0856235	.0063787	-.0035480	.0020562
180 E	-.0389069	.0025316	.1046452	.0044533	-.0035392	.0013893
185	.0000000	.0024886	.0000000	-.0031056	-.0025528	-.0011008
185A	.0098755	.0024653	-.0267291	.0004910	-.0020843	.0001585
190	.0000000	.0024402	.0000000	.0011105	-.0016158	.0004569
190A	-.0054041	.0024108	.0099457	-.0002089	-.0011040	-.0000412
195	.0000000	.0023793	.0000000	-.0002638	-.0005923	-.0002899
200	.0028279	.0023662	-.0006916	.0001472	-.0003886	-.0002776
205	.0000000	.0000000	-.0006934	.0002621	-.0002351	-.0002690
205A	-.0016357	-.0017411	-.0006970	-.0000467	.0000384	-.0002502
210	.0000000	.0000000	-.0007003	-.0000713	.0000781	-.0002313
210A	.0005754	.0000706	-.0007043	.0000333	-.0000222	-.0002049
215	.0000000	.0000000	-.0007075	-.0000632	.0000117	-.0001784
215A	.0014991	.0033391	-.0007107	.0000109	.0000034	-.0001413
220	.0000000	.0000000	-.0007124	.0000194	-.0000254	-.0001042
225 B	-.0000364	.0017323	-.0007127	-.0001173	.0000030	-.0000807
225 E	-.0000419	.0019348	-.0006878	-.0001160	-.0000106	-.0000768
230	-.0000409	.0000000	.0000000	-.0000993	-.0000138	-.0000304
230A	-.0000395	.0001649	-.0001676	-.0000799	.0000090	.0000172
235	-.0000381	.0000000	.0000000	-.0000605	-.0000224	-.0000388
235A	-.0000367	-.0014926	.0007873	-.0000410	.0000016	.0000012
240	-.0000351	.0000000	.0000000	-.0000214	.0000160	.0000340
245	-.0000335	-.0000074	-.0000478	-.0000019	.0000034	-.0000144
250	.0000000	.0000000	-.0000477	-.0000011	.0000049	-.0000118
255 B	.0000132	.0000255	-.0000475	-.0000022	-.0000028	-.0000064
255 E	-.0000079	.0000129	-.0000222	-.0000016	-.0000056	-.0000037
260	-.0000079	.0000000	.0000000	-.0000013	-.0000051	-.0000028
265 B	-.0000079	.0000288	-.0000157	.0000024	.0000031	.0000019
265 E	-.0000033	.0000316	-.0000269	.0000026	.0000032	.0000018
270	.0000295	.0000186	-.0000596	.0000033	.0000032	.0000017
275	.0000000	.0000186	.0000000	.0000025	.0000032	.0000010
280	.0000209	.0000185	.0000038	-.0000016	.0000031	-.0000006
285	-.0000008	.0000069	.0000038	-.0000015	.0000030	-.0000003
290	.0000000	.0000069	.0000000	-.0000013	.0000029	-.0000003
290A	.0000011	.0000069	-.0000084	.0000004	.0000020	.0000001
295	.0000000	.0000068	.0000000	-.0000004	.0000011	-.0000001
300	.0000019	.0000067	-.0000071	-.0000011	.0000008	-.0000002
305	-.0000019	.0000000	-.0000071	-.0000013	.0000007	-.0000002
310 B	-.0000026	-.0000013	-.0000071	-.0000013	.0000007	-.0000002
310 E	-.0000058	-.0000060	-.0000039	-.0000010	.0000006	-.0000002
315	-.0000058	-.0000033	.0000020	-.0000006	.0000006	-.0000003
320 B	-.0000040	-.0000033	-.0000008	-.0000004	.0000005	-.0000003

M O D E S H A P E N U M B E R 20

FREQUENCY : 30.7690148

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0114657	.0000032	.0020743	.0000176	-.0000007	.0000970
150	.0000000	.0000065	.0000000	-.0000706	-.0000013	-.0003905
155	.0017493	.0000069	-.0003208	-.0000570	-.0000014	-.0002966
160	.0017588	-.0004827	.0000000	.0000571	-.0000303	.0001925
165	.0017671	.0077151	.0002391	.0001958	.0000759	.0001401

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0017676	.0080531	.0000000	.0002066	.0000988	.0001079
175	.0017682	.0083491	-.0003671	.0002194	.0001276	.0000775
180 B	.0028063	.0065633	.0014159	.0001746	.0001940	.0000293
180 E	.0029901	.0063282	.0019471	.0001256	.0001994	.0000319
185	.0000000	.0062990	.0000000	-.0000431	.0002473	.0000780
185A	-.0012964	.0062768	.0001218	.0000259	.0002701	.0000112
190	.0000000	.0062495	.0000000	-.0000621	.0002928	-.0001234
190A	.0030290	.0062136	-.0021412	-.0000407	.0003177	-.0000400
195	.0000000	.0061714	.0000000	.0002272	.0003426	.0002857
200	-.0033222	.0061530	.0035831	.0005698	.0003525	.0003540
205	.0000000	.0000000	.0035757	.0006292	.0004019	.0003558
205A	.0068166	-.0049983	.0035578	-.0000756	.0001202	.0003597
210	.0000000	.0000000	.0035377	-.0003202	-.0008928	.0003636
210A	-.0279349	.0053839	.0035057	.0000103	-.0003267	.0003690
215	.0000000	.0000000	.0034694	.0002785	.0022137	.0003745
215A	.0662478	-.0054869	.0034114	-.0001204	-.0008824	.0003822
220	.0000000	.0000000	.0033451	.0002057	.0013352	.0003899
225 B	.0952431	-.0103114	.0032989	.0003818	.0044821	.0003948
225 E	.1161047	-.0099245	-.0161963	.0001572	.0034620	.0003903
230	.1160165	.0000000	.0000000	-.0009083	-.0058390	.0001086
230A	.1156946	-.0033338	.2256743	-.0021391	.0005208	-.0000891
235	.1151373	.0000000	.0000000	-.0033700	.0037415	.0002502
235A	.1143378	.0069944	.0728103	-.0046116	-.0025764	-.0000554
240	.1133017	.0000000	.0000000	-.0058533	.0066299	-.0000273
245	.1120358	-.0451260	-.0441171	-.0070906	-.0143323	-.0041931
250	.0000000	.0000000	-.0441602	-.0069250	-.0189205	-.0063264
255 B	-.2300516	.0870481	-.0442428	-.0058503	-.0124901	-.0108859
255 E	-.2778620	.0538300	-.0081880	-.0055655	-.0041173	-.0130455
260	-.2778868	.0000000	.0000000	-.0053686	-.0001099	-.0138192
265 B	-.2776151	-.5749775	-.4512554	-.0029489	.0044706	-.0031865
265 E	-.2736064	-.5788632	-.4623978	-.0023587	.0018438	-.0015994
270	-.3045653	-.6587032	-.4308436	.0142957	-.0081488	-.0108639
275	.0000000	-.6577874	.0000000	.0192404	-.0264710	-.0102100
280	-.6116520	-.6526018	.0276546	.0054088	-.0823891	.0035385
285	-.0237293	-.6260175	.0275937	-.0047318	-.0842611	-.0070719
290	.0000000	-.6256679	.0000000	-.0151799	-.0835567	-.0097712
290A	.3401588	-.6214847	-1.0000000	-.0169615	-.0760640	-.0034880
295	.0000000	-.6164582	.0000000	.0836866	-.0685714	.0238591
300	-.2392386	-.6146945	.9116356	.1130947	-.0662019	.0267009
305	.1067055	.0000000	.9115995	.1138825	-.0659527	.0265090
310 B	.1726641	.1125208	.9115881	.1110775	-.0660847	.0264725
310 E	.5061996	.4990074	.5753298	.0844891	-.0675915	.0245541
315	.5060098	.2463957	-.0771504	.0453864	-.0601911	.0258996
320 B	.3650374	.2463754	.1302040	.0309872	-.0496532	.0243826

MODE SHAPE NUMBER 21

FREQUENCY : 33.6223736

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
20	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
40	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 B	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 E	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	-.0000000	.0000000	.0000000	.0000000	-.0000000
100 E	-.0000001	-.0000000	.0000000	.0000000	.0000000	-.0000000
105	.0000000	-.0000000	.0000000	.0000000	.0000000	-.0000000
110	.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
137	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-1.0000000	.0011481	.1266647	.0006150	.0003499	.0048553
150	.0000000	.0022933	.0000000	-.0024751	.0006997	-.0195405
155	.0630198	.0024487	-.0081757	-.0007373	.0007473	-.0046456
160	.0638336	.5916640	.0000000	.0132811	-.0024690	.0203987
165	.0646859	.4745042	.0225685	.0303206	.0071343	-.0211313

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0647460	.4139419	.0000000	.0316500	.0093531	-.0225270
175	.0648158	.3393326	-.0349809	.0332210	.0123700	-.0228890
180 B	.3761350	.0706108	.2335123	.0264276	.0206815	-.0136667
180 E	.4459625	.0348831	.3149296	.0195992	.0209045	-.0085830
185	.0000000	.0333284	.0000000	-.0126878	.0154506	.0109945
185A	-.1060021	.0325382	-.1362658	.0011562	.0128604	-.0014529
190	.0000000	.0317154	.0000000	.0079900	.0102702	-.0050909
190A	.0616051	.0307803	.1316980	.0002946	.0074407	.0005300
195	.0000000	.0298083	.0000000	-.0091839	.0046111	.0029427
200	-.0268299	.0294116	-.0713968	-.0015756	.0034850	.0025408
205	.0000000	.0000000	-.0716880	.0046247	.0023380	.0024421
205A	.0175836	-.0346812	-.0722903	-.0006712	-.0003370	.0022247
210	.0000000	.0000000	-.0728389	-.0018822	-.0009611	.0020073
210A	-.0110898	.0212793	-.0735175	.0003790	.0001877	.0017022
215	.0000000	.0000000	-.0740886	.0003495	.0002020	.0013971
215A	-.0068907	.0149894	-.0747064	-.0001586	-.0000935	.0009692
220	.0000000	.0000000	-.0751091	.0002885	.0001739	.0005413
225 B	.0013100	.0010414	-.0752524	-.0002379	-.0000146	.0002698
225 E	.0010987	.0033541	-.0747516	-.0002592	-.0002856	.0001755
230	.0010934	.0000000	.0000000	-.0002446	-.0051932	-.0004596
230A	.0010847	-.0154148	.1544874	-.0002278	.0014663	.0001172
235	.0010735	.0000000	.0000000	-.0002109	-.0007107	-.0000123
235A	.0010595	-.0160231	.1838249	-.0001939	-.0008287	-.0000969
240	.0010428	.0000000	.0000000	-.0001769	.0040465	.0004024
245	.0010237	-.0010348	.0068474	-.0001599	-.0007302	-.0002753
250	.0000000	.0000000	.0068647	-.0001700	.0004369	-.0003049
255 B	.0163514	.0025599	.0069001	-.0001989	.0013579	-.0003681
255 E	.0220339	.0016233	.0022591	-.0002102	.0006842	-.0003999
260	.0220446	.0000000	.0000000	-.0002160	.0005073	-.0004109
265 B	.0221221	-.0074748	-.0053642	-.0002873	-.0002757	.0004269
265 E	.0216683	-.0053124	-.0042964	-.0002770	-.0003288	.0005673
270	.0176577	.0047617	-.0002795	-.0000541	-.0004116	.0009614
275	.0000000	.0047651	.0000000	-.0000462	-.0003602	.0007003
280	-.0014348	.0047548	-.0025861	.0005259	-.0002032	-.0001582
285	-.0001315	.0095181	-.0025862	.0008617	-.0001555	-.0000627
290	.0000000	.0095166	.0000000	.0010190	-.0001141	-.0000287
290A	-.0020943	.0094918	.0298490	.0001717	.0003261	.0000617
295	.0000000	.0094516	.0000000	-.0017126	.0007664	-.0002203
300	.0024434	.0094357	-.0163564	-.0018142	.0009056	-.0002982
305	-.0024786	.0000000	-.0163558	-.0017132	.0009721	-.0003367
310 B	-.0034571	-.0016902	-.0163556	-.0016663	.0009861	-.0003440
310 E	-.0085916	-.0075302	-.0110740	-.0012362	.0010861	-.0003636
315	-.0085890	-.0035963	-.0003128	-.0006035	.0010098	-.0004158
320 B	-.0063031	-.0035956	-.0029655	-.0003823	.0008464	-.0004003

MODE SHAPE NUMBER 22

FREQUENCY : 34.5219007

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	-.0000000	-.0000000	.0000000	.0000000	.0000000
15	-.0000000	-.0000001	-.0000001	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
45 B	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
95	.0000002	.0000000	-.0000000	.0000000	.0000000	.0000000
100 B	.0000002	.0000000	-.0000000	.0000000	.0000000	.0000000
100 E	.0000001	.0000000	-.0000001	.0000000	.0000000	.0000000
105	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
110	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
115	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
125	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	-.0000001	.0000000	-.0000001	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.1724442	-.0002783	-.0114946	-.0000420	-.0001653	-.0006298
150	.0000000	-.0005558	.0000000	.0001690	-.0003305	.0025346
155	-.0055215	-.0005934	.0003623	-.0000424	-.0003530	-.0005692
160	-.0057238	-.1492620	.0000000	-.0019246	.0008018	-.0036555
165	-.0059566	-.0466951	-.0077228	-.0042124	-.0024384	.0070349

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0059742	-.0270012	.0000000	-.0043909	-.0032038	.0072208
175	-.0059948	-.0033959	.0119584	-.0046018	-.0041764	.0072242
180 B	-.1062973	.038980	-.0253017	-.0036969	-.0066997	.0044013
180 E	-.1289862	.0389148	-.0367833	-.0027994	-.0067642	.0028480
185	.0000000	.0389864	.0000000	.0018760	-.0050482	-.0033537
185A	.0333009	.0389565	.0237089	-.0000450	-.0042332	.0004170
190	.0000000	.0388855	.0000000	-.0016932	-.0034182	.0016595
190A	-.0213252	.0387609	-.0336873	-.0002353	-.0025280	-.0001410
195	.0000000	.0385875	.0000000	.0026471	-.0016377	-.0010881
200	.0101950	.0385049	.0323907	.0040387	-.0012834	-.0009719
205	.0000000	.0000000	.0323673	.0037386	-.0009480	-.0009021
205A	-.0091262	-.0287549	.0322973	-.0005150	.0000467	-.0007486
210	.0000000	.0000000	.0322021	-.0016341	.0007572	-.0005950
210A	.0170622	.0206814	.0320258	.0002827	.0000592	-.0003795
215	.0000000	.0000000	.0318000	.0004912	-.0009962	-.0001640
215A	-.0206942	.0075855	.0314007	-.0002257	.0005461	.0001383
220	.0000000	.0000000	.0309061	.0004164	-.0012001	.0004405
225 B	-.0035330	-.0092866	.0305434	.0002748	.0042352	.0006323
225 E	.0265051	-.0072157	-.0059134	.0001966	.0085855	.0006621
230	.0263017	.0000000	.0000000	-.0000887	-.0230867	-.0006375
230A	.0260038	-.0319368	1.0000000	-.0004183	.0053743	.0001221
235	.0256393	.0000000	.0000000	-.0007479	.0014458	.0001459
235A	.0252051	-.0264882	.9511747	-.0010804	-.0057461	-.0002125
240	.0247052	.0000000	.0000000	-.0014129	.0216850	.0007096
245	.0241430	-.0111567	.0501007	-.0017443	-.0065553	-.0013719
250	.0000000	.0000000	.0501799	-.0017312	-.0002088	-.0018804
255 B	.0747963	.0227079	.0503355	-.0016147	.0077746	-.0029671
255 E	.1101750	.0142446	.0189983	-.0016976	.0052625	-.0034770
260	.1102371	.0000000	.0000000	-.0017485	.0044945	-.0036268
265 B	.1107121	-.0907323	-.0786894	-.0023737	-.0022876	.0024556
265 E	.1067070	-.0768658	-.0693939	-.0022867	-.0029531	.0034371
270	.0692885	-.0188717	-.0318759	.0006784	-.0038530	.0047011
275	.0000000	-.0187607	.0000000	.0004421	-.0030713	.0023114
280	-.0018414	-.0183362	-.0303533	.0077121	-.0006858	-.0000432
285	.0019655	.0477200	-.0303591	.0106842	-.0003568	.0006140
290	.0000000	.0477419	.0000000	.0114044	-.0001324	.0008291
290A	-.0310465	.0479303	.2629909	.0001519	.0022550	.0002740
295	.0000000	.0480368	.0000000	-.0120179	.0046424	-.0019359
300	.0187728	.0480534	-.1015976	-.0098354	.0053974	-.0020748
305	-.0104565	.0000000	-.1015965	-.0085106	.0057470	-.0020826
310 B	-.0162374	-.0083954	-.1015956	-.0082728	.0058184	-.0020840
310 E	-.0463506	-.0361278	-.0707600	-.0060131	.0063106	-.0019559
315	-.0463377	-.0157432	-.0085401	-.0026809	.0058180	-.0021146
320 B	-.0347512	-.0157415	-.0198133	-.0015408	.0048562	-.0020204

MODE SHAPE NUMBER 23

FREQUENCY : 34.7850175

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
100 E	-.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
137	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000002	.0000000	.0000002	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0127331	.0000154	.0016285	.0000054	-.0000065	.0000419
150	.0000000	.0000307	.0000000	-.0000216	-.0000131	-.0001688
155	.0003417	.0000328	-.0000454	.0000029	-.0000140	.0000325
160	.0003417	.0085071	.0000000	.0001785	.0000255	.0002188
165	.0003409	.0047936	-.0002551	.0003920	-.0000805	-.0002651

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0003408	.0040667	.0000000	.0004087	-.0001059	-.0002579
175	.0003407	.0032614	.0003925	.0004284	-.0001322	-.0002307
180 B	.0003251	-.0001573	.0038083	.0003245	-.0001892	-.0000957
180 E	.0003085	-.0005891	.0047812	.0002257	-.0002065	-.0000597
185	.0000000	-.0006068	.0000000	-.0000828	-.0004658	-.0000702
185A	.0022677	-.0006141	.0004851	.0000587	-.0005889	-.0000492
190	.0000000	-.0006209	.0000000	-.0001556	-.0007121	.0002703
190A	-.0071297	-.0006275	-.0050569	-.0000834	-.0008466	.0000924
195	.0000000	-.0006332	.0000000	.0004936	-.0009811	-.0006449
200	.0087260	-.0006353	.0046430	.0002605	-.0010347	-.0012057
205	.0000000	.0000000	.0046572	-.0004186	-.0008025	-.0021956
205A	-.0062173	.0137239	.0046858	-.0004220	.0001088	-.0043747
210	.0000000	.0000000	.0047106	.0021426	.0003578	-.0065539
210A	.0046537	-.0697028	.0047392	.0007011	-.0000594	-.0096129
215	.0000000	.0000000	.0047604	-.0049767	-.0001175	-.0126720
215A	.0013930	.1250355	.0047774	.0028346	.0000544	-.0169615
220	.0000000	.0000000	.0047798	-.0064235	-.0001014	-.0212510
225 B	-.0005736	.3500630	.0047736	-.0170682	.0001624	-.0239732
225 E	.0005780	.3121642	.0033708	-.0164119	.0003370	-.0243875
230	.0005722	.0000000	.0000000	-.0146103	-.0006133	.0186287
230A	.0005641	1.0000000	.0298937	-.0125291	.0001324	-.0034909
235	.0005546	.0000000	.0000000	-.0104479	.0000802	-.0045703
235A	.0005435	.8300401	.0270021	-.0083485	-.0001734	.0063759
240	.0005310	.0000000	.0000000	-.0062491	.0006178	-.0210959
245	.0005171	-.0232721	.0011549	-.0041570	-.0001624	.0074878
250	.0000000	.0000000	.0011572	-.0026085	.0000200	.0056337
255 B	.0023203	.0045366	.0011620	.0011460	.0002173	.0016712
255 E	.0032554	.0004275	.0003827	.0012569	.0001169	.0000483
260	.0032573	.0000000	.0000000	.0011826	.0000826	-.0001499
265 B	.0032716	-.0028600	-.0004162	.0002685	-.0000176	.0001200
265 E	.0032504	-.0027011	-.0003606	.0002036	-.0000136	.0001540
270	.0031631	-.0020547	-.0002718	.0000695	-.0000042	.0001951
275	.0000000	-.0020501	.0000000	-.0000626	.0000082	.0001144
280	.0002965	-.0020267	-.0012660	.0003588	.0000462	-.0000356
285	-.0000409	.0009304	-.0012661	.0004559	.0000507	-.0000176
290	.0000000	.0009319	.0000000	.0004651	.0000535	-.0000120
290A	-.0001597	.0009463	.0093369	-.0000261	.0000837	.0000094
295	.0000000	.0009592	.0000000	-.0003597	.0001139	-.0000261
300	.0002976	.0009629	-.0026912	-.0002184	.0001235	-.0000356
305	-.0003643	.0000000	-.0026912	-.0001625	.0001296	-.0000373
310 B	-.0004945	-.0001602	-.0026912	-.0001576	.0001312	-.0000376
310 E	-.0011774	-.0006842	-.0019866	-.0001090	.0001460	-.0000376
315	-.0011769	-.0002571	-.0005181	-.0000359	.0001399	-.0000488
320 B	-.0008970	-.0002571	-.0006408	-.0000120	.0001206	-.0000502

MODE SHAPE NUMBER 24

FREQUENCY : 35.3875904

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
125	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000000
130A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	-.0000002	.0000000	-.0000002	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0139188	.0000359	-.0012460	-.0000031	.0000407	.0000343
150	.0000000	.0000717	.0000000	.0000124	.0000814	-.0001380
155	-.0000304	.0000766	.0000192	-.0000004	.0000870	.0001937
160	.0000068	.0190894	.0000000	-.0000304	-.0001862	.0003400
165	.0000519	-.0020507	.0018116	-.0000669	.0005719	-.0011636

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000554	-.0052909	.0000000	-.0000698	.0007516	-.0011887
175	.0000596	-.0091895	-.0027983	-.0000731	.0009657	-.0012063
180 B	.0198025	-.0086354	-.0033553	-.0000451	.0014703	-.0007772
180 E	.0242386	-.0085806	-.0034684	-.0000167	.0014821	-.0005040
185	.0000000	-.0085536	.0000000	.0000322	.0011630	.0006547
185A	-.0070474	-.0085260	-.0003346	-.0000282	.0010114	-.0000632
190	.0000000	-.0084890	.0000000	.0000822	.0008599	-.0003978
190A	.0061477	-.0084377	.0025718	.0000402	.0006943	.0000032
195	.0000000	-.0083753	.0000000	-.0002452	.0005288	.0003848
200	-.0039528	-.0083474	-.0042272	-.0007420	.0004629	.0003988
205	.0000000	.0000000	-.0042142	-.0008564	.0004145	.0003932
205A	.0054158	.0063289	-.0041832	.0001309	.0000438	.0003809
210	.0000000	.0000000	-.0041487	.0003213	-.0005933	.0003686
210A	-.0163446	-.0028282	-.0040945	-.0000885	-.0001135	.0003513
215	.0000000	.0000000	-.0040337	.0000366	.0010523	.0003340
215A	.0237204	-.0056938	-.0039374	-.0000402	-.0006150	.0003097
220	.0000000	.0000000	-.0038286	.0001252	.0014214	.0002854
225 B	.0547497	-.0073555	-.0037531	.0002260	.0011876	.0002700
225 E	.0574395	-.0067938	-.0040390	-.0000256	-.0004998	.0002586
230	.0574046	.0000000	.0000000	-.0012141	.0032989	.0000747
230A	.0572202	-.0022288	-.1583814	-.0025870	-.0008476	-.0000483
235	.0568819	.0000000	.0000000	-.0039600	.0001144	.0001196
235A	.0563856	.0023497	-.1639141	-.0053449	.0006246	-.0000496
240	.0557348	.0000000	.0000000	-.0067298	-.0026288	.0000802
245	.0549345	-.0515023	.0405711	-.0081100	-.0070771	-.0047785
250	.0000000	.0000000	.0405210	-.0078635	-.0089558	-.0071561
255 B	-.0862911	.0975899	.0404024	-.0064907	-.0019626	-.0122376
255 E	-.0830223	.0599930	.0269577	-.0062336	.0052048	-.0145886
260	-.0830481	.0000000	.0000000	-.0060874	.0080206	-.0153289
265 B	-.0831377	-.4920951	-.4696770	-.0042895	-.0020231	.0043897
265 E	-.0893777	-.4650108	-.4565301	-.0035992	-.0051342	.0073287
270	-.1529846	-.4248678	-.3924307	.0149270	-.0035983	.0021568
275	.0000000	-.4239528	.0000000	.0103078	.0170733	-.0144676
280	.6190120	-.4191222	-.1608167	.0475952	.0801617	.0068271
285	.0487159	-.0232430	-.1608750	.0592262	.0805975	.0163516
290	.0000000	-.0229367	.0000000	.0578910	.0780897	.0183932
290A	-.4228030	-.0196567	1.0000000	-.0072154	.0514163	-.0000384
295	.0000000	-.0163413	.0000000	-.0287483	.0247428	-.0182381
300	.1458160	-.0152868	-.1500131	-.0027744	.0163076	-.0128403
305	.0695673	.0000000	-.1500538	.0044429	.0128384	-.0079744
310 B	.0570488	.0042508	-.1500605	.0041433	.0122243	-.0070475
310 E	.0041659	.0380414	-.1028536	.0033816	.0081295	-.0013552
315	.0041824	.0338711	-.0388471	.0025159	.0050317	.0013302
320 B	-.0038880	.0338229	-.0256564	.0023900	.0035113	.0016662

MODE SHAPE NUMBER 25

FREQUENCY : 35.7179952

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0011915	-.0371787	-.0009782	.0047011	-.0004858	.0130089
15	-.0064793	-.3576935	-.0079211	.0051987	-.0002120	.0200001
20	-.0065036	-.5341942	-.0040603	.0023832	.0008822	.0175100
25	.0220097	-.5352248	-.0093440	-.0009635	.0008822	-.0024021
30	-.0205503	-.5362335	.0054030	-.0053055	.0008822	-.0155970
35	-.1810936	-.5371282	.0595548	-.0087017	.0008822	-.0258665
40	-.3909956	-.5372377	.1301337	-.0092829	.0008822	-.0276127
45 B	-.6645740	-.5303366	-.1340652	-.0384022	.0026892	.0688843
45 E	-1.0000000	-.1803317	-.4196268	-.0791181	.0080064	.0748933
50	-.9784842	.0000000	-.4194027	-.0766288	.0116492	.0754389
55	-.6439014	.7351325	-.4180470	-.0389492	.0439884	.0785307
60	-.0438772	.0160476	.1841082	.0038778	.0229779	.0577846
65	.0000000	.0000000	.1844560	.0063268	.0062190	.0512581
70	-.1203928	-.0632524	.1855759	.0031124	-.0196377	.0297748
75	-.2527802	-.0060893	.1858519	-.0128489	.0050073	.0033965
80 B	-.2040068	.0586751	.1855760	-.0185290	.0166968	-.0055775
80 E	-.0383556	.1680719	.0676178	-.0236602	.0209170	-.0137558
85	.0000000	.1680664	.0000000	-.0200960	.0202308	-.0103687
90	-.2076004	.1678337	-.0195372	.0113736	.0133696	.0146460
95	.0163873	.0000000	-.0193535	.0004930	.0103019	.0119064
100 B	.0756734	.0170461	-.0192924	-.0045547	.0094914	.0110413
100 E	.0700055	.0387690	-.0364836	-.0020059	.0085926	.0098165
105	.0000000	.0390454	-.0411546	.0000583	.0078718	.0080489
110	-.0372190	.0392253	-.0417115	-.0006849	.0073952	.0064141
115	-.0372269	.0000000	.0000000	-.0031841	.0056692	.0079794
120 B	-.0372311	-.2889655	.0477205	-.0121096	.0006546	.0141696
120 E	-.0312675	-.2865602	.0521678	-.0147318	.0016533	.0117772
125	.0185206	-.0014878	.0520298	-.0124198	.0029243	.0045690
130	.0000000	-.0014489	.0000000	-.0092157	.0027098	.0032742
130A	-.0229596	-.0012927	-.0578796	.0017274	.0018518	-.0004988
135	.0000000	-.0011355	.0000000	.0021454	.0009938	-.0012326
135A	.0119587	-.0009774	.0002345	-.0011904	.0001358	-.0000551
137	.0062314	-.0008186	-.0113948	.0008999	-.0007223	.0004588
138	-.0035037	-.0219162	-.0114198	.0023930	-.0009609	.0004588
140	.0000000	-.0006144	.0000000	.0004813	-.0005417	.0002757
140A	-.0019933	-.0003074	.0034807	-.0001186	-.0002708	-.0000679
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000000
155	.0000001	.0000000	.0000000	.0000000	.0000000	-.0000000
160	.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
165	.0000001	-.0000001	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000001	-.0000001	.0000000	.0000000	.0000000	.0000000
175	.0000001	-.0000001	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	-.0000001	-.0000000	.0000000	.0000000	.0000000
180 E	-.0000000	-.0000001	-.0000000	.0000000	.0000000	.0000000
185	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000001	-.0000000	-.0000001	.0000000	.0000000	.0000000
190	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	-.0000000	.0000006	.0000000	.0000000	.0000000
195	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
200	-.0000001	-.0000000	.0000001	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
205A	.0000000	.0000001	.0000001	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
225 B	.0000000	.0000001	.0000001	.0000000	.0000000	-.0000000
225 E	.0000000	-.0000000	.0000001	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000002	-.0000001	.0000000	.0000000	.0000000
250	.0000000	.0000000	-.0000001	.0000000	.0000000	.0000000
255 B	.0000000	-.0000001	-.0000001	.0000000	.0000000	.0000000
255 E	.0000000	-.0000000	-.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
275	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
305	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 B	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 E	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
315	-.0000001	.0000000	.0000001	-.0000000	.0000000	.0000000
320 B	-.0000001	.0000000	.0000000	-.0000000	.0000000	.0000000



MODE SHAPE NUMBER 26

FREQUENCY : 36.5594597

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 B	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
100 E	-.0000001	-.0000000	.0000000	.0000000	.0000000	-.0000000
105	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
137	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000002	.0000000	.0000002	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0001427	.0000236	-.0043840	-.0000035	.0000632	-.0000001
150	.0000000	.0000472	.0000000	.0000143	.0001264	.0000005
155	-.0001668	.0000504	-.0001342	-.0000609	.0001350	.0001298
160	-.0001123	.0112835	.0000000	-.0005180	-.0003062	.0001338
165	-.0000459	-.0091370	.0029503	-.0010735	.0009315	-.0010855

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0000407	-.0121881	.0000000	-.0011168	.0012237	-.0011372
175	-.0000345	-.0159966	-.0045458	-.0011680	.0015546	-.0012125
180 B	.0263974	-.0066340	-.0139119	-.0009060	.0022500	-.0008633
180 E	.0322130	-.0054191	-.0166700	-.0006485	.0022544	-.0005445
185	.0000000	-.0053705	.0000000	.0005321	.0017108	.0008353
185A	-.0090453	-.0053375	.0054432	-.0000640	.0014526	-.0000823
190	.0000000	-.0052983	.0000000	-.0002719	.0011944	-.0005007
190A	.0074458	-.0052482	-.0034272	.0000283	.0009124	.0000172
195	.0000000	-.0051907	.0000000	.0001570	.0006303	.0004311
200	-.0042687	-.0051658	-.0000817	-.0003373	.0005181	.0004204
205	.0000000	.0000000	-.0000676	-.0005850	.0004245	.0004008
205A	.0049274	.0047011	-.0000365	.0000735	.0000154	.0003578
210	.0000000	.0000000	-.0000053	.0002848	-.0004872	.0003147
210A	-.0124411	-.0040626	.0000384	-.0000426	-.0000599	.0002542
215	.0000000	.0000000	.0000821	-.0001124	.0007293	.0001938
215A	.0143397	-.0008161	.0001431	.0000511	-.0004465	.0001090
220	.0000000	.0000000	.0002036	-.0000932	.0010664	.0000242
225 B	.0417777	.0019335	.0002416	-.0000002	.0011391	-.0000296
225 E	.0455277	.0015872	-.0020781	.0001059	.0001250	-.0000389
230	.0454807	.0000000	.0000000	.0006003	.0012235	-.0000335
230A	.0453047	.0000537	-.0628562	.0011715	-.0003901	.0000168
235	.0449985	.0000000	.0000000	.0017426	.0003473	-.0000343
235A	.0445587	-.0012377	-.0763619	.0023188	.0000249	.0000138
240	.0439887	.0000000	.0000000	.0028949	-.0004475	-.0000214
245	.0432928	.0220116	.0125638	.0034691	-.0056249	.0020172
250	.0000000	.0000000	.0125322	.0033551	-.0069159	.0030163
255 B	-.0673570	-.0412731	.0124608	.0027045	-.0021782	.0051517
255 E	-.0708140	-.0252179	.0103309	.0025283	.0017765	.0061331
260	-.0708209	.0000000	.0000000	.0024280	.0032443	.0064418
265 B	-.0706981	.1068800	-.0940808	.0011956	-.0082546	-.0079305
265 E	-.0856571	.0731295	-.0598723	.0008268	-.0112817	-.0104507
270	-.2687271	-.0668138	.1233643	-.0035240	-.0251264	-.0178611
275	.0000000	-.0668675	.0000000	-.0086832	-.0529470	-.0033545
280	-1.0000000	-.0666884	-.0732428	.0188487	-.1378538	.0056817
285	-.0261249	.0902376	-.0732322	.0255371	-.1367814	-.0076153
290	.0000000	.0902568	.0000000	.0276822	-.1317111	-.0102597
290A	.2727948	.0903662	.6482901	-.0003427	-.0777814	-.0005434
295	.0000000	.0903025	.0000000	-.0262979	-.0238518	.0124547
300	-.0988811	.0902463	-.2078722	-.0190743	-.0067971	.0081250
305	-.0819493	.0000000	-.2078299	-.0150311	.0000856	.0033597
310 B	-.0826653	-.0145564	-.2078203	-.0141714	.0012713	.0024520
310 E	-.1044800	-.0690007	-.1757482	-.0084420	.0086843	-.0026472
315	-.1045170	-.0274270	-.0685446	-.0005156	.0111773	-.0046800
320 B	-.0794954	-.0273725	-.0642492	.0014440	.0099086	-.0044922

MODE SHAPE NUMBER 27

FREQUENCY : 37.0715585

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000001	.0000002	.0000003	-.0000000	.0000001	-.0000001
15	.0000006	.0000009	.0000015	.0000000	-.0000000	.0000000
20	.0000000	-.0000003	.0000001	.0000001	-.0000002	.0000001
25	.0000003	-.0000003	-.0000001	.0000000	-.0000002	.0000000
30	.0000004	-.0000003	-.0000001	-.0000000	-.0000002	.0000000
35	-.0000000	-.0000003	.0000001	-.0000000	-.0000002	-.0000001
40	-.0000007	-.0000003	.0000005	-.0000000	-.0000002	-.0000001
45 B	.0000005	-.0000003	.0000001	-.0000000	-.0000001	-.0000001
45 E	.0000004	-.0000001	-.0000001	-.0000000	-.0000001	-.0000001
50	.0000003	.0000000	-.0000001	-.0000000	-.0000001	-.0000000
55	-.0000004	-.0000003	-.0000001	.0000000	-.0000000	.0000000
60	-.0000002	-.0000002	.0000001	-.0000001	.0000001	.0000000
65	.0000000	.0000000	.0000001	-.0000001	.0000001	.0000000
70	.0000005	.0000007	.0000001	.0000000	-.0000000	-.0000000
75	-.0000004	-.0000003	.0000001	.0000001	-.0000001	-.0000001
80 B	-.0000007	-.0000007	.0000001	.0000001	-.0000000	-.0000001
80 E	-.0000003	-.0000008	.0000001	-.0000000	-.0000000	-.0000001
85	.0000000	-.0000008	.0000000	-.0000000	-.0000001	-.0000001
90	.0000002	-.0000008	.0000007	-.0000000	-.0000002	-.0000000
95	-.0000030	.0000000	.0000007	.0000000	-.0000001	-.0000002
100 B	-.0000036	-.0000004	.0000007	.0000001	-.0000001	-.0000003
100 E	-.0000024	-.0000008	.0000010	.0000000	-.0000001	-.0000003
105	.0000000	-.0000008	.0000008	-.0000001	-.0000001	-.0000003
110	.0000013	-.0000008	.0000005	-.0000001	-.0000001	-.0000002
115	.0000013	.0000000	.0000000	-.0000001	-.0000001	-.0000001
120 B	.0000013	-.0000007	-.0000001	-.0000001	.0000000	.0000001
120 E	.0000014	-.0000007	.0000000	-.0000001	.0000000	.0000001
125	.0000005	.0000000	.0000000	.0000000	-.0000001	.0000001
130	.0000000	.0000000	.0000000	-.0000000	-.0000001	.0000001
130A	-.0000009	.0000000	-.0000006	.0000000	-.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	-.0000000	-.0000001
135A	.0000007	.0000000	-.0000001	.0000000	.0000000	.0000000
137	-.0000004	.0000000	.0000001	.0000000	.0000000	.0000000
138	.0000000	-.0000001	.0000001	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000001
140A	.0000026	.0000000	.0000017	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.1594906	-.0004610	.1498900	.0000104	-.0020364	.0000110
150	.0000000	-.0009205	.0000000	-.0000417	-.0040727	-.0000444
155	-.0028110	-.0009828	.0073632	.0027520	-.0043498	-.0009397
160	-.0046085	-.1889853	.0000000	.0201363	.0101825	-.0020534
165	-.0067814	.2834160	-.0975961	.0412673	-.0308196	.0270165

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0069501	.3603003	.0000000	.0429158	-.0404728	.0290894
175	-.0071493	.4594726	.1502597	.0448640	-.0512701	.0322110
180 B	-.8225284	.0996604	.5102106	.0349038	-.0730275	.0242983
180 E	-1.0000000	.0528009	.6167543	.0251637	-.0729576	.0149904
185	.0000000	.0515243	.0000000	-.0206325	-.0537752	-.0249435
185A	.2640437	.0508205	-.2199393	.0022006	-.0446651	.0027273
190	.0000000	.0500549	.0000000	.0116908	-.0355549	.0138616
190A	-.1892230	.0491488	.1627744	-.0007813	-.0256031	-.0010421
195	.0000000	.0481713	.0000000	-.0085243	-.0156513	-.0096381
200	.0900107	.0477627	-.0542525	.0006088	-.0116904	-.0086269
205	.0000000	.0000000	-.0544943	.0063714	-.0079234	-.0082745
205A	-.0627780	-.0507245	-.0549907	-.0008277	.0010429	-.0074988
210	.0000000	.0000000	-.0554375	-.0029894	.0036618	-.0067230
210A	.0478178	.0399621	-.0559800	.0005252	-.0006703	-.0056341
215	.0000000	.0000000	-.0564229	.0008660	-.0009514	-.0045451
215A	.0258449	.0185345	-.0568747	-.0003059	.0002992	-.0030181
220	.0000000	.0000000	-.0571273	.0003642	-.0002518	-.0014910
225 B	.0019179	.0019930	-.0571839	-.0003344	-.0004079	-.0005220
225 E	-.0017690	.0019289	-.0520928	-.0003209	-.0014164	-.0002720
230	-.0017258	.0000000	.0000000	-.0002582	.0000635	-.0000023
230A	-.0016711	-.0013012	-.0546602	-.0001858	.0001203	-.0000025
235	-.0016115	.0000000	.0000000	-.0001133	-.0005477	.0000122
235A	-.0015466	-.0008531	-.0345546	-.0000402	.0003372	-.0000077
240	-.0014770	.0000000	.0000000	.0000329	-.0008096	.0000187
245	-.0014032	.0006912	-.0037597	.0001057	.0003600	.0000613
250	.0000000	.0000000	-.0037620	.0001078	-.0000229	.0000996
255 B	-.0062005	-.0014169	-.0037656	.0001026	-.0006284	.0001814
255 E	-.0090578	-.0009030	-.0012615	.0001148	-.0003931	.0002198
260	-.0090623	.0000000	.0000000	.0001225	-.0002415	.0002301
265 B	-.0090900	.0028128	-.0051947	.0002162	-.0000930	-.0003369
265 E	-.0093384	.0011401	-.0046707	.0002134	-.0002079	-.0004365
270	-.0136226	-.0070871	-.0003811	.0001340	-.0006268	-.0007853
275	.0000000	-.0070838	.0000000	-.0001640	-.0013555	-.0003713
280	-.0256772	-.0070360	-.0032927	.0009279	-.0035794	.0002668
285	-.0003800	.0006210	-.0032928	.0011838	-.0035554	-.0000878
290	.0000000	.0006247	.0000000	.0012107	-.0034268	-.0001597
290A	.0053279	.0006632	.0239737	-.0001142	-.0020593	-.0000288
295	.0000000	.0007003	.0000000	-.0007494	-.0006918	.0002760
300	-.0023167	.0007118	-.0045663	-.0002464	-.0002593	.0002022
305	-.0014278	.0000000	-.0045654	-.0000694	-.0000870	.0001032
310 B	-.0013565	-.0000608	-.0045652	-.0000545	-.0000579	.0000844
310 E	-.0014409	-.0002079	-.0042365	.0000304	.0001199	-.0000211
315	-.0014425	.0002472	-.0025256	.0001408	.0001871	-.0000479
320 B	-.0012121	.0002483	-.0016719	.0001548	.0001673	-.0000410

M O D E S H A P E N U M B E R 28

FREQUENCY : 38.5275884

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0000000	-.0000000	-.0000000	.0000000	.0000000	.0000000
15	-.0000001	-.0000001	-.0000001	.0000000	.0000000	.0000000
20	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
25	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	-.0000001	.0000000	.0000000	.0000000
45 B	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
70	-.0000001	-.0000001	-.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000001	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000001	.0000000	.0000000	.0000000	.0000000
90	-.0000000	.0000001	-.0000001	.0000000	.0000000	.0000000
95	.0000003	.0000000	-.0000001	.0000000	.0000000	.0000000
100 B	.0000004	.0000000	-.0000001	.0000000	.0000000	.0000000
100 E	.0000002	.0000001	-.0000001	.0000000	.0000000	.0000000
105	.0000000	.0000001	-.0000001	.0000000	.0000000	.0000000
110	-.0000001	.0000001	-.0000001	.0000000	.0000000	.0000000
115	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	-.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
120 E	-.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
125	-.0000001	.0000000	.0000000	.0000000	.0000000	-.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000000
130A	.0000002	.0000000	.0000001	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	-.0000004	.0000000	-.0000003	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0000094	.0000003	-.0000498	.0000001	.0000006	-.0000000
150	.0000000	.0000006	.0000000	-.0000004	.0000013	.0000001
155	-.0000030	.0000006	-.0000051	-.0000015	.0000014	.0000018
160	-.0000023	.0001389	.0000000	-.0000087	-.0000035	.0000012
165	-.0000016	-.0001280	.0000329	-.0000175	.0000104	-.0000128

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0000015	-.0001637	.0000000	-.0000182	.0000136	-.0000132
175	-.0000015	-.0002074	-.0000505	-.0000190	.0000171	-.0000138
180 B	.0002857	-.0000552	-.0002028	-.0000148	.0000235	-.0000092
180 E	.0003458	-.0000353	-.0002481	-.0000107	.0000230	-.0000053
185	.0000000	-.0000348	.0000000	.0000083	.0000093	.0000050
185A	.0000052	-.0000344	.0000839	-.0000011	.0000027	-.0000026
190	.0000000	-.0000341	.0000000	-.0000039	-.0000038	.0000057
190A	-.0001966	-.0000336	-.0000404	.0000007	-.0000110	.0000031
195	.0000000	-.0000331	.0000000	.0000010	-.0000181	-.0000182
200	.0002051	-.0000328	-.0000043	-.0000027	-.0000209	-.0000211
205	.0000000	.0000000	-.0000043	-.0000026	-.0000257	-.0000188
205A	-.0004481	-.0000187	-.0000041	.0000021	-.0000075	-.0000137
210	.0000000	.0000000	-.0000039	-.0000061	.0000564	-.0000087
210A	.0016264	.0002260	-.0000037	-.0000022	.0000094	-.0000016
215	.0000000	.0000000	-.0000035	.0000149	-.0000944	.0000055
215A	-.0017267	-.0003147	-.0000031	-.0000103	.0000630	.0000155
220	.0000000	.0000000	-.0000028	.0000267	-.0001590	.0000254
225 B	-.0066483	-.0009241	-.0000026	.0000153	-.0002392	.0000318
225 E	-.0076580	-.0007768	.0008704	-.0000267	-.0001385	.0000316
230	-.0076455	.0000000	.0000000	-.0002227	.0001646	.0000008
230A	-.0076083	-.0005721	-.0044978	-.0004490	-.0000783	-.0000008
235	-.0075469	.0000000	.0000000	-.0006754	.0001506	.0000026
235A	-.0074605	-.0004819	-.0100101	-.0009037	-.0000765	-.0000012
240	-.0073499	.0000000	.0000000	-.0011321	.0001574	.0000022
245	-.0072160	-.0086345	-.0316416	-.0013596	.0012598	-.0006904
250	.0000000	.0000000	-.0316327	-.0013189	.0008044	-.0009927
255 B	-.0054502	.0147382	-.0316031	-.0007168	-.0018386	-.0016389
255 E	-.0181653	.0081106	-.0162460	-.0000570	-.0036996	-.0019363
260	-.0181586	.0000000	.0000000	.0003545	-.0043403	-.0021235
265 B	-.0180171	-.0348983	.0416107	.0054140	.0092192	.0033363
265 E	-.0019563	-.0296658	.0046056	.0059123	.0118286	.0044376
270	.1622198	-.0381239	-.1595104	.0087164	.0194610	.0080020
275	.0000000	-.0380577	.0000000	.0054391	.0296065	.0078787
280	.3192769	-.0376388	-.0169710	.0040491	.0605699	-.0275880
285	-.1063771	-.0002490	-.0169829	.0060562	.0594155	-.0371808
290	.0000000	-.0002209	.0000000	.0063211	.0567864	-.0406668
290A	1.0000000	.0000780	.1337373	-.0005688	.0288226	.0009859
295	.0000000	.0003768	.0000000	-.0040237	.0008588	.0366848
300	-.2700463	.0004711	-.0224157	-.0008050	-.0079845	.0232056
305	-.2203279	.0000000	-.0224146	.0002550	-.0101786	.0162017
310 B	-.2100006	.0002666	-.0224142	.0003150	-.0102141	.0148676
310 E	-.1625627	-.0413180	-.0641147	.0006984	-.0064420	.0054195
315	-.1622726	-.0375381	-.0938689	.0027953	.0002765	-.0064204
320 B	-.1121705	-.0375470	-.0765514	.0033518	.0046675	-.0105486

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
320 E	-.0337436	-.0152610	-.0334838	.0023237	.0080780	-.0072024
500	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 29

FREQUENCY : 40.2261229

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000477	-.0006004	.0001460	.0001278	.0000550	.0001865
15	.0003966	-.0055440	.0010713	.0002800	.0000283	.0001980
20	.0002670	-.0079985	.0008384	.0003584	-.0000702	.0001356
25	.0004269	-.0080181	-.0001812	.0000572	-.0000702	-.0000204
30	.0001823	-.0080373	.0003665	-.0002716	-.0000702	-.0000859
35	-.0006937	-.0080543	.0035237	-.0005291	-.0000702	-.0001413
40	-.0018452	-.0080564	.0078648	-.0005736	-.0000702	-.0001518
45 B	-.0055899	-.0079234	.0051350	-.0002191	-.0001955	.0005408
45 E	-.0091293	-.0030066	.0018429	-.0012706	-.0002039	.0003000
50	-.0095434	.0000000	.0018486	-.0013134	-.0001525	.0001971
55	-.0081623	.0126386	.0018807	-.0004409	.0004624	-.0003864
60	-.0003903	.0088668	.0097009	.0026816	.0002653	-.0008736
65	.0000000	.0000000	.0097074	.0032413	-.0000010	-.0007667
70	-.0024281	-.0297570	.0097271	.0013993	-.0002733	-.0004146
75	-.0023990	-.0130963	.0096781	-.0034202	.0003708	.0000177
80 B	-.0002739	.0023939	.0096371	-.0037493	.0006372	.0001648
80 E	.0017827	.0180971	-.0016507	-.0005625	.0010142	.0005144
85	.0000000	.0181349	.0000000	.0018533	.0011340	.0006896
90	-.0359805	.0184882	.2154937	.0043320	.0023322	.0012289
95	.0022243	.0000000	.2154028	.0013126	.0010477	.0005008
100 B	.0052212	-.0098091	.2153303	.0005668	-.0001265	.0002709
100 E	.0008177	.0000548	.1931186	-.0076942	-.0024550	-.0000461
105	.0000000	-.0001869	.1090475	-.0126474	-.0051998	.0003670
110	-.0029212	-.0003467	.0438669	-.0120116	-.0070149	.0007267
115	-.0029290	.0000000	.0000000	-.0084710	-.0062666	-.0022662
120 B	-.0029544	.2002520	-.0498662	.0041742	-.0000149	-.0115295
120 E	-.0034930	.2215259	-.0498475	.0081758	-.0003115	-.0099452
125	-.0176813	.0176317	-.0497039	.0110605	-.0008617	-.0042630
130	.0000000	.0175988	.0000000	.0095775	-.0007375	-.0031927
130A	.0245299	.0174566	.0934873	-.0002838	-.0002405	.0004066
135	.0000000	.0172973	.0000000	-.0084160	.0002564	.0015285
135A	-.0190370	.0171211	-.2079197	-.0135977	.0007534	.0003228
137	-.0129673	.0169281	-.5895022	-.0304509	.0012504	-.0007706
138	.0022362	1.0000000	-.5911449	-.1168594	.0014436	-.0007706
140	.0000000	.0127068	.0000000	.0545267	.0009378	-.0006518
140A	.0049884	.0063584	.4172677	-.0134367	.0004689	.0001606
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000001
155	.0000003	.0000000	-.0000000	.0000000	.0000000	-.0000001
160	.0000003	.0000002	.0000000	.0000000	.0000000	.0000000
165	.0000003	-.0000002	-.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000003	-.0000002	.0000000	.0000000	.0000000	.0000000
175	.0000003	-.0000002	.0000000	.0000000	.0000000	.0000000
180 B	.0000001	-.0000001	-.0000000	-.0000000	-.0000000	.0000000
180 E	-.0000000	-.0000001	-.0000001	-.0000000	-.0000000	.0000000
185	.0000000	-.0000001	.0000000	.0000000	.0000000	-.0000000
185A	.0000005	-.0000001	-.0000002	-.0000000	.0000000	.0000000
190	.0000000	-.0000001	.0000000	.0000001	.0000000	.0000000
190A	.0000002	-.0000001	.0000014	-.0000000	.0000000	-.0000000
195	.0000000	-.0000001	.0000000	.0000000	.0000000	.0000000
200	-.0000004	-.0000001	.0000002	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000002	-.0000000	.0000000	.0000000
205A	.0000002	.0000002	.0000002	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000002	.0000000	.0000000	.0000000
210A	.0000001	.0000001	.0000002	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000002	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000002	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000002	-.0000000	.0000000	-.0000000
225 B	.0000000	-.0000001	.0000002	.0000000	.0000000	-.0000000
225 E	.0000000	-.0000001	.0000002	.0000000	.0000000	-.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000001	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000001	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000001	.0000000	.0000000
245	.0000000	.0000005	-.0000002	.0000001	.0000000	.0000000
250	.0000000	.0000000	-.0000002	.0000001	.0000000	.0000000
255 B	.0000001	-.0000001	-.0000002	.0000000	.0000000	.0000000
255 E	.0000000	-.0000000	-.0000001	.0000000	-.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	-.0000000	.0000000
265 B	.0000001	-.0000001	-.0000000	.0000000	.0000000	.0000000
265 E	.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
270	.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000001	-.0000000	-.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 E	-.0000000	.0000001	.0000001	.0000000	.0000000	-.0000000
315	-.0000000	.0000002	.0000003	-.0000000	.0000000	.0000000
320 B	.0000000	.0000002	.0000001	-.0000000	.0000000	.0000000

MODE SHAPE NUMBER 30

FREQUENCY : 41.4433265

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0002550	-.0020124	.0006831	.0004761	.0002610	.0005987
15	.0019670	-.0176207	.0049727	.0010763	.0001214	.0004306
20	.0013498	-.0230514	.0036962	.0013577	-.0003434	-.0000329
25	.0008037	-.0231114	-.0003412	.0002975	-.0003434	-.0000992
30	.0006799	-.0231702	.0012151	-.0008803	-.0003434	.0000251
35	.0012722	-.0232223	.0118550	-.0018036	-.0003434	.0001129
40	.0022185	-.0232287	.0267006	-.0019642	-.0003434	.0001261
45 B	-.0017515	-.0228203	.0210987	-.0003755	-.0009029	.0000897
45 E	-.0061440	-.0088611	.0122893	-.0037188	-.0010929	-.0009652
50	-.0085312	.0000000	.0123072	-.0038854	-.0009977	-.0013640
55	-.0131856	.0358667	.0124050	-.0008384	.0005760	-.0036240
60	.0002796	.0367676	.0260221	.0111651	.0002447	-.0050840
65	.0000000	.0000000	.0260411	.0133998	-.0004063	-.0045107
70	-.0086168	-.1214096	.0260988	.0054062	-.0006894	-.0026236
75	-.0049444	-.0490992	.0259615	-.0138645	.0013975	-.0003065
80 B	.0023724	.0123551	.0258453	-.0144731	.0020832	.0004817
80 E	.0072702	.0695167	-.0116376	-.0005018	.0030250	.0020898
85	.0000000	.0696784	.0000000	.0087971	.0032844	.0028018
90	-.1266362	.0711954	.8407256	.0157947	.0058784	.0031531
95	-.0413264	.0000000	.8402957	.0076682	.0009875	-.0026299
100 B	-.0471607	-.0586293	.8399785	.0057745	-.0032655	-.0044561
100 E	-.0471563	-.0350619	.7646699	-.0287132	-.0123723	-.0065935
105	.0000000	-.0361134	.4403477	-.0491698	-.0232123	-.0049382
110	.0200565	-.0368054	.1881623	-.0459075	-.0303807	-.0029909
115	.0200367	.0000000	.0000000	-.0298813	-.0265779	-.0151767
120 B	.0199483	.9483097	-.1998136	.0273552	.0001324	-.0518183
120 E	.0153486	1.0000000	-.2005204	.0449586	-.0022050	-.0442446
125	-.0781337	.0037899	-.1998739	.0471180	-.0057106	-.0188450
130	.0000000	.0036160	.0000000	.0357460	-.0050287	-.0141426
130A	.1106309	.0029181	.2326981	-.0065872	-.0023013	.0017384
135	.0000000	.0022172	.0000000	-.0087836	.0004261	.0070273
135A	-.0893902	.0015139	.0059313	.0061788	.0031535	.0015704
137	-.0613025	.0008090	.1196019	.0026706	.0058809	-.0036258
138	.0108550	-.0915380	.1199558	.0110661	.0068765	-.0036258
140	.0000000	.0006073	.0000000	-.0097719	.0044107	-.0031015
140A	.0241454	.0003039	-.0760689	.0024080	.0022053	.0007643
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000005	-.0000000	-.0000001	.0000000	.0000000	.0000001
150	.0000000	.0000001	.0000000	-.0000001	-.0000000	-.0000005
155	.0000027	.0000001	-.0000004	-.0000001	-.0000000	-.0000005
160	.0000028	.0000017	.0000000	-.0000001	.0000000	.0000001
165	.0000029	-.0000019	-.0000001	-.0000001	-.0000000	-.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000029	-.0000019	.0000000	-.0000000	-.0000000	.0000000
175	.0000029	-.0000018	.0000001	-.0000000	-.0000000	.0000001
180 B	.0000007	-.0000013	-.0000005	-.0000001	-.0000001	.0000002
180 E	-.0000004	-.0000011	-.0000010	-.0000001	-.0000001	.0000002
185	.0000000	-.0000010	.0000000	-.0000000	.0000000	-.0000002
185A	.0000039	-.0000009	-.0000024	-.0000001	.0000001	.0000000
190	.0000000	-.0000008	.0000000	.0000005	.0000002	.0000001
190A	.0000014	-.0000007	.0000125	-.0000001	.0000003	-.0000001
195	.0000000	-.0000007	.0000000	-.0000001	.0000004	.0000003
200	-.0000036	-.0000006	.0000017	.0000001	.0000004	.0000004
205	.0000000	.0000000	.0000017	-.0000001	.0000003	.0000004
205A	.0000017	.0000016	.0000017	.0000000	-.0000001	.0000003
210	.0000000	.0000000	.0000017	.0000001	-.0000000	.0000002
210A	.0000007	.0000005	.0000017	-.0000000	.0000000	.0000001
215	.0000000	.0000000	.0000017	.0000000	-.0000000	.0000001
215A	.0000001	.0000001	.0000017	.0000000	.0000000	-.0000001
220	.0000000	.0000000	.0000017	-.0000001	.0000000	-.0000002
225 B	.0000002	.0000013	.0000018	.0000001	.0000000	-.0000003
225 E	.0000002	-.0000009	.0000017	.0000003	.0000000	-.0000002
230	.0000002	.0000000	.0000000	.0000003	.0000000	.0000001
230A	.0000003	-.0000000	.0000002	.0000004	-.0000000	-.0000000
235	.0000003	.0000000	.0000000	.0000005	.0000000	.0000000
235A	.0000003	.0000000	-.0000001	.0000005	-.0000000	-.0000000
240	.0000004	.0000000	.0000000	.0000006	.0000001	.0000001
245	.0000004	.0000040	-.0000017	.0000007	-.0000001	.0000001
250	.0000000	.0000000	-.0000017	.0000004	-.0000000	.0000001
255 B	.0000007	-.0000012	-.0000017	-.0000001	.0000000	.0000001
255 E	.0000004	-.0000003	-.0000009	-.0000001	-.0000002	.0000001
260	.0000004	.0000000	.0000000	-.0000001	-.0000002	.0000001
265 B	.0000005	-.0000006	-.0000001	-.0000000	.0000000	.0000001
265 E	.0000005	-.0000001	-.0000001	-.0000000	.0000000	.0000001
270	.0000007	.0000003	-.0000002	.0000000	.0000000	.0000000
275	.0000000	.0000003	.0000000	.0000000	.0000000	.0000000
280	-.0000001	.0000003	.0000000	-.0000001	.0000000	-.0000000
285	-.0000001	-.0000002	.0000000	-.0000000	.0000000	-.0000000
290	.0000000	-.0000002	.0000000	.0000000	.0000000	-.0000000
290A	.0000001	-.0000003	.0000003	.0000000	.0000000	.0000000
295	.0000000	.0000003	.0000000	-.0000000	.0000000	-.0000000
300	.0000005	-.0000003	-.0000001	.0000000	.0000000	-.0000001
305	.0000004	.0000000	-.0000001	.0000001	.0000000	-.0000001
310 B	.0000003	.0000001	-.0000001	.0000001	.0000001	-.0000001
310 E	-.0000002	.0000008	.0000005	-.0000001	.0000002	-.0000001
315	-.0000002	.0000015	.0000022	-.0000003	.0000001	-.0000001
320 B	.0000001	.0000015	.0000007	-.0000003	.0000001	.0000000

MODE SHAPE NUMBER 31

FREQUENCY : 42.5268893

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0000005	-.0000007	-.0000012	.0000001	-.0000004	.0000002
15	-.0000028	-.0000035	-.0000066	-.0000002	.0000002	-.0000002
20	-.0000002	.0000009	-.0000005	-.0000002	.0000008	-.0000002
25	-.0000008	.0000009	.0000004	-.0000001	.0000008	-.0000001
30	-.0000010	.0000009	.0000005	.0000000	.0000008	.0000000
35	.0000002	.0000009	-.0000004	.0000002	.0000008	.0000002
40	.0000015	.0000009	-.0000021	.0000002	.0000008	.0000002
45 B	-.0000026	.0000009	.0000002	.0000002	.0000005	.0000003
45 E	-.0000018	.0000001	.0000010	.0000001	.0000004	.0000002
50	-.0000010	.0000000	.0000010	.0000000	.0000004	.0000002
55	.0000025	.0000009	.0000010	-.0000001	.0000001	-.0000000
60	.0000009	.0000011	-.0000005	.0000003	-.0000003	-.0000001
65	.0000000	.0000000	-.0000005	.0000004	-.0000003	-.0000000
70	-.0000023	-.0000033	-.0000005	-.0000000	.0000001	.0000002
75	.0000020	.0000016	-.0000004	-.0000004	.0000003	.0000004
80 B	.0000030	.0000029	-.0000004	-.0000002	.0000002	.0000004
80 E	.0000013	.0000032	-.0000002	.0000001	.0000002	.0000005
85	.0000000	.0000032	.0000000	.0000000	.0000003	.0000003
90	-.0000011	.0000032	-.0000035	.0000001	.0000008	.0000002
95	.0000144	.0000000	-.0000035	-.0000002	.0000006	.0000010
100 B	.0000174	.0000020	-.0000035	-.0000004	.0000004	.0000013
100 E	.0000117	.0000037	-.0000047	-.0000001	.0000004	.0000016
105	.0000000	.0000037	-.0000039	.0000003	.0000004	.0000014
110	-.0000062	.0000037	-.0000023	.0000003	.0000004	.0000009
115	-.0000062	.0000000	.0000000	.0000003	.0000003	.0000003
120 B	-.0000062	.0000030	.0000003	.0000003	-.0000001	-.0000004
120 E	-.0000065	.0000034	-.0000002	.0000003	.0000000	-.0000004
125	-.0000028	-.0000001	-.0000002	.0000001	.0000003	-.0000006
130	.0000000	-.0000001	.0000000	.0000001	.0000002	-.0000006
130A	.0000060	-.0000001	.0000023	.0000000	.0000001	.0000000
135	.0000000	-.0000001	.0000000	-.0000001	.0000000	.0000004
135A	-.0000036	-.0000001	-.0000004	-.0000000	-.0000001	-.0000001
137	.0000017	-.0000001	-.0000012	.0000001	-.0000001	-.0000002
138	-.0000002	.0000006	-.0000012	-.0000001	-.0000002	-.0000002
140	.0000000	-.0000000	.0000000	-.0000003	-.0000001	.0000005
140A	-.0000141	-.0000000	-.0000144	.0000001	-.0000001	-.0000001
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.6892517	.0015660	-.0825594	.0006980	-.0025280	-.0058271
150	.0000000	.0031256	.0000000	-.0028092	-.0050560	.0234519
155	-.1712480	.0033368	-.0224459	-.0063625	-.0053999	.0406911
160	-.1747124	.9102660	.0000000	-.0362017	.0093516	-.0119201
165	-.1783240	-.8675940	-.0946414	-.0724719	-.0298533	-.0339813

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.1785775	-.9458931	.0000000	-.0753015	-.0392652	-.0230233
175	-.1788718	-1.0000000	.1470614	-.0786455	-.0521546	-.0105177
180 B	-.8057179	-.3611195	-.4919815	-.0642942	-.0809849	.0083212
180 E	-.9490498	-.2733540	-.6937330	-.0494410	-.0807379	.0041816
185	.0000000	-.2701885	.0000000	.0375987	-.0620145	-.0252117
185A	.3348349	-.2680126	.5073170	-.0012207	-.0531223	.0010009
190	.0000000	-.2654072	.0000000	-.0326385	-.0442301	.0211450
190A	-.3482145	-.2620748	-.5484185	.0007983	-.0345164	-.0007147
195	.0000000	-.2582412	.0000000	.0294032	-.0248027	-.0182484
200	.1702212	-.2565779	.1661258	-.0086224	-.0209365	-.0162914
205	.0000000	.0000000	.1671532	-.0333296	-.0160547	-.0155679
205A	-.1530838	.3141068	.1692703	.0025483	.0011493	-.0139752
210	.0000000	.0000000	.1711862	.0229151	.0113573	-.0123824
210A	.2090482	-.4128549	.1735321	-.0030107	-.0014030	-.0101466
215	.0000000	.0000000	.1754714	-.0107399	-.0056836	-.0079108
215A	.0533467	-.1240627	.1774979	.0032422	.0019240	-.0047756
220	.0000000	.0000000	.1787064	-.0022999	-.0020543	-.0016404
225 B	-.0092252	-.0308595	.1790461	.0031520	.0018037	.0003493
225 E	.0031006	-.0430956	.1639035	.0032163	.0039393	.0010172
230	.0030830	.0000000	.0000000	.0027703	.0022706	.0006023
230A	.0030515	-.0150614	.0572364	.0022551	-.0008355	-.0002223
235	.0030081	.0000000	.0000000	.0017398	.0010930	.0002924
235A	.0029525	-.0051896	.0203452	.0012201	-.0004166	-.0001130
240	.0028852	.0000000	.0000000	.0007004	.0005840	.0001626
245	.0028068	.0009130	.0029917	.0001825	-.0004913	-.0000331
250	.0000000	.0000000	.0029918	.0000980	-.0002744	-.0000241
255 B	.0014867	-.0002011	.0029908	-.0000446	.0003421	-.0000050
255 E	.0032929	.0000638	.0012142	-.0000714	.0003303	-.0000091
260	.0032957	.0000000	.0000000	-.0000800	.0002719	-.0000262
265 B	.0033172	-.0021418	-.0003515	-.0001864	-.0001093	.0000652
265 E	.0031643	-.0015736	.0000248	-.0001900	-.0001025	.0000989
270	.0022501	.0015317	.0009416	-.0001175	-.0000741	.0001491
275	.0000000	.0015333	.0000000	.0000038	-.0000190	.0000734
280	.0010397	.0015274	.0003330	-.0001059	.0001492	-.0000337
285	-.0000354	.0006715	.0003330	-.0001244	.0001534	-.0000155
290	.0000000	.0006708	.0000000	-.0001177	.0001499	-.0000117
290A	.0000739	.0006622	-.0016409	.0000319	.0001121	.0000047
295	.0000000	.0006519	.0000000	-.0000111	.0000743	-.0000075
300	.0001087	.0006483	-.0005492	-.0001061	.0000623	-.0000145
305	-.0002064	.0000000	-.0005492	-.0001261	.0000582	-.0000168
310 B	-.0002642	-.0001251	-.0005492	-.0001238	.0000577	-.0000172
310 E	-.0005476	-.0006148	-.0002677	-.0001000	.0000559	-.0000197
315	-.0005473	-.0003723	.0002700	-.0000628	.0000502	-.0000290
320 B	-.0003781	-.0003722	-.0000334	-.0000478	.0000432	-.0000307

MODE SHAPE NUMBER 32

FREQUENCY : 45.8198109

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0000051	-.0000070	-.0000122	.0000008	-.0000046	.0000023
15	-.0000282	-.0000340	-.0000676	-.0000013	.0000018	-.0000017
20	-.0000013	.0000091	-.0000030	-.0000019	.0000084	-.0000022
25	-.0000107	.0000093	.0000045	-.0000008	.0000084	-.0000019
30	-.0000162	.0000094	.0000032	.0000008	.0000084	.0000001
35	.0000007	.0000097	-.0000051	.0000014	.0000084	.0000036
40	.0000317	.0000097	-.0000180	.0000017	.0000084	.0000042
45 B	-.0000168	.0000089	-.0000022	.0000014	.0000048	.0000027
45 E	-.0000112	.0000015	.0000054	.0000010	.0000031	.0000020
50	-.0000046	.0000000	.0000054	.0000002	.0000028	.0000018
55	.0000185	.0000169	.0000054	-.0000016	.0000008	.0000006
60	.0000080	.0000100	-.0000050	.0000029	-.0000024	.0000004
65	.0000000	.0000000	-.0000050	.0000038	-.0000030	.0000008
70	-.0000219	-.0000308	-.0000050	.0000000	.0000005	.0000023
75	.0000190	.0000143	-.0000040	-.0000046	.0000033	.0000041
80 B	.0000290	.0000302	-.0000039	-.0000028	.0000019	.0000047
80 E	.0000126	.0000356	-.0000032	.0000010	.0000023	.0000046
85	.0000000	.0000356	.0000000	.0000005	.0000030	.0000035
90	-.0000145	.0000356	-.0000349	.0000014	.0000095	.0000019
95	.0001586	.0000000	-.0000350	-.0000017	.0000067	.0000116
100 B	.0001911	.0000202	-.0000350	-.0000040	.0000043	.0000146
100 E	.0001274	.0000370	-.0000469	-.0000008	.0000036	.0000170
105	.0000000	.0000372	-.0000377	.0000027	.0000036	.0000148
110	-.0000648	.0000372	-.0000206	.0000035	.0000037	.0000097
115	-.0000649	.0000000	.0000000	.0000035	.0000026	.0000033
120 B	-.0000653	.0000417	.0000019	.0000035	-.0000009	-.0000038
120 E	-.0000647	.0000422	-.0000003	.0000034	.0000010	-.0000030
125	-.0000039	-.0000020	-.0000007	.0000005	.0000040	-.0000011
130	.0000000	-.0000020	.0000000	.0000004	.0000037	-.0000004
130A	-.0000074	-.0000020	.0000199	.0000000	.0000025	.0000002
135	.0000000	-.0000019	.0000000	-.0000004	.0000012	-.0000004
135A	.0000048	-.0000016	.0000117	.0000002	-.0000000	-.0000005
137	.0000148	-.0000013	.0000003	-.0000004	-.0000013	.0000001
138	-.0000017	-.0000005	.0000002	.0000001	-.0000016	.0000001
140	.0000000	-.0000009	.0000000	.0000003	-.0000009	.0000014
140A	-.0000210	-.0000006	.0000071	-.0000001	-.0000005	-.0000003
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0145866	.0000724	-.0197906	.0002803	.0002622	.0002061
150	.0000000	.0001436	.0000000	-.0011281	.0005244	-.0008295
155	.0048239	.0001533	-.0079179	-.0019836	.0005601	-.0006892
160	.0051666	.0197085	.0000000	-.0075672	-.0020369	.0004846
165	.0055627	-.0246858	.0184144	-.0143540	.0058236	-.0026612

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0055926	-.0322395	.0000000	-.0148835	.0076187	-.0028563
175	.0056277	-.0419791	-.0280647	-.0155092	.0093079	-.0031719
180 B	.1185246	.0816345	-.1518372	-.0118768	.0110746	-.0010324
180 E	.1349237	.0974992	-.1879323	-.0084511	.0103375	.0008202
185	.0000000	.0970904	.0000000	.0042552	-.0025669	-.0065046
185A	.2021512	.0966156	.0092512	-.0017921	-.0086955	-.0034024
190	.0000000	.0959607	.0000000	.0030267	-.0148241	.0203294
190A	-.4598478	.0950417	.1134008	.0014652	-.0215189	.0019629
195	.0000000	.0939116	.0000000	-.0089652	-.0282137	-.0282849
200	.2812397	.0934039	-.0573614	.0026742	-.0308783	-.0277904
205	.0000000	.0000000	-.0577899	.0134082	-.0309471	-.0266657
205A	-.4167228	-.1715536	-.0586749	.0008015	-.0027416	-.0241899
210	.0000000	.0000000	-.0594788	-.0166807	.0421433	-.0217140
210A	1.0000000	.3847484	-.0604686	.0014471	-.0031620	-.0182384
215	.0000000	.0000000	-.0612940	.0108275	-.0293526	-.0147627
215A	.1941078	.0914462	-.0621708	-.0032137	.0099888	-.0098891
220	.0000000	.0000000	-.0627149	.0020975	-.0108209	-.0050154
225 B	-.1939199	.0128822	-.0628863	-.0019226	-.0038552	-.0019225
225 E	-.2088218	.0155392	-.0499515	-.0017929	-.0023150	-.0011633
230	-.2080873	.0000000	.0000000	-.0009830	-.0008165	-.0000856
230A	-.2063630	.0007754	.0021486	-.0000473	.0004280	.0000344
235	-.2037079	.0000000	.0000000	.0008884	-.0009064	-.0000528
235A	-.2000986	-.0009134	.0311948	.0018322	.0008134	.0000369
240	-.1955708	.0000000	.0000000	.0027761	-.0023680	-.0000958
245	-.1901656	.0235633	-.2071621	.0037166	.0286359	.0023962
250	.0000000	.0000000	-.2069873	.0035515	.0230221	.0036493
255 B	.0155704	-.0462343	-.2065146	.0035971	-.0160479	.0063274
255 E	-.0867070	-.0301474	-.0932351	.0050226	-.0238281	.0074868
260	-.0868033	.0000000	.0000000	.0059761	-.0216573	.0074766
265 B	-.0875887	.1559054	.0857317	.0176983	.0123432	-.0041967
265 E	-.0685072	.1120421	.0401536	.0183258	.0133174	-.0053086
270	.0738073	-.1008950	-.1024146	.0120715	.0134261	-.0006639
275	.0000000	-.1011040	.0000000	.0006433	.0090198	.0047579
280	-.0320394	-.1009280	-.0192872	.0059810	-.0044281	-.0002473
285	.0019063	-.0519645	-.0192872	.0071783	-.0050017	.0005619
290	.0000000	-.0519217	.0000000	.0068431	-.0049584	.0009072
290A	-.0421649	-.0513807	.0951108	-.0021466	-.0044977	.0001013
295	.0000000	-.0506852	.0000000	.0018271	-.0040370	-.0013164
300	.0074261	-.0504336	.0482530	.0084433	-.0038913	-.0003416
305	.0277718	.0000000	.0482559	.0097334	-.0038873	.0002752
310 B	.0316599	.0096523	.0482559	.0095514	-.0039010	.0003927
310 E	.0515734	.0500896	.0278902	.0076728	-.0041944	.0011821
315	.0515415	.0314909	-.0146425	.0046584	-.0041444	.0025395
320 B	.0361022	.0314863	.0076270	.0034862	-.0037845	.0028962

MODE SHAPE NUMBER 33

FREQUENCY : 46.3681908

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000099	.0000137	.0000239	-.0000016	.0000090	-.0000045
15	.0000555	.0000663	.0001328	.0000026	-.0000035	.0000033
20	.0000024	-.0000175	.0000059	.0000036	-.0000165	.0000042
25	.0000200	-.0000178	-.0000085	.0000014	-.0000165	.0000035
30	.0000302	-.0000182	-.0000057	-.0000016	-.0000165	-.0000003
35	-.0000013	-.0000187	.0000100	-.0000027	-.0000165	-.0000067
40	-.0000587	-.0000188	.0000337	-.0000032	-.0000165	-.0000077
45 B	.0000332	-.0000172	.0000035	-.0000027	-.0000095	-.0000052
45 E	.0000215	-.0000030	-.0000114	-.0000019	-.0000061	-.0000039
50	.0000085	.0000000	-.0000114	-.0000004	-.0000055	-.0000034
55	-.0000372	-.0000317	-.0000114	.0000031	-.0000015	-.0000010
60	-.0000158	-.0000196	.0000099	-.0000056	.0000048	-.0000007
65	.0000000	.0000000	.0000098	-.0000074	.0000058	-.0000015
70	.0000429	.0000605	.0000097	-.0000000	-.0000011	-.0000044
75	-.0000373	-.0000282	.0000080	.0000090	-.0000064	-.0000080
80 B	-.0000570	-.0000593	.0000077	.0000055	-.0000037	-.0000092
80 E	-.0000247	-.0000698	.0000062	-.0000020	-.0000045	-.0000091
85	.0000000	-.0000698	.0000000	-.0000011	-.0000058	-.0000069
90	.0000286	-.0000699	.0000693	-.0000028	-.0000187	-.0000038
95	-.0003128	.0000000	.0000694	.0000034	-.0000132	-.0000228
100 B	-.0003772	-.0000402	.0000694	.0000079	-.0000086	-.0000288
100 E	-.0002515	-.0000737	.0000930	.0000016	-.0000071	-.0000336
105	.0000000	-.0000740	.0000749	-.0000054	-.0000072	-.0000292
110	.0001280	-.0000742	.0000412	-.0000070	-.0000073	-.0000192
115	.0001283	.0000000	.0000000	-.0000069	-.0000052	-.0000066
120 B	.0001290	-.0000792	-.0000041	-.0000068	.0000018	.0000078
120 E	.0001290	-.0000825	.0000013	-.0000065	-.0000018	.0000066
125	.0000170	.0000037	.0000019	-.0000010	-.0000074	.0000040
130	.0000000	.0000036	.0000000	-.0000009	-.0000068	.0000029
130A	-.0000129	.0000038	-.0000406	-.0000000	-.0000045	-.0000005
135	.0000000	.0000036	.0000000	.0000010	-.0000021	-.0000010
135A	.0000078	.0000030	-.0000180	-.0000003	.0000003	.0000013
137	-.0000311	.0000023	.0000012	.0000005	.0000026	.0000007
138	.0000033	-.0000003	.0000014	.0000001	.0000033	.0000007
140	.0000000	.0000017	.0000000	.0000001	.0000020	-.0000044
140A	.0000891	.0000010	.0000134	-.0000000	.0000010	.0000011
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.1092606	-.0002713	.0461044	-.0006987	.0006128	.0016570
150	.0000000	-.0005397	.0000000	.0028122	.0012256	-.0066687
155	.0439700	-.0005761	.0199161	.0051477	.0013090	-.0096998
160	.0449330	-.1576148	.0000000	.0226631	-.0007596	.0046976
165	.0459201	.2351965	.0107925	.0439534	.0033837	.0046257

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0459884	.2438013	.0000000	.0456144	.0045006	.0017222
175	.0460676	.2441524	-.0174799	.0475773	.0070808	-.0013483
180 B	.1842960	-.1377961	.3647853	.0373482	.0149470	-.0046753
180 E	.2205079	-.1881080	.4797388	.0274335	.0149096	-.0030581
185	.0000000	-.1877565	.0000000	-.0146927	.0096926	.0055874
185A	-.0594479	-.1870339	-.0918293	.0042544	.0072150	-.0008227
190	.0000000	-.1859542	.0000000	-.0025939	.0047374	-.0022445
190A	.0081836	-.1843706	-.1926032	-.0036842	.0020308	.0008964
195	.0000000	-.1823678	.0000000	.0175254	-.0006757	-.0013884
200	.0213753	-.1814554	.1186740	-.0043727	-.0017530	-.0024441
205	.0000000	.0000000	.1195478	-.0274994	-.0033012	-.0022804
205A	-.0706247	.3939001	.1213481	-.0033878	-.0014048	-.0019200
210	.0000000	.0000000	.1229766	.0413360	.0090399	-.0015595
210A	.2445623	-1.0000000	.1249689	-.0031932	-.0002520	-.0010535
215	.0000000	.0000000	.1266133	-.0284190	-.0080195	-.0005475
215A	.0184425	-.2309146	.1283254	.0083772	.0035283	.0001620
220	.0000000	.0000000	.1293344	-.0052730	-.0061707	.0008715
225 B	-.1717441	-.0393408	.1296074	.0054409	-.0036883	.0013218
225 E	-.1822035	-.0597765	.1342555	.0056640	.0006746	.0017061
230	-.1817075	.0000000	.0000000	.0054435	.0025047	.0008973
230A	-.1803516	-.0134893	.0486710	.0051887	-.0006937	-.0002930
235	-.1781622	.0000000	.0000000	.0049340	.0002876	.0002823
235A	-.1751198	-.0045747	.0396877	.0046770	.0003563	-.0000828
240	-.1712543	.0000000	.0000000	.0044200	-.0017220	.0000510
245	-.1666013	.0258370	-.1806654	.0041640	.0249837	.0024201
250	.0000000	.0000000	-.1805090	.0038040	.0203709	.0036754
255 B	.0204415	-.0469483	-.1800862	.0034959	-.0135637	.0063582
255 E	-.0674107	-.0300632	-.0819313	.0048240	-.0208309	.0074857
260	-.0674903	.0000000	.0000000	.0057376	-.0191219	.0074273
265 B	-.0681498	.1501644	.0871493	.0169699	.0113393	-.0040593
265 E	-.0504348	.1080348	.0449514	.0175693	.0124158	-.0050807
270	.0842589	-.0928929	-.0899880	.0112876	.0128249	-.0001286
275	.0000000	-.0931071	.0000000	.0002927	.0088319	.0051558
280	-.0248481	-.0929904	-.0174033	.0054167	-.0033547	-.0005203
285	.0013653	-.0488010	-.0174023	.0064744	-.0039026	.0003562
290	.0000000	-.0487630	.0000000	.0061739	-.0038921	.0007083
290A	-.0381728	-.0482763	.0852489	-.0019865	-.0037804	.0001285
295	.0000000	-.0476406	.0000000	.0018495	-.0036687	-.0012271
300	.0070723	-.0474090	.0461345	.0079635	-.0036334	-.0003394
305	.0261716	.0000000	.0461376	.0091410	-.0036641	.0002425
310 B	.0298393	.0090651	.0461376	.0089704	-.0036812	.0003534
310 E	.0486727	.0471040	.0268590	.0072035	-.0039738	.0011006
315	.0486434	.0296837	-.0134651	.0043644	-.0039301	.0023839
320 B	.0341383	.0296791	.0073876	.0032641	-.0035877	.0027242

MODE SHAPE NUMBER 34

FREQUENCY : 46.6152549

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000062	.0000082	.0000150	-.0000010	.0000056	-.0000027
15	.0000347	.0000400	.0000830	.0000015	-.0000022	.0000019
20	.0000015	-.0000107	.0000034	.0000023	-.0000103	.0000028
25	.0000137	-.0000109	-.0000058	.0000009	-.0000103	.0000025
30	.0000211	-.0000111	-.0000042	-.0000010	-.0000103	-.0000001
35	-.0000006	-.0000115	.0000062	-.0000018	-.0000103	-.0000047
40	-.0000421	-.0000115	.0000227	-.0000023	-.0000103	-.0000056
45 B	.0000190	-.0000105	.0000026	-.0000016	-.0000058	-.0000032
45 E	.0000122	-.0000017	-.0000066	-.0000011	-.0000037	-.0000025
50	.0000044	.0000000	-.0000066	-.0000001	-.0000033	-.0000023
55	-.0000224	-.0000235	-.0000066	.0000022	-.0000009	-.0000010
60	-.0000096	-.0000122	.0000061	-.0000035	.0000029	-.0000008
65	.0000000	.0000000	.0000061	-.0000046	.0000036	-.0000013
70	.0000264	.0000375	.0000060	-.0000000	-.0000006	-.0000030
75	-.0000230	-.0000175	.0000049	.0000056	-.0000040	-.0000051
80 B	-.0000355	-.0000369	.0000048	.0000034	-.0000024	-.0000058
80 E	-.0000155	-.0000435	.0000038	-.0000013	-.0000030	-.0000057
85	.0000000	-.0000435	.0000000	-.0000007	-.0000038	-.0000043
90	.0000200	-.0000436	.0000432	-.0000017	-.0000123	-.0000026
95	-.0002044	.0000000	.0000432	.0000021	-.0000086	-.0000149
100 B	-.0002457	-.0000249	.0000432	.0000049	-.0000054	-.0000188
100 E	-.0001629	-.0000455	.0000577	.0000009	-.0000044	-.0000219
105	.0000000	-.0000457	.0000457	-.0000035	-.0000043	-.0000188
110	.0000818	-.0000458	.0000241	-.0000045	-.0000043	-.0000121
115	.0000820	.0000000	.0000000	-.0000045	-.0000029	-.0000038
120 B	.0000824	-.0000602	-.0000010	-.0000047	.0000008	.0000047
120 E	.0000791	-.0000571	-.0000002	-.0000045	-.0000019	.0000028
125	-.0000128	.0000026	.0000002	-.0000006	-.0000059	-.0000022
130	.0000000	.0000026	.0000000	-.0000003	-.0000055	-.0000033
130A	.0000610	.0000027	-.0000189	.0000001	-.0000038	-.0000002
135	.0000000	.0000026	.0000000	-.0000002	-.0000022	.0000040
135A	-.0000404	.0000022	-.0000249	-.0000004	-.0000005	.0000001
137	-.0000145	.0000018	-.0000046	.0000009	.0000012	-.0000021
138	.0000021	.0000038	-.0000046	-.0000007	.0000017	-.0000021
140	.0000000	.0000013	.0000000	-.0000019	.0000009	.0000016
140A	-.0000678	.0000008	-.0000712	.0000005	.0000004	-.0000004
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0940223	-.0001319	.0182002	-.0002840	.0007121	.0014681
150	.0000000	-.0002622	.0000000	.0011431	.0014243	-.0059085
155	.0381442	-.0002799	.0081958	.0021808	.0015212	-.0080244
160	.0392069	-.0985072	.0000000	.0107240	-.0024393	.0040828
165	.0403368	.1562151	.0250875	.0211085	.0075113	.0009319

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0404173	.1554445	.0000000	.0219186	.0104061	-.0014430
175	.0405109	.1463790	-.0390275	.0228760	.0139373	-.0040439
180 B	.2498797	-.0381973	.1456510	.0182704	.0216303	-.0043648
180 E	.2919178	-.0629499	.2023779	.0137108	.0209105	-.0013235
185	.0000000	-.0630200	.0000000	-.0079339	.0047495	-.0029080
185A	.1686382	-.0628647	-.0721381	.0015734	-.0029256	-.0040185
190	.0000000	-.0625879	.0000000	.0015408	-.0106008	.0192364
190A	-.4580474	-.0621483	-.0301784	-.0015351	-.0189851	.0022430
195	.0000000	-.0615659	.0000000	.0046808	-.0273695	-.0283269
200	.2816454	-.0612947	.0330038	-.0016689	-.0307065	-.0278178
205	.0000000	.0000000	.0333023	-.0094172	-.0311898	-.0266387
205A	-.4230296	.1428465	.0339246	-.0014902	-.0027970	-.0240433
210	.0000000	.0000000	.0344981	.0155039	.0426126	-.0214477
210A	1.0000000	-.3822587	.0352200	-.0011484	-.0040205	-.0178042
215	.0000000	.0000000	.0358428	-.0108583	-.0263508	-.0141605
215A	.3055208	-.0889978	.0365464	.0031337	.0053245	-.0090513
220	.0000000	.0000000	.0370476	-.0017449	.0049366	-.0039421
225 B	.4110000	-.0231203	.0372594	.0021763	.0152170	-.0006998
225 E	.4713515	-.0341769	-.0118896	.0019622	.0070857	.0002780
230	.4702509	.0000000	.0000000	.0002218	-.0012765	.0006962
230A	.4669313	-.0087164	-.0478193	-.0017887	.0000733	-.0002435
235	.4614316	.0000000	.0000000	-.0037994	.0009818	.0002841
235A	.4537011	.0002317	-.0789619	-.0058275	-.0015151	-.0001442
240	.4438151	.0000000	.0000000	-.0078557	.0051170	.0002965
245	.4318656	-.0623957	.4679114	-.0098768	-.0647766	-.0062889
250	.0000000	.0000000	.4675071	-.0093646	-.0529246	-.0095362
255 B	-.0578477	.1205773	.4664110	-.0092889	.0347930	-.0164765
255 E	.1685855	.0782584	.2127572	-.0129292	.0539881	-.0194534
260	.1687881	.0000000	.0000000	-.0153833	.0497596	-.0193814
265 B	.1704756	-.4025944	-.2392582	-.0455562	-.0301493	.0105997
265 E	.1231478	-.2905746	-.1266650	-.0471654	-.0332344	.0133169
270	-.2397872	.2436349	.2369310	-.0301278	-.0346800	-.0002773
275	.0000000	.2442196	.0000000	-.0006465	-.0240342	-.0144117
280	.0633356	.2439677	.0452975	-.0140840	.0084560	.0016563
285	-.0031680	.1290910	.0452945	-.0168427	.0099324	-.0007655
290	.0000000	.1289926	.0000000	-.0160772	.0099203	-.0017273
290A	.1000635	.1277258	-.2223705	.0052189	.0097920	-.0003780
295	.0000000	.1260613	.0000000	-.0050016	.0096637	.0032541
300	-.0189209	.1254533	-.1227476	-.0210961	.0096231	.0009267
305	-.0695576	.0000000	-.1227561	-.0241844	.0097212	-.0006152
310 B	-.0792895	-.0239853	-.1227563	-.0237354	.0097684	-.0009089
310 E	-.1292795	-.1247695	-.0715792	-.0190699	.0105500	-.0028944
315	-.1292019	-.0787294	.0355019	-.0115633	.0104389	-.0063172
320 B	-.0907263	-.0787174	-.0197613	-.0086521	.0095335	-.0072305

MODE SHAPE NUMBER 35

FREQUENCY : 49.7622471

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0003125	-.0013834	.0007084	.0003496	.0002752	.0003848
15	.0021376	-.0093824	.0049321	.0006760	.0000802	-.0001740
20	.0014301	-.0056461	.0032145	.0007369	-.0003352	-.0009758
25	-.0013496	-.0056667	.0005730	.0003436	-.0003352	-.0002696
30	-.0009837	-.0056868	.0003498	-.0001866	-.0003352	.0003840
35	.0043494	-.0057039	.0036489	-.0006097	-.0003352	.0009428
40	.0122370	-.0057062	.0087818	-.0006851	-.0003352	.0010503
45 B	.0256579	-.0055541	.0119080	.0000530	-.0005797	-.0022190
45 E	.0333094	-.0020890	.0099601	-.0009056	-.0007890	-.0021413
50	.0314230	.0000000	.0099646	-.0008434	-.0008934	-.0020807
55	.0171980	.0040557	.0099860	.0002746	-.0012399	-.0017373
60	.0025228	.0078024	-.0046398	.0024331	-.0009100	-.0014974
65	.0000000	.0000000	-.0046360	.0027643	-.0007379	-.0013785
70	-.0032873	-.0222330	-.0046223	.0005013	.0001267	-.0009869
75	.0014343	-.0013072	-.0045485	-.0026020	.0002519	-.0005062
80 B	.0017210	.0084974	-.0045068	-.0018791	-.0001465	-.0003427
80 E	.0001133	.0127931	-.0043508	.0010457	-.0013283	-.0000637
85	.0000000	.0128225	.0000000	.0016602	-.0018975	.0001621
90	.0151101	.0130896	.0531839	.0002056	-.0075893	-.0031542
95	-.1309084	.0000000	.0531182	.0038099	-.0064310	-.0107311
100 B	-.1651780	-.0293802	.0530810	.0049117	-.0051218	-.0131238
100 E	-.1161114	-.0480396	.0649567	.0004564	-.0050740	-.0152193
105	.0000000	-.0482084	.0523374	-.0030558	-.0055564	-.0139804
110	.0642251	-.0483136	.0346684	-.0034461	-.0058754	-.0103668
115	.0643408	.0000000	.0000000	-.0027614	-.0048958	-.0062959
120 B	.0646724	.0377419	-.0217364	-.0003161	.0027840	.0038516
120 E	.0849823	.0100563	-.0036892	-.0000020	.0042818	.0091687
125	.1200080	.0001031	-.0036560	.0007940	-.0028731	.0238449
130	.0000000	.0000997	.0000000	.0006845	-.0073558	.0267035
130A	-.4120946	.0000856	.0049927	-.0001147	-.0252869	.0053648
135	.0000000	.0000721	.0000000	-.0002150	-.0432179	-.0486626
135A	1.0000000	.0000594	-.0007026	.0000815	-.0611490	-.0326056
137	.8693168	.0000468	.0007606	.0000035	-.0790801	.0427305
138	-.0696902	.0001698	.0007634	-.0000180	-.0882962	.0427305
140	.0000000	.0000353	.0000000	-.0000609	-.0593100	.0492308
140A	-.4413337	.0000172	-.0005909	.0000150	-.0296550	-.0121317
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0000038	.0000005	.0000065	-.0000002	.0000002	-.0000023
150	.0000000	-.0000028	.0000000	.0000008	.0000004	.0000092
155	-.0000500	-.0000029	.0000050	.0000012	.0000004	.0000081
160	-.0000513	-.0000476	.0000000	.0000042	-.0000003	-.0000012
165	-.0000522	.0000857	.0000041	.0000078	.0000013	.0000014

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0000522	.0000876	.0000000	.0000081	.0000015	-.0000001
175	-.0000522	.0000848	-.0000050	.0000084	.0000020	-.0000014
180 B	.0000051	.0000158	.0000645	.0000073	.0000052	-.0000040
180 E	.0000272	.0000059	.0000874	.0000050	.0000053	-.0000035
185	.0000000	.0000036	.0000000	.0000074	.0000022	-.0000004
185A	.0000266	.0000021	.0002350	.0000037	.0000008	.0000002
190	.0000000	-.0000010	.0000000	-.0000222	-.0000007	-.0000004
190A	.0000389	-.0000025	-.0004319	.0000045	-.0000023	.0000005
195	.0000000	-.0000039	.0000000	.0000038	-.0000039	-.0000017
200	.0000362	-.0000043	-.0000461	-.0000048	-.0000045	-.0000044
205	.0000000	.0000000	-.0000469	.0000017	-.0000026	-.0000040
205A	.0000006	-.0000303	-.0000482	.0000004	.0000006	-.0000031
210	.0000000	.0000000	-.0000483	-.0000031	.0000000	-.0000021
210A	.0000118	.0000744	-.0000481	.0000002	.0000001	-.0000008
215	.0000000	.0000000	-.0000481	.0000023	-.0000004	.0000005
215A	.0000014	.0000150	-.0000491	-.0000012	.0000002	.0000023
220	.0000000	.0000000	-.0000497	.0000024	-.0000003	.0000042
225 B	-.0000087	-.0000240	-.0000505	-.0000035	-.0000002	.0000053
225 E	-.0000097	.0000237	-.0000492	-.0000056	-.0000006	.0000038
230	-.0000101	.0000000	.0000000	-.0000072	-.0000011	-.0000017
230A	-.0000101	.0000012	-.0000039	-.0000091	.0000004	.0000005
235	-.0000106	.0000000	.0000000	-.0000109	-.0000003	-.0000003
235A	-.0000112	-.0000009	.0000030	-.0000128	.0000004	.0000004
240	-.0000115	.0000000	.0000000	-.0000146	-.0000013	-.0000013
245	-.0000117	-.0000950	.0000406	-.0000165	.0000017	-.0000032
250	.0000000	.0000000	.0000404	-.0000108	.0000007	-.0000031
255 B	-.0000137	.0000326	.0000401	.0000018	-.0000000	-.0000029
255 E	-.0000048	.0000096	.0000231	.0000017	.0000052	-.0000026
260	-.0000049	.0000000	.0000000	.0000016	.0000055	-.0000019
265 B	-.0000076	.0000202	-.0000156	-.0000003	-.0000032	-.0000030
265 E	-.0000135	.0000087	-.0000030	-.0000008	-.0000041	-.0000034
270	-.0000617	.0000012	.0000438	-.0000027	-.0000046	-.0000030
275	.0000000	.0000020	.0000000	-.0000016	-.0000031	-.0000026
280	.0000121	.0000003	.0000044	.0000004	.0000014	.0000007
285	.0000013	-.0000003	.0000042	-.0000011	.0000015	.0000005
290	.0000000	-.0000002	.0000000	-.0000013	.0000014	.0000003
290A	.0000119	.0000009	.0000026	.0000001	-.0000002	.0000001
295	.0000000	.0000013	.0000000	.0000010	-.0000017	-.0000006
300	.0000093	.0000013	.0000092	.0000002	-.0000022	-.0000009
305	.0000218	.0000000	.0000092	-.0000000	-.0000027	-.0000003
310 B	.0000245	.0000000	.0000092	.0000002	-.0000028	-.0000002
310 E	.0000414	.0000035	-.0000100	.0000032	-.0000043	.0000006
315	.0000413	-.0000082	-.0000535	.0000079	-.0000041	.0000023
320 B	.0000266	-.0000081	-.0000079	.0000078	-.0000033	.0000022

ORTHOGONALITY CHECK OF EIGENVECTORS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

ORTHOGONALITY CHECK OF EIGENVECTORS
 (UPPER TRIANGLE OF THE SYMMETRICAL MATRIX)

1	2	3	4	5	6	7	8
.10000+01	.42334-07 .10000+01	.53325-13 -.73876-13 .10000+01	.90622-08 -.66675-08 -.33895-13 .10000+01	.44002-08 .23272-09 -.20351-12 -.21687-08 .10000+01	-.16384-14 .40642-14 -.38632-08 -.25961-12 -.28358-12 .10000+01	-.25800-08 .12976-08 .66903-14 .46173-08 -.24122-08 -.63676-13 .10000+01	-.64902-14 .81287-14 -.35202-08 .26533-12 .14434-12 -.55329-08 -.49254-12 .10000+01
9	10	11	12	13	14	15	16
-.74570-14 .98878-14 .15630-10 .14171-12 -.20514-12 .54653-08 -.21264-13 -.61917-08 .10000+01	-.45484-08 .16336-09 -.30456-14 .42220-08 .40916-09 .47943-13 -.32395-07 -.20484-12 -.63550-12 .10000+01	-.59082-09 .51538-09 .59319-13 -.10908-08 -.35271-09 .96746-13 -.36979-08 -.34086-13 -.47153-12 -.11721-07 .10000+01	.16998-12 -.20322-12 -.20226-09 .54481-13 -.71487-15 -.57436-09 .59991-13 .21866-08 .28238-08 .49766-12 -.66806-19 .10000+01	-.15871-12 .19110-12 .78075-08 -.10435-13 -.13507-14 .11278-09 -.95429-13 .18434-08 -.32984-08 .87904-19 -.11854-18 .69152-07 .10000+01	.22822-14 -.21947-14 .60365-10 -.53534-13 .64873-14 .86094-09 .10563-12 .26711-08 -.15562-07 .38614-19 -.57203-20 .12736-07 -.14381-07 .10000+01	.43405-12 -.55801-12 .31101-09 -.14106-14 .35846-12 .17836-08 -.13149-12 .36472-08 -.10157-07 -.10927-17 .21770-18 -.20857-07 .20565-07 .61181-08 .10000+01	-.41811-10 .74710-08 -.28719-13 .32299-08 .84961-08 .72591-13 -.31681-08 .10967-12 .40838-12 -.37831-08 -.61527-08 .49382-18 -.17312-18 .68784-19 .54127-18 .10000+01
17	18	19	20	21	22	23	24
-.14144-12 -.17665-12 -.82732-08 .15224-13 .76180-18 .10227-08 -.11314-12 .12929-08 -.44637-09 -.14585-17 -.53340-17 .67237-08 -.45659-09	.41944-11 -.41147-10 .47963-13 .17821-08 .78984-09 -.60513-13 .25710-08 .46902-12 .58086-12 .27117-08 .68726-08 .17448-17 .74553-17	-.79698-12 .92795-12 -.75316-11 -.21491-13 .79189-18 -.15187-10 .32950-13 -.20177-09 -.10047-11 -.57975-18 -.33110-18 -.14193-08 .45980-09	-.37981-14 -.45932-13 .27200-09 -.70799-14 -.68478-12 .21587-08 .21596-13 .85943-09 .12743-08 -.13664-17 -.62743-18 -.72045-09 .15499-09	.65759-15 -.59097-15 .20822-09 .78047-12 -.22715-14 .16749-09 -.17387-13 .49367-08 .13942-08 .94861-13 .72613-17 .57098-08 -.29103-08	-.14639-15 -.55410-16 .27063-09 -.51767-14 .40183-14 .66674-09 .13378-13 .27733-08 .53917-08 .53210-12 .40625-17 -.13374-08 .84021-09	-.26129-14 -.13337-16 -.28134-08 .82300-13 .21739-14 .99136-10 -.19776-13 .45156-09 -.65844-10 -.86116-16 .24944-17 .20010-08 -.47609-08	.81847-15 -.73670-15 .17493-09 .46058-12 .11099-13 .64137-08 .75088-12 -.60482-09 .77456-09 .33723-12 .85869-16 .14171-09 -.29539-09

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.84721-09	.97737-18	.10964-09	.65643-10	.28376-09	-.10837-08	-.31809-09	-.38406-10
-.10034-08	.52341-17	-.81001-09	-.13593-08	-.46057-08	-.31065-08	.19261-09	.68903-09
-.41995-18	.66915-08	-.23085-17	-.11670-17	.39216-15	.10054-15	.17034-16	-.38944-16
.10000+01	-.87309-17	-.27602-09	-.32129-09	-.17344-09	-.27384-09	-.14408-07	-.20834-09
	.10000+01	-.22306-16	-.56851-17	.29234-15	-.79736-16	.13738-15	.17881-15
		.10000+01	-.78928-11	.90418-10	-.22518-09	.47281-10	.69862-10
			.10000+01	.23533-09	-.42632-09	.14346-10	-.56632-08
				.10000+01	.65140-08	.31842-09	-.69763-09
					.10000+01	-.47845-09	-.53275-08
						.10000+01	-.19178-09
							.10000+01
25	26	27	28	29	30	31	32
-.21248-08	-.91640-14	.70547-14	-.75100-15	-.20271-09	.54954-10	-.22158-13	-.99970-13
-.18360-08	.81236-15	.95599-12	.18262-18	.26774-10	.11738-08	.97214-14	-.11876-12
.20822-12	-.75544-10	.60112-10	.31895-10	.17394-15	.30891-14	.15554-08	-.89323-09
.44100-08	.14532-12	-.36164-14	-.71797-12	-.91377-09	-.98847-08	.20192-13	-.85948-12
-.87948-08	-.26164-14	-.10047-14	-.23404-14	-.39212-09	-.25107-08	-.34764-14	-.57050-13
.83932-15	-.24101-08	.12208-09	.21061-08	.19703-13	.23073-12	.25393-10	.66763-09
-.51357-08	-.12564-16	-.10307-12	.33284-13	.47006-09	.68711-08	.22386-12	-.59589-13
-.31183-12	.28859-09	.11516-08	-.16354-09	.80828-15	.20007-13	-.22173-08	-.52052-09
-.54460-16	-.13411-09	-.27306-09	.23491-09	.22417-13	.37590-13	.70476-09	-.16530-08
-.11752-08	.22476-15	.20468-12	-.47067-12	.49203-09	.65090-08	-.18821-12	-.31059-12
.70991-09	.65060-16	.22625-14	.12488-15	-.42594-08	.12823-08	-.80469-14	.46111-13
.11028-14	.36417-09	.73924-09	.23457-10	.99978-15	.38607-14	.14680-07	-.31286-09
.22468-15	-.13563-09	-.37749-08	-.19829-10	.96377-15	.10263-13	-.86639-08	.30787-09
-.23629-16	-.37380-09	-.56589-09	.12333-09	.32276-12	-.45857-14	-.89054-09	-.13125-08
-.37491-15	.21877-09	.19677-08	.77697-10	-.90662-15	-.81843-14	.33648-08	-.33599-09
-.48569-09	-.31493-15	.12707-13	-.19443-15	-.55052-09	-.28243-08	-.27571-14	.68703-12
-.49214-16	-.15228-09	-.25391-09	-.85806-11	.14801-15	-.53830-14	-.25630-09	-.10239-08
-.46615-08	.23403-15	.72356-14	-.54327-15	-.23342-08	.17065-07	-.11266-13	-.18781-12
.15925-16	.35475-09	-.90154-08	.26894-11	.16586-15	.39199-14	.41729-08	.31783-09
-.28413-16	-.50436-08	-.73099-10	.53037-09	-.43042-16	-.44519-14	-.64871-10	-.62179-09
-.25171-13	.55794-10	.15840-08	.91447-11	.10037-14	.18954-13	.22831-07	-.53149-09
.31063-13	.17959-08	.16610-08	.10008-08	-.38860-15	-.64595-14	-.38815-08	.15950-08
-.12398-13	.22724-10	.28007-09	.26948-10	-.99587-14	-.30609-14	-.65572-09	-.13076-09
-.23212-13	.46199-08	.33365-09	-.59127-08	-.35550-15	-.20124-14	-.28839-09	.31254-08
.10000+01	.24256-13	-.42449-12	-.36263-13	-.62647-09	.32472-08	.86656-14	-.26663-12
	.10000+01	.34333-08	.33151-08	-.29923-13	.11391-14	-.18957-09	.14517-08
		.10000+01	.44118-10	-.17364-12	-.96514-13	.52837-08	-.55249-08
			.10000+01	.15682-12	-.88143-14	.90764-11	-.11468-08
				.10000+01	-.15994-07	.19228-14	.98670-14
					.10000+01	-.26120-13	.12834-11
						.10000+01	.16956-08
							.10000+01
33	34	35					
.38603-12	.65141-13	.14351-08					
-.24642-12	.22818-12	.17330-08					
.27451-08	.59728-09	.41072-12					
-.29234-12	.24202-12	-.70724-09					
-.17463-12	.13621-12	.12767-09					
-.15030-10	-.25042-08	-.56599-12					
.52411-12	.35980-12	.34159-09					
-.32011-08	-.73492-09	-.83026-12					
-.91484-09	.26767-08	-.22208-12					
-.14825-12	.61619-13	.26047-09					
-.16727-12	.54984-13	.11295-13					
-.31815-08	-.16638-08	.30840-12					

ORTHOGONALITY CHECK OF EIGENVECTORS

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.18125-08	.88927-09	-.10074-11
.21799-09	.12936-08	-.10543-12
-.12440-08	.34123-09	.92541-12
-.30442-12	.30781-12	-.50629-09
.54979-09	.34236-09	-.49762-13
.81862-12	.38486-12	.67079-09
-.28611-08	-.83023-09	-.18924-12
.74012-09	-.23679-08	.83936-13
.77198-09	-.75530-09	-.12199-11
.10346-08	-.54888-09	.27691-12
-.73223-09	-.37257-09	-.49256-14
.85430-09	-.65501-08	-.44620-13
-.12083-12	-.10886-13	.34272-09
.12539-08	-.11940-08	.24236-12
.23755-08	-.18890-09	-.27327-11
.17260-09	.41270-09	.17696-12
-.21419-12	-.12363-12	-.72597-09
-.14985-11	-.10458-11	-.75003-08
.98694-09	-.67813-08	.33670-11
.36754-09	.39015-07	.31414-12
.10000+01	-.21293-08	-.47893-11
	.10000+01	-.18189-12
		.10000+01

MODAL ACCELERATIONS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO1

TITLE OF RESPONSE SPECTRUM : ENVELOPE OF OBERBC719

MODAL ACCELERATIONS (G'S)

MODE	FREQUENCY (CPS)	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	12.309859	4.2910	3.7237	1.4000
2	12.350390	4.2189	3.7744	1.4000
3	14.860653	2.0700	3.9600	1.4000
4	15.102113	2.0489	3.9600	1.4000
5	15.865048	1.8956	3.9600	1.4000
6	16.319606	1.8077	3.9600	1.4000
7	17.625497	1.5683	3.9600	1.4000
8	17.906043	1.5191	3.9600	1.4000
9	20.147381	1.1689	3.5339	.8918
10	21.577264	1.1105	2.1594	.8381
11	24.167456	.9943	1.0957	.7493
12	24.587541	.9306	1.0775	.7358
13	24.622173	.9254	1.0761	.7347
14	24.806387	.8978	1.0682	.7289
15	25.568806	.8180	1.0600	.7052
16	25.628638	.8127	1.0600	.7033
17	27.901274	.6753	1.0600	.6368
18	28.462847	.6343	.9404	.6212
19	28.724004	.6196	.8738	.6140
20	30.769005	.5299	.4521	.5305
21	33.622362	.4169	.3050	.3571
22	34.521890	.3872	.2900	.3055
23	34.785006	.3794	.2900	.2906
24	35.387578	.3730	.2900	.2729
25	35.717984	.3730	.2900	.2681
26	36.559448	.3730	.2900	.2562
27	37.071546	.3730	.2900	.2500
28	38.527576	.3730	.2900	.2500
29	40.226110	.3730	.2900	.2500
30	41.443313	.3730	.2900	.2500
31	42.526875	.3730	.2900	.2500
32	45.819796	.3730	.2900	.2500
33	46.368176	.3730	.2900	.2500
34	46.615240	.3730	.2900	.2500
35	49.762231	.3730	.2900	.2500

PARTICIPATION FACTORS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

MODE	PARTICIPATION FACTORS		
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	.39513	.00455	-.04227
2	-.12891	-.04626	.04588
3	.00092	-.04266	-.02003
4	-.03295	.48940	.11323
5	.07973	.14615	-.02398
6	.03640	.08748	-.14855
7	-.07425	.11417	-.03386
8	.00060	-.22510	-.23477
9	-.06253	.04526	-.06718
10	-.10046	-.00532	-.27622
11	-.01028	-.14964	-.35243
12	.00179	-.13246	.03589
13	-.01261	.00938	-.04116
14	.08228	.02812	-.00848
15	-.05115	.02652	.05303
16	.34712	-.10573	-.09277
17	-.00078	.10676	.01499
18	.12562	-.04504	.35465
19	-.01396	.00030	-.11814
20	.00504	-.21477	-.04178
21	-.04845	.11131	.03007
22	.04035	-.00849	.21813
23	-.00008	.24210	.01030
24	.03791	-.14697	-.03798
25	-.27959	-.31791	.15440
26	-.09118	.00755	.01433
27	-.12218	.04240	.02557
28	.12887	-.02295	-.01072
29	-.00500	.18369	-.09277
30	-.01878	-.06637	.19824
31	-.12229	-.10546	.02943
32	-.07321	.06213	-.06685
33	-.07238	-.19536	.11571
34	.33312	-.01229	.03808
35	.06027	-.02614	.00837

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
 *** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
 *** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

MODAL ACCELERATIONS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO2

TITLE OF RESPONSE SPECTRUM : ENVELOPE OF SSERBC719

MODAL ACCELERATIONS (G'S)

MODE	FREQUENCY (CPS)	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	12.309859	3.3451	2.0116	.9467
2	12.350390	3.3071	1.9808	.9395
3	14.860653	1.5900	1.9400	.7800
4	15.102113	1.5442	1.9400	.7800
5	15.865048	1.4038	1.9400	.7800
6	16.319606	1.3234	1.9400	.7800
7	17.625497	1.1426	1.9400	.7800
8	17.906043	1.1225	1.9400	.7800
9	20.147381	.9722	1.8110	.6327
10	21.577264	.8847	1.4386	.6100
11	24.167456	.8600	.7412	.5756
12	24.587541	.8600	.7203	.5588
13	24.622173	.8600	.7185	.5574
14	24.806387	.8600	.7095	.5501
15	25.568806	.8037	.6545	.5206
16	25.628638	.7978	.6498	.5183
17	27.901274	.5851	.5700	.4354
18	28.462847	.5609	.5377	.4159
19	28.724004	.5523	.5197	.4070
20	30.769005	.4876	.4436	.3445
21	33.622362	.4730	.4130	.3230
22	34.521890	.4730	.4130	.3230
23	34.785006	.4730	.4130	.3230
24	35.387578	.4730	.4130	.3230
25	35.717984	.4730	.4130	.3230
26	36.559448	.4730	.4130	.3230
27	37.071546	.4730	.4130	.3230
28	38.527576	.4730	.4130	.3230
29	40.226110	.4730	.4130	.3230
30	41.443313	.4730	.4130	.3230
31	42.526875	.4730	.4130	.3230
32	45.819796	.4727	.4130	.3230
33	46.368176	.4727	.4130	.3230
34	46.615240	.4727	.4130	.3230
35	49.762231	.4728	.4130	.3230

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***

TIME FOR ME101P2 38.057

@XOT *ME101.ME101S . SEISO3

ME101S VERSION/SEP21 (SAP)

4 100.0 93.5
NUMBER OF ITERATION VECTORS (NAD) ***** 46

CORE CHANGED FROM 28.37 TO 34.36

TIME FOR ABOVE = 1308.969 . NOW START *** NODAL POINT INPUT ***
 TIME FOR ABOVE = .549 . NOW START *** BOUNDARY ELEMENT STIFFNESSES ***
 TIME FOR ABOVE = 1.110 . NOW START *** BEAM ELEMENT STIFFNESSES ***
 TIME FOR ABOVE = 6.158 . NOW START *** CURVED ELEMENT STIFFNESSES ***

***** EQUATION SOLUTION PARAMETERS ***** TOTAL NUMBER OF EQUATIONS 534
 MAXIMUM BANDWIDTH 18 NUMBER OF EQUATIONS PER BLOCK 129
 NUMBER OF BLOCKS 5 VALUE OF MTOT 65155

TIME FOR ABOVE = 1.104 . NOW START *** INPUT OF NODAL LOADS AND MASSES ***
 TIME FOR ABOVE = .116 . NOW START *** COMPUTATION OF INDEXES ***

CORE CHANGED FROM 34.36 TO 35.00

TIME FOR ABOVE = 3.914 . NOW START *** ASSEMBLY OF EQUATIONS ***

CORE CHANGED FROM 35.00 TO 40.59

TIME FOR ABOVE = 1.022 . NOW START *** FORMING INITIAL VECTORS ***

85	86	51	115	14	39
.91	68	15	229	248	231
217	206	219	205	158	195
349	350	381	337	380	303
301	338	291	475	392	393
457	404	477	391	416	513
517	524	519	523	518	525
529					

TIME FOR ABOVE = .323 . NOW START *** FACTOR OF STIFFNESS MATRIX ***
 TIME FOR ABOVE = .008 . NOW START *** DECOMP *** BLOCK 1 OF 5 BLOCKS. @@
 TIME FOR ABOVE = .253 . NOW START *** DECOMP *** BLOCK 2 OF 5 BLOCKS. @@
 TIME FOR ABOVE = .203 . NOW START *** DECOMP *** BLOCK 3 OF 5 BLOCKS. @@
 TIME FOR ABOVE = .200 . NOW START *** DECOMP *** BLOCK 4 OF 5 BLOCKS. @@
 TIME FOR ABOVE = .200 . NOW START *** DECOMP *** BLOCK 5 OF 5 BLOCKS. @@

CORE CHANGED FROM 40.59 TO 68.99

TIME FOR ABOVE = .064 . NOW START *** SUBSPACE ITERATION EIGENVALUES ***
 TIME FOR ABOVE = .006 . NOW START SUBSPACE ITERATION CYCLE NO. 1 ****@@
 TIME FOR ABOVE = 83.310 . NOW START SUBSPACE ITERATION CYCLE NO. 2 ****@@
 TIME FOR ABOVE = 84.893 . NOW START SUBSPACE ITERATION CYCLE NO. 3 ****@@
 TIME FOR ABOVE = 73.722 . NOW START SUBSPACE ITERATION CYCLE NO. 4 ****@@
 TIME FOR ABOVE = 69.238 . NOW START SUBSPACE ITERATION CYCLE NO. 5 ****@@
 TIME FOR ABOVE = 62.445 . NOW START SUBSPACE ITERATION CYCLE NO. 6 ****@@
 TIME FOR ABOVE = 59.668 . NOW START SUBSPACE ITERATION CYCLE NO. 7 ****@@
 TIME FOR ABOVE = 57.913 . NOW START SUBSPACE ITERATION CYCLE NO. 8 ****@@
 TIME FOR ABOVE = 56.930 . NOW START SUBSPACE ITERATION CYCLE NO. 9 ****@@
 TIME FOR ABOVE = 56.281 . NOW START SUBSPACE ITERATION CYCLE NO. 10 ****@@
 TIME FOR ABOVE = 55.256 . NOW START SUBSPACE ITERATION CYCLE NO. 11 ****@@

RELATIVE TOLERANCES REACHED ON EIGENVALUES ARE NOW ...

.23755-017	.47199-017	.32600-017	.00000	.28603-017	.00000	.23174-017	.22454-017	.35472-017	.00000
.49305-017	.48825-016	.43938-016	.46798-017	.26649-015	.10961-017	.57688-014	.85942-013	.14746-014	.15102-014
.25581-011	.40848-011	.61546-011	.43222-011	.60487-010	.60057-011	.12210-008	.29953-010	.17261-009	.20223-007
.65363-008	.24708-006	.78107-006	.22412-006	.45521-005	.20371-005	.86232-004	.29540-004	.17430-005	.12721-003
.69200-002	.46177-002	.13449-001	.42195-003	.22222+000	.18487+000				

MODAL ACCELERATIONS

ME101/I2

DATE 040182

PAGE 326

RESALL
LB= 36

*** CORE CHANGED FROM 92610 TO 88038 DECIMAL WORDS ***
PTEMP CASE 4 MS AN
#TIME FOR ME101P1# 179.292

QXQT *ME101.ME101P2 . SEISO4

ME101P2 VERSION/MAR04
*** CORE CHANGED FROM 33763 TO 39763 DECIMAL WORDS ***
*** CORE CHANGED FROM 39763 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

FREQUENCIES AND PERIODS

ME101/12

DATE 040182

PAGE 327

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO3

EIGEN SOLVER : SUBSPACE ITERATION

FREQUENCIES FOR THE SEISO3 LOAD CASE (CPS)

12.3098587	12.3503901	14.8606527	15.1021134	15.8650482	16.3196061	17.6254971	17.9060431
20.1473808	21.5772645	24.1674564	24.5875411	24.6221735	24.8063874	25.5688066	25.6286385
27.9012747	28.4628479	28.7240040	30.7690053	33.6223626	34.5218897	34.7850065	35.3875790
35.7179842	36.5594482	37.0715466	38.5275764	40.2261105	41.4433136	42.5268760	45.8197966
46.3681765	46.6152406	49.7622313					

PERIODS FOR THE SEISO3 LOAD CASE (SEC)

.0812357	.0809691	.0672918	.0662159	.0630316	.0612760	.0567360	.0558471
.0496342	.0463451	.0413780	.0406710	.0406138	.0403122	.0391102	.0390188
.0358407	.0351335	.0348141	.0325002	.0297421	.0289671	.0287480	.0282585
.0279971	.0273527	.0269749	.0259554	.0248595	.0241293	.0235145	.0218246
.0215665	.0214522	.0200956					

MASS TABLE

ME101/12

DATE 040182

PAGE 328

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

DATA PT	MASSES (LB-SEC**2/IN)			X-DIRECTION	MASSES (LB)	
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION		Y-DIRECTION	Z-DIRECTION
5	.0014	.0014	.0014	.5591	.5591	.5591
10	.0058	.0058	.0058	2.2492	2.2492	2.2492
15	.0595	.0595	.0595	22.9864	22.9864	22.9864
20	.0084	.0084	.0084	3.2515	3.2515	3.2515
25	.0026	.0026	.0026	1.0026	1.0026	1.0026
30	.0554	.0554	.0554	21.4248	21.4248	21.4248
35	.0564	.0564	.0564	21.8115	21.8115	21.8115
40	.0073	.0073	.0073	2.8200	2.8200	2.8200
45 B	.0063	.0063	.0063	2.4467	2.4467	2.4467
45 E	.0030	.0030	.0030	1.1577	1.1577	1.1577
50	.0044	.0044	.0044	1.7187	1.7187	1.7187
55	.0091	.0091	.0091	3.5269	3.5269	3.5269
60	.0062	.0062	.0062	2.4097	2.4097	2.4097
65	.0038	.0038	.0038	1.4752	1.4752	1.4752
70	.1355	.1355	.1355	52.3663	52.3663	52.3663
75	.1338	.1338	.1338	51.7075	51.7075	51.7075
80 B	.0036	.0036	.0036	1.3725	1.3725	1.3725
80 E	.0032	.0032	.0032	1.2436	1.2436	1.2436
85	.0098	.0098	.0098	3.7811	3.7811	3.7811
90	.0145	.0145	.0145	5.6143	5.6143	5.6143
95	.0074	.0074	.0074	2.8644	2.8644	2.8644
100 B	.0041	.0041	.0041	1.5874	1.5874	1.5874
100 E	.0046	.0046	.0046	1.7879	1.7879	1.7879
105	.0038	.0038	.0038	1.4752	1.4752	1.4752
110	.0033	.0033	.0033	1.2890	1.2890	1.2890
115	.0083	.0083	.0083	3.2082	3.2082	3.2082
120 B	.0088	.0088	.0088	3.4063	3.4063	3.4063
120 E	.0080	.0080	.0080	3.0769	3.0769	3.0769
125	.0070	.0070	.0070	2.7212	2.7212	2.7212
130	.0070	.0070	.0070	2.7212	2.7212	2.7212
130A	.0113	.0113	.0113	4.3540	4.3540	4.3540
135	.0113	.0113	.0113	4.3540	4.3540	4.3540

DATA PT	MASSES (LB-SEC**2/IN)			X-DIRECTION	MASSES (LB)	
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION		Y-DIRECTION	Z-DIRECTION
135A	.0113	.0113	.0113	4.3540	4.3540	4.3540
137	.0136	.0136	.0136	5.2706	5.2706	5.2706
138	.0553	.0553	.0553	21.3532	21.3532	21.3532
140	.0119	.0119	.0119	4.5831	4.5831	4.5831
140A	.0142	.0142	.0142	5.4997	5.4997	5.4997
145	.0180	.0180	.0180	6.9606	6.9606	6.9606
145A	.0218	.0218	.0218	8.4215	8.4215	8.4215
150	.0124	.0124	.0124	4.7836	4.7836	4.7836
155	.0101	.0101	.0101	3.8957	3.8957	3.8957
160	.0191	.0191	.0191	7.3616	7.3616	7.3616
165	.0113	.0113	.0113	4.3540	4.3540	4.3540
170	.0018	.0018	.0018	.6875	.6875	.6875
175	.0045	.0045	.0045	1.7393	1.7393	1.7393
180 B	.0047	.0047	.0047	1.8168	1.8168	1.8168
180 E	.0155	.0155	.0155	5.9988	5.9988	5.9988
185	.0212	.0212	.0212	8.1842	8.1842	8.1842
185A	.0136	.0136	.0136	5.2706	5.2706	5.2706
190	.0143	.0143	.0143	5.5141	5.5141	5.5141
190A	.0149	.0149	.0149	5.7575	5.7575	5.7575
195	.0104	.0104	.0104	4.0246	4.0246	4.0246
200	.0056	.0056	.0056	2.1770	2.1770	2.1770
205	.0085	.0085	.0085	3.3012	3.3012	3.3012
205A	.0117	.0117	.0117	4.5402	4.5402	4.5402
210	.0141	.0141	.0141	5.4568	5.4568	5.4568
210A	.0165	.0165	.0165	6.3734	6.3734	6.3734
215	.0198	.0198	.0198	7.6553	7.6553	7.6553
215A	.0231	.0231	.0231	8.9371	8.9371	8.9371
220	.0189	.0189	.0189	7.3043	7.3043	7.3043
225 B	.0097	.0097	.0097	3.7357	3.7357	3.7357
225 E	.0115	.0115	.0115	4.4518	4.4518	4.4518
230	.0198	.0198	.0198	7.6552	7.6552	7.6552
230A	.0212	.0212	.0212	8.2066	8.2066	8.2066
235	.0213	.0213	.0213	8.2425	8.2425	8.2425
235A	.0214	.0214	.0214	8.2783	8.2783	8.2783
240	.0214	.0214	.0214	8.2639	8.2639	8.2639
245	.0126	.0126	.0126	4.8552	4.8552	4.8552
250	.0059	.0059	.0059	2.2916	2.2916	2.2916

DATA PT	MASSES (LB-SEC**2/IN)			X-DIRECTION	MASSES (LB)	
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION		Y-DIRECTION	Z-DIRECTION
255 B	.0064	.0064	.0064	2.4610	2.4610	2.4610
255 E	.0035	.0035	.0035	1.3582	1.3582	1.3582
260	.0158	.0158	.0158	6.0931	6.0931	6.0931
265 B	.0157	.0157	.0157	6.0847	6.0847	6.0847
265 E	.0055	.0055	.0055	2.1176	2.1176	2.1176
270	.0100	.0100	.0100	3.8733	3.8733	3.8733
275	.0231	.0231	.0231	8.9371	8.9371	8.9371
280	.0195	.0195	.0195	7.5335	7.5335	7.5335
285	.0029	.0029	.0029	1.1171	1.1171	1.1171
290	.0095	.0095	.0095	3.6665	3.6665	3.6665
290A	.0173	.0173	.0173	6.7028	6.7028	6.7028
295	.0114	.0114	.0114	4.4113	4.4113	4.4113
300	.0043	.0043	.0043	1.6614	1.6614	1.6614
305	.0019	.0019	.0019	.7161	.7161	.7161
310 B	.0026	.0026	.0026	1.0145	1.0145	1.0145
310 E	.0053	.0053	.0053	2.0457	2.0457	2.0457
315	.0046	.0046	.0046	1.7760	1.7760	1.7760
320 B	.0040	.0040	.0040	1.5301	1.5301	1.5301
320 E	.0050	.0050	.0050	1.9312	1.9312	1.9312
500	.0027	.0027	.0027	1.0312	1.0312	1.0312

NORMALIZED MODE SHAPES

ME101/I2

DATE 040182

PAGE 331

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

MODE SHAPE NUMBER 1

FREQUENCY : 12.3098626

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0016293	.0037626	-.0039465	-.0025514	-.0016041	-.0002239
15	-.0169934	.0026283	-.0405222	-.0069808	-.0028179	.0068371
20	-.0248948	-.0869079	-.0594088	-.0071364	-.0007004	.0189339
25	.0684837	-.0869277	-.0290740	-.0070798	-.0007004	.0234834
30	.1791862	-.0869471	.0031216	-.0075840	-.0007004	.0266850
35	.3832849	-.0869643	.0599280	-.0079771	-.0007004	.0289489
40	.6093857	-.0869664	.1221003	-.0080418	-.0007004	.0292722
45 B	-.2968555	-.0867047	-.1653475	-.0096112	.0045719	.0209721
45 E	-.3707888	-.0283599	-.2193567	-.0124313	.0074312	.0216215
50	-.3532159	.0000000	-.2193420	-.0125451	.0082018	.0217195
55	-.2200769	.1528114	-.2192537	-.0111366	.0127086	.0222748
60	-.0398631	-.0193998	-.0389122	-.0068580	.0136693	.0232564
65	.0000000	.0000000	-.0388885	-.0060522	.0128909	.0237155
70	.1108265	.0441438	-.0388100	-.0026467	.0091386	.0252266
75	.1891585	.0463621	-.0386862	.0022511	.0041334	.0270821
80 B	.2039742	.0338252	-.0386350	.0037519	.0033987	.0277133
80 E	.0820525	.0112125	-.0141977	.0049302	.0054638	.0277917
85	.0000000	.0112037	.0000000	.0042990	.0068587	.0266529
90	-.6087618	.0111147	.0462282	.0008078	.0208080	.0150162
95	-.1810211	.0000000	.0461779	-.0007030	.0224469	.0080794
100 B	-.0506393	.0086802	.0461612	-.0022145	.0207644	.0058889
100 E	.0256406	.0234372	.0287337	-.0041128	.0162293	.0034793
105	.0000000	.0234325	-.0078511	-.0051320	.0108132	.0035171
110	-.0192714	.0234292	-.0347443	-.0052603	.0072316	.0038466
115	-.0192985	.0000000	.0000000	-.0051228	.0042447	.0037727
120 B	-.0193940	-.0788469	.0186874	-.0046319	-.0010869	.0035314
120 E	-.0244177	-.0739875	.0131254	-.0044412	-.0006752	.0036161
125	.0189073	-.0001040	.0130635	-.0030709	.0067113	.0040110
130	.0000000	-.0001004	.0000000	-.0023252	.0105098	.0038148
130A	-.0453977	-.0000860	-.0148318	.0003794	.0257035	.0004522
135	.0000000	-.0000717	.0000000	.0007722	.0408972	-.0056658
135A	.1351859	-.0000573	.0078021	.0000890	.0560909	-.0062171
137	.1551765	-.0000429	.0050699	-.0003234	.0712846	.0062314
138	1.0000000	.0037422	.0050712	-.0003537	.0793764	.0062314
140	.0000000	-.0000322	.0000000	-.0002345	.0534634	.0085056
140A	-.0520871	-.0000161	-.0014362	.0000578	.0267317	-.0020960
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 2

FREQUENCY : 12.3503940

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0025556	-.0068212	.0061995	.0040980	.0025176	.0006633
15	.0265586	-.0100179	.0633711	.0108287	.0043752	-.0106639
20	.0386156	.1366520	.0922219	.0104726	.0009763	-.0308683
25	-.1139105	.1366834	.0483595	.0101610	.0009763	-.0384043
30	-.2950935	.1367142	.0022977	.0108281	.0009763	-.0436969
35	-.6294680	.1367414	-.0786547	.0113575	.0009763	-.0474383
40	-1.0000000	.1367447	-.1671574	.0114467	.0009763	-.0479722
45 B	.4848586	.1363131	.2500854	.0147274	-.0074524	-.0345659
45 E	.6077045	.0448979	.3339871	.0196338	-.0120596	-.0357334
50	.5791859	.0000000	.3339622	.0198881	-.0133146	-.0359229
55	.3623311	-.2449755	.3338129	.0181422	-.0207826	-.0369970
60	.0659713	.0366283	.0372351	.0127097	-.0225974	-.0386843
65	.0000000	.0000000	.0371957	.0116796	-.0213625	-.0393491
70	-.1840941	-.0934053	.0370656	.0066950	-.0151656	-.0415374
75	-.3120888	-.1268222	.0368795	-.0011610	-.0064463	-.0442244
80 B	-.3344933	-.1168968	.0368074	-.0034541	-.0049809	-.0451385
80 E	-.1328694	-.0946005	.0126649	-.0046430	-.0077029	-.0450335
85	.0000000	-.0945772	.0000000	-.0034690	-.0096993	-.0431299
90	.9587904	-.0943322	-.0177852	-.0030395	-.0296642	-.0219634
95	.3497206	.0000000	-.0176653	-.0038194	-.0318646	-.0073941
100 B	.1650368	.0148786	-.0176270	-.0010608	-.0293205	-.0027932
100 E	.0248072	.0132173	-.0108886	.0025214	-.0223186	.0023318
105	.0000000	.0132308	.0168771	.0042137	-.0140919	.0034785
110	-.0166179	.0132396	.0388523	.0041372	-.0086517	.0027918
115	-.0166552	.0000000	.0000000	.0032804	-.0043247	.0016089
120 B	-.0167870	-.0121524	-.0056731	.0002203	.0012588	.0002660
120 E	-.0137899	-.0124307	-.0010794	-.0006605	.0002792	.0009939
125	.0157309	-.0002539	-.0009740	-.0000097	.0049018	.0031959
130	.0000000	-.0002456	.0000000	.0002441	.0083674	.0032389
130A	-.0396968	-.0002124	.0015596	-.0000397	.0222298	.0004427
135	.0000000	-.0001792	.0000000	-.0000816	.0360922	-.0050508
135A	.1214530	-.0001460	-.0008332	-.0000100	.0499546	-.0056088
137	.1397339	-.0001128	-.0005439	.0000351	.0638170	.0056027
138	.8964913	-.0005318	-.0005440	.0000395	.0711192	.0056027
140	.0000000	-.0000846	.0000000	.0000250	.0478628	.0076625
140A	-.0469303	-.0000423	.0001531	-.0000062	.0239314	-.0018882
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 3

FREQUENCY : 14.8606575

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0036469	-.0000055	.0002696	.0000061	.0000004	.0000828
150	.0000000	-.0000110	.0000000	-.0000246	.0000009	-.0003333
155	.0018533	-.0000118	-.0001368	-.0000298	.0000009	-.0004052
160	.0018553	-.0138976	.0000000	-.0000644	-.0000163	-.0004320
165	.0018570	-.0226796	.0001345	-.0001064	.0000426	-.0000842

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0018571	-.0228805	.0000000	-.0001097	.0000557	-.0000650
175	.0018572	-.0230649	-.0002083	-.0001135	.0000739	-.0000526
180 B	.0030941	-.0222108	-.0010585	-.0000683	.0001545	-.0000066
180 E	.0033251	-.0221270	-.0012315	-.0000305	.0001792	.0000096
185	.0000000	-.0221006	.0000000	-.0001017	.0004763	.0000978
185A	-.0016690	-.0220814	-.0034186	-.0000926	.0006174	.0000215
190	.0000000	-.0220578	.0000000	.0004780	.0007586	-.0001852
190A	.0052129	-.0220272	.0145098	.0003139	.0009127	-.0001061
195	.0000000	-.0219914	.0000000	-.0017503	.0010669	.0006154
200	-.0094118	-.0219757	-.0218343	-.0024486	.0011283	.0014161
205	.0000000	.0000000	-.0218480	-.0022921	.0008368	.0028250
205A	.0055503	.0281194	-.0218760	-.0002484	-.0001391	.0059264
210	.0000000	.0000000	-.0219007	.0033066	-.0002683	.0090280
210A	-.0024350	-.1075035	-.0219302	.0019863	.0000507	.0133818
215	.0000000	.0000000	-.0219533	-.0113369	.0000634	.0177358
215A	-.0004049	.5274071	-.0219752	-.0050805	-.0000397	.0238410
220	.0000000	.0000000	-.0219847	.0317697	.0000965	.0299462
225 B	.0007582	-.9645957	-.0219843	.0419129	-.0001822	.0338206
225 E	-.0005884	-1.0000000	-.0202893	.0408846	-.0004308	.0349375
230	-.0005806	.0000000	.0000000	.0352955	-.0006090	.0243133
230A	-.0005714	.3561221	.0092785	.0288389	.0000823	-.0036268
235	-.0005619	.0000000	.0000000	.0223821	.0002775	-.0097110
235A	-.0005521	-.1312674	-.0046617	.0158690	-.0000288	.0017546
240	-.0005420	.0000000	.0000000	.0093560	-.0001614	.0026480
245	-.0005317	.0151523	.0027491	.0028655	.0000599	-.0002120
250	.0000000	.0000000	.0027492	.0018194	.0000927	.0002216
255 B	.0016660	-.0116770	.0027493	.0002539	.0001848	.0011482
255 E	.0028080	-.0056839	.0014215	.0002525	.0003178	.0014483
260	.0028072	.0000000	.0000000	.0003351	.0003929	.0013427
265 B	.0027965	.0223704	-.0235475	.0013509	.0001880	-.0001139
265 E	.0029707	.0198658	-.0240373	.0014217	.0000873	-.0001349
270	.0026678	.0038570	-.0237360	.0014503	-.0000858	.0000228
275	.0000000	.0038483	.0000000	.0009089	-.0000886	.0001563
280	-.0007514	.0038185	.0010305	-.0004617	-.0000969	-.0000416
285	-.0000805	.0006878	.0010295	-.0004015	-.0000927	-.0000310
290	.0000000	.0006863	.0000000	-.0003448	-.0000879	-.0000270
290A	.0002123	.0006700	-.0028169	.0000815	-.0000372	.0000066
295	.0000000	.0006534	.0000000	.0000156	.0000136	.0000002
300	.0000435	.0006482	-.0003835	-.0001007	.0000296	-.0000099
305	-.0001298	.0000000	-.0003833	-.0001254	.0000363	-.0000180
310 B	-.0001667	-.0001234	-.0003833	-.0001217	.0000375	-.0000196
310 E	-.0003700	-.0005591	-.0001702	-.0000932	.0000444	-.0000260
315	-.0003700	-.0002923	.0002675	-.0000538	.0000403	-.0000249
320 B	-.0002450	-.0002922	.0000142	-.0000394	.0000320	-.0000206

MODE SHAPE NUMBER 4

FREQUENCY : 15.1021181

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0018143	-.0020329	.0044844	.0025709	.0018219	-.0004221
15	.0194318	.0043034	.0466850	.0082486	.0033240	-.0066329
20	.0294918	.0697473	.0708850	.0103537	.0013280	-.0156237
25	-.0544614	.0697712	.0231210	.0118280	.0013280	-.0223499
30	-.1640098	.0697947	-.0328813	.0135638	.0013280	-.0270913
35	-.3762834	.0698155	-.1372666	.0148615	.0013280	-.0304734
40	-.6151063	.0698180	-.2535371	.0150639	.0013280	-.0309645
45 B	.1768611	.0695776	.2015312	.0095460	-.0035507	-.0063817
45 E	.1752327	.0208198	.2500130	.0094742	-.0054542	-.0010047
50	.1623751	.0000000	.2500033	.0088367	-.0059443	.0007544
55	.0745864	-.0649291	.2499394	-.0002162	-.0074217	.0107226
60	.0024347	-.0968796	.1777234	-.0296894	-.0017970	.0200817
65	.0000000	.0000000	.1777018	-.0350630	.0002290	.0198445
70	.0292009	.3962944	.1776265	-.0403092	.0048250	.0190641
75	.0951892	.8046574	.1773459	-.0250836	.0051872	.0181058
80 B	.1152369	.8961047	.1771873	-.0207395	.0045950	.0177797
80 E	.0502369	1.0000000	.0684216	-.0227100	.0039246	.0169565
85	.0000000	.9998191	.0000000	-.0221684	.0037595	.0164835
90	-.3411539	.9978209	.0513536	.0421056	.0021085	.0038143
95	-.3109239	.0000000	.0509789	.0363035	.0009527	-.0125919
100 B	-.3069517	-.1467262	.0508592	.0146182	.0002903	-.0177728
100 E	-.1999877	-.1858614	.0711162	.0003779	-.0019160	-.0236881
105	.0000000	-.1855021	.0526744	-.0037766	-.0040946	-.0277046
110	.1480473	-.1852621	.0341695	-.0027265	-.0055352	-.0301353
115	.1480339	.0000000	.0000000	.0012645	-.0046839	-.0281983
120 B	.1479689	.3983283	-.0453548	.0155179	-.0023546	-.0107159
120 E	.1274150	.3559283	-.0618199	.0191458	-.0051776	-.0081419
125	-.0071345	.0013309	-.0616899	.0148503	-.0074199	-.0020192
130	.0000000	.0012857	.0000000	.0108988	-.0066672	-.0011251
130A	.0043206	.0011050	.0708248	-.0017266	-.0036561	.0003302
135	.0000000	.0009242	.0000000	-.0038314	-.0006451	-.0002265
135A	.0128973	.0007432	-.0417160	-.0006363	.0023659	-.0007783
137	.0173595	.0005621	-.0288887	.0018038	.0053769	.0006286
138	.0841968	-.0212183	-.0289000	.0020622	.0064023	.0006286
140	.0000000	.0004216	.0000000	.0013533	.0040327	.0009783
140A	-.0060542	.0002108	.0083745	-.0003335	.0020163	-.0002411
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 5

FREQUENCY : 15.8650532

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0007518	.0091610	-.0021696	-.0018036	-.0008363	-.0027422
15	-.0069548	.0576891	-.0180131	-.0021476	-.0007910	.0010083
20	-.0060449	-.0064300	-.0167348	.0019860	.0013501	.0140021
25	.0754624	-.0064324	-.0320368	.0046019	.0013501	.0225588
30	.1884209	-.0064348	-.0557915	.0060521	.0013501	.0282987
35	.4127077	-.0064369	-.1044201	.0070618	.0013501	.0323734
40	.6667764	-.0064372	-.1599102	.0072027	.0013501	.0329609
45 B	-.1440252	-.0062393	-.0073546	-.0005388	.0061483	.0072057
45 E	-.1383147	-.0010693	-.0119504	-.0007314	.0080121	.0051028
50	-.1199382	.0000000	-.0119509	-.0000043	.0082444	.0045010
55	-.0195249	-.0218962	-.0119537	.0024306	.0066021	.0010913
60	.0120150	-.0068735	.0194816	-.0015735	-.0028981	-.0070029
65	.0000000	.0000000	.0194809	-.0031220	-.0052176	-.0094990
70	-.0806084	.0500818	.0194782	-.0060184	-.0098020	-.0177156
75	-.1992982	.1164539	.0194520	-.0041883	-.0090309	-.0278043
80 B	-.2351752	.1312678	.0194355	-.0031556	-.0087331	-.0312366
80 E	-.1090096	.1451475	.0064475	-.0023305	-.0123996	-.0360428
85	.0000000	.1451272	.0000000	-.0018909	-.0143588	-.0363508
90	1.0000000	.1448939	.0580411	.0068908	-.0339516	-.0275924
95	.3098441	.0000000	.0580047	.0051099	-.0361866	-.0137295
100 B	.0990435	-.0211277	.0579913	.0022211	-.0336905	-.0093517
100 E	-.0293832	-.0278695	.0623780	.0004286	-.0266867	-.0045086
105	.0000000	-.0278179	.0631990	-.0000427	-.0184025	-.0036761
110	.0202190	-.0277834	.0632061	.0001428	-.0129243	-.0042861
115	.0202062	.0000000	.0000000	.0007506	-.0075809	-.0044748
120 B	.0201578	.0771682	-.0235838	.0029215	.0017072	-.0025852
120 E	.0243341	.0723292	-.0170526	.0035110	.0001566	-.0019480
125	-.0002026	.0001145	-.0168949	.0037739	-.0018720	-.0001735
130	.0000000	.0001102	.0000000	.0030742	-.0017105	.0000099
130A	-.0006289	.0000930	.0201196	-.0004811	-.0010648	.0000271
135	.0000000	.0000759	.0000000	-.0011050	-.0004190	-.0001208
135A	.0032800	.0000586	-.0123702	-.0002056	.0002268	-.0001596
137	.0038745	.0000414	-.0087482	.0005436	.0008726	.0001527
138	.0149831	-.0066043	-.0087520	.0006324	.0010739	.0001527
140	.0000000	.0000311	.0000000	.0004110	.0006544	.0002140
140A	-.0013285	.0000155	.0025518	-.0001013	.0003272	-.0000527
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 6

FREQUENCY : 16.3196111

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0031051	-.0000048	.0002071	.0000045	-.0000021	.0000677
150	.0000000	-.0000096	.0000000	-.0000182	-.0000042	-.0002726
155	.0015093	-.0000103	-.0001012	-.0000223	-.0000045	-.0003288
160	.0015109	-.0108920	.0000000	-.0000544	-.0000007	-.0003165
165	.0015120	-.0161457	-.0000104	-.0000934	-.0000031	-.0000113

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0015121	-.0161544	.0000000	-.0000964	-.0000044	.0000021
175	.0015121	-.0161312	.0000162	-.0001000	-.0000042	.0000084
180 B	.0014052	-.0153782	-.0007333	-.0000601	.0000014	.0000167
180 E	.0013415	-.0153047	-.0008848	-.0000265	.0000017	.0000206
185	.0000000	-.0152818	.0000000	-.0001035	-.0000002	.0000173
185A	-.0001426	-.0152654	-.0033240	-.0000870	-.0000011	-.0000026
190	.0000000	-.0152453	.0000000	.0004572	-.0000021	-.0000068
190A	.0000946	-.0152193	.0137553	.0002917	-.0000031	-.0000002
195	.0000000	-.0151890	.0000000	-.0016394	-.0000040	.0000076
200	-.0000140	-.0151758	-.0194009	-.0019683	-.0000044	-.0000138
205	.0000000	.0000000	-.0194236	-.0012836	.0000150	-.0000675
205A	.0006517	.0080271	-.0194711	.0002383	.0000243	-.0001857
210	.0000000	.0000000	-.0195151	.0003100	-.0001143	-.0003039
210A	-.0043102	.0003102	-.0195713	-.0001637	-.0000870	-.0004698
215	.0000000	.0000000	-.0196206	.0003518	.0004660	-.0006357
215A	.0214358	-.0214917	-.0196785	.0002389	.0001810	-.0008684
220	.0000000	.0000000	-.0197229	-.0013126	-.0011940	-.0011010
225 B	-.0305469	.0379791	-.0197442	-.0015063	-.0009513	-.0012486
225 E	-.0346007	.0388210	-.0162163	-.0012872	-.0005835	-.0012843
230	-.0346016	.0000000	.0000000	-.0002320	-.0009897	-.0010489
230A	-.0345841	-.0188664	.0433283	.0009870	-.0005008	.0000889
235	-.0345469	.0000000	.0000000	.0022061	.0030058	.0006909
235A	-.0344892	.0154247	-.1064332	.0034358	.0009057	.0000044
240	-.0344115	.0000000	.0000000	.0046654	-.0066516	-.0007087
245	-.0343142	.0376832	.1655998	.0058909	.0031235	.0047155
250	.0000000	.0000000	.1656191	.0058383	.0074942	.0072755
255 B	.1560329	-.0882310	.1656505	.0081263	.0150373	.0127470
255 E	.2379138	-.0624965	.0787994	.0127356	.0187207	.0153994
260	.2379164	.0000000	.0000000	.0155710	.0207120	.0156946
265 B	.2378087	.6574648	-.9858216	.0504313	.0060192	.0085699
265 E	.2425553	.6098565	-1.0000000	.0529310	.0019581	.0078428
270	.2140528	.1231933	-.9714399	.0568680	-.0051300	.0101247
275	.0000000	.1229978	.0000000	.0378421	-.0056854	.0093737
280	-.0569191	.1222756	.0377863	-.0169829	-.0073807	-.0024870
285	-.0053851	.0089816	.0377404	-.0145899	-.0072102	-.0020316
290	.0000000	.0089428	.0000000	-.0127414	-.0069567	-.0018435
290A	.0210554	.0085283	-.1198483	.0025676	-.0042600	.0002555
295	.0000000	.0081106	.0000000	.0023708	-.0015632	.0008115
300	-.0062875	.0079778	.0071797	-.0008649	-.0007104	.0004934
305	-.0034717	.0000000	.0071823	-.0016513	-.0003833	.0001518
310 B	-.0031176	-.0016160	.0071828	-.0015901	-.0003312	.0000867
310 E	-.0020913	-.0080233	.0065351	-.0012323	-.0000524	-.0002612
315	-.0020969	-.0048705	.0066892	-.0007751	.0000374	-.0002783
320 B	-.0008417	-.0048656	.0029049	-.0006172	.0000132	-.0001996

MODE SHAPE NUMBER 7

FREQUENCY : 17.6255026

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0025622	-.0069822	-.0055596	-.0023765	-.0023334	.0037095
15	-.0276679	-.0479105	-.0633448	-.0132401	-.0050779	.0062517
20	-.0474794	-.0112004	-.1090714	-.0240370	-.0042242	.0008436
25	-.0550500	-.0112056	.0233709	-.0364828	-.0042242	-.0034567
30	-.0754409	-.0112107	.2075679	-.0464378	-.0042242	-.0055555
35	-.1224754	-.0112153	.5781064	-.0536796	-.0042242	-.0069877
40	-.1776741	-.0112158	1.0000000	-.0547671	-.0042242	-.0071809
45 B	-.0960624	-.0113045	-.2910887	-.0052806	-.0019451	.0055015
45 E	-.1306432	-.0013588	-.3068506	-.0009104	-.0003507	.0064284
50	-.1308108	.0000000	-.3068161	-.0004135	.0002595	.0065725
55	-.0972829	.0018286	-.3066053	-.0007883	.0055383	.0073886
60	-.0103760	-.0309821	-.2193106	-.0093567	.0044335	.0053911
65	.0000000	.0000000	-.2192501	-.0114007	.0025303	.0040059
70	-.0007723	.1215101	-.2190434	-.0100377	-.0021898	-.0005535
75	-.0447889	.1426964	-.2184738	.0090080	-.0043609	-.0061519
80 B	-.0629336	.0873573	-.2181742	.0178176	-.0044496	-.0080565
80 E	-.0352062	-.0292119	-.0852546	.0285889	-.0050750	-.0112348
85	.0000000	-.0292131	.0000000	.0268587	-.0052576	-.0122211
90	.3869381	-.0292175	.3808141	.0024438	-.0070835	-.0093437
95	.2439407	.0000000	.3806352	-.0054401	-.0079670	.0033552
100 B	.1955814	.0424256	.3805639	-.0093535	-.0080822	.0073654
100 E	.1042327	.1034264	.3078504	-.0174648	-.0072518	.0118496
105	.0000000	.1033080	.1498506	-.0223369	-.0065184	.0148669
110	-.0803798	.1032279	.0327984	-.0228141	-.0060334	.0164507
115	-.0803871	.0000000	.0000000	-.0218227	-.0039849	.0165278
120 B	-.0804004	-.2977013	.0169378	-.0182819	.0037111	.0106490
120 E	-.0604689	-.2601907	.0365404	-.0167931	.0040143	.0084369
125	.0128560	-.0005341	.0366081	-.0091260	.0035506	.0032037
130	.0000000	-.0005149	.0000000	-.0063936	.0032545	.0022207
130A	-.0132094	-.0004382	-.0427065	.0009637	.0020702	-.0004168
135	.0000000	-.0003614	.0000000	.0024491	.0008860	-.0005145
135A	.0010555	-.0002845	.0295202	.0005929	-.0002983	.0002353
137	-.0027740	-.0002076	.0220125	-.0013462	-.0014826	-.0000039
138	-.0217941	.0166754	.0220242	-.0016228	-.0018441	-.0000039
140	.0000000	-.0001557	.0000000	-.0010438	-.0011119	-.0001918
140A	.0012004	-.0000779	-.0065334	.0002572	-.0005560	.0000473
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 8

FREQUENCY : 17.9060488

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.2292476	-.0003478	.0219689	.0004559	-.0001808	.0047571
150	.0000000	-.0006954	.0000000	-.0018347	-.0003617	-.0191456
155	.1052587	-.0007427	-.0101404	-.0022222	-.0003863	-.0227599
160	.1054000	-.7144751	.0000000	-.0051580	-.0002198	-.0188812
165	.1055075	-.9345516	.0003928	-.0087265	.0001362	.0029854

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.1055130	-.9251494	.0000000	-.0090049	.0001485	.0036348
175	.1055188	-.9128140	-.0005590	-.0093339	.0002678	.0036729
180 B	.0840131	-.8408588	-.0722614	-.0062563	.0006204	.0025947
180 E	.0761100	-.8328360	-.0896080	-.0036134	.0005950	.0024237
185	.0000000	-.8312413	.0000000	-.0040629	.0003056	.0005996
185A	-.0042903	-.8301171	-.1621811	-.0046908	.0001681	-.0001181
190	.0000000	-.8287571	.0000000	.0231229	.0000307	-.0001196
190A	-.0004682	-.8270022	.6992833	.0146489	-.0001195	.0000764
195	.0000000	-.8249669	.0000000	-.0824937	-.0002697	-.0001903
200	.0030330	-.8240790	-.9884412	-.1032915	-.0003294	-.0004340
205	.0000000	.0000000	-.9894197	-.0717721	-.0003286	-.0007751
205A	-.0043839	.4836988	-.9914220	.0117102	-.0000515	-.0015261
210	.0000000	.0000000	-.9932153	.0239244	.0005388	-.0022771
210A	.0176708	-.2333453	-.9953792	-.0041714	.0003138	-.0033313
215	.0000000	.0000000	-.9971297	-.0070578	-.0018075	-.0043855
215A	-.0794806	.0184512	-.9988863	.0031779	-.0005304	-.0058638
220	.0000000	.0000000	-.9998268	-.0057234	.0039406	-.0073421
225 B	-.0044679	.2440459	-1.0000000	-.0119561	-.0093461	-.0082802
225 E	-.0684582	.2613677	-.9221004	-.0118399	-.0193566	-.0086457
230	-.0681687	.0000000	.0000000	-.0106696	-.0297070	-.0069429
230A	-.0677905	-.1176609	.5304818	-.0093177	.0031299	.0008700
235	-.0673655	.0000000	.0000000	-.0079657	.0171045	.0034398
235A	-.0668899	.0499767	-.3038613	-.0066019	-.0019565	-.0006331
240	-.0663673	.0000000	.0000000	-.0052382	-.0092287	-.0008912
245	-.0658003	-.0238253	.0624412	-.0038792	.0085564	-.0019351
250	.0000000	.0000000	.0624512	-.0035228	.0112834	-.0032051
255 B	.1519302	.0448612	.0624679	-.0034267	.0099034	-.0059194
255 E	.1960757	.0294128	.0229270	-.0045239	.0066316	-.0071955
260	.1960938	.0000000	.0000000	-.0052083	.0048521	-.0074518
265 B	.1961781	-.2518158	.1310765	-.0136232	-.0069588	.0004954
265 E	.1858099	-.2272862	.1559762	-.0141133	-.0071402	.0018477
270	.1100464	-.0399840	.2316925	-.0139303	-.0074635	.0055306
275	.0000000	-.0399137	.0000000	-.0089409	-.0074581	.0048220
280	-.0542366	-.0396503	-.0097080	.0044145	-.0074417	-.0009789
285	-.0026001	-.0098989	-.0096978	.0037926	-.0072228	-.0009525
290	.0000000	-.0098845	.0000000	.0032344	-.0069998	-.0009108
290A	.0135041	-.0097296	.0238735	-.0008691	-.0046282	.0000367
295	.0000000	-.0095703	.0000000	.0002760	-.0022566	.0007626
300	-.0071644	-.0095190	.0086164	.0015723	-.0015066	.0007324
305	-.0000522	.0000000	.0086170	.0018508	-.0012234	.0006041
310 B	.0011460	.0018372	.0086171	.0018201	-.0011794	.0005797
310 E	.0065149	.0081026	.0035720	.0014700	-.0009346	.0004084
315	.0065089	.0042794	-.0046593	.0009450	-.0007196	.0003846
320 B	.0043942	.0042808	-.0000848	.0007148	-.0005811	.0003600

MODE SHAPE NUMBER 9

FREQUENCY : 20.1473873

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0377873	-.0000536	.0049286	.0000940	-.0000346	.0007209
150	.0000000	-.0001071	.0000000	-.0003784	-.0000692	-.0029012
155	.0157617	-.0001144	-.0020684	-.0004487	-.0000739	-.0033658
160	.0157886	-.0970239	.0000000	-.0009751	-.0000555	-.0021505
165	.0158091	-.1001163	.0001837	-.0016149	.0000605	.0011883

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0158101	-.0967518	.0000000	-.0016648	.0000733	.0012243
175	.0158112	-.0928173	-.0002685	-.0017238	.0000986	.0011530
180 B	.0091585	-.0793273	-.0137231	-.0012348	.0000976	.0006742
180 E	.0071323	-.0777042	-.0173205	-.0008075	.0000730	.0005604
185	.0000000	-.0774888	.0000000	-.0000637	-.0001460	-.0000735
185A	.0014055	-.0773432	-.0118330	-.0004519	-.0002500	-.0000212
190	.0000000	-.0771698	.0000000	.0019000	-.0003540	.0001597
190A	-.0044559	-.0769487	.0587838	.0012215	-.0004676	.0000849
195	.0000000	-.0766945	.0000000	-.0068507	-.0005812	-.0005036
200	.0061003	-.0765842	-.0838520	-.0091802	-.0006264	-.0006597
205	.0000000	.0000000	-.0839108	-.0068388	-.0007728	-.0006631
205A	-.0142343	.0465345	-.0840238	.0011065	-.0003073	-.0006705
210	.0000000	.0000000	-.0841144	.0023176	.0020281	-.0006778
210A	.0701074	-.0227789	-.0842037	-.0004149	.0012483	-.0006882
215	.0000000	.0000000	-.0842486	-.0006399	-.0070745	-.0006986
215A	-.2981420	-.0015437	-.0842371	.0003429	-.0012467	-.0007131
220	.0000000	.0000000	-.0841384	-.0007391	.0120886	-.0007276
225 B	.2359744	.0256874	-.0840306	-.0009830	.0043271	-.0007368
225 E	.2485946	.0264232	-.0899513	-.0006402	-.0004586	-.0007379
230	.2485516	.0000000	.0000000	.0010216	.0005858	-.0009375
230A	.2482998	-.0233253	-.1849197	.0029413	.0034759	-.0000094
235	.2478314	.0000000	.0000000	.0048612	-.0145789	.0009753
235A	.2471399	.0231628	.5121571	.0067977	-.0029681	-.0000227
240	.2462290	.0000000	.0000000	.0087343	.0265270	-.0008837
245	.2451039	.0681545	-.3891762	.0106641	-.0285092	.0073528
250	.0000000	.0000000	-.3892626	.0105638	-.0466923	.0110878
255 B	-.7446436	-.1440604	-.3894112	.0111337	-.0547514	.0190704
255 E	-.9991361	-.0943975	-.1533671	.0135391	-.0419879	.0229695
260	-.9992679	.0000000	.0000000	.0149444	-.0348854	.0241170
265 B	-1.0000000	.7682563	.0131613	.0322224	.0273287	-.0072961
265 E	-.9568915	.6845855	-.0888432	.0329120	.0304498	-.0131386
270	-.6044334	.1265988	-.4412077	.0283742	.0362607	-.0304792
275	.0000000	.1263422	.0000000	.0166294	.0375649	-.0265179
280	.3047859	.1253621	.0226266	-.0104382	.0415449	.0055873
285	.0155773	.0533553	.0226115	-.0090329	.0405176	.0056712
290	.0000000	.0533012	.0000000	-.0073725	.0392814	.0054807
290A	-.0837960	.0527092	-.0269248	.0028474	.0261333	-.0002137
295	.0000000	.0520865	.0000000	-.0041279	.0129851	-.0046175
300	.0428402	.0518832	-.0612282	-.0090221	.0088271	-.0043295
305	.0009054	.0000000	-.0612318	-.0099345	.0072665	-.0034975
310 B	-.0062227	-.0098653	-.0612323	-.0097725	.0070268	-.0033390
310 E	-.0384983	-.0429040	-.0306929	-.0078306	.0057080	-.0022589
315	-.0384632	-.0219105	.0201459	-.0048928	.0044776	-.0021272
320 B	-.0266721	-.0219197	-.0033123	-.0036267	.0036318	-.0020161

MODE SHAPE NUMBER 10

FREQUENCY : 21.5772715

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0019389	-.0074562	.0039327	.0032390	.0016819	.0016471
15	.0211009	-.0737278	.0472146	.0103910	.0040155	.0004017
20	.0387452	-.1048264	.0874817	.0137711	.0044367	-.0045222
25	.0215215	-.1049000	-.0091367	.0308449	.0044367	-.0042056
30	.0004810	-.1049720	-.1796943	.0453012	.0044367	-.0053006
35	-.0419610	-.1050358	-.5577375	.0559297	.0044367	-.0061688
40	-.0905669	-.1050436	-1.0000000	.0575595	.0044367	-.0063164
45 B	.1506443	-.1046171	.0359153	-.0146870	.0055126	-.0092562
45 E	.2197723	-.0285459	-.0421121	-.0135976	.0052333	-.0047845
50	.2307053	.0000000	-.0421955	-.0115264	.0042839	-.0029266
55	.2217252	.0827867	-.0426647	-.0031214	-.0076389	.0076010
60	.0414047	-.0204374	-.2238061	-.0060102	-.0146516	.0127269
65	.0000000	.0000000	-.2239094	-.0078221	-.0131195	.0120674
70	-.0959811	.0861896	-.2242386	-.0066417	-.0048436	.0098965
75	-.0678223	.0754492	-.2241581	.0104821	.0090895	.0072309
80 B	-.0219858	.0161173	-.2239679	.0183010	.0127480	.0063240
80 E	.0204214	-.1007426	-.0907153	.0295166	.0167009	.0063886
85	.0000000	-.1007397	.0000000	.0300630	.0178731	.0075019
90	-.4213397	-.1006720	.6318744	.0062703	.0295947	.0196858
95	.1506216	.0000000	.6317732	-.0154011	.0281572	.0275207
100 B	.3104800	.1111858	.6317042	-.0222503	.0248837	.0299949
100 E	.2667585	.2431262	.4834069	-.0337498	.0187182	.0326548
105	.0000000	.2430070	.1887485	-.0410955	.0111744	.0363357
110	-.1928349	.2429219	-.0272970	-.0425544	.0061857	.0388239
115	-.1928459	.0000000	.0000000	-.0426531	.0035819	.0396893
120 B	-.1928393	-.7832109	.0846780	-.0430057	.0056121	.0297604
120 E	-.1565007	-.7083103	.1172654	-.0422441	.0082483	.0237711
125	.0336003	-.0011331	.1171636	-.0280515	.0102970	.0084811
130	.0000000	-.0010769	.0000000	-.0210766	.0095761	.0057888
130A	-.0353954	-.0008519	-.1577085	.0023871	.0066927	-.0010530
135	.0000000	-.0006267	.0000000	.0113059	.0038092	-.0014789
135A	.0059764	-.0004013	.1812985	.0056948	.0009258	.0004726
137	-.0036983	-.0001758	.1578583	-.0093036	-.0019576	.0001375
138	-.0310162	.1255825	.1579847	-.0124258	-.0027288	.0001375
140	.0000000	-.0001319	.0000000	-.0076459	-.0014682	-.0003089
140A	.0019760	-.0000660	-.0489145	.0018841	-.0007341	.0000761
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 11

FREQUENCY : 24.1674640

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0004538	-.0065639	.0009193	.0012624	.0003935	.0021024
15	.0049513	-.0612679	.0110755	.0025466	.0009458	.0024883
20	.0092255	-.0788246	.0208385	.0018784	.0011314	-.0009684
25	.0018333	-.0788940	-.0007783	.0082471	.0011314	-.0026064
30	-.0135728	-.0789620	-.0504489	.0137730	.0011314	-.0042368
35	-.0499476	-.0790223	-.1693770	.0178647	.0011314	-.0054515
40	-.0932270	-.0790297	-.3112677	.0185011	.0011314	-.0056421
45 B	.0217223	-.0786211	-.0548248	-.0105655	.0016602	-.0002076
45 E	.0285618	-.0225377	-.1109453	-.0104952	.0018319	.0021686
50	.0325139	.0000000	-.1109739	-.0092955	.0016304	.0030356
55	.0384460	.0765871	-.1111258	-.0035580	-.0012073	.0079486
60	.0056881	-.0097631	-.1441138	-.0029517	-.0022208	.0092896
65	.0000000	.0000000	-.1441401	-.0036739	-.0016178	.0086772
70	-.0073429	.0370838	-.1442176	-.0022245	.0001126	.0066613
75	.0036056	.0088503	-.1439217	.0079940	.0014226	.0041862
80 B	.0098174	-.0337194	-.1436900	.0127917	.0015622	.0033441
80 E	.0054602	-.1136656	-.0543480	.0186386	.0014856	.0020116
85	.0000000	-.1136466	.0000000	.0165114	.0014648	.0016462
90	-.0143063	-.1134021	.0858518	-.0064321	.0012572	-.0001440
95	.0023707	.0000000	.0857162	-.0016944	.0001541	-.0002798
100 B	.0011368	-.0005073	.0856672	.0007516	-.0006076	-.0003227
100 E	-.0021749	-.0011641	.0814955	-.0022267	-.0020584	-.0004123
105	.0000000	-.0013585	.0535848	-.0043473	-.0037703	-.0000845
110	-.0004471	-.0014869	.0313851	-.0039743	-.0049023	.0002759
115	-.0004442	.0000000	.0000000	-.0022725	-.0048933	-.0019079
120 B	-.0004334	.1629900	-.0695953	.0038054	-.0016541	-.0097837
120 E	-.0061668	.1847127	-.0763046	.0060109	-.0009247	-.0085629
125	-.0148799	-.0052262	-.0762587	.0147405	-.0001949	-.0036198
130	.0000000	-.0052156	.0000000	.0172639	-.0001492	-.0026217
130A	.0171518	-.0051722	.2872061	.0058793	.0000337	.0004262
135	.0000000	-.0051270	.0000000	-.0413286	.0002165	.0008774
135A	-.0081308	-.0050800	-.9997968	-.0430812	.0003993	.0000366
137	-.0044596	-.0050312	-.9989970	.0574809	.0005822	-.0003119
138	.0025381	-.8319415	-1.0000000	.0834284	.0006613	-.0003119
140	.0000000	-.0037745	.0000000	.0490676	.0004366	-.0001988
140A	.0012934	-.0018878	.3192929	-.0120914	.0002183	.0000490
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 12

FREQUENCY : 24.5875490

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.6719162	-.0006588	.1214781	.0018438	-.0005350	.0101984
150	.0000000	-.0013167	.0000000	-.0074206	-.0010701	-.0410448
155	.2148172	-.0014061	-.0391406	-.0082108	-.0011429	-.0441249
160	.2153566	-1.0000000	.0000000	-.0137818	-.0016018	-.0104126
165	.2157652	-.3392024	.0088331	-.0205534	.0028353	.0305542

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.2157857	-.2564305	.0000000	-.0210817	.0036116	.0292717
175	.2158077	-.1649714	-.0132547	-.0217060	.0045094	.0265632
180 B	.0870759	.0065401	-.1845084	-.0163790	.0047643	.0142777
180 E	.0495101	.0284949	-.2342039	-.0117888	.0044347	.0111696
185	.0000000	.0295824	.0000000	.0080553	.0031141	-.0022118
185A	.0176893	.0300742	.0811079	-.0007301	.0024869	.0003832
190	.0000000	.0305500	.0000000	-.0050889	.0018598	.0006549
190A	-.0039116	.0310510	-.0966414	-.0009177	.0011747	-.0001844
195	.0000000	.0315321	.0000000	.0088083	.0004895	.0000924
200	-.0017906	.0317180	.0878225	.0063146	.0002169	.0001514
205	.0000000	.0000000	.0880250	.0023195	.0002742	-.0001408
205A	.0073019	-.0360523	.0884451	.0005789	.0002130	-.0007841
210	.0000000	.0000000	.0888301	-.0046841	-.0011443	-.0014274
210A	-.0399722	.1521415	.0893110	-.0023114	-.0006500	-.0023304
215	.0000000	.0000000	.0897219	.0140286	.0037721	-.0032335
215A	.1421265	-.5228294	.0901796	-.0010563	-.0002665	-.0044998
220	.0000000	.0000000	.0904985	-.0097805	-.0027002	-.0057662
225 B	-.0126753	.0209869	.0906285	.0045952	.0005210	-.0065698
225 E	-.0103035	-.0360942	.0884745	.0050488	.0004590	-.0062213
230	-.0102298	.0000000	.0000000	.0045535	.0070960	.0136558
230A	-.0101322	.6114741	-.2649142	.0039814	.0009153	.0034657
235	-.0100215	.0000000	.0000000	.0034093	-.0107802	-.0276060
235A	-.0098967	-.6330024	.2207510	.0028322	.0017722	.0034391
240	-.0097587	.0000000	.0000000	.0022551	.0036463	.0137619
245	-.0096084	.0090667	.0161594	.0016800	.0005756	-.0053618
250	.0000000	.0000000	.0161837	.0008428	.0022254	-.0043565
255 B	.0383822	.0060326	.0162333	-.0012695	.0027168	-.0022077
255 E	.0501443	.0049873	.0060372	-.0013257	.0016821	-.0013296
260	.0501563	.0000000	.0000000	-.0012817	.0014240	-.0012247
265 B	.0502381	-.0294451	-.0230000	-.0007413	-.0008149	.0006747
265 E	.0488095	-.0255248	-.0197032	-.0006665	-.0010551	.0009787
270	.0347176	-.0065822	-.0056037	.0000105	-.0015645	.0018242
275	.0000000	-.0065656	.0000000	.0002997	-.0018545	.0015172
280	-.0203692	-.0064998	-.0002207	.0001593	-.0027396	-.0003428
285	-.0011453	-.0052447	-.0002216	.0001237	-.0027063	-.0004082
290	.0000000	-.0052410	.0000000	.0000398	-.0026308	-.0004102
290A	.0071592	-.0051986	-.0050190	-.0001596	-.0018284	.0000036
295	.0000000	-.0051518	.0000000	.0006048	-.0010260	.0003957
300	-.0036693	-.0051361	.0071112	.0009272	-.0007722	.0003751
305	.0001181	.0000000	.0071112	.0009662	-.0006787	.0003156
310 B	.0007886	.0009576	.0071112	.0009473	-.0006648	.0003042
310 E	.0039502	.0041427	.0040475	.0007422	-.0005888	.0002218
315	.0039475	.0020465	-.0013587	.0004361	-.0004839	.0002093
320 B	.0028038	.0020470	.0006931	.0003128	-.0003924	.0001952

MODE SHAPE NUMBER 13

FREQUENCY : 24.6221814

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.5981564	.0005828	-.1097074	-.0016615	.0004768	-.0090589
150	.0000000	.0011648	.0000000	.0066868	.0009537	.0364586
155	-.1907299	.0012439	.0352552	.0073923	.0010186	.0391565
160	-.1912124	.8846769	.0000000	.0123539	.0014663	.0090919
165	-.1915791	.2940793	-.0081847	.0183847	-.0026259	-.0271551

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.1915975	.2205407	.0000000	.0188552	-.0033479	-.0259989
175	-.1916174	.1393347	.0122905	.0194113	-.0041803	-.0235787
180 B	-.0793740	-.0141317	.1655319	.0146842	-.0045011	-.0126622
180 E	-.0464689	-.0338317	.2101580	.0106082	-.0042308	-.0099097
185	.0000000	-.0347753	.0000000	-.0075475	-.0033281	.0018445
185A	-.0133036	-.0351944	-.0813520	.0004710	-.0028993	-.0003774
190	.0000000	-.0355946	.0000000	.0056336	-.0024706	-.0003111
190A	-.0039072	-.0360100	.1168820	.0013658	-.0020023	.0002921
195	.0000000	-.0364022	.0000000	-.0111692	-.0015339	-.0008727
200	.0119563	-.0365518	-.1126635	-.0082017	-.0013475	-.0014396
205	.0000000	.0000000	-.1129257	-.0011879	-.0013648	-.0018536
205A	-.0217619	-.0223095	-.1134701	.0016423	-.0003666	-.0027650
210	.0000000	.0000000	-.1139693	-.0055215	.0028623	-.0036764
210A	.0934483	.2169291	-.1145934	-.0038651	.0014257	-.0049558
215	.0000000	.0000000	-.1151275	.0211471	-.0086260	-.0062353
215A	-.3214221	-.8080232	-.1157240	-.0013993	.0006630	-.0080293
220	.0000000	.0000000	-.1161418	-.0155195	.0059596	-.0098234
225 B	.0222523	.0477478	-.1163138	.0064212	-.0015133	-.0109619
225 E	.0152985	-.0411066	-.1101130	.0071887	-.0011247	-.0103894
230	.0151380	.0000000	.0000000	.0067118	-.0085923	.0211903
230A	.0149342	.9606152	.3253826	.0061609	-.0011755	.0055453
235	.0147110	.0000000	.0000000	.0056099	.0133237	-.0435116
235A	.0144664	-1.0000000	-.2746151	.0050542	-.0021701	.0054153
240	.0142026	.0000000	.0000000	.0044984	-.0045878	.0217124
245	.0139210	.0226094	-.0137793	.0039446	-.0010716	-.0076458
250	.0000000	.0000000	-.0138107	.0026183	-.0029003	-.0056308
255 B	-.0435037	-.0074063	-.0138758	-.0007895	-.0027601	-.0013242
255 E	-.0547511	-.0028870	-.0046917	-.0008100	-.0013824	.0005070
260	-.0547636	.0000000	.0000000	-.0007088	-.0010807	.0008320
265 B	-.0548438	.0321516	.0123193	.0005354	.0008356	-.0005674
265 E	-.0534193	.0286982	.0090134	.0005926	.0010422	-.0009224
270	-.0397712	.0075716	-.0046341	.0003901	.0015128	-.0019981
275	.0000000	.0075560	.0000000	.0001724	.0018456	-.0017629
280	.0214196	.0074907	.0006419	-.0003413	.0028613	.0004206
285	.0013235	.0050394	.0006421	-.0002821	.0028293	.0004748
290	.0000000	.0050356	.0000000	-.0001855	.0027490	.0004718
290A	-.0079211	.0049927	.0031435	.0001794	.0018950	-.0000130
295	.0000000	.0049454	.0000000	-.0005391	.0010409	-.0004193
300	.0038298	.0049296	-.0066104	-.0008830	.0007708	-.0003867
305	.0000690	.0000000	-.0066106	-.0009313	.0006697	-.0003194
310 B	-.0005917	-.0009236	-.0066106	-.0009141	.0006542	-.0003066
310 E	-.0036769	-.0039809	-.0036403	-.0007209	.0005662	-.0002157
315	-.0036744	-.0019807	.0015049	-.0004322	.0004572	-.0001972
320 B	-.0026006	-.0019813	-.0005422	-.0003138	.0003683	-.0001824



MODE SHAPE NUMBER 14

FREQUENCY : 24.8063953

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0520000	.0000517	-.0088559	-.0001325	.0000509	-.0007782
150	.0000000	.0001033	.0000000	.0005334	.0001019	.0031321
155	-.0163699	.0001103	.0028102	.0005902	.0001088	.0033646
160	-.0164054	.0763066	.0000000	.0010105	.0000571	.0007666
165	-.0164294	.0227130	-.0000722	.0015215	-.0000262	-.0024754

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0164304	.0159912	.0000000	.0015614	-.0000259	-.0023857
175	-.0164314	.0084997	.0000808	.0016085	-.0000212	-.0021915
180 B	-.0014716	-.0042437	.0128055	.0012250	.0001996	-.0012133
180 E	.0026261	-.0058902	.0165414	.0008925	.0002831	-.0009415
185	.0000000	-.0059626	.0000000	-.0006339	.0010730	.0005219
185A	-.0084341	-.0059920	-.0071857	.0000258	.0014482	.0000790
190	.0000000	-.0060180	.0000000	.0005291	.0018233	-.0008431
190A	.0218707	-.0060427	.0114997	.0001462	.0022331	-.0003585
195	.0000000	-.0060635	.0000000	-.0011214	.0026429	.0022959
200	-.0271823	-.0060707	-.0118883	-.0009977	.0028060	.0028805
205	.0000000	.0000000	-.0119095	-.0004084	.0034269	.0027425
205A	.0624021	.0012347	-.0119526	.0001413	.0012876	.0024388
210	.0000000	.0000000	-.0119910	-.0001687	-.0086870	.0021350
210A	-.2900933	.0101920	-.0120365	-.0002257	-.0045014	.0017087
215	.0000000	.0000000	-.0120725	.0010810	.0268851	.0012822
215A	1.0000000	-.0426292	-.0121068	-.0000657	-.0023002	.0006843
220	.0000000	.0000000	-.0121220	-.0008168	-.0176341	.0000864
225 B	-.0283685	.0019014	-.0121219	.0004025	.0068440	-.0002930
225 E	.0036331	-.0020282	-.0406777	.0004810	.0045707	-.0003518
230	.0040939	.0000000	.0000000	.0006739	-.0062558	.0008810
230A	.0046213	.0406767	.2100085	.0008968	-.0003712	.0002362
235	.0051425	.0000000	.0000000	.0011196	.0077493	-.0018317
235A	.0056613	-.0416483	-.1378522	.0013444	-.0016400	.0002423
240	.0061726	.0000000	.0000000	.0015692	-.0011477	.0008563
245	.0066738	.0113138	-.0675512	.0017933	.0004425	.0007256
250	.0000000	.0000000	-.0675649	.0017064	-.0032071	.0013486
255 B	-.0949832	-.0213800	-.0675846	.0015202	-.0087402	.0026802
255 E	-.1373529	-.0136548	-.0273392	.0017350	-.0073563	.0033116
260	-.1373884	.0000000	.0000000	.0018643	-.0063268	.0034955
265 B	-.1376397	.1069046	.0457762	.0034539	.0036749	-.0013938
265 E	-.1317111	.0953528	.0318062	.0034707	.0042337	-.0022768
270	-.0806438	.0288708	-.0192901	.0019779	.0054232	-.0043461
275	.0000000	.0288062	.0000000	.0005891	.0061470	-.0035581
280	.0612725	.0285409	.0028674	-.0014190	.0083561	.0006722
285	.0027375	.0181865	.0028687	-.0012293	.0082368	.0009569
290	.0000000	.0181712	.0000000	-.0008601	.0080116	.0009930
290A	-.0190624	.0179994	.0088857	.0006726	.0056156	.0000375
295	.0000000	.0178117	.0000000	-.0018564	.0032196	-.0011444
300	.0109008	.0177491	-.0232716	-.0031628	.0024619	-.0011392
305	-.0012351	.0000000	-.0232714	-.0033477	.0021877	-.0009915
310 B	-.0033989	-.0033159	-.0232712	-.0032792	.0021482	-.0009634
310 E	-.0136928	-.0145286	-.0132371	-.0025636	.0019422	-.0007462
315	-.0136841	-.0072839	.0047567	-.0014997	.0016210	-.0007335
320 B	-.0096695	-.0072851	-.0022931	-.0010756	.0013224	-.0006883

MODE SHAPE NUMBER 15

FREQUENCY : 25.5688145

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.2750918	-.0002322	.0508407	.0007226	-.0002076	.0039096
150	.0000000	-.0004640	.0000000	-.0029080	-.0004153	-.0157348
155	.0813501	-.0004955	-.0151586	-.0031452	-.0004435	-.0165013
160	.0815657	-.3467202	.0000000	-.0047729	-.0006184	-.0023270
165	.0817267	-.0476516	.0034016	-.0067513	.0010920	.0123130

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0817345	-.0144841	.0000000	-.0069057	.0013906	.0116878
175	.0817430	.0219096	-.0050969	-.0070881	.0017245	.0105669
180 B	.0294510	.0779278	-.0610464	-.0053895	.0017233	.0056700
180 E	.0143065	.0851781	-.0775319	-.0039536	.0015712	.0044172
185	.0000000	.0853549	.0000000	.0032887	.0008082	-.0010491
185A	.0100091	.0853620	.0434933	.0001056	.0004459	.0001195
190	.0000000	.0853197	.0000000	-.0037177	.0000835	.0005633
190A	-.0094219	.0852169	-.0886787	-.0012844	-.0003123	.0000534
195	.0000000	.0850553	.0000000	.0089232	-.0007081	-.0007797
200	.0086806	.0849746	.1034631	.0106547	-.0008656	-.0008817
205	.0000000	.0000000	.1035493	.0074520	-.0011175	-.0007647
205A	-.0206124	-.0522262	.1037067	-.0011725	-.0004300	-.0005073
210	.0000000	.0000000	.1038195	-.0026610	.0028740	-.0002499
210A	.0955909	.0269700	.1039025	.0005071	.0014464	.0001115
215	.0000000	.0000000	.1038975	.0006104	-.0087212	.0004729
215A	-.3169686	.0108272	.1037422	-.0004136	.0011138	.0009797
220	.0000000	.0000000	.1034141	.0010532	.0042417	.0014864
225 B	.0145863	-.0344908	.1031165	.0015236	.0027470	.0018080
225 E	.0380748	-.0327691	.0718831	.0015185	.0080215	.0018753
230	.0377351	.0000000	.0000000	.0015692	-.0174845	-.0006360
230A	.0372932	-.0578930	.9654040	.0016277	-.0066332	-.0006027
235	.0367989	.0000000	.0000000	.0016863	.0441854	.0030622
235A	.0362480	.0784157	-1.0000000	.0017453	-.0066360	-.0003203
240	.0356452	.0000000	.0000000	.0018044	-.0174725	-.0017728
245	.0349938	.0119325	-.0551865	.0018632	-.0016662	.0019246
250	.0000000	.0000000	-.0552933	.0018871	-.0083917	.0024261
255 B	-.1450217	-.0260860	-.0555132	.0019258	-.0100418	.0034978
255 E	-.1873631	-.0165339	-.0198292	.0020019	-.0056482	.0040281
260	-.1874130	.0000000	.0000000	.0020312	-.0046577	.0042305
265 B	-.1877583	.1178317	.0770345	.0023919	.0028068	-.0024473
265 E	-.1828212	.1036670	.0656477	.0022822	.0036561	-.0036726
270	-.1332866	.0315236	.0160832	.0001405	.0055812	-.0069848
275	.0000000	.0314515	.0000000	-.0008612	.0069724	-.0058712
280	.0836750	.0311525	.0013666	-.0009124	.0112185	.0013527
285	.0047947	.0242561	.0013701	-.0007067	.0111193	.0016982
290	.0000000	.0242387	.0000000	-.0002986	.0108191	.0017267
290A	-.0313092	.0240408	.0224035	.0007613	.0076262	.0000023
295	.0000000	.0238204	.0000000	-.0027762	.0044332	-.0017358
300	.0161163	.0237461	-.0327636	-.0042840	.0034235	-.0016551
305	-.0007989	.0000000	-.0327636	-.0044629	.0030531	-.0014116
310 B	-.0038196	-.0044217	-.0327635	-.0043731	.0029985	-.0013652
310 E	-.0181760	-.0191706	-.0187904	-.0034161	.0026983	-.0010191
315	-.0181650	-.0094851	.0061098	-.0019934	.0022343	-.0009640
320 B	-.0129197	-.0094871	-.0032507	-.0014260	.0018107	-.0008946

MODE SHAPE NUMBER 16

FREQUENCY : 25.6286464

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0008492	-.0102531	.0022515	.0015630	.0008800	.0034730
15	.0077273	-.0981409	.0192405	.0024705	.0009136	.0049711
20	.0080715	-.1342884	.0206015	.0009465	-.0007549	.0009217
25	-.0048480	-.1344215	.0020582	.0080279	-.0007549	-.0066491
30	-.0483174	-.1345518	-.0490484	.0145368	-.0007549	-.0124946
35	-.1590673	-.1346672	-.1770136	.0193839	-.0007549	-.0168207
40	-.2930695	-.1346814	-.3313561	.0201458	-.0007549	-.0174946
45 B	-.1038419	-.1338641	-.0888747	-.0155269	-.0040250	.0134215
45 E	-.1994817	-.0412339	-.1767061	-.0186278	-.0045726	.0156147
50	-.2094597	.0000000	-.1767218	-.0175203	-.0041458	.0160380
55	-.2262432	.1696814	-.1767920	-.0093987	.0028580	.0184365
60	-.0738631	-.0020990	-.0243781	-.0010292	.0225942	.0168220
65	.0000000	.0000000	-.0243848	-.0004588	.0267146	.0160582
70	.2675932	-.0019770	-.0244052	.0007612	.0197576	.0135441
75	.2871301	-.0175749	-.0243558	.0017430	-.0177591	.0104571
80 B	.1879711	-.0254934	-.0243140	.0021995	-.0286506	.0094069
80 E	-.0048819	-.0388312	-.0093258	.0031717	-.0355495	.0016045
85	.0000000	-.0388183	.0000000	.0028503	-.0358877	-.0060728
90	.0000000	-.0386680	.0025994	-.0025149	-.0392695	-.0409328
95	.2640643	.0000000	.0025945	.0005655	-.0367747	-.0216509
100 B	.0510282	-.0107610	.0025928	.0026618	-.0338964	-.0155619
100 E	-.0533611	-.0260801	.0184789	.0032140	-.0264839	-.0086321
105	.0000000	-.0261406	.0433785	.0032434	-.0180315	-.0056491
110	.0262028	-.0261797	.0602649	.0033739	-.0124420	-.0046162
115	.0261949	.0000000	.0000000	.0036667	-.0071835	-.0042738
120 B	.0261578	.0971061	-.0227000	.0047127	.0015241	-.0039453
120 E	.0291982	.0909433	-.0172075	.0049557	-.0001021	-.0030650
125	-.0020320	.0005309	-.0170480	.0040344	-.0022890	-.0006220
130	.0000000	.0005238	.0000000	.0028709	-.0021517	-.0003137
130A	.0016389	.0004949	.0080107	-.0010051	-.0016025	.0000719
135	.0000000	.0004659	.0000000	.0012431	-.0010533	.0000193
135A	.0013558	.0004367	.0496318	.0025906	-.0005040	-.0001054
137	.0021341	.0004073	.0545500	-.0030998	.0000452	.0000701
138	.0035702	.0468228	.0546116	-.0047421	.0001704	.0000701
140	.0000000	.0003056	.0000000	-.0026996	.0000339	.0001244
140A	-.0008181	.0001528	-.0177536	.0006652	.0000169	-.0000307
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

MODE SHAPE NUMBER 17

FREQUENCY : 27.9012835

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0043950	-.0000029	.0061989	.0000729	-.0000293	.0000517
150	.0000000	-.0000057	.0000000	-.0002935	-.0000587	-.0002081
155	.0010404	-.0000061	-.0014733	-.0002956	-.0000627	-.0002064
160	.0010412	-.0037766	.0000000	-.0003083	-.0000178	.0000087
165	.0010406	.0017908	-.0000803	-.0003237	-.0000236	.0002120

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0010405	.0023651	.0000000	-.0003249	-.0000355	.0002050
175	.0010403	.0030162	.0001424	-.0003263	-.0000556	.0001951
180 B	-.0012123	.0056533	-.0024969	-.0002816	-.0001522	.0001195
180 E	-.0018175	.0060498	-.0034326	-.0002467	-.0001782	.0000910
185	.0000000	.0060368	.0000000	.0004576	-.0004745	-.0001268
185A	.0023708	.0060242	.0099981	.0001651	-.0006152	-.0000301
190	.0000000	.0060074	.0000000	-.0011286	-.0007558	.0002493
190A	-.0065091	.0059843	-.0303294	-.0004860	-.0009095	.0001008
195	.0000000	.0059563	.0000000	.0030984	-.0010632	-.0006579
200	.0094331	.0059438	.0314074	.0022578	-.0011244	-.0013599
205	.0000000	.0000000	.0314835	-.0010519	-.0008530	-.0025963
205A	-.0061300	.0542432	.0316393	-.0020353	.0001294	-.0053180
210	.0000000	.0000000	.0317788	.0093666	.0003244	-.0080399
210A	.0036356	-.3307267	.0319473	.0049380	-.0000552	-.0118607
215	.0000000	.0000000	.0320836	-.0293295	-.0001010	-.0156816
215A	.0005029	1.0000000	.0322201	.0073416	.0000539	-.0210394
220	.0000000	.0000000	.0322927	-.0001974	-.0001157	-.0263972
225 B	.0007367	.7451258	.0323056	-.0454311	.0004148	-.0297973
225 E	.0035709	.8191908	.0288587	-.0448751	.0008535	-.0314624
230	.0035550	.0000000	.0000000	-.0383219	.0001852	-.0105979
230A	.0035311	.2107674	.0218173	-.0307515	-.0003888	.0081319
235	.0035012	.0000000	.0000000	-.0231809	.0013799	-.0221396
235A	.0034652	-.7445758	-.0376363	-.0155443	-.0001966	.0013266
240	.0034232	.0000000	.0000000	-.0079078	-.0005884	.0167996
245	.0033756	-.0002791	-.0029832	-.0002976	-.0003179	-.0069729
250	.0000000	.0000000	-.0029882	-.0001787	-.0006721	-.0057050
255 B	-.0099520	.0108443	-.0029984	-.0011556	-.0006288	-.0029953
255 E	-.0125122	.0059676	-.0009229	-.0010038	-.0002976	-.0017160
260	-.0125147	.0000000	.0000000	-.0009165	-.0001817	-.0012981
265 B	-.0125241	.0017216	-.0088228	.0001577	.0003829	.0004577
265 E	-.0119503	.0028989	-.0101947	.0002353	.0003975	.0003683
270	-.0075418	-.0000297	-.0145923	.0006340	.0004543	-.0001581
275	.0000000	-.0000239	.0000000	.0006371	.0005335	-.0004272
280	.0057174	-.0000060	.0004018	-.0001670	.0007753	.0000911
285	.0002956	-.0010290	.0004007	-.0001425	.0007575	.0001058
290	.0000000	-.0010281	.0000000	-.0001461	.0007279	.0001041
290A	-.0014984	-.0010184	-.0028997	-.0000035	.0004139	-.0000124
295	.0000000	-.0010075	.0000000	.0001601	.0000999	-.0000541
300	.0003810	-.0010038	.0015827	.0001876	.0000006	-.0000249
305	.0004880	.0000000	.0015823	.0001800	-.0000402	.0000031
310 B	.0005319	.0001760	.0015822	.0001726	-.0000474	.0000084
310 E	.0008633	.0008009	.0011885	.0001193	-.0000920	.0000363
315	.0008634	.0003652	.0001755	.0000454	-.0000996	.0000443
320 B	.0006335	.0003649	.0003528	.0000233	-.0000837	.0000397

MODE SHAPE NUMBER 18

FREQUENCY : 28.4628568

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0002327	.0099451	.0006192	-.0011666	.0002290	-.0034900
15	.0012552	.0909380	.0032490	-.0007511	-.0001207	-.0047464
20	-.0012722	.1154262	-.0025564	.0016387	-.0011763	-.0007047
25	-.0001083	.1155674	.0000460	-.0029484	-.0011763	.0012845
30	.0096567	.1157056	.0225416	-.0068604	-.0011763	.0029746
35	.0371102	.1158281	.0859014	-.0097887	-.0011763	.0042404
40	.0710620	.1158431	.1642817	-.0102546	-.0011763	.0044419
45 B	.0198680	.1149595	.1135106	.0142331	-.0033574	-.0030296
45 E	.0193242	.0339442	.1918835	.0156643	-.0044466	-.0064040
50	.0092585	.0000000	.1918932	.0139551	-.0044441	-.0075748
55	-.0381714	-.1141993	.1919232	.0054212	-.0023706	-.0142095
60	-.0211647	.0222266	.2089546	.0066685	.0060891	-.0142062
65	.0000000	.0000000	.2089406	.0083570	.0080722	-.0125814
70	.0880865	.0844017	.2088768	.0051381	.0067830	-.0072332
75	.0978389	-.0359830	.2080129	-.0144659	-.0054517	-.0006665
80 B	.0674787	.0399804	.2074562	-.0223116	-.0085255	.0015676
80 E	.0068436	.1727272	.0669123	-.0258021	-.0073260	.0029656
85	.0000000	.1727284	.0000000	-.0162168	-.0057947	.0010549
90	.1134404	.1726249	.5998509	.0265075	.0095180	-.0000940
95	.3259370	.0000000	.6001292	-.0115586	.0106918	.0197672
100 B	.3851400	.1096406	.6001560	-.0237898	.0090147	.0260391
100 E	.2739735	.2477772	.4507757	-.0324276	.0074843	.0328680
105	.0000000	.2479585	.1774626	-.0377063	.0054130	.0374398
110	-.1971346	.2480672	-.0222641	-.0399722	.0040433	.0392117
115	-.1971740	.0000000	.0000000	-.0426287	.0035620	.0426740
120 B	-.1972328	-1.0000000	.1054972	-.0521162	.0068411	.0417147
120 E	-.1556118	-.9271191	.1437205	-.0540351	.0092450	.0338423
125	.0518176	-.0041481	.1435991	-.0354736	.0111428	.0128716
130	.0000000	-.0040442	.0000000	-.0247136	.0103903	.0090506
130A	-.0588723	-.0036273	-.1333513	.0055114	.0073805	-.0015243
135	.0000000	-.0032086	.0000000	.0021548	.0043706	-.0028113
135A	.0206837	-.0027883	-.0878189	-.0070304	.0013608	.0002751
137	-.0059778	-.0023667	-.1229494	.0069070	-.0016491	.0007269
138	-.0180038	-.1159761	-.1231207	.0119243	-.0024279	.0007269
140	.0000000	-.0017758	.0000000	.0061433	-.0012368	.0001544
140A	-.0010390	-.0008882	.0413283	-.0015139	-.0006184	-.0000381
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
155	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
160	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
165	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
175	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
180 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
195	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
200	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
205A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
225 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
250	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
255 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
310 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
315	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
320 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000

M O D E S H A P E N U M B E R 19

FREQUENCY : 28.7240131

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.1250617	-.0000515	-1.0000000	-.0108497	.0038373	.0013569
150	.0000000	-.0001030	.0000000	.0436658	.0076746	-.0054609
155	.0267004	-.0001099	.2147682	.0421545	.0081967	-.0051496
160	.0267417	-.0792510	.0000000	.0293875	.0046212	.0008107
165	.0267500	.0606713	-.0079966	.0138691	-.0027824	.0046175

MODE SHAPE NUMBER 20

FREQUENCY : 30.7690148

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
95	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0114657	.0000032	.0020743	.0000176	-.0000007	.0000970
150	.0000000	.0000065	.0000000	-.0000706	-.0000013	-.0003905
155	.0017493	.0000069	-.0003208	-.0000570	-.0000014	-.0002966
160	.0017588	-.0004827	.0000000	.0000571	-.0000303	.0001925
165	.0017671	.0077151	.0002391	.0001958	.0000759	.0001401

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0017676	.0080531	.0000000	.0002066	.0000988	.0001079
175	.0017682	.0083491	-.0003671	.0002194	.0001276	.0000775
180 B	.0028063	.0065633	.0014159	.0001746	.0001940	.0000293
180 E	.0029901	.0063282	.0019471	.0001256	.0001994	.0000319
185	.0000000	.0062990	.0000000	-.0000431	.0002473	.0000780
185A	-.0012964	.0062768	.0001218	.0000259	.0002701	.0000112
190	.0000000	.0062495	.0000000	-.0000621	.0002928	-.0001234
190A	.0030290	.0062136	-.0021412	-.0000407	.0003177	-.0000400
195	.0000000	.0061714	.0000000	.0002272	.0003426	.0002857
200	-.0033222	.0061530	.0035831	.0005698	.0003525	.0003540
205	.0000000	.0000000	.0035757	.0006292	.0004019	.0003558
205A	.0068166	-.0049983	.0035578	-.0000756	.0001202	.0003597
210	.0000000	.0000000	.0035377	-.0003202	-.0008928	.0003636
210A	-.0279349	.0053839	.0035057	.0000103	-.0003267	.0003690
215	.0000000	.0000000	.0034694	.0002785	.0022137	.0003745
215A	.0662478	-.0054869	.0034114	-.0001204	-.0008824	.0003822
220	.0000000	.0000000	.0033451	.0002057	.0013352	.0003899
225 B	.0952431	-.0103114	.0032989	.0003818	.0044821	.0003948
225 E	.1161047	-.0099245	-.0161963	.0001572	.0034620	.0003903
230	.1160165	.0000000	.0000000	-.0009083	-.0058390	.0001086
230A	.1156946	-.0033338	.2256743	-.0021391	.0005208	-.0000891
235	.1151373	.0000000	.0000000	-.0033700	.0037415	.0002502
235A	.1143378	.0069944	.0728103	-.0046116	-.0025764	-.0000554
240	.1133017	.0000000	.0000000	-.0058533	.0066299	-.0000273
245	.1120358	-.0451260	-.0441171	-.0070906	-.0143323	-.0041931
250	.0000000	.0000000	-.0441602	-.0069250	-.0189205	-.0063264
255 B	-.2300516	.0870481	-.0442428	-.0058503	-.0124901	-.0108859
255 E	-.2778620	.0538300	-.0081880	-.0055655	-.0041173	-.0130455
260	-.2778868	.0000000	.0000000	-.0053686	-.0001099	-.0138192
265 B	-.2776151	-.5749775	-.4512554	-.0029489	.0044706	-.0031865
265 E	-.2736064	-.5788632	-.4623978	-.0023587	.0018438	-.0015994
270	-.3045653	-.6587032	-.4308436	.0142957	-.0081488	-.0108639
275	.0000000	-.6577874	.0000000	.0192404	-.0264710	-.0102100
280	-.6116520	-.6526018	.0276546	.0054088	-.0823891	.0035385
285	-.0237293	-.6260175	.0275937	-.0047318	-.0842611	-.0070719
290	.0000000	-.6256679	.0000000	-.0151799	-.0835567	-.0097712
290A	.3401588	-.6214847	-1.0000000	-.0169615	-.0760640	-.0034880
295	.0000000	-.6164582	.0000000	.0836866	-.0685714	.0238591
300	-.2392386	-.6146945	.9116356	.1130947	-.0662019	.0267009
305	.1067055	.0000000	.9115995	.1138825	-.0659527	.0265090
310 B	.1726641	.1125208	.9115881	.1110775	-.0660847	.0264725
310 E	.5061996	.4990074	.5753298	.0844891	-.0675915	.0245541
315	.5060098	.2463957	-.0771504	.0453864	-.0601911	.0258996
320 B	.3650374	.2463754	.1302040	.0309872	-.0496532	.0243826

MODE SHAPE NUMBER 21

FREQUENCY : 33.6223736

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
20	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
40	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 B	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 E	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	-.0000000	.0000000	.0000000	.0000000	-.0000000
100 E	-.0000001	-.0000000	.0000000	.0000000	.0000000	-.0000000
105	.0000000	-.0000000	.0000000	.0000000	.0000000	-.0000000
110	.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
137	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
145	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
145A	-1.0000000	.0011481	.1266647	.0006150	.0003499	.0048553
150	.0000000	.0022933	.0000000	-.0024751	.0006997	-.0195405
155	.0630198	.0024487	-.0081757	-.0007373	.0007473	-.0046456
160	.0638336	.5916640	.0000000	.0132811	-.0024690	.0203987
165	.0646859	.4745042	.0225685	.0303206	.0071343	-.0211313

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0647460	.4139419	.0000000	.0316500	.0093531	-.0225270
175	.0648158	.3393326	-.0349809	.0332210	.0123700	-.0228890
180 B	.3761350	.0706108	.2335123	.0264276	.0206815	-.0136667
180 E	.4459625	.0348831	.3149296	.0195992	.0209045	-.0085830
185	.0000000	.0333284	.0000000	-.0126878	.0154506	.0109945
185A	-.1060021	.0325382	-.1362658	.0011562	.0128604	-.0014529
190	.0000000	.0317154	.0000000	.0079900	.0102702	-.0050909
190A	.0616051	.0307803	.1316980	.0002946	.0074407	.0005300
195	.0000000	.0298083	.0000000	-.0091839	.0046111	.0029427
200	-.0268299	.0294116	-.0713968	-.0015756	.0034850	.0025408
205	.0000000	.0000000	-.0716880	.0046247	.0023380	.0024421
205A	.0175836	-.0346812	-.0722903	-.0006712	-.0003370	.0022247
210	.0000000	.0000000	-.0728389	-.0018822	-.0009611	.0020073
210A	-.0110898	.0212793	-.0735175	.0003790	.0001877	.0017022
215	.0000000	.0000000	-.0740886	.0003495	.0002020	.0013971
215A	-.0068907	.0149894	-.0747064	-.0001586	-.0000935	.0009692
220	.0000000	.0000000	-.0751091	.0002885	.0001739	.0005413
225 B	.0013100	.0010414	-.0752524	-.0002379	-.0000146	.0002698
225 E	.0010987	.0033541	-.0747516	-.0002592	-.0002856	.0001755
230	.0010934	.0000000	.0000000	-.0002446	-.0051932	-.0004596
230A	.0010847	-.0154148	.1544874	-.0002278	.0014663	.0001172
235	.0010735	.0000000	.0000000	-.0002109	-.0007107	-.0000123
235A	.0010595	-.0160231	.1838249	-.0001939	-.0008287	-.0000969
240	.0010428	.0000000	.0000000	-.0001769	.0040465	.0004024
245	.0010237	-.0010348	.0068474	-.0001599	-.0007302	-.0002753
250	.0000000	.0000000	.0068647	-.0001700	.0004369	-.0003049
255 B	.0163514	.0025599	.0069001	-.0001989	.0013579	-.0003681
255 E	.0220339	.0016233	.0022591	-.0002102	.0006842	-.0003999
260	.0220446	.0000000	.0000000	-.0002160	.0005073	-.0004109
265 B	.0221221	-.0074748	-.0053642	-.0002873	-.0002757	.0004269
265 E	.0216683	-.0053124	-.0042964	-.0002770	-.0003288	.0005673
270	.0176577	.0047617	-.0002795	-.0000541	-.0004116	.0009614
275	.0000000	.0047651	.0000000	-.0000462	-.0003602	.0007003
280	-.0014348	.0047548	-.0025861	.0005259	-.0002032	-.0001582
285	-.0001315	.0095181	-.0025862	.0008617	-.0001555	-.0000627
290	.0000000	.0095166	.0000000	.0010190	-.0001141	-.0000287
290A	-.0020943	.0094918	.0298490	.0001717	.0003261	.0000617
295	.0000000	.0094516	.0000000	-.0017126	.0007664	-.0002203
300	.0024434	.0094357	-.0163564	-.0018142	.0009056	-.0002982
305	-.0024786	.0000000	-.0163558	-.0017132	.0009721	-.0003367
310 B	-.0034571	-.0016902	-.0163556	-.0016663	.0009861	-.0003440
310 E	-.0085916	-.0075302	-.0110740	-.0012362	.0010861	-.0003636
315	-.0085890	-.0035963	-.0003128	-.0006035	.0010098	-.0004158
320 B	-.0063031	-.0035956	-.0029655	-.0003823	.0008464	-.0004003

MODE SHAPE NUMBER 22

FREQUENCY : 34.5219007

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	-.0000000	-.0000000	.0000000	.0000000	.0000000
15	-.0000000	-.0000001	-.0000001	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
45 B	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
90	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
95	.0000002	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	.0000002	.0000000	-.0000000	.0000000	.0000000	.0000000
100 E	.0000001	.0000000	-.0000001	.0000000	.0000000	.0000000
105	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
110	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
115	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
125	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	-.0000001	.0000000	-.0000001	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.1724442	-.0002783	-.0114946	-.0000420	-.0001653	-.0006298
150	.0000000	-.0005558	.0000000	.0001690	-.0003305	.0025346
155	-.0055215	-.0005934	.0003623	-.0000424	-.0003530	-.0005692
160	-.0057238	-.1492620	.0000000	-.0019246	.0008018	-.0036555
165	-.0059566	-.0466951	-.0077228	-.0042124	-.0024384	.0070349

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0059742	-.0270012	.0000000	-.0043909	-.0032038	.0072208
175	-.0059948	-.0033959	.0119584	-.0046018	-.0041764	.0072242
180 B	-.1062973	.0338980	-.0253017	-.0036969	-.0066997	.0044013
180 E	-.1289862	.0389148	-.0367833	-.0027994	-.0067642	.0028480
185	.0000000	.0389864	.0000000	.0018760	-.0050482	-.0033537
185A	.0333009	.0389565	.0237089	-.0000450	-.0042332	.0004170
190	.0000000	.0388855	.0000000	-.0016932	-.0034182	.0016595
190A	-.0213252	.0387609	-.0336873	-.0002353	-.0025280	-.0001410
195	.0000000	.0385875	.0000000	.0026471	-.0016377	-.0010881
200	.0101950	.0385049	.0323907	.0040387	-.0012834	-.0009719
205	.0000000	.0000000	.0323673	.0037386	-.0009480	-.0009021
205A	-.0091262	-.0287549	.0322973	-.0005150	.0000467	-.0007486
210	.0000000	.0000000	.0322021	-.0016341	.0007572	-.0005950
210A	.0170622	.0206814	.0320258	.0002827	.0000592	-.0003795
215	.0000000	.0000000	.0318000	.0004912	-.0009962	-.0001640
215A	-.0206942	.0075855	.0314007	-.0002257	.0005461	.0001383
220	.0000000	.0000000	.0309061	.0004164	-.0012001	.0004405
225 B	-.0035330	-.0092866	.0305434	.0002748	.0042352	.0006323
225 E	.0265051	-.0072157	-.0059134	.0001966	.0085855	.0006621
230	.0263017	.0000000	.0000000	-.0000887	-.0230867	-.0006375
230A	.0260038	-.0319368	1.0000000	-.0004183	.0053743	.0001221
235	.0256393	.0000000	.0000000	-.0007479	.0014458	.0001459
235A	.0252051	-.0264882	.9511747	-.0010804	-.0057461	-.0002125
240	.0247052	.0000000	.0000000	-.0014129	.0216850	.0007096
245	.0241430	-.0111567	.0501007	-.0017443	-.0065553	-.0013719
250	.0000000	.0000000	.0501799	-.0017312	-.0002088	-.0018804
255 B	.0747963	.0227079	.0503355	-.0016147	.0077746	-.0029671
255 E	.1101750	.0142446	.0189983	-.0016976	.0052625	-.0034770
260	.1102371	.0000000	.0000000	-.0017485	.0044945	-.0036268
265 B	.1107121	-.0907323	-.0786894	-.0023737	-.0022876	.0024556
265 E	.1067070	-.0768658	-.0693939	-.0022867	-.0029531	.0034371
270	.0692885	-.0188717	-.0318759	.0006784	-.0038530	.0047011
275	.0000000	-.0187607	.0000000	.0004421	-.0030713	.0023114
280	-.0018414	-.0183362	-.0303533	.0077121	-.0006858	-.0000432
285	.0019655	.0477200	-.0303591	.0106842	-.0003568	.0006140
290	.0000000	.0477419	.0000000	.0114044	-.0001324	.0008291
290A	-.0310465	.0479303	.2629909	.0001519	.0022550	.0002740
295	.0000000	.0480368	.0000000	-.0120179	.0046424	-.0019359
300	.0187728	.0480534	-.1015976	-.0098354	.0053974	-.0020748
305	-.0104565	.0000000	-.1015965	-.0085106	.0057470	-.0020826
310 B	-.0162374	-.0083954	-.1015956	-.0082728	.0058184	-.0020840
310 E	-.0463506	-.0361278	-.0707600	-.0060131	.0063106	-.0019559
315	-.0463377	-.0157432	-.0085401	-.0026809	.0058180	-.0021146
320 B	-.0347512	-.0157415	-.0198133	-.0015408	.0048562	-.0020204

MODE SHAPE NUMBER 23

FREQUENCY : 34.7850175

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
100 E	-.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
137	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000002	.0000000	.0000002	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0127331	.0000154	.0016285	.0000054	-.0000065	.0000419
150	.0000000	.0000307	.0000000	-.0000216	-.0000131	-.0001688
155	.0003417	.0000328	-.0000454	.0000029	-.0000140	.0000325
160	.0003417	.0085071	.0000000	.0001785	.0000255	.0002188
165	.0003409	.0047936	-.0002551	.0003920	-.0000805	-.0002651

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0003408	.0040667	.0000000	.0004087	-.0001059	-.0002579
175	.0003407	.0032614	.0003925	.0004284	-.0001322	-.0002307
180 B	.0003251	-.0001573	.0038083	.0003245	-.0001892	-.0000957
180 E	.0003085	-.0005891	.0047812	.0002257	-.0002065	-.0000597
185	.0000000	-.0006068	.0000000	-.0000828	-.0004658	-.0000702
185A	.0022677	-.0006141	.0004851	.0000587	-.0005889	-.0000492
190	.0000000	-.0006209	.0000000	-.0001556	-.0007121	.0002703
190A	-.0071297	-.0006275	-.0050569	-.0000834	-.0008466	.0000924
195	.0000000	-.0006332	.0000000	.0004936	-.0009811	-.0006449
200	.0087260	-.0006353	.0046430	.0002605	-.0010347	-.0012057
205	.0000000	.0000000	.0046572	-.0004186	-.0008025	-.0021956
205A	-.0062173	.0137239	.0046858	-.0004220	.0001088	-.0043747
210	.0000000	.0000000	.0047106	.0021426	.0003578	-.0065539
210A	.0046537	-.0697028	.0047392	.0007011	-.0000594	-.0096129
215	.0000000	.0000000	.0047604	-.0049767	-.0001175	-.0126720
215A	.0013930	.1250355	.0047774	.0028346	.0000544	-.0169615
220	.0000000	.0000000	.0047798	-.0064235	-.0001014	-.0212510
225 B	-.0005736	.3500630	.0047736	-.0170682	.0001624	-.0239732
225 E	.0005780	.3121642	.0033708	-.0164119	.0003370	-.0243875
230	.0005722	.0000000	.0000000	-.0146103	-.0006133	.0186287
230A	.0005641	1.0000000	.0298937	-.0125291	.0001324	-.0034909
235	.0005546	.0000000	.0000000	-.0104479	.0000802	-.0045703
235A	.0005435	.8300401	.0270021	-.0083485	-.0001734	.0063759
240	.0005310	.0000000	.0000000	-.0062491	.0006178	-.0210959
245	.0005171	-.0232721	.0011549	-.0041570	-.0001624	.0074878
250	.0000000	.0000000	.0011572	-.0026085	.0000200	.0056337
255 B	.0023203	.0045366	.0011620	.0011460	.0002173	.0016712
255 E	.0032554	.0004275	.0003827	.0012569	.0001169	.0000483
260	.0032573	.0000000	.0000000	.0011826	.0000826	-.0001499
265 B	.0032716	-.0028600	-.0004162	.0002685	-.0000176	.0001200
265 E	.0032504	-.0027011	-.0003606	.0002036	-.0000136	.0001540
270	.0031631	-.0020547	-.0002718	.0000695	-.0000042	.0001951
275	.0000000	-.0020501	.0000000	-.0000626	.0000082	.0001144
280	.0002965	-.0020267	-.0012660	.0003588	.0000462	-.0000356
285	-.0000409	.0009304	-.0012661	.0004559	.0000507	-.0000176
290	.0000000	.0009319	.0000000	.0004651	.0000535	-.0000120
290A	-.0001597	.0009463	.0093369	-.0000261	.0000837	.0000094
295	.0000000	.0009592	-.0000000	-.0003597	.0001139	-.0000261
300	.0002976	.0009629	-.0026912	-.0002184	.0001235	-.0000356
305	-.0003643	.0000000	-.0026912	-.0001625	.0001296	-.0000373
310 B	-.0004945	-.0001602	-.0026912	-.0001576	.0001312	-.0000376
310 E	-.0011774	-.0006842	-.0019866	-.0001090	.0001460	-.0000376
315	-.0011769	-.0002571	-.0005181	-.0000359	.0001399	-.0000488
320 B	-.0008970	-.0002571	-.0006408	-.0000120	.0001206	-.0000502

MODE SHAPE NUMBER 24

FREQUENCY : 35.3875904

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 E	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
105	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
125	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000000
130A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	-.0000002	.0000000	-.0000002	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0139188	.0000359	-.0012460	-.0000031	.0000407	.0000343
150	.0000000	.0000717	.0000000	.0000124	.0000814	-.0001380
155	-.0000304	.0000766	.0000192	-.0000004	.0000870	.0001937
160	.0000068	.0190894	.0000000	-.0000304	-.0001862	.0003400
165	.0000519	-.0020507	.0018116	-.0000669	.0005719	-.0011636

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000554	-.0052909	.0000000	-.0000698	.0007516	-.0011887
175	.0000596	-.0091895	-.0027983	-.0000731	.0009657	-.0012063
180 B	.0198025	-.0086354	-.0033553	-.0000451	.0014703	-.0007772
180 E	.0242386	-.0085806	-.0034684	-.0000167	.0014821	-.0005040
185	.0000000	-.0085536	.0000000	.0000322	.0011630	.0006547
185A	-.0070474	-.0085260	-.0003346	-.0000282	.0010114	-.0000632
190	.0000000	-.0084890	.0000000	.0000822	.0008599	-.0003978
190A	.0061477	-.0084377	.0025718	.0000402	.0006943	.0000032
195	.0000000	-.0083753	.0000000	-.0002452	.0005288	.0003848
200	-.0039528	-.0083474	-.0042272	-.0007420	.0004629	.0003988
205	.0000000	.0000000	-.0042142	-.0008564	.0004145	.0003932
205A	.0054158	.0063289	-.0041832	.0001309	.0000438	.0003809
210	.0000000	.0000000	-.0041487	.0003213	-.0005933	.0003686
210A	-.0163446	-.0028282	-.0040945	-.0000885	-.0001135	.0003513
215	.0000000	.0000000	-.0040337	.0000366	.0010523	.0003340
215A	.0237204	-.0056938	-.0039374	-.0000402	-.0006150	.0003097
220	.0000000	.0000000	-.0038286	.0001252	.0014214	.0002854
225 B	.0547497	-.0073555	-.0037531	.0002260	.0011876	.0002700
225 E	.0574395	-.0067938	-.0040390	-.0000256	-.0004998	.0002586
230	.0574046	.0000000	.0000000	-.0012141	.0032989	.0000747
230A	.0572202	-.0022288	-.1583814	-.0025870	-.0008476	-.0000483
235	.0568819	.0000000	.0000000	-.0039600	.0001144	.0001196
235A	.0563856	.0023497	-.1639141	-.0053449	.0006246	-.0000496
240	.0557348	.0000000	.0000000	-.0067298	-.0026288	.0000802
245	.0549345	-.0515023	.0405711	-.0081100	-.0070771	-.0047785
250	.0000000	.0000000	.0405210	-.0078635	-.0089558	-.0071561
255 B	-.0862911	.0975899	.0404024	-.0064907	-.0019626	-.0122376
255 E	-.0830223	.0599930	.0269577	-.0062336	.0052048	-.0145886
260	-.0830481	.0000000	.0000000	-.0060874	.0080206	-.0153289
265 B	-.0831377	-.4920951	-.4696770	-.0042895	-.0020231	.0043897
265 E	-.0893777	-.4650108	-.4565301	-.0035992	-.0051342	.0073287
270	-.1529846	-.4248678	-.3924307	.0149270	-.0035983	.0021568
275	.0000000	-.4239528	.0000000	.0103078	.0170733	-.0144676
280	.6190120	-.4191222	-.1608167	.0475952	.0801617	.0068271
285	.0487159	-.0232430	-.1608750	.0592262	.0805975	.0163516
290	.0000000	-.0229367	.0000000	.0578910	.0780897	.0183932
290A	-.4228030	-.0196567	1.0000000	-.0072154	.0514163	-.0000384
295	.0000000	-.0163413	.0000000	-.0287483	.0247428	-.0182381
300	.1458160	-.0152868	-.1500131	-.0027744	.0163076	-.0128403
305	.0695673	.0000000	-.1500538	.0044429	.0128384	-.0079744
310 B	.0570488	.0042508	-.1500605	.0041433	.0122243	-.0070475
310 E	.0041659	.0380414	-.1028536	.0033816	.0081295	-.0013552
315	.0041824	.0338711	-.0388471	.0025159	.0050317	.0013302
320 B	-.0038880	.0338229	-.0256564	.0023900	.0035113	.0016662

MODE - SHAPE NUMBER 25

FREQUENCY : 35.7179952

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0011915	-.0371787	-.0009782	.0047011	-.0004858	.0130089
15	-.0064793	-.3576935	-.0079211	.0051987	-.0002120	.0200001
20	-.0065036	-.5341942	-.0040603	.0023832	.0008822	.0175100
25	.0220097	-.5352248	-.0093440	-.0009635	.0008822	-.0024021
30	-.0205503	-.5362335	.0054030	-.0053055	.0008822	-.0155970
35	-.1810936	-.5371282	.0595548	-.0087017	.0008822	-.0258665
40	-.3909956	-.5372377	.1301337	-.0092829	.0008822	-.0276127
45 B	-.6645740	-.5303366	-.1340652	-.0384022	.0026892	.0688843
45 E	-1.0000000	-.1803317	-.4196268	-.0791181	.0080064	.0748933
50	-.9784842	.0000000	-.4194027	-.0766288	.0116492	.0754389
55	-.6439014	.7351325	-.4180470	-.0389492	.0439884	.0785307
60	-.0438772	.0160476	.1841082	.0038778	.0229779	.0577846
65	.0000000	.0000000	.1844560	.0063268	.0062190	.0512581
70	-.1203928	-.0632524	.1855759	.0031124	-.0196377	.0297748
75	-.2527802	-.0060893	.1858519	-.0128489	.0050073	.0033965
80 B	-.2040068	.0586751	.1855760	-.0185290	.0166968	-.0055775
80 E	-.0383556	.1680719	.0676178	-.0236602	.0209170	-.0137558
85	.0000000	.1680664	.0000000	-.0200960	.0202308	-.0103687
90	-.2076004	.1678337	-.0195372	.0113736	.0133696	.0146460
95	.0163873	.0000000	-.0193535	.0004930	.0103019	.0119064
100 B	.0756734	.0170461	-.0192924	-.0045547	.0094914	.0110413
100 E	.0700055	.0387690	-.0364836	-.0020059	.0085926	.0098165
105	.0000000	.0390454	-.0411546	.0000583	.0078718	.0080489
110	-.0372190	.0392253	-.0417115	-.0006849	.0073952	.0064141
115	-.0372269	.0000000	.0000000	-.0031841	.0056692	.0079794
120 B	-.0372311	-.2889655	.0477205	-.0121096	.0006546	.0141696
120 E	-.0312675	-.2865602	.0521678	-.0147318	.0016533	.0117772
125	.0185206	-.0014878	.0520298	-.0124198	.0029243	.0045690
130	.0000000	-.0014489	.0000000	-.0092157	.0027098	.0032742
130A	-.0229596	-.0012927	-.0578796	.0017274	.0018518	-.0004988
135	.0000000	-.0011355	.0000000	.0021454	.0009938	-.0012326
135A	.0119587	-.0009774	.0002345	-.0011904	.0001358	-.0000551
137	.0062314	-.0008186	-.0113948	.0008999	-.0007223	.0004588
138	-.0035037	-.0219162	-.0114198	.0023930	-.0009609	.0004588
140	.0000000	-.0006144	.0000000	.0004813	-.0005417	.0002757
140A	-.0019933	-.0003074	.0034807	-.0001186	-.0002708	-.0000679
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000000
155	.0000001	.0000000	.0000000	.0000000	.0000000	-.0000000
160	.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
165	.0000001	-.0000001	.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000001	-.0000001	.0000000	.0000000	.0000000	.0000000
175	.0000001	-.0000001	.0000000	.0000000	.0000000	.0000000
180 B	.0000000	-.0000001	-.0000000	.0000000	.0000000	.0000000
180 E	-.0000000	-.0000001	-.0000000	.0000000	.0000000	.0000000
185	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
185A	.0000001	-.0000000	-.0000001	.0000000	.0000000	.0000000
190	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
190A	.0000000	-.0000000	.0000006	.0000000	.0000000	.0000000
195	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
200	-.0000001	-.0000000	.0000001	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
205A	.0000000	.0000001	.0000001	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
210A	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
225 B	.0000000	.0000001	.0000001	.0000000	.0000000	.0000000
225 E	.0000000	-.0000000	.0000001	.0000000	.0000000	.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
245	.0000000	.0000002	-.0000001	.0000000	.0000000	.0000000
250	.0000000	.0000000	-.0000001	.0000000	.0000000	.0000000
255 B	.0000000	-.0000001	-.0000001	.0000000	.0000000	.0000000
255 E	.0000000	-.0000000	-.0000000	.0000000	.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
265 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
265 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
270	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
275	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
285	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
290A	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
295	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
300	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
305	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 B	-.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 E	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
315	-.0000001	.0000000	.0000001	-.0000000	.0000000	.0000000
320 B	-.0000001	.0000000	.0000000	-.0000000	.0000000	.0000000



MODE SHAPE NUMBER 26

FREQUENCY : 36.5594597

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
15	.0000000	.0000000	.0000001	.0000000	.0000000	.0000000
20	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
25	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
40	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 B	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
70	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
75	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 B	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
85	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
90	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
95	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
100 B	-.0000001	-.0000000	.0000000	.0000000	.0000000	.0000000
100 E	-.0000001	-.0000000	.0000000	.0000000	.0000000	-.0000000
105	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
110	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
115	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
120 E	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
125	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
130A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
137	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	.0000002	.0000000	.0000002	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0001427	.0000236	-.0043840	-.0000035	.0000632	-.0000001
150	.0000000	.0000472	.0000000	.0000143	.0001264	.0000005
155	-.0001668	.0000504	-.0001342	-.0000609	.0001350	.0001298
160	-.0001123	.0112835	.0000000	-.0005180	-.0003062	.0001338
165	-.0000459	-.0091370	.0029503	-.0010735	.0009315	-.0010855

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0000407	-.0121881	.0000000	-.0011168	.0012237	-.0011372
175	-.0000345	-.0159966	-.0045458	-.0011680	.0015546	-.0012125
180 B	.0263974	-.0066340	-.0139119	-.0009060	.0022500	-.0008633
180 E	.0322130	-.0054191	-.0166700	-.0006485	.0022544	-.0005445
185	.0000000	-.0053705	.0000000	.0005321	.0017108	.0008353
185A	-.0090453	-.0053375	.0054432	-.0000640	.0014526	-.0000823
190	.0000000	-.0052983	.0000000	-.0002719	.0011944	-.0005007
190A	.0074458	-.0052482	-.0034272	.0000283	.0009124	.0000172
195	.0000000	-.0051907	.0000000	.0001570	.0006303	.0004311
200	-.0042687	-.0051658	-.0000817	-.0003373	.0005181	.0004204
205	.0000000	.0000000	-.0000676	-.0005850	.0004245	.0004008
205A	.0049274	.0047011	-.0000365	.0000735	.0000154	.0003578
210	.0000000	.0000000	-.0000053	.0002848	-.0004872	.0003147
210A	-.0124411	-.0040626	.0000384	-.0000426	-.0000599	.0002542
215	.0000000	.0000000	.0000821	-.0001124	.0007293	.0001938
215A	.0143397	-.0008161	.0001431	.0000511	-.0004465	.0001090
220	.0000000	.0000000	.0002036	-.0000932	.0010664	.0000242
225 B	.0417777	.0019335	.0002416	-.0000002	.0011391	-.0000296
225 E	.0455277	.0015872	-.0020781	.0001059	.0001250	-.0000389
230	.0454807	.0000000	.0000000	.0006003	.0012235	-.0000335
230A	.0453047	.0000537	-.0628562	.0011715	-.0003901	.0000168
235	.0449985	.0000000	.0000000	.0017426	.0003473	-.0000343
235A	.0445587	-.0012377	-.0763619	.0023188	.0000249	.0000138
240	.0439887	.0000000	.0000000	.0028949	-.0004475	-.0000214
245	.0432928	.0220116	.0125638	.0034691	-.0056249	.0020172
250	.0000000	.0000000	.0125322	.0033551	-.0069159	.0030163
255 B	-.0673570	-.0412731	.0124608	.0027045	-.0021782	.0051517
255 E	-.0708140	-.0252179	.0103309	.0025283	.0017765	.0061331
260	-.0708209	.0000000	.0000000	.0024280	.0032443	.0064418
265 B	-.0706981	.1068800	-.0940808	.0011956	-.0082546	-.0079305
265 E	-.0856571	.0731295	-.0598723	.0008268	-.0112817	-.0104507
270	-.2687271	-.0668138	.1233643	-.0035240	-.0251264	-.0178611
275	.0000000	-.0668675	.0000000	-.0086832	-.0529470	-.0033545
280	-1.0000000	-.0666884	-.0732428	.0188487	-.1378538	.0056817
285	-.0261249	.0902376	-.0732322	.0255371	-.1367814	-.0076153
290	.0000000	.0902568	.0000000	.0276822	-.1317111	-.0102597
290A	.2727948	.0903662	.6482901	-.0003427	-.0777814	-.0005434
295	.0000000	.0903025	.0000000	-.0262979	-.0238518	.0124547
300	-.0988811	.0902463	-.2078722	-.0190743	-.0067971	.0081250
305	-.0819493	.0000000	-.2078299	-.0150311	.0000856	.0033597
310 B	-.0826653	-.0145564	-.2078203	-.0141714	.0012713	.0024520
310 E	-.1044800	-.0690007	-.1757482	-.0084420	.0086843	-.0026472
315	-.1045170	-.0274270	-.0685446	-.0005156	.0111773	-.0046800
320 B	-.0794954	-.0273725	-.0642492	.0014440	.0099086	-.0044922

NORMALIZED MODE SHAPES

ME101/I2

DATE 040182

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DATA PT	DISPLACEMENTS				ROTATIONS		
	DX	DY	DZ		RX	RY	RZ
320 E	-.0269461	-.0154664	-.0271077		.0003823	.0074166	-.0039409
500	.0000000	.0000000	.0000000		.0000000	.0000000	.0000000

MODE SHAPE NUMBER 27

FREQUENCY : 37.0715585

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000001	.0000002	.0000003	-.0000000	.0000001	-.0000001
15	.0000006	.0000009	.0000015	.0000000	-.0000000	.0000000
20	.0000000	-.0000003	.0000001	.0000001	-.0000002	.0000001
25	.0000003	-.0000003	-.0000001	.0000000	-.0000002	.0000000
30	.0000004	-.0000003	-.0000001	-.0000000	-.0000002	.0000000
35	-.0000000	-.0000003	.0000001	-.0000000	-.0000002	-.0000001
40	-.0000007	-.0000003	.0000005	-.0000000	-.0000002	-.0000001
45 B	.0000005	-.0000003	.0000001	-.0000000	-.0000001	-.0000001
45 E	.0000004	-.0000001	-.0000001	-.0000000	-.0000001	-.0000001
50	.0000003	.0000000	-.0000001	-.0000000	-.0000001	-.0000000
55	-.0000004	-.0000003	-.0000001	.0000000	-.0000000	.0000000
60	-.0000002	-.0000002	.0000001	-.0000001	.0000001	.0000000
65	.0000000	.0000000	.0000001	-.0000001	.0000001	.0000000
70	.0000005	.0000007	.0000001	.0000000	-.0000000	-.0000000
75	-.0000004	-.0000003	.0000001	.0000001	-.0000001	-.0000001
80 B	-.0000007	-.0000007	.0000001	.0000001	-.0000000	-.0000001
80 E	-.0000003	-.0000008	.0000001	-.0000000	-.0000000	-.0000001
85	.0000000	-.0000008	.0000000	-.0000000	-.0000001	-.0000001
90	.0000002	-.0000008	.0000007	-.0000000	-.0000002	-.0000000
95	-.0000030	.0000000	.0000007	.0000000	-.0000001	-.0000002
100 B	-.0000036	-.0000004	.0000007	.0000001	-.0000001	-.0000003
100 E	-.0000024	-.0000008	.0000010	.0000000	-.0000001	-.0000003
105	.0000000	-.0000008	.0000008	-.0000001	-.0000001	-.0000003
110	.0000013	-.0000008	.0000005	-.0000001	-.0000001	-.0000002
115	.0000013	.0000000	.0000000	-.0000001	-.0000001	-.0000001
120 B	.0000013	-.0000007	-.0000001	-.0000001	.0000000	.0000001
120 E	.0000014	-.0000007	.0000000	-.0000001	.0000000	.0000001
125	.0000005	.0000000	.0000000	.0000000	-.0000001	.0000001
130	.0000000	.0000000	.0000000	-.0000000	-.0000001	.0000001
130A	-.0000009	.0000000	-.0000006	.0000000	-.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	-.0000000	-.0000001
135A	.0000007	.0000000	-.0000001	.0000000	.0000000	.0000000
137	-.0000004	.0000000	.0000001	.0000000	.0000000	.0000000
138	.0000000	-.0000001	.0000001	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000001
140A	.0000026	.0000000	.0000017	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.1594906	-.0004610	.1498900	.0000104	-.0020364	.0000110
150	.0000000	-.0009205	.0000000	-.0000417	-.0040727	-.0000444
155	-.0028110	-.0009828	.0073632	.0027520	-.0043498	-.0009397
160	-.0046085	-.1889853	.0000000	.0201363	.0101825	-.0020534
165	-.0067814	.2834160	-.0975961	.0412673	-.0308196	.0270165

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0069501	.3603003	.0000000	.0429158	-.0404728	.0290894
175	-.0071493	.4594726	.1502597	.0448640	-.0512701	.0322110
180 B	-.8225284	.0996604	.5102106	.0349038	-.0730275	.0242983
180 E	-1.0000000	.0528009	.6167543	.0251637	-.0729576	.0149904
185	.0000000	.0515243	.0000000	-.0206325	-.0537752	-.0249435
185A	.2640437	.0508205	-.2199393	.0022006	-.0446651	.0027273
190	.0000000	.0500549	.0000000	.0116908	-.0355549	.0138616
190A	-.1892230	.0491488	.1627744	-.0007813	-.0256031	-.0010421
195	.0000000	.0481713	.0000000	-.0085243	-.0156513	-.0096381
200	.0900107	.0477627	-.0542525	.0006088	-.0116904	-.0086269
205	.0000000	.0000000	-.0544943	.0063714	-.0079234	-.0082745
205A	-.0627780	-.0507245	-.0549907	-.0008277	.0010429	-.0074988
210	.0000000	.0000000	-.0554375	-.0029894	.0036618	-.0067230
210A	.0478178	.0399621	-.0559800	.0005252	-.0006703	-.0056341
215	.0000000	.0000000	-.0564229	.0008660	-.0009514	-.0045451
215A	.0258449	.0185345	-.0568747	-.0003059	.0002992	-.0030181
220	.0000000	.0000000	-.0571273	.0003642	-.0002518	-.0014910
225 B	.0019179	.0019930	-.0571839	-.0003344	-.0004079	-.0005220
225 E	-.0017690	.0019289	-.0520928	-.0003209	-.0014164	-.0002720
230	-.0017258	.0000000	.0000000	-.0002582	.0000635	-.0000023
230A	-.0016711	-.0013012	-.0546602	-.0001858	.0001203	-.0000025
235	-.0016115	.0000000	.0000000	-.0001133	-.0005477	.0000122
235A	-.0015466	-.0008531	-.0345546	-.0000402	.0003372	-.0000077
240	-.0014770	.0000000	.0000000	.0000329	-.0008096	.0000187
245	-.0014032	.0006912	-.0037597	.0001057	.0003600	.0000613
250	.0000000	.0000000	-.0037620	.0001078	-.0000229	.0000996
255 B	-.0062005	-.0014169	-.0037656	.0001026	-.0006284	.0001814
255 E	-.0090578	-.0009030	-.0012615	.0001148	-.0003931	.0002198
260	-.0090623	.0000000	.0000000	.0001225	-.0002415	.0002301
265 B	-.0090900	.0028128	-.0051947	.0002162	-.0000930	-.0003369
265 E	-.0093384	.0011401	-.0046707	.0002134	-.0002079	-.0004365
270	-.0136226	-.0070871	-.0003811	.0001340	-.0006268	-.0007853
275	.0000000	-.0070838	.0000000	-.0001640	-.0013555	-.0003713
280	-.0256772	-.0070360	-.0032927	.0009279	-.0035794	.0002668
285	-.0003800	.0006210	-.0032928	.0011838	-.0035554	-.0000878
290	.0000000	.0006247	.0000000	.0012107	-.0034268	-.0001597
290A	.0053279	.0006632	.0239737	-.0001142	-.0020593	-.0000288
295	.0000000	.0007003	.0000000	-.0007494	-.0006918	.0002760
300	-.0023167	.0007118	-.0045663	-.0002464	-.0002593	.0002022
305	-.0014278	.0000000	-.0045654	-.0000694	-.0000870	.0001032
310 B	-.0013565	-.0000608	-.0045652	-.0000545	-.0000579	.0000844
310 E	-.0014409	-.0002079	-.0042365	.0000304	.0001199	-.0000211
315	-.0014425	.0002472	-.0025256	.0001408	.0001871	-.0000479
320 B	-.0012121	.0002483	-.0016719	.0001548	.0001673	-.0000410



MODE SHAPE NUMBER 28

FREQUENCY : 38.5275884

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0000000	-.0000000	-.0000000	.0000000	.0000000	.0000000
15	-.0000001	-.0000001	-.0000001	.0000000	.0000000	.0000000
20	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
25	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
30	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
35	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
40	.0000000	.0000000	-.0000001	.0000000	.0000000	.0000000
45 B	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
45 E	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
50	-.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
55	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
60	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
65	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
70	-.0000001	-.0000001	-.0000000	.0000000	.0000000	.0000000
75	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
80 B	.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
80 E	.0000000	.0000001	.0000000	.0000000	.0000000	.0000000
85	.0000000	.0000001	.0000000	.0000000	.0000000	.0000000
90	-.0000000	.0000001	-.0000001	.0000000	.0000000	.0000000
95	.0000003	.0000000	-.0000001	.0000000	.0000000	.0000000
100 B	.0000004	.0000000	-.0000001	.0000000	.0000000	.0000000
100 E	.0000002	.0000001	-.0000001	.0000000	.0000000	.0000000
105	.0000000	.0000001	-.0000001	.0000000	.0000000	.0000000
110	-.0000001	.0000001	-.0000001	.0000000	.0000000	.0000000
115	-.0000001	.0000000	.0000000	.0000000	.0000000	.0000000
120 B	-.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
120 E	-.0000001	.0000001	.0000000	.0000000	.0000000	.0000000
125	-.0000001	.0000000	.0000000	.0000000	.0000000	-.0000000
130	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000000
130A	.0000002	.0000000	.0000001	.0000000	.0000000	.0000000
135	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
135A	-.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
137	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
138	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
140	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
140A	-.0000004	.0000000	-.0000003	.0000000	.0000000	.0000000
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0000094	.0000003	-.0000498	.0000001	.0000006	-.0000000
150	.0000000	.0000006	.0000000	-.0000004	.0000013	.0000001
155	-.0000030	.0000006	-.0000051	-.0000015	.0000014	.0000018
160	-.0000023	.0001389	.0000000	-.0000087	-.0000035	.0000012
165	-.0000016	-.0001280	.0000329	-.0000175	.0000104	-.0000128

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0000015	-.0001637	.0000000	-.0000182	.0000136	-.0000132
175	-.0000015	-.0002074	-.0000505	-.0000190	.0000171	-.0000138
180 B	.0002857	-.0000552	-.0002028	-.0000148	.0000235	-.0000092
180 E	.0003458	-.0000353	-.0002481	-.0000107	.0000230	-.0000053
185	.0000000	-.0000348	.0000000	.0000083	.0000093	.0000050
185A	.0000052	-.0000344	.0000839	-.0000011	.0000027	-.0000026
190	.0000000	-.0000341	.0000000	-.0000039	-.0000038	.0000057
190A	-.0001966	-.0000336	-.0000404	.0000007	-.0000110	.0000031
195	.0000000	-.0000331	.0000000	.0000010	-.0000181	-.0000182
200	.0002051	-.0000328	-.0000043	-.0000027	-.0000209	-.0000211
205	.0000000	.0000000	-.0000043	-.0000026	-.0000257	-.0000188
205A	-.0004481	-.0000187	-.0000041	.0000021	-.0000075	-.0000137
210	.0000000	.0000000	-.0000039	-.0000061	.0000564	-.0000087
210A	.0016264	.0002260	-.0000037	-.0000022	.0000094	-.0000016
215	.0000000	.0000000	-.0000035	.0000149	-.0000944	.0000055
215A	-.0017267	-.0003147	-.0000031	-.0000103	.0000630	.0000155
220	.0000000	.0000000	-.0000028	.0000267	-.0001590	.0000254
225 B	-.0066483	-.0009241	-.0000026	.0000153	-.0002392	.0000318
225 E	-.0076580	-.0007768	.0008704	-.0000267	-.0001385	.0000316
230	-.0076455	.0000000	.0000000	-.0002227	.0001546	.0000008
230A	-.0076083	-.0005721	-.0044978	-.0004490	-.0000783	-.0000008
235	-.0075469	.0000000	.0000000	-.0006754	.0001506	.0000026
235A	-.0074605	-.0004819	-.0100101	-.0009037	-.0000765	-.0000012
240	-.0073499	.0000000	.0000000	-.0011321	.0001574	.0000022
245	-.0072160	-.0086345	-.0316416	-.0013596	.0012598	-.0006904
250	.0000000	.0000000	-.0316327	-.0013189	.0008044	-.0009927
255 B	-.0054502	.0147382	-.0316031	-.0007168	-.0018386	-.0016389
255 E	-.0181653	.0081106	-.0162460	-.0000570	-.0036996	-.0019363
260	-.0181586	.0000000	.0000000	.0003545	-.0043403	-.0021235
265 B	-.0180171	-.0348983	.0416107	.0054140	.0092192	.0033363
265 E	-.0019563	-.0296658	.0046056	.0059123	.0118286	.0044376
270	.1622198	-.0381239	-.1595104	.0087164	.0194610	.0080020
275	.0000000	-.0380577	.0000000	.0054391	.0296065	.0078787
280	.3192769	-.0376388	-.0169710	.0040491	.0605699	-.0275880
285	-.1063771	-.0002490	-.0169829	.0060562	.0594155	-.0371808
290	.0000000	-.0002209	.0000000	.0063211	.0567864	-.0406668
290A	1.0000000	.0000780	.1337373	-.0005688	.0288226	.0009859
295	.0000000	.0003768	.0000000	-.0040237	.0008588	.0366848
300	-.2700463	.0004711	-.0224157	-.0008050	-.0079845	.0232056
305	-.2203279	.0000000	-.0224146	.0002550	-.0101786	.0162017
310 B	-.2100006	.0002666	-.0224142	.0003150	-.0102141	.0148676
310 E	-.1625627	-.0413180	-.0641147	.0006984	-.0064420	.0054195
315	-.1622726	-.0375381	-.0938689	.0027953	.0002765	-.0064204
320 B	-.1121705	-.0375470	-.0765514	.0033518	.0046675	-.0105486

MODE SHAPE NUMBER 29

FREQUENCY : 40.2261229

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000477	-.0006004	.0001460	.0001278	.0000550	.0001865
15	.0003966	-.0055440	.0010713	.0002800	.0000283	.0001980
20	.0002670	-.0079985	.0008384	.0003584	-.0000702	.0001356
25	.0004269	-.0080181	-.0001812	.0000572	-.0000702	-.0000204
30	.0001823	-.0080373	.0003665	-.0002716	-.0000702	-.0000859
35	-.0006937	-.0080543	.0035237	-.0005291	-.0000702	-.0001413
40	-.0018452	-.0080564	.0078648	-.0005736	-.0000702	-.0001518
45 B	-.0055899	-.0079234	.0051350	-.0002191	-.0001955	.0005408
45 E	-.0091293	-.0030066	.0018429	-.0012706	-.0002039	.0003000
50	-.0095434	.0000000	.0018486	-.0013134	-.0001525	.0001971
55	-.0081623	.0126386	.0018807	-.0004409	.0004624	-.0003864
60	-.0003903	.0088668	.0097009	.0026816	.0002653	-.0008736
65	.0000000	.0000000	.0097074	.0032413	-.0000010	-.0007667
70	-.0024281	-.0297570	.0097271	.0013993	-.0002733	-.0004146
75	-.0023990	-.0130963	.0096781	-.0034202	.0003708	.0000177
80 B	-.0002739	.0023939	.0096371	-.0037493	.0006372	.0001648
80 E	.0017827	.0180971	-.0016507	-.0005625	.0010142	.0005144
85	.0000000	.0181349	.0000000	.0018533	.0011340	.0006896
90	-.0359805	.0184882	.2154937	.0043320	.0023322	.0012289
95	.0022243	.0000000	.2154028	.0013126	.0010477	.0005008
100 B	.0052212	-.0098091	.2153303	.0005668	-.0001265	.0002709
100 E	.0008177	.0000548	.1931186	-.0076942	-.0024550	-.0000461
105	.0000000	-.0001869	.1090475	-.0126474	-.0051998	.0003670
110	-.0029212	-.0003467	.0438669	-.0120116	-.0070149	.0007267
115	-.0029290	.0000000	.0000000	-.0084710	-.0062666	-.0022662
120 B	-.0029544	.2002520	-.0498662	.0041742	-.0000149	-.0115295
120 E	-.0034930	.2215259	-.0498475	.0081758	-.0003115	-.0099452
125	-.0176813	.0176317	-.0497039	.0110605	-.0008617	-.0042630
130	.0000000	.0175988	.0000000	.0095775	-.0007375	-.0031927
130A	.0245299	.0174566	.0934873	-.0002838	-.0002405	.0004066
135	.0000000	.0172973	.0000000	-.0084160	.0002564	.0015285
135A	-.0190370	.0171211	-.2079197	-.0135977	.0007534	.0003228
137	-.0129673	.0169281	-.5895022	-.0304509	.0012504	-.0007706
138	.0022362	1.0000000	-.5911449	-.1168594	.0014436	-.0007706
140	.0000000	.0127068	.0000000	.0545267	.0009378	-.0006518
140A	.0049884	.0063584	.4172677	-.0134367	.0004689	.0001606
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
150	.0000000	.0000000	.0000000	.0000000	.0000000	-.0000001
155	.0000003	.0000000	-.0000000	.0000000	.0000000	-.0000001
160	.0000003	.0000002	.0000000	.0000000	.0000000	.0000000
165	.0000003	-.0000002	-.0000000	.0000000	.0000000	.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000003	-.0000002	.0000000	.0000000	.0000000	.0000000
175	.0000003	-.0000002	.0000000	.0000000	.0000000	.0000000
180 B	.0000001	-.0000001	-.0000000	-.0000000	-.0000000	.0000000
180 E	-.0000000	-.0000001	-.0000001	-.0000000	-.0000000	.0000000
185	.0000000	-.0000001	.0000000	.0000000	.0000000	-.0000000
185A	.0000005	-.0000001	-.0000002	-.0000000	.0000000	.0000000
190	.0000000	-.0000001	.0000000	.0000001	.0000000	.0000000
190A	.0000002	-.0000001	.0000014	-.0000001	.0000000	-.0000000
195	.0000000	-.0000001	.0000000	.0000000	.0000000	.0000000
200	-.0000004	-.0000001	.0000002	.0000000	.0000000	.0000000
205	.0000000	.0000000	.0000002	-.0000000	.0000000	.0000000
205A	.0000002	.0000002	.0000002	.0000000	.0000000	.0000000
210	.0000000	.0000000	.0000002	.0000000	.0000000	.0000000
210A	.0000001	.0000001	.0000002	.0000000	.0000000	.0000000
215	.0000000	.0000000	.0000002	.0000000	.0000000	.0000000
215A	.0000000	.0000000	.0000002	.0000000	.0000000	.0000000
220	.0000000	.0000000	.0000002	-.0000000	.0000000	-.0000000
225 B	.0000000	.0000001	.0000002	.0000000	.0000000	-.0000000
225 E	.0000000	-.0000001	.0000002	.0000000	.0000000	-.0000000
230	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
230A	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
235	.0000000	.0000000	.0000000	.0000001	.0000000	.0000000
235A	.0000000	.0000000	.0000000	.0000001	.0000000	.0000000
240	.0000000	.0000000	.0000000	.0000001	.0000000	.0000000
245	.0000000	.0000005	-.0000002	.0000001	.0000000	.0000000
250	.0000000	.0000000	-.0000002	.0000001	.0000000	.0000000
255 B	.0000001	-.0000001	-.0000002	.0000000	.0000000	.0000000
255 E	.0000000	-.0000000	-.0000001	.0000000	-.0000000	.0000000
260	.0000000	.0000000	.0000000	.0000000	-.0000000	.0000000
265 B	.0000001	-.0000001	-.0000000	.0000000	.0000000	.0000000
265 E	.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
270	.0000001	.0000000	-.0000000	.0000000	.0000000	.0000000
275	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
280	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
285	-.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
290	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
290A	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
295	.0000000	-.0000000	.0000000	.0000000	.0000000	.0000000
300	.0000001	-.0000000	-.0000000	.0000000	.0000000	.0000000
305	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 B	.0000000	.0000000	-.0000000	.0000000	.0000000	.0000000
310 E	-.0000000	.0000001	.0000001	.0000000	.0000000	-.0000000
315	-.0000000	.0000002	.0000003	-.0000000	.0000000	.0000000
320 B	.0000000	.0000002	.0000001	-.0000000	.0000000	.0000000

MODE SHAPE NUMBER 30

FREQUENCY : 41.4433265

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	..0000000	.0000000	.0000000	.0000000	.0000000
10	.0002550	-.0020124	.0006831	.0004761	.0002610	.0005987
15	.0019670	-.0176207	.0049727	.0010763	.0001214	.0004306
20	.0013498	-.0230514	.0036962	.0013577	-.0003434	-.0000329
25	.0008037	-.0231114	-.0003412	.0002975	-.0003434	-.0000992
30	.0006799	-.0231702	.0012151	-.0008803	-.0003434	.0000251
35	.0012722	-.0232223	.0118550	-.0018036	-.0003434	.0001129
40	.0022185	-.0232287	.0267006	-.0019642	-.0003434	.0001261
45 B	-.0017515	-.0228203	.0210987	-.0003755	-.0009029	.0000897
45 E	-.0061440	-.0088611	.0122893	-.0037188	-.0010929	-.0009652
50	-.0085312	.0000000	.0123072	-.0038854	-.0009977	-.0013640
55	-.0131856	.0358667	.0124050	-.0008384	.0005760	-.0036240
60	.0002796	.0367676	.0260221	.0111651	.0002447	-.0050840
65	.0000000	.0000000	.0260411	.0133998	-.0004063	-.0045107
70	-.0086168	-.1214096	.0260988	.0054062	-.0006894	-.0026236
75	-.0049444	-.0490992	.0259615	-.0138645	.0013975	-.0003065
80 B	.0023724	.0123551	.0258453	-.0144731	.0020832	.0004817
80 E	.0072702	.0695167	-.0116376	-.0005018	.0030250	.0020898
85	.0000000	.0696784	.0000000	.0087971	.0032844	.0028018
90	-.1266362	.0711954	.8407256	.0157947	.0058784	.0031531
95	-.0413264	.0000000	.8402957	.0076682	.0009875	-.0026299
100 B	-.0471607	-.0586293	.8399785	.0057745	-.0032655	-.0044561
100 E	-.0471563	-.0350619	.7646699	-.0287132	-.0123723	-.0065935
105	.0000000	-.0361134	.4403477	-.0491698	-.0232123	-.0049382
110	.0200565	-.0368054	.1881623	-.0459075	-.0303807	-.0029909
115	.0200367	.0000000	.0000000	-.0298813	-.0265779	-.0151767
120 B	.0199483	.9483097	-.1998136	.0273552	.0001324	-.0518183
120 E	.0153486	1.0000000	-.2005204	.0449586	-.0022050	-.0442446
125	-.0781337	.0037899	-.1998739	.0471180	-.0057106	-.0188450
130	.0000000	.0036160	.0000000	.0357460	-.0050287	-.0141426
130A	.1106309	.0029181	.2326981	-.0065872	-.0023013	.0017384
135	.0000000	.0022172	.0000000	-.0087836	.0004261	.0070273
135A	-.0893902	.0015139	.0059313	.0061788	.0031535	.0015704
137	-.0613025	.0008090	.1196019	.0026706	.0058809	-.0036258
138	.0108550	-.0915380	.1199558	.0110661	.0068765	-.0036258
140	.0000000	.0006073	.0000000	-.0097719	.0044107	-.0031015
140A	.0241454	.0003039	-.0760689	.0024080	.0022053	.0007643
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0000005	-.0000000	-.0000001	.0000000	.0000000	.0000001
150	.0000000	.0000001	.0000000	-.0000001	-.0000000	-.0000005
155	.0000027	.0000001	-.0000004	-.0000001	-.0000000	-.0000005
160	.0000028	.0000017	.0000000	-.0000001	.0000000	.0000001
165	.0000029	-.0000019	-.0000001	-.0000001	-.0000000	-.0000000

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0000029	-.0000019	.0000000	-.0000000	-.0000000	.0000000
175	.0000029	-.0000018	.0000001	-.0000000	-.0000000	.0000001
180 B	.0000007	-.0000013	-.0000005	-.0000001	-.0000001	.0000002
180 E	-.0000004	-.0000011	-.0000010	-.0000001	-.0000001	.0000002
185	.0000000	-.0000010	.0000000	-.0000000	.0000000	-.0000002
185A	.0000039	-.0000009	-.0000024	-.0000001	.0000001	.0000000
190	.0000000	-.0000008	.0000000	.0000005	.0000002	.0000001
190A	.0000014	-.0000007	.0000125	-.0000001	.0000003	-.0000001
195	.0000000	-.0000007	.0000000	-.0000001	.0000004	.0000003
200	-.0000036	-.0000006	.0000017	.0000001	.0000004	.0000004
205	.0000000	.0000000	.0000017	-.0000001	.0000003	.0000004
205A	.0000017	.0000016	.0000017	.0000000	-.0000001	.0000003
210	.0000000	.0000000	.0000017	.0000001	-.0000000	.0000002
210A	.0000007	.0000005	.0000017	-.0000000	.0000000	.0000001
215	.0000000	.0000000	.0000017	.0000000	-.0000000	.0000001
215A	.0000001	.0000001	.0000017	.0000000	.0000000	-.0000001
220	.0000000	.0000000	.0000017	-.0000001	.0000000	-.0000002
225 B	.0000002	.0000013	.0000018	.0000001	.0000000	-.0000003
225 E	.0000002	-.0000009	.0000017	.0000003	.0000000	-.0000002
230	.0000002	.0000000	.0000000	.0000003	.0000000	.0000001
230A	.0000003	-.0000000	.0000002	.0000004	-.0000000	-.0000000
235	.0000003	.0000000	.0000000	.0000005	.0000000	.0000000
235A	.0000003	.0000000	-.0000001	.0000005	-.0000000	-.0000000
240	.0000004	.0000000	.0000000	.0000006	.0000001	.0000001
245	.0000004	.0000040	-.0000017	.0000007	-.0000001	.0000001
250	-.0000000	.0000000	-.0000017	.0000004	-.0000000	.0000001
255 B	.0000007	-.0000012	-.0000017	-.0000001	.0000000	.0000001
255 E	.0000004	-.0000003	-.0000009	-.0000001	-.0000002	.0000001
260	.0000004	.0000000	.0000000	-.0000001	-.0000002	.0000001
265 B	.0000005	-.0000006	-.0000001	-.0000000	.0000000	.0000001
265 E	.0000005	-.0000001	-.0000001	-.0000000	.0000000	.0000001
270	.0000007	.0000003	-.0000002	.0000000	.0000000	.0000000
275	.0000000	.0000003	.0000000	.0000000	.0000000	.0000000
280	-.0000001	.0000003	.0000000	-.0000001	.0000000	-.0000000
285	-.0000001	-.0000002	.0000000	-.0000000	.0000000	-.0000000
290	.0000000	-.0000002	.0000000	.0000000	.0000000	-.0000000
290A	.0000001	-.0000003	.0000003	.0000000	.0000000	.0000000
295	.0000000	-.0000003	.0000000	-.0000000	.0000000	-.0000000
300	.0000005	-.0000003	-.0000001	.0000000	.0000000	-.0000001
305	.0000004	.0000000	-.0000001	.0000001	.0000000	-.0000001
310 B	.0000003	.0000001	-.0000001	.0000001	.0000001	-.0000001
310 E	-.0000002	.0000008	.0000005	-.0000001	.0000002	-.0000001
315	-.0000002	.0000015	.0000022	-.0000003	.0000001	-.0000001
320 B	.0000001	.0000015	.0000007	-.0000003	.0000001	.0000000

MODE SHAPE NUMBER 31

FREQUENCY : 42.5268893

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0000005	-.0000007	-.0000012	.0000001	-.0000004	.0000002
15	-.0000028	-.0000035	-.0000066	-.0000002	.0000002	-.0000002
20	-.0000002	.0000009	-.0000005	-.0000002	.0000008	-.0000002
25	-.0000008	.0000009	.0000004	-.0000001	.0000008	-.0000001
30	-.0000010	.0000009	.0000005	.0000000	.0000008	.0000000
35	.0000002	.0000009	-.0000004	.0000002	.0000008	.0000002
40	.0000015	.0000009	-.0000021	.0000002	.0000008	.0000002
45 B	-.0000026	.0000009	.0000002	.0000002	.0000005	.0000003
45 E	-.0000018	.0000001	.0000010	.0000001	.0000004	.0000002
50	-.0000010	.0000000	.0000010	.0000000	.0000004	.0000002
55	.0000025	.0000009	.0000010	-.0000001	.0000001	-.0000000
60	.0000009	.0000011	-.0000005	.0000003	-.0000003	-.0000001
65	.0000000	.0000000	-.0000005	.0000004	-.0000003	-.0000000
70	-.0000023	-.0000033	-.0000005	-.0000000	.0000001	.0000002
75	.0000020	.0000016	-.0000004	-.0000004	.0000003	.0000004
80 B	.0000030	.0000029	-.0000004	-.0000002	.0000002	.0000004
80 E	.0000013	.0000032	-.0000002	.0000001	.0000002	.0000005
85	.0000000	.0000032	.0000000	.0000000	.0000003	.0000003
90	-.0000011	.0000032	-.0000035	.0000001	.0000008	.0000002
95	.0000144	.0000000	-.0000035	-.0000002	.0000006	.0000010
100 B	.0000174	.0000020	-.0000035	-.0000004	.0000004	.0000013
100 E	.0000117	.0000037	-.0000047	-.0000001	.0000004	.0000016
105	.0000000	.0000037	-.0000039	.0000003	.0000004	.0000014
110	-.0000062	.0000037	-.0000023	.0000003	.0000004	.0000009
115	-.0000062	.0000000	.0000000	.0000003	.0000003	.0000003
120 B	-.0000062	.0000030	.0000003	.0000003	-.0000001	-.0000004
120 E	-.0000065	.0000034	-.0000002	.0000003	.0000000	-.0000004
125	-.0000028	-.0000001	-.0000002	.0000001	.0000003	-.0000006
130	.0000000	-.0000001	.0000000	.0000001	.0000002	-.0000006
130A	.0000060	-.0000001	.0000023	.0000000	.0000001	.0000000
135	.0000000	-.0000001	.0000000	-.0000001	.0000000	.0000004
135A	-.0000036	-.0000001	-.0000004	-.0000000	-.0000001	-.0000001
137	.0000017	-.0000001	-.0000012	.0000001	-.0000001	-.0000002
138	-.0000002	.0000006	-.0000012	-.0000001	-.0000002	-.0000002
140	.0000000	-.0000000	.0000000	-.0000003	-.0000001	.0000005
140A	-.0000141	-.0000000	-.0000144	.0000001	-.0000001	-.0000001
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.6892517	.0015660	-.0825594	.0006980	-.0025280	-.0058271
150	.0000000	.0031256	.0000000	-.0028092	-.0050560	.0234519
155	-.1712480	.0033368	-.0224459	-.0063625	-.0053999	.0406911
160	-.1747124	.9102660	.0000000	-.0362017	.0093516	-.0119201
165	-.1783240	-.8675940	-.0946414	-.0724719	-.0298533	-.0339813

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.1785775	-.9458931	.0000000	-.0753015	-.0392652	-.0230233
175	-.1788718	-1.0000000	.1470614	-.0786455	-.0521546	-.0105177
180 B	-.8057179	-.3611195	-.4919815	-.0642942	-.0809849	.0083212
180 E	-.9490498	-.2733540	-.6937330	-.0494410	-.0807379	.0041816
185	.0000000	-.2701885	.0000000	.0375987	-.0620145	-.0252117
185A	.3348349	-.2680126	.5073170	-.0012207	-.0531223	.0010009
190	.0000000	-.2654072	.0000000	-.0326385	-.0442301	.0211450
190A	-.3482145	-.2620748	-.5484185	.0007983	-.0345164	-.0007147
195	.0000000	-.2582412	.0000000	.0294032	-.0248027	-.0182484
200	.1702212	-.2565779	.1661258	-.0086224	-.0209365	-.0162914
205	.0000000	.0000000	.1671532	-.0333296	-.0160547	-.0155679
205A	-.1530838	.3141068	.1692703	.0025483	.0011493	-.0139752
210	.0000000	.0000000	.1711862	.0229151	.0113573	-.0123824
210A	.2090482	-.4128549	.1735321	-.0030107	-.0014030	-.0101466
215	.0000000	.0000000	.1754714	-.0107399	-.0056836	-.0079108
215A	.0533467	-.1240627	.1774979	.0032422	.0019240	-.0047756
220	.0000000	.0000000	.1787064	-.0022999	-.0020543	-.0016404
225 B	-.0092252	-.0308595	.1790461	.0031520	.0018037	.0003493
225 E	.0031006	-.0430956	.1639035	.0032163	.0039393	.0010172
230	.0030830	.0000000	.0000000	.0027703	.0022706	.0006023
230A	.0030515	-.0150614	.0572364	.0022551	-.0008355	-.0002223
235	.0030081	.0000000	.0000000	.0017398	.0010930	.0002924
235A	.0029525	-.0051896	.0203452	.0012201	-.0004166	-.0001130
240	.0028852	.0000000	.0000000	.0007004	.0005840	.0001626
245	.0028068	.0009130	.0029917	.0001825	-.0004913	-.0000331
250	.0000000	.0000000	.0029918	.0000980	-.0002744	-.0000241
255 B	.0014867	-.0002011	.0029908	-.0000446	.0003421	-.0000050
255 E	.0032929	.0000638	.0012142	-.0000714	.0003303	-.0000091
260	.0032957	.0000000	.0000000	-.0000800	.0002719	-.0000262
265 B	.0033172	-.0021418	-.0003515	-.0001864	-.0001093	.0000652
265 E	.0031643	-.0015736	.0000248	-.0001900	-.0001025	.0000989
270	.0022501	.0015317	.0009416	-.0001175	-.0000741	.0001491
275	.0000000	.0015333	.0000000	.0000038	-.0000190	.0000734
280	.0010397	.0015274	.0003330	-.0001059	.0001492	-.0000337
285	-.0000354	.0006715	.0003330	-.0001244	.0001534	-.0000155
290	.0000000	.0006708	.0000000	-.0001177	.0001499	-.0000117
290A	.0000739	.0006622	-.0016409	.0000319	.0001121	.0000047
295	.0000000	.0006519	.0000000	-.0000111	.0000743	-.0000075
300	.0001087	.0006483	-.0005492	-.0001061	.0000623	-.0000145
305	-.0002064	.0000000	-.0005492	-.0001261	.0000582	-.0000168
310 B	-.0002642	-.0001251	-.0005492	-.0001238	.0000577	-.0000172
310 E	-.0005476	-.0006148	-.0002677	-.0001000	.0000559	-.0000197
315	-.0005473	-.0003723	.0002700	-.0000628	.0000502	-.0000290
320 B	-.0003781	-.0003722	-.0000334	-.0000478	.0000432	-.0000307

MODE SHAPE NUMBER 32

FREQUENCY : 45.8198109

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	-.0000051	-.0000070	-.0000122	.0000008	-.0000046	.0000023
15	-.0000282	-.0000340	-.0000676	-.0000013	.0000018	-.0000017
20	-.0000013	.0000091	-.0000030	-.0000019	.0000084	-.0000022
25	-.0000107	.0000093	.0000045	-.0000008	.0000084	-.0000019
30	-.0000162	.0000094	.0000032	.0000008	.0000084	.0000001
35	.0000007	.0000097	-.0000051	.0000014	.0000084	.0000036
40	.0000317	.0000097	-.0000180	.0000017	.0000084	.0000042
45 B	-.0000168	.0000089	-.0000022	.0000014	.0000048	.0000027
45 E	-.0000112	.0000015	.0000054	.0000010	.0000031	.0000020
50	-.0000046	.0000000	.0000054	.0000002	.0000028	.0000018
55	.0000185	.0000169	.0000054	-.0000016	.0000008	.0000006
60	.0000080	.0000100	-.0000050	.0000029	-.0000024	.0000004
65	.0000000	.0000000	-.0000050	.0000038	-.0000030	.0000008
70	-.0000219	-.0000308	-.0000050	.0000000	.0000005	.0000023
75	.0000190	.0000143	-.0000040	-.0000046	.0000033	.0000041
80 B	.0000290	.0000302	-.0000039	-.0000028	.0000019	.0000047
80 E	.0000126	.0000356	-.0000032	.0000010	.0000023	.0000046
85	.0000000	.0000356	.0000000	.0000005	.0000030	.0000035
90	-.0000145	.0000356	-.0000349	.0000014	.0000095	.0000019
95	.0001586	.0000000	-.0000350	-.0000017	.0000067	.0000116
100 B	.0001911	.0000202	-.0000350	-.0000040	.0000043	.0000146
100 E	.0001274	.0000370	-.0000469	-.0000008	.0000036	.0000170
105	.0000000	.0000372	-.0000377	.0000027	.0000036	.0000148
110	-.0000648	.0000372	-.0000206	.0000035	.0000037	.0000097
115	-.0000649	.0000000	.0000000	.0000035	.0000026	.0000033
120 B	-.0000653	.0000417	.0000019	.0000035	-.0000009	-.0000038
120 E	-.0000647	.0000422	-.0000003	.0000034	.0000010	-.0000030
125	-.0000039	-.0000020	-.0000007	.0000005	.0000040	-.0000011
130	.0000000	-.0000020	.0000000	.0000004	.0000037	-.0000004
130A	-.0000074	-.0000020	.0000199	.0000000	.0000025	.0000002
135	.0000000	-.0000019	.0000000	-.0000004	.0000012	-.0000004
135A	.0000048	-.0000016	.0000117	.0000002	-.0000000	-.0000005
137	.0000148	-.0000013	.0000003	-.0000004	-.0000013	.0000001
138	-.0000017	-.0000005	.0000002	.0000001	-.0000016	.0000001
140	.0000000	-.0000009	.0000000	.0000003	-.0000009	.0000014
140A	-.0000210	-.0000006	.0000071	-.0000001	-.0000005	-.0000003
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0145866	.0000724	-.0197906	.0002803	.0002622	.0002061
150	.0000000	.0001436	.0000000	-.0011281	.0005244	-.0008295
155	.0048239	.0001533	-.0079179	-.0019836	.0005601	-.0006892
160	.0051666	.0197085	.0000000	-.0075672	-.0020369	.0004846
165	.0055627	-.0246858	.0184144	-.0143540	.0058236	-.0026612

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0055926	-.0322395	.0000000	-.0148835	.0076187	-.0028563
175	.0056277	-.0419791	-.0280647	-.0155092	.0093079	-.0031719
180 B	.1185246	.0816345	-.1518372	-.0118768	.0110746	-.0010324
180 E	.1349237	.0974992	-.1879323	-.0084511	.0103375	.0008202
185	.0000000	.0970904	.0000000	.0042552	-.0025669	-.0065046
185A	.2021512	.0966156	.0092512	-.0017921	-.0086955	-.0034024
190	.0000000	.0959607	.0000000	.0030267	-.0148241	.0203294
190A	-.4598478	.0950417	.1134008	.0014652	-.0215189	.0019629
195	.0000000	.0939116	.0000000	-.0089652	-.0282137	-.0282849
200	.2812397	.0934039	-.0573614	.0026742	-.0308783	-.0277904
205	.0000000	.0000000	-.0577899	.0134082	-.0309471	-.0266657
205A	-.4167228	-.1715536	-.0586749	.0008015	-.0027416	-.0241899
210	.0000000	.0000000	-.0594788	-.0166807	.0421433	-.0217140
210A	1.0000000	.3847484	-.0604686	.0014471	-.0031620	-.0182384
215	.0000000	.0000000	-.0612940	.0108275	-.0293526	-.0147627
215A	.1941078	.0914462	-.0621708	-.0032137	.0099888	-.0098891
220	.0000000	.0000000	-.0627149	.0020975	-.0108209	-.0050154
225 B	-.1939199	.0128822	-.0628863	-.0019226	-.0038552	-.0019225
225 E	-.2088218	.0155392	-.0499515	-.0017929	-.0023150	-.0011633
230	-.2080873	.0000000	.0000000	-.0009830	-.0008165	-.0000856
230A	-.2063630	.0007754	.0021486	-.0000473	.0004280	.0000344
235	-.2037079	.0000000	.0000000	.0008884	-.0009064	-.0000528
235A	-.2000986	-.0009134	.0311948	.0018322	.0008134	.0000369
240	-.1955708	.0000000	.0000000	.0027761	-.0023680	-.0000958
245	-.1901656	.0235633	-.2071621	.0037166	.0286359	.0023962
250	.0000000	.0000000	-.2069873	.0035515	.0230221	.0036493
255 B	.0155704	-.0462343	-.2065146	.0035971	-.0160479	.0063274
255 E	-.0867070	-.0301474	-.0932351	.0050226	-.0238281	.0074868
260	-.0868033	.0000000	.0000000	.0059761	-.0216573	.0074766
265 B	-.0875887	.1559054	.0857317	.0176983	.0123432	-.0041967
265 E	-.0685072	.1120421	.0401536	.0183258	.0133174	-.0053086
270	.0738073	-.1008950	-.1024146	.0120715	.0134261	-.0006639
275	.0000000	-.1011040	.0000000	.0006433	.0090198	.0047579
280	-.0320394	-.1009280	-.0192872	.0059810	-.0044281	-.0002473
285	.0019063	-.0519645	-.0192872	.0071783	-.0050017	.0005619
290	.0000000	-.0519217	.0000000	.0068431	-.0049584	.0009072
290A	-.0421649	-.0513807	.0951108	-.0021466	-.0044977	.0001013
295	.0000000	-.0506852	.0000000	.0018271	-.0040370	-.0013164
300	.0074261	-.0504336	.0482530	.0084433	-.0038913	-.0003416
305	.0277718	.0000000	.0482559	.0097334	-.0038873	.0002752
310 B	.0316599	.0096523	.0482559	.0095514	-.0039010	.0003927
310 E	.0515734	.0500896	.0278902	.0076728	-.0041944	.0011821
315	.0515415	.0314909	-.0146425	.0046584	-.0041444	.0025395
320 B	.0361022	.0314863	.0076270	.0034862	-.0037845	.0028962

MODE SHAPE NUMBER 33

FREQUENCY : 46.3681908

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000099	.0000137	.0000239	-.0000016	.0000090	-.0000045
15	.0000555	.0000663	.0001328	.0000026	-.0000035	.0000033
20	.0000024	-.0000175	.0000059	.0000036	-.0000165	.0000042
25	.0000200	-.0000178	-.0000085	.0000014	-.0000165	.0000035
30	.0000302	-.0000182	-.0000057	-.0000016	-.0000165	-.0000003
35	-.0000013	-.0000187	.0000100	-.0000027	-.0000165	-.0000067
40	-.0000587	-.0000188	.0000337	-.0000032	-.0000165	-.0000077
45 B	.0000332	-.0000172	.0000035	-.0000027	-.0000095	-.0000052
45 E	.0000215	-.0000030	-.0000114	-.0000019	-.0000061	-.0000039
50	.0000085	.0000000	-.0000114	-.0000004	-.0000055	-.0000034
55	-.0000372	-.0000317	-.0000114	.0000031	-.0000015	-.0000010
60	-.0000158	-.0000196	.0000099	-.0000056	.0000048	-.0000007
65	.0000000	.0000000	.0000098	-.0000074	.0000058	-.0000015
70	.0000429	.0000605	.0000097	-.0000000	-.0000011	-.0000044
75	-.0000373	-.0000282	.0000080	.0000090	-.0000064	-.0000080
80 B	-.0000570	-.0000593	.0000077	.0000055	-.0000037	-.0000092
80 E	-.0000247	-.0000698	.0000062	-.0000020	-.0000045	-.0000091
85	.0000000	-.0000698	.0000000	-.0000011	-.0000058	-.0000069
90	.0000286	-.0000699	.0000693	-.0000028	-.0000187	-.0000038
95	-.0003128	.0000000	.0000694	.0000034	-.0000132	-.0000228
100 B	-.0003772	-.0000402	.0000694	.0000079	-.0000086	-.0000288
100 E	-.0002515	-.0000737	.0000930	.0000016	-.0000071	-.0000336
105	.0000000	-.0000740	.0000749	-.0000054	-.0000072	-.0000292
110	.0001280	-.0000742	.0000412	-.0000070	-.0000073	-.0000192
115	.0001283	.0000000	.0000000	-.0000069	-.0000052	-.0000066
120 B	.0001290	-.0000792	-.0000041	-.0000068	.0000018	.0000078
120 E	.0001290	-.0000825	.0000013	-.0000065	-.0000018	.0000066
125	.0000170	.0000037	.0000019	-.0000010	-.0000074	.0000040
130	.0000000	.0000036	.0000000	-.0000009	-.0000068	.0000029
130A	-.0000129	.0000038	-.0000406	-.0000000	-.0000045	-.0000005
135	.0000000	.0000036	.0000000	.0000010	-.0000021	-.0000010
135A	.0000078	.0000030	-.0000180	-.0000003	.0000003	.0000013
137	-.0000311	.0000023	.0000012	.0000005	.0000026	.0000007
138	.0000033	-.0000003	.0000014	.0000001	.0000033	.0000007
140	.0000000	.0000017	.0000000	.0000001	.0000020	-.0000044
140A	.0000891	.0000010	.0000134	-.0000000	.0000010	.0000011
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.1092606	-.0002713	.0461044	-.0006987	.0006128	.0016570
150	.0000000	-.0005397	.0000000	.0028122	.0012256	-.0066687
155	.0439700	-.0005761	.0199161	.0051477	.0013090	-.0096998
160	.0449330	-.1576148	.0000000	.0226631	-.0007596	.0046976
165	.0459201	.2351965	.0107925	.0439534	.0033837	.0046257

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0459884	.2438013	.0000000	.0456144	.0045006	.0017222
175	.0460676	.2441524	-.0174799	.0475773	.0070808	-.0013483
180 B	.1842960	-.1377961	.3647853	.0373482	.0149470	-.0046753
180 E	.2205079	-.1881080	.4797388	.0274335	.0149096	-.0030581
185	.0000000	-.1877565	.0000000	-.0146927	.0096926	.0055874
185A	-.0594479	-.1870339	-.0918293	.0042544	.0072150	-.0008227
190	.0000000	-.1859542	.0000000	-.0025939	.0047374	-.0022445
190A	.0081836	-.1843706	-.1926032	-.0036842	.0020308	.0008964
195	.0000000	-.1823678	.0000000	.0175254	-.0006757	-.0013884
200	.0213753	-.1814554	.1186740	-.0043727	-.0017530	-.0024441
205	.0000000	.0000000	.1195478	-.0274994	-.0033012	-.0022804
205A	-.0706247	.3939001	.1213481	-.0033878	-.0014048	-.0019200
210	.0000000	.0000000	.1229766	.0413360	.0090399	-.0015595
210A	.2445623	-1.0000000	.1249689	-.0031932	-.0002520	-.0010535
215	.0000000	.0000000	.1266133	-.0284190	-.0080195	-.0005475
215A	.0184425	-.2309146	.1283254	.0083772	.0035283	.0001620
220	.0000000	.0000000	.1293344	-.0052730	-.0061707	.0008715
225 B	-.1717441	-.0393408	.1296074	.0054409	-.0036883	.0013218
225 E	-.1822035	-.0597765	.1342555	.0056640	.0006746	.0017061
230	-.1817075	.0000000	.0000000	.0054435	.0025047	.0008973
230A	-.1803516	-.0134893	.0486710	.0051887	-.0006937	-.0002930
235	-.1781622	.0000000	.0000000	.0049340	.0002876	.0002823
235A	-.1751198	-.0045747	.0396877	.0046770	.0003563	-.0000828
240	-.1712543	.0000000	.0000000	.0044200	-.0017220	.0000510
245	-.1666013	.0258370	-.1806654	.0041640	.0249837	.0024201
250	.0000000	.0000000	-.1805090	.0038040	.0203709	.0036754
255 B	.0204415	-.0469483	-.1800862	.0034959	-.0135637	.0063582
255 E	-.0674107	-.0300632	-.0819313	.0048240	-.0208309	.0074857
260	-.0674903	.0000000	.0000000	.0057376	-.0191219	.0074273
265 B	-.0681498	.1501644	.0871493	.0169699	.0113393	-.0040593
265 E	-.0504348	.1080348	.0449514	.0175693	.0124158	-.0050807
270	.0842589	-.0928929	-.0899880	.0112876	.0128249	-.0001286
275	.0000000	-.0931071	.0000000	.0002927	.0088319	.0051558
280	-.0248481	-.0929904	-.0174033	.0054167	-.0033547	-.0005203
285	.0013653	-.0488010	-.0174023	.0064744	-.0039026	.0003562
290	.0000000	-.0487630	.0000000	.0061739	-.0038921	.0007083
290A	-.0381728	-.0482763	.0852489	-.0019865	-.0037804	.0001285
295	.0000000	-.0476406	.0000000	.0018495	-.0036687	-.0012271
300	.0070723	-.0474090	.0461345	.0079635	-.0036334	-.0003394
305	.0261716	.0000000	.0461376	.0091410	-.0036641	.0002425
310 B	.0298393	.0090651	.0461376	.0089704	-.0036812	.0003534
310 E	.0486727	.0471040	.0268590	.0072035	-.0039738	.0011006
315	.0486434	.0296837	-.0134651	.0043644	-.0039301	.0023839
320 B	.0341383	.0296791	.0073876	.0032641	-.0035877	.0027242

MODE SHAPE NUMBER 34

FREQUENCY : 46.6152549

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0000062	.0000082	.0000150	-.0000010	.0000056	-.0000027
15	.0000347	.0000400	.0000830	.0000015	-.0000022	.0000019
20	.0000015	-.0000107	.0000034	.0000023	-.0000103	.0000028
25	.0000137	-.0000109	-.0000058	.0000009	-.0000103	.0000025
30	.0000211	-.0000111	-.0000042	-.0000010	-.0000103	-.0000001
35	-.0000006	-.0000115	.0000062	-.0000018	-.0000103	-.0000047
40	-.0000421	-.0000115	.0000227	-.0000023	-.0000103	-.0000056
45 B	.0000190	-.0000105	.0000026	-.0000016	-.0000058	-.0000032
45 E	.0000122	-.0000017	-.0000066	-.0000011	-.0000037	-.0000025
50	.0000044	.0000000	-.0000066	-.0000001	-.0000033	-.0000023
55	-.0000224	-.0000235	-.0000066	.0000022	-.0000009	-.0000010
60	-.0000096	-.0000122	.0000061	-.0000035	.0000029	-.0000008
65	.0000000	.0000000	.0000061	-.0000046	.0000036	-.0000013
70	.0000264	.0000375	.0000060	-.0000000	-.0000006	-.0000030
75	-.0000230	-.0000175	.0000049	.0000056	-.0000040	-.0000051
80 B	-.0000355	-.0000369	.0000048	.0000034	-.0000024	-.0000058
80 E	-.0000155	-.0000435	.0000038	-.0000013	-.0000030	-.0000057
85	.0000000	-.0000435	.0000000	-.0000007	-.0000038	-.0000043
90	.0000200	-.0000436	.0000432	-.0000017	-.0000123	-.0000026
95	-.0002044	.0000000	.0000432	.0000021	-.0000086	-.0000149
100 B	-.0002457	-.0000249	.0000432	.0000049	-.0000054	-.0000188
100 E	-.0001629	-.0000455	.0000577	.0000009	-.0000044	-.0000219
105	.0000000	-.0000457	.0000457	-.0000035	-.0000043	-.0000188
110	.0000818	-.0000458	.0000241	-.0000045	-.0000043	-.0000121
115	.0000820	.0000000	.0000000	-.0000045	-.0000029	-.0000038
120 B	.0000824	-.0000602	-.0000010	-.0000047	.0000008	.0000047
120 E	.0000791	-.0000571	-.0000002	-.0000045	-.0000019	.0000028
125	-.0000128	.0000026	.0000002	-.0000006	-.0000059	-.0000022
130	.0000000	.0000026	.0000000	-.0000003	-.0000055	-.0000033
130A	.0000610	.0000027	-.0000189	.0000001	-.0000038	-.0000002
135	.0000000	.0000026	.0000000	-.0000002	-.0000022	.0000040
135A	-.0000404	.0000022	-.0000249	-.0000004	-.0000005	.0000001
137	-.0000145	.0000018	-.0000046	.0000009	.0000012	-.0000021
138	.0000021	.0000038	-.0000046	-.0000007	.0000017	-.0000021
140	.0000000	.0000013	.0000000	-.0000019	.0000009	.0000016
140A	-.0000678	.0000008	-.0000712	.0000005	.0000004	-.0000004
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	.0940223	-.0001319	.0182002	-.0002840	.0007121	.0014681
150	.0000000	-.0002622	.0000000	.0011431	.0014243	-.0059085
155	.0381442	-.0002799	.0081958	.0021808	.0015212	-.0080244
160	.0392069	-.0985072	.0000000	.0107240	-.0024393	.0040828
165	.0403368	.1562151	.0250875	.0211085	.0079113	.0009319

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	.0404173	.1554445	.0000000	.0219186	.0104061	-.0014430
175	.0405109	.1463790	-.0390275	.0228760	.0139373	-.0040439
180 B	.2498797	-.0381973	.1456510	.0182704	.0216303	-.0043648
180 E	.2919178	-.0629499	.2023779	.0137108	.0209105	-.0013235
185	.0000000	-.0630200	.0000000	-.0079339	.0047495	-.0029080
185A	.1686382	-.0628647	-.0721381	.0015734	-.0029256	-.0040185
190	.0000000	-.0625879	.0000000	.0015408	-.0106008	.0192364
190A	-.4580474	-.0621483	-.0301784	-.0015351	-.0189851	.0022430
195	.0000000	-.0615659	.0000000	.0046808	-.0273695	-.0283269
200	.2816454	-.0612947	.0330038	-.0016689	-.0307065	-.0278178
205	.0000000	.0000000	.0333023	-.0094172	-.0311898	-.0266387
205A	-.4230296	.1428465	.0339246	-.0014902	-.0027970	-.0240433
210	.0000000	.0000000	.0344981	.0155039	.0426126	-.0214477
210A	1.0000000	-.3822587	.0352200	-.0011484	-.0040205	-.0178042
215	.0000000	.0000000	.0358428	-.0108583	-.0263508	-.0141605
215A	.3055208	-.0889978	.0365464	.0031337	.0053245	-.0090513
220	.0000000	.0000000	.0370476	-.0017449	.0049366	-.0039421
225 B	.4110000	-.0231203	.0372594	.0021763	.0152170	-.0006998
225 E	.4713515	-.0341769	-.0118896	.0019622	.0070857	.0002780
230	.4702509	.0000000	.0000000	.0002218	-.0012765	.0006962
230A	.4669313	-.0087164	-.0478193	-.0017887	.0000733	-.0002435
235	.4614316	.0000000	.0000000	-.0037994	.0009818	.0002841
235A	.4537011	.0002317	-.0789619	-.0058275	-.0015151	-.0001442
240	.4438151	.0000000	.0000000	-.0078557	.0051170	.0002965
245	.4318656	-.0623957	.4679114	-.0098768	-.0647766	-.0062889
250	.0000000	.0000000	.4675071	-.0093646	-.0529246	-.0095362
255 B	-.0578477	.1205773	.4664110	-.0092889	.0347930	-.0164765
255 E	.1685855	.0782584	.2127572	-.0129292	.0539881	-.0194534
260	.1687881	.0000000	.0000000	-.0153833	.0497596	-.0193814
265 B	.1704756	-.4025944	-.2392582	-.0455562	-.0301493	.0105997
265 E	.1231478	-.2905746	-.1266650	-.0471654	-.0332344	.0133169
270	-.2397872	.2436349	.2369310	-.0301278	-.0346800	-.0002773
275	.0000000	.2442196	.0000000	-.0006465	-.0240342	-.0144117
280	.0633356	.2439677	.0452975	-.0140840	.0084560	.0016563
285	-.0031680	.1290910	.0452945	-.0168427	.0099324	-.0007655
290	.0000000	.1289926	.0000000	-.0160772	.0099203	-.0017273
290A	.1000635	.1277258	-.2223705	.0052189	.0097920	-.0003780
295	.0000000	.1260613	.0000000	-.0050016	.0096637	.0032541
300	-.0189209	.1254533	-.1227476	-.0210961	.0096231	.0009267
305	-.0695576	.0000000	-.1227561	-.0241844	.0097212	-.0006152
310 B	-.0792895	-.0239853	-.1227563	-.0237354	.0097684	-.0009089
310 E	-.1292795	-.1247695	-.0715792	-.0190699	.0105500	-.0028944
315	-.1292019	-.0787294	.0355019	-.0115633	.0104389	-.0063172
320 B	-.0907263	-.0787174	-.0197613	-.0086521	.0095335	-.0072305

MODE SHAPE NUMBER 35

FREQUENCY : 49.7622471

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
5	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
10	.0003125	-.0013834	.0007084	.0003496	.0002752	.0003848
15	.0021376	-.0093824	.0049321	.0006760	.0000802	-.0001740
20	.0014301	-.0056461	.0032145	.0007369	-.0003352	-.0009758
25	-.0013496	-.0056667	.0005730	.0003436	-.0003352	-.0002696
30	-.0009837	-.0056868	.0003498	-.0001866	-.0003352	.0003840
35	.0043494	-.0057039	.0036489	-.0006097	-.0003352	.0009428
40	.0122370	-.0057062	.0087818	-.0006851	-.0003352	.0010503
45 B	.0256579	-.0055541	.0119080	.0000530	-.0005797	-.0022190
45 E	.0333094	-.0020890	.0099601	-.0009056	-.0007890	-.0021413
50	.0314230	.0000000	.0099646	-.0008434	-.0008934	-.0020807
55	.0171980	.0040557	.0099860	.0002746	-.0012399	-.0017373
60	.0025228	.0078024	-.0046398	.0024331	-.0009100	-.0014974
65	.0000000	.0000000	-.0046360	.0027643	-.0007379	-.0013785
70	-.0032873	-.0222330	-.0046223	.0005013	.0001267	-.0009869
75	.0014343	-.0013072	-.0045485	-.0026020	.0002519	-.0005062
80 B	.0017210	.0084974	-.0045068	-.0018791	-.0001465	-.0003427
80 E	.0001133	.0127931	-.0043508	.0010457	-.0013283	-.0000637
85	.0000000	.0128225	.0000000	.0016602	-.0018975	.0001621
90	.0151101	.0130896	.0531839	.0002056	-.0075893	-.0031542
95	-.1309084	.0000000	.0531182	.0038099	-.0064310	-.0107311
100 B	-.1651780	-.0293802	.0530810	.0049117	-.0051218	-.0131238
100 E	-.1161114	-.0480396	.0649567	.0004564	-.0050740	-.0152193
105	.0000000	-.0482084	.0523374	-.0030558	-.0055564	-.0139804
110	.0642251	-.0483136	.0346684	-.0034461	-.0058754	-.0103668
115	.0643408	.0000000	.0000000	-.0027614	-.0048958	-.0062959
120 B	.0646724	.0377419	-.0217364	-.0003161	.0027840	.0038516
120 E	.0849823	.0100563	-.0036892	-.0000020	.0042818	.0091687
125	.1200080	.0001031	-.0036560	.0007940	-.0028731	.0238449
130	.0000000	.0000997	.0000000	.0006845	-.0073558	.0267035
130A	-.4120946	.0000856	.0049927	-.0001147	-.0252869	.0053648
135	.0000000	.0000721	.0000000	-.0002150	-.0432179	-.0486626
135A	1.0000000	.0000594	-.0007026	.0000815	-.0611490	-.0326056
137	.8693168	.0000468	.0007606	.0000035	-.0790801	.0427305
138	-.0696902	.0001698	.0007634	-.0000180	-.0882962	.0427305
140	.0000000	.0000353	.0000000	-.0000609	-.0593100	.0492308
140A	-.4413337	.0000172	-.0005909	.0000150	-.0296550	-.0121317
145	.0000000	.0000000	.0000000	.0000000	.0000000	.0000000
145A	-.0000038	.0000005	.0000065	-.0000002	.0000002	-.0000023
150	.0000000	-.0000028	.0000000	.0000008	.0000004	.0000092
155	-.0000500	-.0000029	.0000050	.0000012	.0000004	.0000081
160	-.0000513	-.0000476	.0000000	.0000042	-.0000003	-.0000012
165	-.0000522	.0000857	.0000041	.0000078	.0000013	.0000014

DATA PT	DISPLACEMENTS			ROTATIONS		
	DX	DY	DZ	RX	RY	RZ
170	-.0000522	.0000876	.0000000	.0000081	.0000015	-.0000001
175	-.0000522	.0000848	-.0000050	.0000084	.0000020	-.0000014
180 B	.0000051	.0000158	.0000645	.0000073	.0000052	-.0000040
180 E	.0000272	.0000059	.0000874	.0000050	.0000053	-.0000035
185	.0000000	.0000036	.0000000	.0000074	.0000022	-.0000004
185A	.0000266	.0000021	.0002350	.0000037	.0000008	.0000002
190	.0000000	-.0000010	.0000000	-.0000222	-.0000007	-.0000004
190A	.0000389	-.0000025	-.0004319	.0000045	-.0000023	.0000005
195	.0000000	-.0000039	.0000000	.0000038	-.0000039	-.0000017
200	.0000362	-.0000043	-.0000461	-.0000048	-.0000045	-.0000044
205	.0000000	.0000000	-.0000469	.0000017	-.0000026	-.0000040
205A	.0000006	-.0000303	-.0000482	.0000004	.0000006	-.0000031
210	.0000000	.0000000	-.0000483	-.0000031	.0000000	-.0000021
210A	.0000118	.0000744	-.0000481	.0000002	.0000001	-.0000008
215	.0000000	.0000000	-.0000481	.0000023	-.0000004	.0000005
215A	.0000014	.0000150	-.0000491	-.0000012	.0000002	.0000023
220	.0000000	.0000000	-.0000497	.0000024	-.0000003	.0000042
225 B	-.0000087	-.0000240	-.0000505	-.0000035	-.0000002	.0000053
225 E	-.0000097	.0000237	-.0000492	-.0000056	-.0000006	.0000038
230	-.0000101	.0000000	.0000000	-.0000072	-.0000011	-.0000017
230A	-.0000101	.0000012	-.0000039	-.0000091	.0000004	.0000005
235	-.0000106	.0000000	.0000000	-.0000109	-.0000003	-.0000003
235A	-.0000112	-.0000009	.0000030	-.0000128	.0000004	.0000004
240	-.0000115	.0000000	.0000000	-.0000146	-.0000013	-.0000013
245	-.0000117	-.0000950	.0000406	-.0000165	.0000017	-.0000032
250	.0000000	.0000000	.0000404	-.0000108	.0000007	-.0000031
255 B	-.0000137	.0000326	.0000401	.0000018	-.0000000	-.0000029
255 E	-.0000048	.0000096	.0000231	.0000017	.0000052	-.0000026
260	-.0000049	.0000000	.0000000	.0000016	.0000055	-.0000019
265 B	-.0000076	.0000202	-.0000156	-.0000003	-.0000032	-.0000030
265 E	-.0000135	.0000087	-.0000030	-.0000008	-.0000041	-.0000034
270	-.0000617	.0000012	.0000438	-.0000027	-.0000046	-.0000030
275	.0000000	.0000020	.0000000	-.0000016	-.0000031	-.0000026
280	.0000121	.0000003	.0000044	.0000004	.0000014	.0000007
285	.0000013	-.0000003	.0000042	-.0000011	.0000015	.0000005
290	.0000000	-.0000002	.0000000	-.0000013	.0000014	.0000003
290A	.0000119	.0000009	.0000026	.0000001	-.0000002	.0000001
295	.0000000	.0000013	.0000000	.0000010	-.0000017	-.0000006
300	.0000093	.0000013	.0000092	.0000002	-.0000022	-.0000009
305	.0000218	.0000000	.0000092	-.0000000	-.0000027	-.0000003
310 B	.0000245	.0000000	.0000092	.0000002	-.0000028	-.0000002
310 E	.0000414	.0000035	-.0000100	.0000032	-.0000043	.0000006
315	.0000413	-.0000082	-.0000535	.0000079	-.0000041	.0000023
320 B	.0000266	-.0000081	-.0000079	.0000078	-.0000033	.0000022

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

ORTHOGONALITY CHECK OF EIGENVECTORS
 (UPPER TRIANGLE OF THE SYMMETRICAL MATRIX)

1	2	3	4	5	6	7	8
.10000+01	.42334-07 .10000+01	.53325-13 -.73876-13 .10000+01	.90622-08 -.66675-08 -.33895-13 .10000+01	.44002-08 .23272-09 -.20351-12 -.21687-08 .10000+01	-.16384-14 .40642-14 -.38632-08 -.25961-12 -.28358-12 .10000+01	-.25800-08 .12976-08 .66903-14 .46173-08 -.24122-08 -.63676-13 .10000+01	-.64902-14 .81287-14 -.35202-08 .26533-12 .14434-12 -.55329-08 -.49254-12 .10000+01
9	10	11	12	13	14	15	16
-.74570-14 .98878-14 .15630-10 .14171-12 -.20514-12 .54653-08 -.21264-13 -.61917-08 .10000+01	-.45484-08 .16336-09 -.30456-14 .42220-08 .40916-09 .47943-13 -.32395-07 -.20484-12 -.63550-12 .10000+01	-.59082-09 .51538-09 .59319-13 -.10908-08 -.35271-09 .96746-13 -.36979-08 -.34086-13 -.47153-12 -.11721-07 .10000+01	.16998-12 -.20322-12 -.20226-09 .54481-13 -.71487-15 -.57436-09 .59991-13 .21866-08 .28238-08 .49766-12 -.66806-19 .10000+01	-.15871-12 .19110-12 .78075-08 -.10435-13 -.13507-14 -.11278-09 -.95429-13 .18434-08 -.32984-08 .87904-19 -.11854-18 .69152-07 .10000+01	.22822-14 -.21947-14 .60365-10 -.53534-13 .64873-14 .86094-09 .10563-12 .26711-08 -.15562-07 .38614-19 -.57203-20 .12736-07 -.14381-07 .10000+01	.43405-12 -.55801-12 .31101-09 -.14106-14 .35846-12 .17836-08 -.13149-12 .36472-08 -.10157-07 -.10927-17 .21770-18 -.20857-07 .20565-07 .61181-08 .10000+01	-.41811-10 .74710-08 -.28719-13 .32299-08 .84961-08 .72591-13 -.31681-08 .10967-12 .40838-12 -.37831-08 -.61527-08 .49382-18 -.17312-18 .68784-19 .54127-18 .10000+01
17	18	19	20	21	22	23	24
-.14144-12 -.17665-12 -.82732-08 .15224-13 .76180-18 .10227-08 -.11314-12 .12929-08 -.44637-09 -.14585-17 -.53340-17 .67237-08 -.45659-09	.41944-11 -.41147-10 -.47963-13 .17821-08 .78984-09 -.60513-13 .25710-08 .46902-12 .58086-12 .27117-08 .68726-08 .17448-17 .74553-17	-.79698-12 .92795-12 -.75316-11 -.21491-13 .79189-18 -.15187-10 .32950-13 -.20177-09 -.10047-11 -.57975-18 -.33110-18 -.14193-08 .45980-09	-.37981-14 -.45932-13 .27200-09 -.70799-14 -.68478-12 .21587-08 .21596-13 .85943-09 .12743-08 -.13664-17 -.62743-18 -.72045-09 .15499-09	.65759-15 -.59097-15 .20822-09 .78047-12 -.22715-14 .216749-09 -.17387-13 .49367-08 .13942-08 .94861-13 .72613-17 .57098-08 -.29103-08	-.14639-15 -.55410-16 .27063-09 -.51767-14 .40183-14 .66674-09 .13378-13 .27733-08 .53917-08 .53210-12 .40625-17 -.13374-08 .84021-09	-.26129-14 -.13337-16 -.28134-08 .82300-13 .21739-14 .99136-10 -.19776-13 .45156-09 -.65844-10 -.86116-16 .24944-17 .20010-08 -.47609-08	.81847-15 -.73670-15 .17493-09 .46058-12 .11099-13 .64137-08 .75088-12 -.60482-09 .77456-09 .33723-12 .85869-16 .14171-09 -.29539-09

ORTHOGONALITY CHECK OF EIGENVECTORS

ME101/I2

DATE 040182

PAGE 437

.84721-09	.97737-18	.10964-09	.65643-10	.28376-09	-.10837-08	-.31809-09	-.38406-10
-.10034-08	.52341-17	-.81001-09	-.13593-08	-.46057-08	-.31065-08	.19261-09	.68903-09
-.41995-18	.66915-08	-.23085-17	-.11670-17	.39216-15	.10054-15	.17034-16	-.38944-16
.10000+01	-.87309-17	-.27602-09	-.32129-09	-.17344-09	-.27384-09	-.14408-07	-.20834-09
	.10000+01	-.22306-16	-.56851-17	.29234-15	-.79736-16	.13738-15	.17881-15
		.10000+01	-.78928-11	.90418-10	-.22518-09	.47281-10	.69862-10
			.10000+01	.23533-09	-.42632-09	.14346-10	-.56632-08
				.10000+01	.65140-08	.31842-09	-.69763-09
					.10000+01	-.47845-09	-.53275-08
						.10000+01	-.19178-09
							.10000+01

25	26	27	28	29	30	31	32
-.21248-08	-.91640-14	.70547-14	-.75100-15	-.20271-09	.54954-10	-.22158-13	-.99970-13
-.18360-08	.81236-15	.95599-12	.18262-18	.26774-10	.11738-08	.97214-14	-.11876-12
.20822-12	-.75544-10	.60112-10	.31895-10	.17394-15	.30891-14	.15554-08	-.89323-09
.44100-08	.14532-12	-.36164-14	-.71797-12	-.91377-09	-.98847-08	.20192-13	-.85948-12
-.87948-08	-.26164-14	-.10047-14	-.23404-14	-.39212-09	-.25107-08	-.34764-14	-.57050-13
.83932-15	-.24101-08	.12208-09	.21061-08	.19703-13	.23073-12	.25393-10	.66763-09
-.51357-08	-.12564-16	-.10307-12	.33284-13	.47006-09	.68711-08	.22386-12	-.59589-13
-.31183-12	.28859-09	.11516-08	-.16354-09	.80828-15	.20007-13	-.22173-08	-.52052-09
-.54460-16	-.13411-09	-.27306-09	.23491-09	.22417-13	.37590-13	.70476-09	-.16530-08
-.11752-08	.22476-15	.20468-12	-.47067-12	.49203-09	.65090-08	-.18821-12	-.31059-12
.70991-09	.65060-16	.22625-14	.12488-15	-.42594-08	.12823-08	-.80469-14	.46111-13
.11028-14	.36417-09	.73924-09	.23457-10	.99978-15	.38607-14	.14680-07	-.31286-09
.22468-15	-.13563-09	-.37749-08	-.19829-10	.96377-15	.10263-13	-.86639-08	.30787-09
-.23629-16	-.37380-09	-.56589-09	.12333-09	.32276-12	-.45857-14	-.89054-09	-.13125-08
-.37491-15	.21877-09	.19677-08	.77697-10	-.90662-15	-.81843-14	.33648-08	.33599-09
-.48569-09	-.31493-15	.12707-13	-.19443-15	-.55052-09	-.28243-08	-.27571-14	.68703-12
-.49214-16	-.15228-09	-.25391-09	-.85806-11	.14801-15	-.53830-14	-.25630-09	-.10239-08
-.46615-08	.23403-15	.72356-14	-.54327-15	-.23342-08	.17065-07	-.11266-13	-.18781-12
.15925-16	.35475-09	-.90154-08	.26894-11	.16586-15	.39199-14	.41729-08	.31783-09
-.28413-16	-.50436-08	-.73099-10	.53037-09	-.43042-16	-.44519-14	-.64871-10	-.62179-09
-.25171-13	.55794-10	.15840-08	.91447-11	.10037-14	.18954-13	.22831-07	-.53149-09
.31063-13	.17959-08	.16610-08	.10008-08	-.38860-15	-.64595-14	-.38815-08	.15950-08
-.12398-13	.22724-10	.28007-09	.26948-10	-.99587-14	-.30609-14	-.65572-09	-.13076-09
-.23212-13	.46199-08	.33365-09	-.59127-08	-.35550-15	-.20124-14	-.28839-09	.31254-08
.10000+01	.24256-13	-.42449-12	-.36263-13	-.62647-09	.32472-08	.86656-14	-.26663-12
	.10000+01	.34333-08	.33151-08	-.29923-13	.11391-14	-.18957-09	.14517-08
		.10000+01	.44118-10	-.17364-12	-.96514-13	.52837-08	-.55249-08
			.10000+01	.15682-12	-.88143-14	.90764-11	-.11468-08
				.10000+01	-.15994-07	.19228-14	.98670-14
					.10000+01	-.26120-13	.12834-11
						.10000+01	.16956-08
							.10000+01

33	34	35
.38603-12	.65141-13	.14351-08
-.24642-12	.22818-12	.17330-08
.27451-08	.59728-09	.41072-12
-.29234-12	.24202-12	-.70724-09
-.17463-12	.13621-12	.12767-09
-.15030-10	-.25042-08	-.56599-12
.52411-12	.35980-12	.34159-09
-.32011-08	-.73492-09	-.83026-12
-.91484-09	.26767-08	-.22208-12
-.14825-12	.61619-13	.26047-09
-.16727-12	.54984-13	.11295-13
-.31815-08	-.16638-08	.30840-12

ORTHOGONALITY CHECK OF EIGENVECTORS

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.18125-08	.88927-09	-.10074-11
.21799-09	.12936-08	-.10543-12
-.12440-08	.34123-09	.92541-12
-.30442-12	.30781-12	-.50629-09
.54979-09	.34236-09	-.49762-13
.81862-12	.38486-12	.67079-09
-.28611-08	-.83023-09	-.18924-12
.74012-09	-.23679-08	.83936-13
.77198-09	-.75530-09	-.12199-11
.10346-08	-.54888-09	.27691-12
-.73223-09	-.37257-09	-.49256-14
.85430-09	-.65501-08	-.44620-13
-.12083-12	-.10886-13	.34272-09
.12539-08	-.11940-08	.24236-12
.23755-08	-.18890-09	-.27327-11
.17260-09	.41270-09	.17696-12
-.21419-12	-.12363-12	-.72597-09
-.14985-11	-.10458-11	-.75003-08
.98694-09	-.67813-08	.33670-11
.36754-09	.39015-07	.31414-12
.10000+01	-.21293-08	-.47893-11
	.10000+01	-.18189-12
		.10000+01

MODAL ACCELERATIONS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO3

TITLE OF RESPONSE SPECTRUM : ENVELOPE OF SRVRBC719

MODAL ACCELERATIONS (G'S)					
MODE	FREQUENCY (CPS)	CLOSELY SPACED MODE GROUP	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	12.309859	1	.2407	1.0347	.1419
2	12.350390	1	.2427	1.0743	.1429
3	14.860653	2	.5138	1.6900	.2173
4	15.102113	2	.5383	1.6900	.2245
5	15.865048	2	.5795	1.6900	.2463
6	16.319606	2	.5812	1.6900	.2734
7	17.625497	3	.5861	1.5362	.3643
8	17.906043	3	.5871	1.4235	.3830
9	20.147381	4	.5968	.6692	.4648
10	21.577264	4	.6196	.6230	.5158
11	24.167456	5	.6637	.5033	.6577
12	24.587541	5	.6795	.4634	.6795
13	24.622173	5	.6812	.4602	.6812
14	24.806387	5	.6907	.4429	.6907
15	25.568806	5	.7289	.4011	.7289
16	25.628638	5	.7318	.4002	.7318
17	27.901274	6	1.0369	.3672	1.0369
18	28.462847	6	1.1179	.3595	1.1179
19	28.724004	6	1.1550	.3583	1.1550
20	30.769005	7	1.4345	.3525	1.4345
21	33.622362	7	1.5940	.3449	1.5940
22	34.521890	8	1.5940	.3361	1.5940
23	34.785006	8	1.5940	.3321	1.5940
24	35.387578	8	1.5940	.3232	1.5940
25	35.717984	8	1.5940	.3183	1.5940
26	36.559448	8	1.5940	.3062	1.5940
27	37.071546	8	1.5940	.2990	1.5940
28	38.527576	9	1.5940	.2789	1.5940
29	40.226110	9	1.5940	.2565	1.5940
30	41.443313	9	1.5940	.2409	1.5940
31	42.526875	10	1.5909	.2330	1.5909
32	45.819796	10	1.2269	.2271	1.2269
33	46.368176	10	1.1688	.2266	1.1688
34	46.615240	10	1.1429	.2264	1.1429
35	49.762231	11	.9645	.2240	.9645

PARTICIPATION FACTORS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEIS03

MODE	PARTICIPATION FACTORS		
	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	.39513	.00455	-.04227
2	-.12891	-.04626	.04588
3	.00092	-.04266	-.02003
4	-.03295	.48940	.11323
5	.07973	.14615	-.02398
6	.03640	.08748	-.14855
7	-.07425	.11417	-.03386
8	.00060	-.22510	-.23477
9	-.06253	.04526	-.06718
10	-.10046	-.00532	-.27622
11	-.01028	-.14964	-.35243
12	.00179	-.13246	.03589
13	-.01261	.00938	-.04116
14	.08228	.02812	-.00848
15	-.05115	.02652	.05303
16	.34712	-.10573	-.09277
17	-.00078	.10676	.01499
18	.12562	-.04504	.35465
19	-.01396	.00030	-.11814
20	.00504	-.21477	-.04178
21	-.04845	.11131	.03007
22	.04035	-.00849	.21813
23	-.00008	.24210	.01030
24	.03791	-.14697	-.03798
25	-.27959	-.31791	.15440
26	-.09118	.00755	.01433
27	-.12218	.04240	.02557
28	.12887	-.02295	-.01072
29	-.00500	.18369	-.09277
30	-.01878	-.06637	.19824
31	-.12229	-.10546	.02943
32	-.07321	.06213	-.06685
33	-.07238	-.19536	.11571
34	.33312	-.01229	.03808
35	.06027	-.02614	.00837

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***
*** CORE CHANGED FROM 40800 TO 43365 DECIMAL WORDS ***
*** CORE CHANGED FROM 43365 TO 39763 DECIMAL WORDS ***

MODAL ACCELERATIONS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO4

TITLE OF RESPONSE SPECTRUM : ENVELOPE OF CHGCORBC719

MODAL ACCELERATIONS (G'S)					
MODE	FREQUENCY (CPS)	CLOSELY SPACED MODE GROUP	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	12.309859	1	.2631	1.7007	.2631
2	12.350390	1	.2655	1.7542	.2655
3	14.860653	2	.5088	2.4600	.5088
4	15.102113	2	.5412	2.4600	.5412
5	15.865048	2	.6577	2.4600	.6577
6	16.319606	2	.7509	2.4600	.7509
7	17.625497	3	1.0454	2.2600	1.0507
8	17.906043	3	1.1452	2.2600	1.1567
9	20.147381	4	2.2017	1.2032	2.2174
10	21.577264	4	3.0313	1.0419	3.0336
11	24.167456	5	5.4655	.7539	5.4655
12	24.587541	5	5.8117	.7262	5.8117
13	24.622173	5	5.8378	.7239	5.8378
14	24.806387	5	5.9761	.7119	5.9761
15	25.568806	5	6.5375	.6705	6.5375
16	25.628638	5	6.5808	.6683	6.5808
17	27.901274	6	6.9096	.5979	6.9096
18	28.462847	6	6.9096	.5826	6.9096
19	28.724004	6	6.9096	.5826	6.9096
20	30.769005	7	6.9096	.5826	6.9096
21	33.622362	7	6.9096	.5863	6.9096
22	34.521890	8	6.9077	.6073	6.9077
23	34.785006	8	6.8848	.6139	6.8848
24	35.387578	8	6.8329	.6300	6.8329
25	35.717984	8	6.8049	.6387	6.8049
26	36.559448	8	6.7346	.6605	6.7346
27	37.071546	8	6.6926	.6720	6.6926
28	38.527576	9	6.3924	.6900	6.3924
29	40.226110	9	5.7368	.6972	5.7368
30	41.443313	9	5.0206	.6972	5.0206
31	42.526875	10	4.3958	.6972	4.3958
32	45.819796	10	3.8521	.7752	3.8571
33	46.368176	10	3.7891	.7934	3.7891
34	46.615240	10	3.7497	.8016	3.7497
35	49.762231	11	3.5239	.8408	3.5239

*** CORE CHANGED FROM 39763 TO 40800 DECIMAL WORDS ***

MODAL ACCELERATIONS

TIME FOR ME101P2 38.189

@XQT *ME101.ME101LC

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EFFECTIVE ACCELERATIONS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO1

EARTHQUAKE COMPONENT : X+Y+Z
RESULTS OF MODAL SYNTHESIS

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
5	.000	.000	.000	.000
10	.015	.048	.035	.061
15	.153	.320	.365	.509
20	.231	.731	.550	.944
25	.562	.732	.238	.953
30	1.489	.732	.493	1.731
35	3.258	.732	1.491	3.657
40	5.238	.733	2.651	5.917
45 B	2.139	.729	1.519	2.723
45 E	2.601	.233	1.938	3.252
50	2.474	.000	1.938	3.143
55	1.533	1.109	1.937	2.708
60	.282	.477	1.020	1.160
65	.000	.000	1.019	1.019
70	.859	1.905	1.019	2.325
75	1.480	3.813	1.017	4.214
80 B	1.596	4.230	1.016	4.634
80 E	.658	4.716	.390	4.778
85	.000	4.715	.000	4.715
90	5.361	4.706	1.211	7.235
95	2.204	.000	1.210	2.515
100 B	1.643	.714	1.210	2.162
100 E	1.048	.970	.990	1.737
105	.000	.969	.514	1.096
110	.772	.968	.347	1.286
115	.772	.000	.000	.772

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	.772	2.403	.298	2.542
120 E	.667	2.175	.373	2.305
125	.138	.010	.372	.397
130	.000	.010	.000	.010
130A	.288	.009	.483	.562
135	.000	.008	.000	.008
135A	.819	.007	.905	1.220
137	.934	.007	.900	1.297
138	5.952	.769	.901	6.068
140	.000	.005	.000	.005
140A	.317	.002	.297	.435
145	.000	.000	.000	.000
145A	.645	.001	.491	.811
150	.000	.002	.000	.002
155	.239	.002	.108	.263
160	.240	1.482	.000	1.502
165	.240	1.773	.034	1.790
170	.240	1.753	.000	1.769
175	.240	1.728	.052	1.745
180 B	.344	1.575	.284	1.636
180 E	.389	1.560	.363	1.648
185	.000	1.557	.000	1.557
185A	.129	1.555	.330	1.595
190	.000	1.552	.000	1.552
190A	.237	1.549	1.315	2.046
195	.000	1.545	.000	1.545
200	.143	1.543	1.850	2.413
205	.000	.000	1.851	1.851
205A	.211	.920	1.855	2.082
210	.000	.000	1.859	1.859
210A	.517	.628	1.863	2.033
215	.000	.000	1.866	1.866
215A	.571	.797	1.869	2.111
220	.000	.000	1.871	1.871
225 B	.256	1.126	1.871	2.199
225 E	.311	1.180	1.726	2.114

EFFECTIVE ACCELERATIONS

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	.311	.000	.000	.311
230A	.309	.671	1.104	1.329
235	.307	.000	.000	.307
235A	.303	.635	.815	1.077
240	.299	.000	.000	.299
245	.294	.104	.477	.570
250	.000	.000	.477	.477
255 B	.635	.222	.477	.824
255 E	.875	.152	.212	.913
260	.875	.000	.000	.875
265 B	.876	1.471	1.939	2.587
265 E	.851	1.353	1.971	2.537
270	.625	.364	1.964	2.093
275	.000	.363	.000	.363
280	.403	.361	.088	.548
285	.041	.210	.088	.232
290	.000	.210	.000	.210
290A	.374	.209	.480	.643
295	.000	.207	.000	.207
300	.127	.206	.300	.385
305	.090	.000	.300	.313
310 B	.098	.038	.300	.318
310 E	.181	.172	.191	.314
315	.181	.089	.050	.208
320 B	.130	.089	.051	.166
320 E	.041	.038	.041	.069
500	.000	.000	.000	.000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
5	ANC		80.	68.	61.	46.	38.	29.
25	RAD		46.	0.	108.	0.	0.	0.
50	RAD		0.	88.	0.	0.	0.	0.
65	RAD		54.	0.	0.	0.	0.	0.
65	RAD		0.	165.	0.	0.	0.	0.
85	RAD		91.	0.	0.	0.	0.	0.
85	RAD		0.	0.	126.	0.	0.	0.
95	RAD		0.	343.	0.	0.	0.	0.
105	RAD		56.	0.	0.	0.	0.	0.
115	RAD		0.	149.	0.	0.	0.	0.
115	RAD		0.	0.	79.	0.	0.	0.
130	RAD		19.	0.	0.	0.	0.	0.
130	RAD		0.	0.	45.	0.	0.	0.
135	RAD		43.	0.	0.	0.	0.	0.
135	RAD		0.	0.	24.	0.	0.	0.
140	RAD		120.	0.	0.	0.	0.	0.
140	RAD		0.	0.	21.	0.	0.	0.
145	ANC		23.	32.	6.	9.	68.	30.
150	RAD		12.	0.	0.	0.	0.	0.
150	RAD		0.	0.	3.	0.	0.	0.
160	RAD		0.	0.	2.	0.	0.	0.
170	RAD		0.	0.	3.	0.	0.	0.
185	RAD		5.	0.	0.	0.	0.	0.
185	RAD		0.	0.	13.	0.	0.	0.
190	RAD		4.	0.	0.	0.	0.	0.
190	RAD		0.	0.	30.	0.	0.	0.
195	RAD		3.	0.	0.	0.	0.	0.
195	RAD		0.	0.	107.	0.	0.	0.
205	RAD		2.	0.	0.	0.	0.	0.
205	RAD		0.	98.	0.	0.	0.	0.
210	RAD		4.	0.	0.	0.	0.	0.
210	RAD		0.	31.	0.	0.	0.	0.
215	RAD		6.	0.	0.	0.	0.	0.
215	RAD		0.	10.	0.	0.	0.	0.
220	RAD		8.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	8.	0.	0.	0.	0.
230	RAD		0.	6.	0.	0.	0.	0.
230	RAD		0.	0.	8.	0.	0.	0.
235	RAD		0.	5.	0.	0.	0.	0.
235	RAD		0.	0.	6.	0.	0.	0.
240	RAD		0.	5.	0.	0.	0.	0.
240	RAD		0.	0.	7.	0.	0.	0.
250	RAD	25.	0.	0.	0.	0.	0.	0.
250	RAD		0.	8.	0.	0.	0.	0.
260	RAD		0.	5.	0.	0.	0.	0.
260	RAD		0.	0.	8.	0.	0.	0.
275	RAD	11.	0.	0.	0.	0.	0.	0.
275	RAD		0.	0.	24.	0.	0.	0.
290	RAD		5.	0.	0.	0.	0.	0.
290	RAD		0.	0.	9.	0.	0.	0.
295	RAD		5.	0.	0.	0.	0.	0.
295	RAD		0.	0.	4.	0.	0.	0.
305	RAD		0.	19.	0.	0.	0.	0.
500	ANC		2.	1.	2.	2.	3.	2.

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		80	68	61	46	38	29	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		118	0	0	0	0	0	.391	.000	.920						
50	RAD		88	0	0	0	0	0	.000	1.00	.000						
65	RAD		54	0	0	0	0	0	1.00	.000	.000						
65	RAD		165	0	0	0	0	0	.000	1.00	.000						
85	RAD		91	0	0	0	0	0	1.00	.000	.000						
85	RAD		126	0	0	0	0	0	.000	.000	1.00						
95	RAD		343	0	0	0	0	0	.000	1.00	.000						
105	RAD		56	0	0	0	0	0	1.00	.000	.000						
115	RAD		149	0	0	0	0	0	.000	1.00	.000						
115	RAD		79	0	0	0	0	0	.000	.000	1.00						
130	RAD		19	0	0	0	0	0	1.00	.000	.000						
130	RAD		45	0	0	0	0	0	.000	.000	1.00						
135	RAD		43	0	0	0	0	0	1.00	.000	.000						
135	RAD		24	0	0	0	0	0	.000	.000	1.00						
140	RAD		120	0	0	0	0	0	1.00	.000	.000						
140	RAD		21	0	0	0	0	0	.000	.000	1.00						
145	ANC		23	32	6	9	68	30	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		12	0	0	0	0	0	1.00	.000	.000						
150	RAD		3	0	0	0	0	0	.000	.000	1.00						
160	RAD		2	0	0	0	0	0	.000	.000	1.00						
170	RAD		3	0	0	0	0	0	.000	.000	1.00						
185	RAD		5	0	0	0	0	0	1.00	.000	.000						
185	RAD		13	0	0	0	0	0	.000	.000	1.00						
190	RAD		4	0	0	0	0	0	1.00	.000	.000						
190	RAD		30	0	0	0	0	0	.000	.000	1.00						
195	RAD		3	0	0	0	0	0	1.00	.000	.000						
195	RAD		107	0	0	0	0	0	.000	.000	1.00						
205	RAD		2	0	0	0	0	0	1.00	.000	.000						
205	RAD		98	0	0	0	0	0	.000	1.00	.000						
210	RAD		4	0	0	0	0	0	1.00	.000	.000						
210	RAD		31	0	0	0	0	0	.000	1.00	.000						
215	RAD		6	0	0	0	0	0	1.00	.000	.000						
215	RAD		10	0	0	0	0	0	.000	1.00	.000						
220	RAD		8	0	0	0	0	0	1.00	.000	.000						



DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		8	0	0	0	0	0	.000	1.00	.000						
230	RAD		6	0	0	0	0	0	.000	1.00	.000						
230	RAD		8	0	0	0	0	0	.000	.000	1.00						
235	RAD		5	0	0	0	0	0	.000	1.00	.000						
235	RAD		6	0	0	0	0	0	.000	.000	1.00						
240	RAD		5	0	0	0	0	0	.000	1.00	.000						
240	RAD		7	0	0	0	0	0	.000	.000	1.00						
250	RAD		25	0	0	0	0	0	1.00	.000	.000						
250	RAD		8	0	0	0	0	0	.000	1.00	.000						
260	RAD		5	0	0	0	0	0	.000	1.00	.000						
260	RAD		8	0	0	0	0	0	.000	.000	1.00						
275	RAD		11	0	0	0	0	0	1.00	.000	.000						
275	RAD		24	0	0	0	0	0	.000	.000	1.00						
290	RAD		5	0	0	0	0	0	1.00	.000	.000						
290	RAD		9	0	0	0	0	0	.000	.000	1.00						
295	RAD		5	0	0	0	0	0	1.00	.000	.000						
295	RAD		4	0	0	0	0	0	.000	.000	1.00						
305	RAD		19	0	0	0	0	0	.000	1.00	.000						
500	ANC		2	1	2	2	3	2	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

JOINT DISPLACEMENTS FOR THE SEISO1 LOAD CASE

ME101/I2

DATE 040182

PAGE 450

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.001	.002	.002	.001190	.000767	.000423
15		.008	.008	.019	.003390	.001363	.003105
20		.012	.038	.029	.003844	.000496	.008501
25		.032	.038	.013	.004382	.000496	.010911
30		.083	.038	.016	.005085	.000496	.012624
35		.181	.038	.053	.005625	.000496	.013846
40		.289	.038	.097	.005709	.000496	.014022
45 B		.128	.038	.080	.004377	.002128	.008732
45 E		.157	.012	.104	.005433	.003357	.008892
50		.149	.000	.104	.005429	.003681	.008928
55		.092	.064	.104	.004564	.005471	.009405
60		.016	.021	.041	.006653	.005653	.010401
65		.000	.000	.041	.007543	.005353	.010573
70		.047	.083	.041	.008249	.004054	.011202
75		.083	.164	.041	.005176	.002285	.012085
80 B		.091	.182	.041	.004583	.002061	.012409
80 E		.037	.202	.016	.005292	.002865	.012560
85		.000	.202	.000	.005067	.003410	.012130
90		.283	.202	.034	.008526	.009269	.006943
95		.106	.000	.034	.007356	.009951	.004373
100 B		.069	.030	.034	.003162	.009209	.004424
100 E		.042	.039	.029	.002030	.007208	.005081
105		.000	.039	.017	.002662	.004879	.005882
110		.031	.039	.017	.002672	.003421	.006396
115		.031	.000	.000	.002553	.002105	.006025
120 B		.031	.090	.012	.003895	.000717	.002741
120 E		.028	.081	.014	.004461	.001116	.002286
125		.007	.000	.014	.003357	.002979	.001611
130		.000	.000	.000	.002482	.004239	.001491
130A		.017	.000	.017	.000402	.009865	.000190
135		.000	.000	.000	.001056	.015667	.002173
135A		.052	.000	.017	.000651	.021502	.002390
137		.060	.000	.016	.000939	.027350	.002393
138		.384	.013	.016	.001321	.030460	.002393

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.000786	.020512	.003268
140A		.020	.000	.005	.000194	.010256	.000805
145		.000	.000	.000	.000000	.000000	.000000
145A		.015	.000	.006	.000070	.000025	.000289
150		.000	.000	.000	.000280	.000050	.001165
155		.006	.000	.001	.000284	.000054	.001369
160		.006	.042	.000	.000371	.000040	.001083
165		.006	.053	.000	.000561	.000075	.000352
170		.006	.053	.000	.000577	.000098	.000361
175		.006	.052	.000	.000597	.000125	.000342
180 B		.005	.048	.005	.000411	.000180	.000211
180 E		.005	.048	.006	.000254	.000179	.000179
185		.000	.047	.000	.000254	.000129	.000071
185A		.001	.047	.009	.000268	.000110	.000013
190		.000	.047	.000	.001321	.000095	.000057
190A		.001	.047	.040	.000836	.000087	.000009
195		.000	.047	.000	.004708	.000090	.000076
200		.001	.047	.056	.005895	.000094	.000097
205		.000	.000	.056	.004097	.000088	.000148
205A		.001	.028	.057	.000668	.000015	.000282
210		.000	.000	.057	.001377	.000126	.000422
210A		.004	.014	.057	.000256	.000045	.000621
215		.000	.000	.057	.000680	.000268	.000821
215A		.010	.024	.057	.000291	.000045	.001103
220		.000	.000	.057	.001428	.000333	.001384
225 B		.004	.045	.057	.001973	.000545	.001563
225 E		.006	.046	.053	.001928	.001106	.001617
230		.006	.000	.000	.001672	.001700	.001144
230A		.006	.018	.031	.001381	.000192	.000177
235		.006	.000	.000	.001100	.001046	.000560
235A		.006	.010	.021	.000838	.000142	.000093
240		.006	.000	.000	.000623	.000821	.000228
245		.006	.003	.014	.000519	.000705	.000379
250		.000	.000	.014	.000497	.001105	.000579
255 B		.018	.007	.014	.000635	.001474	.001015
255 E		.025	.005	.006	.000967	.001532	.001226
260		.025	.000	.000	.001172	.001597	.001255
265 B		.025	.050	.071	.003712	.000721	.000622
265 E		.025	.047	.072	.003892	.000637	.000604
270		.019	.010	.071	.004155	.000793	.000916
275		.000	.010	.000	.002758	.000833	.000830
280		.007	.009	.003	.001250	.001002	.000214
285		.001	.002	.003	.001077	.000981	.000199
290		.000	.002	.000	.000941	.000951	.000192

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.003	.002	.009	.000203	.000637	.000022
295		.000	.002	.000	.000332	.000348	.000155
300		.001	.002	.003	.000409	.000275	.000134
305		.001	.000	.003	.000432	.000255	.000114
310 B		.001	.000	.003	.000422	.000252	.000111
310 E		.002	.002	.002	.000325	.000244	.000093
315		.002	.001	.001	.000184	.000213	.000097
320 B		.001	.001	.001	.000131	.000175	.000093
320 E		.000	.000	.000	.000069	.000116	.000060
500		.000	.000	.000	.000000	.000000	.000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000-1.000	.000	.391	.000	.920		80	68	61	46	38	29
		-.920	.000	.391	.000-1.000	.000	.391	.000	.920		80	68	61	36	26	13
10 15	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		80	68	61	36	26	13
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		80	68	61	14	10	78
15 20	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		82	66	54	14	10	78
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		82	66	54	25	28	130
20 25	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			83	34	82	46	0	133
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			83	34	82	47	0	104
25 30	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			118	34	50	47	0	104
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			118	34	50	29	0	61
30 35	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			86	18	40	29	0	61
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			86	18	40	5	0	10
35 40	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			15	2	7	5	0	10
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			15	2	7	0	0	0
20 45 B	TNGT	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			16	98	38	30	28	41
		.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			16	98	38	37	28	29
45 B 45 M	BEND	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			14	100	41	37	28	29
		.000 .707	.707	.000	.000 -.707 .707	1.000	.000	.000			14	100	41	35	29	27
45 M 45 E	BEND	.000 .707	.707	.000	.000 -.707 .707	1.000	.000	.000			14	100	41	35	29	27
		.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			14	100	41	17	30	26
45 E 50	TNGT	.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			13	100	43	17	30	26
		.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			13	100	43	20	31	26
50 55	TNGT	.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			12	31	46	20	31	26
		.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			12	31	46	46	33	26
55 60	TNGT	-.707 .000 .707	.000-1.000	.000	.707 .000 .707	.000	.707	.000	.707		13	29	52	46	33	26
		-.707 .000 .707	.000-1.000	.000	.707 .000 .707	.000	.707	.000	.707		13	29	52	75	40	19
60 65	TNGT	.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			13	28	54	75	40	19
		.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	1.000	.000	.000			13	28	54	82	43	19

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	46	139	54	82	43	19
70		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	46	139	54	50	45	19
70	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	41	96	50	45	19
75		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	41	96	84	34	19
75	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	81	159	145	84	34	19
80 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	81	159	145	43	11	19
80 B	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	83	165	147	43	11	19
80 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	83	165	147	30	22	14
80 M	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	83	165	147	30	22	14
80 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	83	165	147	13	32	26
80 E	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	84	171	147	13	32	26
85		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	84	171	147	39	32	45
85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	189	57	39	32	45
90		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	189	57	157	32	40
90	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	31	215	59	157	32	40
95		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	31	215	59	184	17	40
95	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	35	129	60	184	17	40
100 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	35	129	60	121	35	40
100 B	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	36	130	60	121	35	40
100 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	36	130	60	78	45	37
100 M	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	36	130	60	78	45	37
100 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	36	130	60	46	50	29
100 E	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	132	61	46	50	29
105		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	132	61	8	50	22
105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	133	62	8	50	22
110		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	133	62	21	50	22
110	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	134	62	21	50	22
115		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	134	62	21	47	47
115	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	16	29	21	47	47
120 B		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	16	29	21	13	20
120 B	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	26	22	30	21	13	20
120 M		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	26	22	30	19	17	14
120 M	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	26	22	30	19	17	14
120 E		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	26	22	30	12	20	11

ELEMENT TYPE/TITLE			DIRECTION COSINES							GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)				
FROM		TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120	E	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	27	28	30	12	20	11
125			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	27	28	30	34	49	11
125		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	28	31	34	49	11
130			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	28	31	43	49	10
130		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	28	16	43	49	10
130A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	28	16	19	49	20
130A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	28	17	19	49	20
135			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	28	17	13	49	31
135		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	28	12	13	49	31
135A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	28	12	12	49	26
135A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	28	9	12	49	26
137			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	28	9	23	49	78
137		TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	127	16	19	15	116	0
138			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	127	16	19	0	0	0
137		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	99	31	16	9	68	78
140			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	99	31	16	13	68	55
140		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	31	4	13	68	55
140A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	31	4	4	68	15
140A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	22	31	6	4	68	15
145			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	22	31	6	7	68	29
145		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	3	5	0	10
145A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	3	4	0	7
145A		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	1	4	0	7
150			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	1	1	0	10
150		TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	0	1	0	10
155			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	0	1	0	8
155		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	8	0	1	0	8
160			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	8	0	1	1	12
160		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	3	1	1	1	12
165			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	3	1	1	2	4
165		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	10	1	1	2	4
170			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	10	1	1	2	2
170		TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	12	3	1	2	2
175			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	12	3	1	2	3

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175 180 B	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	3	14	3	1	2	3
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	3	14	3	7	0	2
180 B 180 M	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	2	17	3	7	0	2
		.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	2	17	3	9	0	2
180 M 180 E	BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	2	17	3	9	0	2
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	2	17	3	9	0	2
180 E 185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	26	4	9	0	2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	26	4	8	0	1
185 185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	39	8	8	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	39	8	8	0	1
185A 190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	47	7	8	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	47	7	21	0	1
190 190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	56	24	21	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	56	24	29	0	1
190A 195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	65	16	29	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	65	16	62	0	1
195 200	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	71	91	62	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	71	91	14	0	1
200 205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	74	87	14	0	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	74	87	69	1	1
205 205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	24	81	69	1	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	24	81	30	1	1
205A 210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	28	72	30	1	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	28	72	16	2	1
210 210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	4	62	16	2	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	4	62	9	3	1
210A 215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	6	50	9	3	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	6	50	9	3	1
215 215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	36	9	3	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	36	10	5	1
215A 220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	4	19	10	5	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	4	19	11	3	1
220 225 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	6	6	11	3	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	6	6	1	14	1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	7	2	2	1	14	1
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	7	2	2	1	15	1
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	7	2	2	1	15	1
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	7	2	2	1	16	2
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	4	9	1	16	2
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	4	9	1	8	9
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	9	3	3	1	8	9
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	9	3	3	1	14	8
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	4	6	1	14	8
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	4	6	1	6	5
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	2	3	1	6	5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	2	3	1	10	6
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	3	4	1	10	6
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	3	4	1	5	4
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	18	2	7	1	5	4
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	18	2	7	1	18	5
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	3	5	1	18	5
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	3	5	2	12	5
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	11	6	4	2	12	5
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	11	6	4	6	9	5
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	9	6	4	6	9	5
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	9	6	4	7	10	4
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	9	6	4	7	10	4
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	9	6	4	8	11	3
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	7	4	8	11	3
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	7	4	8	11	1
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	6	8	11	1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	6	8	17	8
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	5	7	6	8	17	8
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	5	7	6	8	15	7
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	5	7	6	8	15	7
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	5	7	6	7	14	6
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	7	10	10	7	14	6
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	7	10	10	3	1	6

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	11	18	3	1	6
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	11	18	29	1	8
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	14	6	29	1	8
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	14	6	2	1	1
280	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	4	16	7	2	1	1
285		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	4	16	7	10	2	1
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	17	7	10	2	1
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	17	7	11	2	2
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	17	3	11	2	2
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	17	3	6	2	3
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	4	6	2	3
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	4	6	2	1
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	1	6	2	1
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	1	6	2	1
300	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	1	18	1	6	2	1
305		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	1	18	1	2	1	1
305	TNGT	.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	1	1	1	2	1	1
310 B		.000	.000	-1.000	.000	1.000	.000	1.000	.000	.000	1	1	1	2	1	1
310 B BEND		.000	.000	-1.000	-1.000	.000	.000	.000	1.000	.000	1	1	1	2	1	1
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	1	1	2	1	1
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	1	1	2	1	1
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	1	1	1	2	1	1
310 E TNGT		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	2	1	1	2	1	1
315		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	2	1	1	2	1	1
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	1	1	2	1	1
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	1	1	2	1	1
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	2	1	1	2	1	1
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	2	1	1	2	1	1
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	2	1	1	2	1	1
320 E		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	2	1	1	1	2	1
320 E TNGT		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	2	1	1	1	2	1
500		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	2	1	1	2	3	2

STRESSES AND LOCAL FORCES AND MOMENTS

ME101/I2

DATE 040182

PAGE 459

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO1

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
5	TNGT	96	68	30	35	38	42	5466.	1.000	1.000	1.000	SC374
10		96	68	30	35	26	15	3805.	1.300	1.000	1.000	2
10	TNGT	96	68	30	35	26	15	3805.	1.300	1.000	1.000	SC374
15		96	68	30	35	10	71	6535.	1.300	1.000	1.000	2
15	TNGT	96	66	21	35	10	71	6535.	1.300	1.000	1.000	SC374
20		96	66	21	35	28	128	11177.	1.300	1.000	1.000	2
20	TNGT	34	82	83	0	133	46	11607.	1.300	1.000	1.000	SC374
25		34	82	83	0	104	47	9415.	1.000	1.000	1.000	2
25	TNGT	34	50	118	0	104	47	9415.	1.000	1.000	1.000	SC374
30		34	50	118	0	61	29	5582.	1.300	1.000	1.000	2
30	TNGT	18	40	86	0	61	29	5582.	1.300	1.000	1.000	SC374
35		18	40	86	0	10	5	879.	1.300	1.000	1.000	2
35	TNGT	2	7	15	0	10	5	879.	1.300	1.000	1.000	SC374
40		2	7	15	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	98	38	16	28	41	30	4765.	1.300	1.000	1.000	SC374
45 B		98	38	16	28	29	37	4519.	1.000	1.000	1.000	2
45 B	BEND	100	41	14	28	29	37	4519.	1.000	1.000	1.000	SC374
45 M		96	49	14	24	31	35	4337.	1.000	1.000	1.000	2
45 M	BEND	96	49	14	24	31	35	4337.	1.000	1.000	1.000	SC374
45 E		41	100	14	26	30	17	3555.	1.000	1.000	1.000	2
45 E	TNGT	43	100	13	26	30	17	3555.	1.000	1.000	1.000	SC374
50		43	100	13	26	31	20	3675.	1.000	1.000	1.000	2
50	TNGT	46	31	12	26	31	20	3675.	1.000	1.000	1.000	SC374
55		46	31	12	26	33	46	5117.	1.300	1.000	1.000	2
55	TNGT	34	29	41	49	33	19	5117.	1.300	1.000	1.000	SC374
60		34	29	41	49	40	60	7186.	1.300	1.000	1.000	2
60	TNGT	54	28	13	19	40	75	7186.	1.300	1.000	1.000	SC374
65		54	28	13	19	43	82	7779.	1.000	1.000	1.000	2
65	TNGT	54	139	46	19	43	82	7779.	1.000	1.000	1.000	SC374
70		54	139	46	19	45	50	5742.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM	TO	FA	FB	FC	MA	MB	MC					
70	TNGT	96	41	23	19	45	50	5742.	1.300	1.000	1.000	SC374
75		96	41	23	19	34	84	7570.	1.300	1.000	1.000	2
75	TNGT	145	159	81	19	34	84	7570.	1.300	1.000	1.000	SC374
80 B		145	159	81.	19	11	43	3941.	1.000	1.000	1.000	2
80 B	BEND	147	165	83	19	11	43	3941.	1.000	1.000	1.000	SC374
80 M		203	88	83	22	15	30	3311.	1.000	1.000	1.000	2
80 M	BEND	203	88	83	22	15	30	3311.	1.000	1.000	1.000	SC374
80 E		165	147	83	32	26	13	3533.	1.000	1.000	1.000	2
80 E	TNGT	171	147	84	32	26	13	3533.	1.000	1.000	1.000	SC374
85		171	147	84	32	45	39	5567.	1.000	1.000	1.000	2
85	TNGT	189	57	14	32	45	39	5567.	1.000	1.000	1.000	SC374
90		189	57	14	32	40	157	13610.	1.300	1.000	1.000	2
90	TNGT	59	215	31	40	32	157	13610.	1.300	1.000	1.000	SC374
95		59	215	31	40	17	184	15518.	1.000	1.000	1.000	2
95	TNGT	60	129	35	40	17	184	15518.	1.000	1.000	1.000	SC374
100 B		60	129	35	40	35	121	10863.	1.000	1.000	1.000	2
100 B	BEND	60	130	36	40	35	121	10863.	1.000	1.000	1.000	SC374
100 M		57	132	36	54	21	78	7989.	1.000	1.000	1.000	2
100 M	BEND	57	132	36	54	21	78	7989.	1.000	1.000	1.000	SC374
100 E		130	60	36	50	29	46	6055.	1.000	1.000	1.000	2
100 E	TNGT	132	61	36	50	29	46	6055.	1.000	1.000	1.000	SC374
105		132	61	36	50	22	8	4514.	1.000	1.000	1.000	2
105	TNGT	133	62	26	50	22	8	4514.	1.000	1.000	1.000	SC374
110		133	62	26	50	22	21	4799.	1.300	1.000	1.000	2
110	TNGT	26	134	62	21	50	22	4799.	1.300	1.000	1.000	SC374
115		26	134	62	21	47	47	5784.	1.000	1.000	1.000	2
115	TNGT	26	16	29	21	47	47	5784.	1.000	1.000	1.000	SC374
120 B		26	16	29	21	13	20	2610.	1.000	1.000	1.000	2
120 B	BEND	26	30	22	21	20	13	2610.	1.000	1.000	1.000	SC374
120 M		27	29	22	6	22	17	2383.	1.000	1.000	1.000	2
120 M	BEND	27	29	22	6	22	17	2383.	1.000	1.000	1.000	SC374
120 E		30	26	22	11	12	20	2177.	1.000	1.000	1.000	2
120 E	TNGT	30	28	27	11	20	12	2177.	1.000	1.000	1.000	SC374
125		30	28	27	11	49	34	4973.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
125 TNGT	28	31	27	49	11	34	4973.	1.300	1.000	1.000	SC374
130	28	31	27	49	10	43	5435.	1.000	1.000	1.000	2
130 TNGT	28	16	8	49	10	43	5435.	1.000	1.000	1.000	SC374
130A	28	16	8	49	20	19	4633.	1.000	1.000	1.000	2
130A TNGT	28	17	7	49	20	19	4633.	1.000	1.000	1.000	SC374
135	28	17	7	49	31	13	4878.	1.000	1.000	1.000	2
135 TNGT	28	12	36	49	31	13	4878.	1.000	1.000	1.000	SC374
135A	28	12	36	49	26	12	4661.	1.000	1.000	1.000	2
135A TNGT	28	9	33	49	26	12	4661.	1.000	1.000	1.000	SC374
137	28	9	33	49	78	23	7777.	1.000	1.000	1.000	2
137 TNGT	19	16	127	0	116	15	9658.	1.000	1.000	1.000	SC374
138	19	16	127	0	0	0	0.	1.300	1.000	1.000	2
137 TNGT	31	16	99	68	78	9	8501.	1.000	1.000	1.000	SC374
140	31	16	99	68	55	13	7248.	1.000	1.000	1.000	2
140 TNGT	31	4	20	68	55	13	7248.	1.000	1.000	1.000	SC374
140A	31	4	20	68	15	4	5708.	1.000	1.000	1.000	2
140A TNGT	31	6	22	68	15	4	5708.	1.000	1.000	1.000	SC374
145	31	6	22	68	29	7	6076.	1.000	1.000	1.000	2
145 TNGT	8	3	6	0	10	5	928.	1.000	1.000	1.000	SC374
145A	8	3	6	0	7	4	669.	1.000	1.000	1.000	2
145A TNGT	8	1	2	0	7	4	669.	1.000	1.000	1.000	SC374
150	8	1	2	0	10	1	808.	1.000	1.000	1.000	2
150 TNGT	8	0	6	0	10	1	808.	1.000	1.000	1.000	SC374
155	8	0	6	0	8	1	638.	1.300	1.000	1.000	2
155 TNGT	5	8	0	1	0	8	638.	1.300	1.000	1.000	SC374
160	5	8	0	1	1	12	991.	1.000	1.000	1.000	2
160 TNGT	4	3	1	1	1	12	991.	1.000	1.000	1.000	SC374
165	4	3	1	1	2	4	373.	1.000	1.000	1.000	2
165 TNGT	3	10	1	1	2	4	373.	1.000	1.000	1.000	SC374
170	3	10	1	1	2	2	254.	1.000	1.000	1.000	2
170 TNGT	3	12	3	1	2	2	254.	1.000	1.000	1.000	SC374
175	3	12	3	1	2	3	283.	1.300	1.000	1.000	2
175 TNGT	12	8	3	1	3	1	283.	1.300	1.000	1.000	SC374
180 B	12	8	3	1	1	7	632.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	14	10	2	1	1	7	632.	1.000	1.000	1.000	SC374
180 M	17	4	2	1	2	9	726.	1.000	1.000	1.000	2
180 M BEND	17	4	2	1	2	9	726.	1.000	1.000	1.000	SC374
180 E	17	3	2	0	2	9	736.	1.000	1.000	1.000	2
180 E TNGT	26	4	1	0	2	9	736.	1.000	1.000	1.000	SC374
185	26	4	1	0	1	8	697.	1.000	1.000	1.000	2
185 TNGT	39	8	1	0	1	8	697.	1.000	1.000	1.000	SC374
185A	39	8	1	0	1	8	644.	1.000	1.000	1.000	2
185A TNGT	47	7	0	0	1	8	644.	1.000	1.000	1.000	SC374
190	47	7	0	0	1	21	1704.	1.000	1.000	1.000	2
190 TNGT	56	24	1	0	1	21	1704.	1.000	1.000	1.000	SC374
190A	56	24	1	0	1	29	2359.	1.000	1.000	1.000	2
190A TNGT	65	16	1	0	1	29	2359.	1.000	1.000	1.000	SC374
195	65	16	1	0	1	62	5119.	1.000	1.000	1.000	2
195 TNGT	71	91	1	0	1	62	5119.	1.000	1.000	1.000	SC374
200	71	91	1	0	1	14	1132.	1.300	1.000	1.000	2
200 TNGT	87	74	1	1	0	14	1132.	1.300	1.000	1.000	SC374
205	87	74	1	1	1	69	5672.	1.000	1.000	1.000	2
205 TNGT	81	24	1	1	1	69	5672.	1.000	1.000	1.000	SC374
205A	81	24	1	1	1	30	2482.	1.000	1.000	1.000	2
205A TNGT	72	28	1	1	1	30	2482.	1.000	1.000	1.000	SC374
210	72	28	1	1	2	16	1307.	1.000	1.000	1.000	2
210 TNGT	62	4	2	1	2	16	1307.	1.000	1.000	1.000	SC374
210A	62	4	2	1	3	9	787.	1.000	1.000	1.000	2
210A TNGT	50	6	2	1	3	9	787.	1.000	1.000	1.000	SC374
215	50	6	2	1	3	9	757.	1.000	1.000	1.000	2
215 TNGT	36	5	3	1	3	9	757.	1.000	1.000	1.000	SC374
215A	36	5	3	1	5	10	952.	1.000	1.000	1.000	2
215A TNGT	19	4	3	1	5	10	952.	1.000	1.000	1.000	SC374
220	19	4	3	1	3	11	978.	1.000	1.000	1.000	2
220 TNGT	6	6	7	1	3	11	978.	1.000	1.000	1.000	SC374
225 B	6	6	7	1	14	1	1121.	1.000	1.000	1.000	2
225 B BEND	2	7	2	1	1	14	1121.	1.000	1.000	1.000	SC374
225 M	6	4	2	0	2	15	1274.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
225 M	BEND	6	4	2	0	2	15	1274.	1.000	1.000	1.000	SC374
225 E		7	2	2	1	2	16	1309.	1.000	1.000	1.000	2
225 E	TNGT	8	4	9	1	16	2	1309.	1.000	1.000	1.000	SC374
230		8	4	9	1	8	9	1000.	1.000	1.000	1.000	2
230	TNGT	9	3	3	1	8	9	1000.	1.000	1.000	1.000	SC374
230A		9	3	3	1	14	8	1368.	1.000	1.000	1.000	2
230A	TNGT	11	4	6	1	14	8	1368.	1.000	1.000	1.000	SC374
235		11	4	6	1	6	5	606.	1.000	1.000	1.000	2
235	TNGT	13	2	3	1	6	5	606.	1.000	1.000	1.000	SC374
235A		13	2	3	1	10	6	949.	1.000	1.000	1.000	2
235A	TNGT	15	3	4	1	10	6	949.	1.000	1.000	1.000	SC374
240		15	3	4	1	5	4	545.	1.000	1.000	1.000	2
240	TNGT	18	2	7	1	5	4	545.	1.000	1.000	1.000	SC374
245		18	2	7	1	18	5	1526.	1.300	1.000	1.000	2
245	TNGT	5	3	19	5	18	1	1526.	1.300	1.000	1.000	SC374
250		5	3	19	5	12	2	1115.	1.000	1.000	1.000	2
250	TNGT	4	6	11	5	12	2	1115.	1.000	1.000	1.000	SC374
255 B		4	6	11	5	9	6	964.	1.000	1.000	1.000	2
255 B	BEND	4	9	6	5	6	9	964.	1.000	1.000	1.000	SC374
255 M		8	6	6	8	3	10	1095.	1.000	1.000	1.000	2
255 M	BEND	8	6	6	8	3	10	1095.	1.000	1.000	1.000	SC374
255 E		9	4	6	8	3	11	1126.	1.000	1.000	1.000	2
255 E	TNGT	8	7	4	8	11	3	1126.	1.000	1.000	1.000	SC374
260		8	7	4	8	11	1	1105.	1.000	1.000	1.000	2
260	TNGT	4	2	6	8	11	1	1105.	1.000	1.000	1.000	SC374
265 B		4	2	6	8	17	8	1646.	1.000	1.000	1.000	2
265 B	BEND	5	6	7	8	8	17	1646.	1.000	1.000	1.000	SC374
265 M		3	7	7	6	9	15	1536.	1.000	1.000	1.000	2
265 M	BEND	3	7	7	6	9	15	1536.	1.000	1.000	1.000	SC374
265 E		2	8	7	5	8	14	1409.	1.000	1.000	1.000	2
265 E	TNGT	4	10	11	5	14	8	1409.	1.000	1.000	1.000	SC374
270		4	10	11	5	1	5	564.	1.300	1.000	1.000	2
270	TNGT	11	18	9	1	6	3	564.	1.300	1.000	1.000	SC374
275		11	18	9	1	8	29	2467.	1.000	1.000	1.000	2

ELEMENT FROM TO	TYPE/TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	14	6	2	1	8	.29	2467.	1.000	1.000	1.000	SC374
280		14	6	2	1	1	2	202.	1.300	1.000	1.000	2
280	TNGT	7	16	4	1	1	2	202.	1.300	1.000	1.000	SC374
285		7	16	4	1	2	10	835.	1.300	1.000	1.000	2
285	TNGT	17	7	4	2	1	10	835.	1.300	1.000	1.000	SC374
290		17	7	4	2	2	11	956.	1.000	1.000	1.000	2
290	TNGT	17	3	1	2	2	11	956.	1.000	1.000	1.000	SC374
290A		17	3	1	2	3	6	529.	1.000	1.000	1.000	2
290A	TNGT	18	4	1	2	3	6	529.	1.000	1.000	1.000	SC374
295		18	4	1	2	1	6	525.	1.000	1.000	1.000	2
295	TNGT	18	1	1	2	1	6	525.	1.000	1.000	1.000	SC374
300		18	1	1	2	1	6	542.	1.300	1.000	1.000	2
300	TNGT	1	18	1	1	2	6	542.	1.300	1.000	1.000	SC374
305		1	18	1	1	1	2	226.	1.000	1.000	1.000	2
305	TNGT	1	1	1	1	1	2	226.	1.000	1.000	1.000	SC374
310 B		1	1	1	1	1	2	223.	1.000	1.000	1.000	2
310 B	BEND	1	1	1	1	2	1	223.	1.000	1.000	1.000	SC374
310 M		1	1	1	2	2	1	213.	1.000	1.000	1.000	2
310 M	BEND	1	1	1	2	2	1	213.	1.000	1.000	1.000	SC374
310 E		1	1	1	2	1	1	204.	1.000	1.000	1.000	2
310 E	TNGT	2	1	1	2	1	1	204.	1.000	1.000	1.000	SC374
315		2	1	1	2	1	1	215.	1.300	1.000	1.000	2
315	TNGT	1	1	2	1	1	2	215.	1.300	1.000	1.000	SC374
320 B		1	1	2	1	1	2	179.	1.000	1.000	1.000	2
320 B	BEND	1	1	2	1	1	2	179.	1.000	1.000	1.000	SC374
320 M		2	1	2	1	1	2	186.	1.000	1.000	1.000	2
320 M	BEND	2	1	2	1	1	2	186.	1.000	1.000	1.000	SC374
320 E		1	1	2	0	2	2	221.	1.000	1.000	1.000	2
320 E	TNGT	1	1	2	0	2	2	221.	1.000	1.000	1.000	SC374
500		1	1	2	0	3	2	342.	1.000	1.000	1.000	2

*** AT THE MEMBER END 95 OF ELEMENT FROM 95 TO 100 B , MAX. STRESS (PSI) IS 15518.

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

PAGE 465

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISO2

EARTHQUAKE COMPONENT : X+Y+Z
RESULTS OF MODAL SYNTHESIS

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
5	.000	.000	.000	.000
10	.010	.038	.023	.045
15	.100	.292	.239	.390
20	.150	.603	.356	.716
25	.382	.604	.162	.733
30	1.005	.604	.273	1.204
35	2.183	.605	.860	2.423
40	3.500	.605	1.552	3.876
45 B	1.598	.601	.985	1.971
45 E	2.008	.196	1.307	2.403
50	1.919	.000	1.306	2.322
55	1.221	.926	1.306	2.013
60	.225	.247	.561	.653
65	.000	.000	.561	.561
70	.679	.956	.561	1.300
75	1.090	1.884	.560	2.247
80 B	1.135	2.084	.559	2.438
80 E	.452	2.323	.213	2.376
85	.000	2.322	.000	2.322
90	3.713	2.318	.812	4.451
95	1.350	.000	.812	1.575
100 B	.883	.362	.811	1.253
100 E	.564	.517	.654	1.006
105	.000	.516	.327	.611
110	.413	.516	.235	.701
115	.413	.000	.000	.413



EFFECTIVE ACCELERATIONS

ME101/12

DATE 040182

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	.413	1.424	.192	1.495
120 E	.359	1.307	.226	1.375
125	.106	.008	.226	.250
130	.000	.008	.000	.008
130A	.233	.007	.310	.387
135	.000	.007	.000	.007
135A	.653	.006	.666	.933
137	.737	.006	.681	1.003
138	4.627	.617	.682	4.717
140	.000	.005	.000	.005
140A	.255	.002	.242	.352
145	.000	.000	.000	.000
145A	.478	.001	.332	.582
150	.000	.001	.000	.001
155	.142	.001	.072	.160
160	.143	.834	.000	.846
165	.144	.929	.043	.941
170	.144	.922	.000	.934
175	.144	.914	.067	.928
180 B	.397	.793	.308	.938
180 E	.470	.786	.399	.999
185	.000	.784	.000	.784
185A	.165	.783	.220	.830
190	.000	.782	.000	.782
190A	.302	.780	.676	1.075
195	.000	.778	.000	.778
200	.182	.777	.925	1.222
205	.000	.000	.926	.926
205A	.268	.503	.928	1.089
210	.000	.000	.930	.930
210A	.645	.592	.932	1.279
215	.000	.000	.934	.934
215A	.506	.454	.936	1.157
220	.000	.000	.937	.937
225 B	.270	.586	.937	1.138
225 E	.311	.608	.864	1.102

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	.311	.000	.000	.311
230A	.309	.607	.669	.955
235	.305	.000	.000	.305
235A	.301	.543	.554	.832
240	.295	.000	.000	.295
245	.288	.068	.366	.471
250	.000	.000	.366	.366
255 B	.364	.140	.365	.535
255 E	.506	.094	.164	.540
260	.506	.000	.000	.506
265 B	.506	.826	1.023	1.409
265 E	.487	.751	1.032	1.367
270	.388	.308	1.036	1.148
275	.000	.308	.000	.308
280	.405	.306	.070	.513
285	.049	.208	.070	.225
290	.000	.207	.000	.207
290A	.462	.206	.491	.705
295	.000	.204	.000	.204
300	.145	.203	.296	.387
305	.111	.000	.296	.316
310 B	.117	.037	.296	.320
310 E	.188	.172	.190	.318
315	.188	.091	.056	.216
320 B	.134	.091	.056	.171
320 E	.042	.039	.042	.071
500	.000	.000	.000	.000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO2

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
5	ANC		48.	49.	40.	33.	27.	19.
25	RAD		31.	0.	74.	0.	0.	0.
50	RAD		0.	67.	0.	0.	0.	0.
65	RAD		36.	0.	0.	0.	0.	0.
65	RAD		0.	82.	0.	0.	0.	0.
85	RAD		71.	0.	0.	0.	0.	0.
85	RAD		0.	0.	82.	0.	0.	0.
95	RAD		0.	169.	0.	0.	0.	0.
105	RAD		42.	0.	0.	0.	0.	0.
115	RAD		0.	74.	0.	0.	0.	0.
115	RAD		0.	0.	39.	0.	0.	0.
130	RAD		13.	0.	0.	0.	0.	0.
130	RAD		0.	0.	27.	0.	0.	0.
135	RAD		33.	0.	0.	0.	0.	0.
135	RAD		0.	0.	15.	0.	0.	0.
140	RAD		93.	0.	0.	0.	0.	0.
140	RAD		0.	0.	15.	0.	0.	0.
145	ANC		17.	38.	5.	6.	53.	23.
150	RAD		15.	0.	0.	0.	0.	0.
150	RAD		0.	0.	4.	0.	0.	0.
160	RAD		0.	0.	3.	0.	0.	0.
170	RAD		0.	0.	4.	0.	0.	0.
185	RAD		6.	0.	0.	0.	0.	0.
185	RAD		0.	0.	6.	0.	0.	0.
190	RAD		5.	0.	0.	0.	0.	0.
190	RAD		0.	0.	15.	0.	0.	0.
195	RAD		4.	0.	0.	0.	0.	0.
195	RAD		0.	0.	53.	0.	0.	0.
205	RAD		2.	0.	0.	0.	0.	0.
205	RAD		0.	49.	0.	0.	0.	0.
210	RAD		5.	0.	0.	0.	0.	0.
210	RAD		0.	16.	0.	0.	0.	0.
215	RAD		8.	0.	0.	0.	0.	0.
215	RAD		0.	7.	0.	0.	0.	0.
220	RAD		8.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	7.	0.	0.	0.	0.
230	RAD		0.	6.	0.	0.	0.	0.
230	RAD		0.	0.	6.	0.	0.	0.
235	RAD		0.	7.	0.	0.	0.	0.
235	RAD		0.	0.	5.	0.	0.	0.
240	RAD		0.	5.	0.	0.	0.	0.
240	RAD		0.	0.	5.	0.	0.	0.
250	RAD		31.	0.	0.	0.	0.	0.
250	RAD		0.	4.	0.	0.	0.	0.
260	RAD		0.	4.	0.	0.	0.	0.
260	RAD		0.	0.	6.	0.	0.	0.
275	RAD		8.	0.	0.	0.	0.	0.
275	RAD		0.	0.	12.	0.	0.	0.
290	RAD		7.	0.	0.	0.	0.	0.
290	RAD		0.	0.	5.	0.	0.	0.
295	RAD		7.	0.	0.	0.	0.	0.
295	RAD		0.	0.	5.	0.	0.	0.
305	RAD		0.	21.	0.	0.	0.	0.
500	ANC		3.	2.	2.	1.	3.	1.

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEIS02

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		48	49	40	33	27	19	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		81	0	0	0	0	0	.391	.000	.920						
50	RAD		67	0	0	0	0	0	.000	1.00	.000						
65	RAD		36	0	0	0	0	0	1.00	.000	.000						
65	RAD		82	0	0	0	0	0	.000	1.00	.000						
85	RAD		71	0	0	0	0	0	1.00	.000	.000						
85	RAD		82	0	0	0	0	0	.000	.000	1.00						
95	RAD		169	0	0	0	0	0	.000	1.00	.000						
105	RAD		42	0	0	0	0	0	1.00	.000	.000						
115	RAD		74	0	0	0	0	0	.000	1.00	.000						
115	RAD		39	0	0	0	0	0	.000	.000	1.00						
130	RAD		13	0	0	0	0	0	1.00	.000	.000						
130	RAD		27	0	0	0	0	0	.000	.000	1.00						
135	RAD		33	0	0	0	0	0	1.00	.000	.000						
135	RAD		15	0	0	0	0	0	.000	.000	1.00						
140	RAD		93	0	0	0	0	0	1.00	.000	.000						
140	RAD		15	0	0	0	0	0	.000	.000	1.00						
145	ANC		17	38	5	6	53	23	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		15	0	0	0	0	0	1.00	.000	.000						
150	RAD		4	0	0	0	0	0	.000	.000	1.00						
160	RAD		3	0	0	0	0	0	.000	.000	1.00						
170	RAD		4	0	0	0	0	0	.000	.000	1.00						
185	RAD		6	0	0	0	0	0	1.00	.000	.000						
185	RAD		6	0	0	0	0	0	.000	.000	1.00						
190	RAD		5	0	0	0	0	0	1.00	.000	.000						
190	RAD		15	0	0	0	0	0	.000	.000	1.00						
195	RAD		4	0	0	0	0	0	1.00	.000	.000						
195	RAD		53	0	0	0	0	0	.000	.000	1.00						
205	RAD		2	0	0	0	0	0	1.00	.000	.000						
205	RAD		49	0	0	0	0	0	.000	1.00	.000						
210	RAD		5	0	0	0	0	0	1.00	.000	.000						
210	RAD		16	0	0	0	0	0	.000	1.00	.000						
215	RAD		8	0	0	0	0	0	1.00	.000	.000						
215	RAD		7	0	0	0	0	0	.000	1.00	.000						
220	RAD		8	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		7	0	0	0	0	0	.000	1.00	.000						
230	RAD		6	0	0	0	0	0	.000	1.00	.000						
230	RAD		6	0	0	0	0	0	.000	.000	1.00						
235	RAD		7	0	0	0	0	0	.000	1.00	.000						
235	RAD		5	0	0	0	0	0	.000	.000	1.00						
240	RAD		5	0	0	0	0	0	.000	1.00	.000						
240	RAD		5	0	0	0	0	0	.000	.000	1.00						
250	RAD		31	0	0	0	0	0	1.00	.000	.000						
250	RAD		4	0	0	0	0	0	.000	1.00	.000						
260	RAD		4	0	0	0	0	0	.000	1.00	.000						
260	RAD		6	0	0	0	0	0	.000	.000	1.00						
275	RAD		8	0	0	0	0	0	1.00	.000	.000						
275	RAD		12	0	0	0	0	0	.000	.000	1.00						
290	RAD		7	0	0	0	0	0	1.00	.000	.000						
290	RAD		5	0	0	0	0	0	.000	.000	1.00						
295	RAD		7	0	0	0	0	0	1.00	.000	.000						
295	RAD		5	0	0	0	0	0	.000	.000	1.00						
305	RAD		21	0	0	0	0	0	.000	1.00	.000						
500	ANC		3	2	2	1	3	1	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

JOINT DISPLACEMENTS FOR THE SEISO2 LOAD CASE

ME101/I2

DATE 040182

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO2

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.001	.001	.001	.000858	.000544	.000241
15		.006	.005	.014	.002386	.000961	.002264
20		.009	.029	.020	.002569	.000303	.006254
25		.023	.029	.010	.002787	.000303	.007884
30		.060	.029	.008	.003168	.000303	.009040
35		.130	.029	.031	.003466	.000303	.009861
40		.207	.029	.058	.003513	.000303	.009979
45 B		.096	.029	.056	.003198	.001540	.006723
45 E		.119	.009	.074	.004076	.002464	.006899
50		.114	.000	.074	.004093	.002711	.006930
55		.071	.049	.074	.003545	.004127	.007190
60		.013	.012	.023	.003694	.004384	.007690
65		.000	.000	.023	.004010	.004151	.007827
70		.036	.042	.022	.004115	.003030	.008304
75		.062	.082	.022	.002599	.001549	.008929
80 B		.067	.090	.022	.002432	.001409	.009151
80 E		.027	.099	.009	.002876	.002039	.009214
85		.000	.099	.000	.002712	.002450	.008866
90		.205	.099	.022	.004199	.006834	.005053
95		.070	.000	.022	.003627	.007344	.002899
100 B		.037	.015	.022	.001658	.006792	.002594
100 E		.022	.020	.017	.001439	.005303	.002656
105		.000	.020	.009	.001844	.003548	.003040
110		.016	.020	.012	.001871	.002418	.003301
115		.016	.000	.000	.001805	.001445	.003124
120 B		.016	.049	.007	.002257	.000444	.001626
120 E		.015	.044	.008	.002481	.000580	.001434
125		.006	.000	.008	.001835	.002129	.001223
130		.000	.000	.000	.001366	.003194	.001149
130A		.014	.000	.009	.000225	.007666	.000142
135		.000	.000	.000	.000652	.012196	.001691
135A		.040	.000	.012	.000480	.016736	.001858
137		.046	.000	.012	.000669	.021280	.001861
138		.299	.010	.012	.000969	.023698	.001861

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.000570	.015960	.002541
140A		.016	.000	.004	.000140	.007980	.000626
145		.000	.000	.000	.000000	.000000	.000000
145A		.008	.000	.004	.000045	.000017	.000152
150		.000	.000	.000	.000181	.000034	.000612
155		.003	.000	.001	.000181	.000036	.000713
160		.003	.021	.000	.000225	.000036	.000544
165		.003	.027	.000	.000343	.000090	.000240
170		.003	.026	.000	.000354	.000118	.000239
175		.003	.026	.000	.000366	.000151	.000227
180 B		.004	.024	.003	.000264	.000221	.000139
180 E		.004	.024	.004	.000177	.000220	.000110
185		.000	.024	.000	.000153	.000159	.000078
185A		.001	.024	.005	.000134	.000133	.000014
190		.000	.024	.000	.000661	.000113	.000071
190A		.001	.024	.020	.000417	.000098	.000008
195		.000	.023	.000	.002348	.000097	.000089
200		.001	.023	.028	.002939	.000101	.000093
205		.000	.000	.028	.002044	.000098	.000106
205A		.001	.014	.028	.000333	.000014	.000156
210		.000	.000	.028	.000693	.000139	.000218
210A		.004	.008	.028	.000129	.000037	.000313
215		.000	.000	.028	.000351	.000225	.000410
215A		.008	.012	.028	.000146	.000033	.000549
220		.000	.000	.028	.000705	.000207	.000688
225 B		.003	.022	.028	.000977	.000279	.000777
225 E		.004	.023	.026	.000955	.000553	.000804
230		.003	.000	.000	.000828	.000853	.000572
230A		.003	.010	.016	.000684	.000100	.000090
235		.003	.000	.000	.000546	.000545	.000307
235A		.003	.007	.012	.000419	.000078	.000055
240		.003	.000	.000	.000318	.000441	.000155
245		.003	.002	.007	.000273	.000415	.000202
250		.000	.000	.007	.000262	.000619	.000305
255 B		.010	.004	.007	.000332	.000803	.000532
255 E		.014	.003	.003	.000503	.000823	.000642
260		.014	.000	.000	.000608	.000848	.000658
265 B		.014	.026	.036	.001920	.000397	.000324
265 E		.014	.024	.037	.002013	.000365	.000320
270		.010	.005	.037	.002145	.000452	.000493
275		.000	.005	.000	.001424	.000484	.000447
280		.005	.005	.001	.000655	.000672	.000135
285		.000	.002	.001	.000573	.000663	.000148
290		.000	.002	.000	.000507	.000644	.000154

JOINT DISPLACEMENTS FOR THE SEISO2 LOAD CASE

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DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.003	.002	.006	.000116	.000442	.000015
295		.000	.002	.000	.000292	.000271	.000146
300		.001	.002	.003	.000374	.000234	.000121
305		.001	.000	.003	.000406	.000193	.000111
310 B		.001	.000	.003	.000391	.000195	.000114
310 E		.002	.002	.002	.000286	.000224	.000083
315		.002	.001	.001	.000157	.000197	.000089
320 B		.001	.001	.000	.000110	.000164	.000087
320 E		.000	.000	.000	.000057	.000110	.000057
500		.000	.000	.000	.000000	.000000	.000000

DIRECTION COSINES AND GLOBAL FORCES AND MOMENTS

ME101/I2

DATE 040182

PAGE 475

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO2

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	48	49	40	33	27	19
		-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	48	49	40	26	19	8
10 15	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	48	49	40	26	19	8
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	48	49	40	7	7	57
15 20	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	49	48	36	7	7	57
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	49	48	36	16	21	96
20 25	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	53	28	59	27	0	89
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	53	28	59	27	0	70
25 30	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	79	28	29	27	0	70
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	79	28	29	17	0	41
30 35	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	57	15	23	17	0	41
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	57	15	23	3	0	6
35 40	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	10	2	4	3	0	6
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	10	2	4	0	0	0
20 45 B	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	12	73	29	18	21	25
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	12	73	29	28	21	15
45 B 45 M	BEND	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	75	31	28	21	15
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	9	75	31	27	21	13
45 M 45 E	BEND	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	9	75	31	27	21	13
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	9	75	31	12	23	13
45 E 50	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	75	32	12	23	13
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	75	32	11	23	13
50 55	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	16	34	11	23	13
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	16	34	24	25	13
55 60	TNGT	-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	7	15	38	24	25	13
		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	7	15	38	39	25	11
60 65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	15	39	39	25	11
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	15	39	43	26	11

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	33	69	39	43	26	11
70		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	33	69	39	32	35	11
70	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	14	20	59	32	35	11
75		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	14	20	59	46	27	11
75	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	63	79	85	46	27	11
80 B		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	63	79	85	27	9	11
80 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	64	82	85	27	9	11
80 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	64	82	85	18	17	8
80 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	64	82	85	18	17	8
80 E		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	64	82	85	9	24	20
80 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	65	85	85	9	24	20
85		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	65	85	85	26	24	35
85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	93	29	26	24	35
90		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	93	29	78	24	25
90	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	23	106	30	78	24	25
95		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	23	106	30	91	13	25
95	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	26	64	31	91	13	25
100 B		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	26	64	31	61	26	25
100 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	27	64	32	61	26	25
100 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	27	64	32	41	33	22
100 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	27	64	32	41	33	22
100 E		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	27	64	32	25	37	16
100 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	65	32	25	37	16
105		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	65	32	5	37	12
105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	66	32	5	37	12
110		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	66	32	11	37	11
110	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	20	66	33	11	37	11
115		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	20	66	33	11	32	24
115	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	19	8	18	11	32	24
120 B		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	19	8	18	11	7	10
120 B BEND		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	19	11	18	11	7	10
120 M		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	19	11	18	9	9	7
120 M BEND		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	19	11	18	9	9	7
120 E		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	19	11	18	6	13	6

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	19	14	19	6	13	6
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	19	14	19	18	38	6
125	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	14	19	18	38	6
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	14	19	24	38	7
130	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	14	9	24	38	7
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	14	9	11	38	16
130A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	14	10	11	38	16
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	14	10	9	38	24
135	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	28	14	9	9	38	24
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	28	14	9	8	38	20
135A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	25	14	6	8	38	20
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	25	14	6	17	38	60
137	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	99	13	15	12	91	0
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	99	13	15	0	0	0
137	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	77	19	12	8	53	60
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	77	19	12	9	53	43
140	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	16	19	3	9	53	43
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	16	19	3	3	53	12
140A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	17	19	4	3	53	12
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	17	19	4	5	53	22
145	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	4	2	3	0	6
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	4	2	3	0	4
145A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	4	1	3	0	4
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	4	1	1	0	5
150	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	4	0	1	0	5
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	4	0	1	0	4
155	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	4	0	1	0	4
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	4	0	1	1	7
160	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	1	1	1	7
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	1	1	2	2
165	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	5	1	1	2	2
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	5	1	1	2	2
170	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	6	2	1	2	2
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	6	2	1	2	2



ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175 180 B	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	3	7	2	1	2	2
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	3	7	2	4	0	2
180 B 180 M	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	2	9	2	4	0	2
		.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	2	9	2	5	0	2
180 M 180 E	BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	2	9	2	5	0	2
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	2	9	2	5	0	2
180 E 185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	13	2	5	0	2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	13	2	4	0	1
185 185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	20	4	4	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	20	4	4	0	1
185A 190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	24	3	4	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	24	3	10	0	1
190 190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	28	12	10	0	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	28	12	14	0	2
190A 195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	33	8	14	0	2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	33	8	31	0	0
195 200	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	36	45	31	0	0
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	36	45	8	0	1
200 205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	37	43	8	0	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	37	43	34	1	1
205 205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	12	40	34	1	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	12	40	15	2	1
205A 210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	14	36	15	2	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	0	14	36	8	2	1
210 210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	3	31	8	2	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	3	31	5	3	1
210A 215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	4	25	5	3	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	4	25	5	3	1
215 215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	3	18	5	3	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	3	18	5	5	1
215A 220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	2	10	5	5	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	2	10	6	3	1
220 225 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	3	3	6	3	1
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	3	3	1	7	1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)				
		FROM TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B	BEND		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	4	1	1	1	7	1
225 M			.707	.000	.707	.707	.000	-.707	.000	1.000	.000	4	1	1	1	8	1
225 M	BEND		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	4	1	1	1	8	1
225 E			1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	4	1	1	1	8	1
225 E	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	5	1	8	1
230			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	5	1	5	5
230	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	6	2	2	1	5	5
230A			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	6	2	2	1	8	5
230A	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	3	4	1	8	5
235			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	3	4	1	4	4
235	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	2	2	1	4	4
235A			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	2	2	1	6	4
235A	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	2	3	1	6	4
240			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	2	3	1	3	3
240	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	1	4	1	3	3
245			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	1	4	1	10	3
245	TNGT		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	16	2	4	1	10	3
250			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	2	2	1	10	1
250	TNGT		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	2	2	1	10	1
255 B			.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	3	4	3	5	3
255 B	BEND		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	6	3	4	3	5	3
255 M			.707	.000	.707	.707	.000	-.707	.000	1.000	.000	6	3	4	4	6	2
255 M	BEND		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	6	3	4	4	6	2
255 E			1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	6	3	4	4	6	1
255 E	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	3	4	4	6	1
260			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	3	4	4	6	1
260	TNGT		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	1	3	4	6	1
265 B			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	1	3	4	9	4
265 B	BEND		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	3	4	3	4	9	4
265 M			.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	4	3	4	8	4
265 M	BEND		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	4	3	4	8	4
265 E			.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	3	4	3	4	7	3
265 E	TNGT		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	4	6	5	4	7	3
270			.707	.000	.707	.000	1.000	.000	-.707	.000	.707	4	6	5	2	1	4

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	6	9	2	1	4
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	6	9	15	1	4
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	8	3	15	1	4
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	11	2	3	1	1
280	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	11	2	3	1	1
285		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	10	3	6	1	1
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	10	3	6	1	1
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	10	3	6	1	1
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	11	3	6	1	1
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	11	3	4	1	3
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	12	3	4	1	3
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	17	3	4	1	2
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	17	3	4	1	2
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	18	2	5	1	1
300	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	18	2	5	1	1
305		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	19	2	3	0	1
305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	2	2	3	0	1
310 B		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	2	2	3	0	1
310 B BEND		.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	2	2	2	3	0	1
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	2	2	2	1	0
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	2	2	2	1	0
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	1	1	2	2	0	0
310 E TNGT		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	1	1	2	2	0	0
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	1	1	1	2	1	1
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	1	1	2	1	1
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	1	2	1	1
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	1	0	1	2	1	1
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	1	1	1	1	1	1
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	1	1	1	1	1	1
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	2	1	1	1	2	1
320 E TNGT		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	2	1	1	1	2	1
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	2	1	1	1	3	1

STRESSES AND LOCAL FORCES AND MOMENTS

ME101/I2

DATE 040182

PAGE 481

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
5 TNGT	59	49	21	25	27	29	3865.	1.000	1.000	1.000	SC374
10	59	49	21	25	19	10	2682.	1.300	1.000	1.000	2
10 TNGT	59	49	21	25	19	10	2682.	1.300	1.000	1.000	SC374
15	59	49	21	25	7	52	4758.	1.300	1.000	1.000	2
15 TNGT	59	48	15	25	7	52	4758.	1.300	1.000	1.000	SC374
20	59	48	15	25	21	94	8150.	1.300	1.000	1.000	2
20 TNGT	28	59	53	0	89	27	7616.	1.300	1.000	1.000	SC374
25	28	59	53	0	70	27	6169.	1.000	1.000	1.000	2
25 TNGT	28	29	79	0	70	27	6169.	1.000	1.000	1.000	SC374
30	28	29	79	0	41	17	3651.	1.300	1.000	1.000	2
30 TNGT	15	23	57	0	41	17	3651.	1.300	1.000	1.000	SC374
35	15	23	57	0	6	3	573.	1.300	1.000	1.000	2
35 TNGT	2	4	10	0	6	3	573.	1.300	1.000	1.000	SC374
40	2	4	10	0	0	0	0.	1.000	1.000	1.000	2
20 TNGT	73	29	12	21	25	18	3032.	1.300	1.000	1.000	SC374
45 B	73	29	12	21	15	28	3136.	1.000	1.000	1.000	2
45 B BEND	75	31	9	21	15	28	3136.	1.000	1.000	1.000	SC374
45 M	73	35	9	17	18	27	3057.	1.000	1.000	1.000	2
45 M BEND	73	35	9	17	18	27	3057.	1.000	1.000	1.000	SC374
45 E	31	75	9	13	23	12	2348.	1.000	1.000	1.000	2
45 E TNGT	32	75	8	13	23	12	2348.	1.000	1.000	1.000	SC374
50	32	75	8	13	23	11	2371.	1.000	1.000	1.000	2
50 TNGT	34	16	7	13	23	11	2371.	1.000	1.000	1.000	SC374
55	34	16	7	13	25	24	3062.	1.300	1.000	1.000	2
55 TNGT	25	15	30	25	25	12	3062.	1.300	1.000	1.000	SC374
60	25	15	30	25	25	32	3916.	1.300	1.000	1.000	2
60 TNGT	39	15	7	11	25	39	3916.	1.300	1.000	1.000	SC374
65	39	15	7	11	26	43	4220.	1.000	1.000	1.000	2
65 TNGT	39	69	33	11	26	43	4220.	1.000	1.000	1.000	SC374
70	39	69	33	11	35	32	4026.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
70	TNGT	59	20	14	11	35	32	4026.	1.300	1.000	1.000	SC374
75		59	20	14	11	27	46	4490.	1.300	1.000	1.000	2
75	TNGT	85	79	63	11	27	46	4490.	1.300	1.000	1.000	SC374
80 B		85	79	63	11	9	27	2548.	1.000	1.000	1.000	2
80 B	BEND	85	82	64	11	9	27	2548.	1.000	1.000	1.000	SC374
80 M		103	58	64	14	11	18	2086.	1.000	1.000	1.000	2
80 M	BEND	103	58	64	14	11	18	2086.	1.000	1.000	1.000	SC374
80 E		82	85	64	24	20	9	2650.	1.000	1.000	1.000	2
80 E	TNGT	85	85	65	24	20	9	2650.	1.000	1.000	1.000	SC374
85		85	85	65	24	35	26	4097.	1.000	1.000	1.000	2
85	TNGT	93	29	10	24	35	26	4097.	1.000	1.000	1.000	SC374
90		93	29	10	24	25	78	6990.	1.300	1.000	1.000	2
90	TNGT	30	106	23	25	24	78	6990.	1.300	1.000	1.000	SC374
95		30	106	23	25	13	91	7838.	1.000	1.000	1.000	2
95	TNGT	31	64	26	25	13	91	7838.	1.000	1.000	1.000	SC374
100 B		31	64	26	25	26	61	5818.	1.000	1.000	1.000	2
100 B	BEND	32	64	27	25	26	61	5818.	1.000	1.000	1.000	SC374
100 M		30	65	27	38	13	41	4687.	1.000	1.000	1.000	2
100 M	BEND	30	65	27	38	13	41	4687.	1.000	1.000	1.000	SC374
100 E		64	32	27	37	16	25	3877.	1.000	1.000	1.000	2
100 E	TNGT	65	32	26	37	16	25	3877.	1.000	1.000	1.000	SC374
105		65	32	26	37	12	5	3207.	1.000	1.000	1.000	2
105	TNGT	66	32	20	37	12	5	3207.	1.000	1.000	1.000	SC374
110		66	32	20	37	11	11	3265.	1.300	1.000	1.000	2
110	TNGT	20	66	33	11	37	11	3265.	1.300	1.000	1.000	SC374
115		20	66	33	11	32	24	3386.	1.000	1.000	1.000	2
115	TNGT	19	8	18	11	32	24	3386.	1.000	1.000	1.000	SC374
120 B		19	8	18	11	7	10	1322.	1.000	1.000	1.000	2
120 B	BEND	19	18	11	11	10	7	1322.	1.000	1.000	1.000	SC374
120 M		15	22	11	4	11	9	1224.	1.000	1.000	1.000	2
120 M	BEND	15	22	11	4	11	9	1224.	1.000	1.000	1.000	SC374
120 E		18	19	11	6	6	13	1269.	1.000	1.000	1.000	2
120 E	TNGT	19	14	19	6	13	6	1269.	1.000	1.000	1.000	SC374
125		19	14	19	6	38	18	3487.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
125 TNGT	14	19	20	38	6	18	3487.	1.300	1.000	1.000	SC374
130	14	19	20	38	7	24	3726.	1.000	1.000	1.000	2
130 TNGT	14	9	6	38	7	24	3726.	1.000	1.000	1.000	SC374
130A	14	9	6	38	16	11	3493.	1.000	1.000	1.000	2
130A TNGT	14	10	6	38	16	11	3493.	1.000	1.000	1.000	SC374
135	14	10	6	38	24	9	3761.	1.000	1.000	1.000	2
135 TNGT	14	9	28	38	24	9	3761.	1.000	1.000	1.000	SC374
135A	14	9	28	38	20	8	3599.	1.000	1.000	1.000	2
135A TNGT	14	6	25	38	20	8	3599.	1.000	1.000	1.000	SC374
137	14	6	25	38	60	17	6025.	1.000	1.000	1.000	2
137 TNGT	15	13	99	0	91	12	7512.	1.000	1.000	1.000	SC374
138	15	13	99	0	0	0	0.	1.300	1.000	1.000	2
137 TNGT	19	12	77	53	60	8	6617.	1.000	1.000	1.000	SC374
140	19	12	77	53	43	9	5630.	1.000	1.000	1.000	2
140 TNGT	19	3	16	53	43	9	5630.	1.000	1.000	1.000	SC374
140A	19	3	16	53	12	3	4440.	1.000	1.000	1.000	2
140A TNGT	19	4	17	53	12	3	4440.	1.000	1.000	1.000	SC374
145	19	4	17	53	22	5	4724.	1.000	1.000	1.000	2
145 TNGT	4	2	3	0	6	3	552.	1.000	1.000	1.000	SC374
145A	4	2	3	0	4	3	423.	1.000	1.000	1.000	2
145A TNGT	4	1	2	0	4	3	423.	1.000	1.000	1.000	SC374
150	4	1	2	0	5	1	438.	1.000	1.000	1.000	2
150 TNGT	4	0	5	0	5	1	438.	1.000	1.000	1.000	SC374
155	4	0	5	0	4	1	348.	1.300	1.000	1.000	2
155 TNGT	4	4	0	1	0	4	348.	1.300	1.000	1.000	SC374
160	4	4	0	1	1	7	554.	1.000	1.000	1.000	2
160 TNGT	4	2	1	1	1	7	554.	1.000	1.000	1.000	SC374
165	4	2	1	1	2	2	263.	1.000	1.000	1.000	2
165 TNGT	3	5	1	1	2	2	263.	1.000	1.000	1.000	SC374
170	3	5	1	1	2	2	237.	1.000	1.000	1.000	2
170 TNGT	3	6	2	1	2	2	237.	1.000	1.000	1.000	SC374
175	3	6	2	1	2	2	250.	1.300	1.000	1.000	2
175 TNGT	6	5	3	1	3	1	250.	1.300	1.000	1.000	SC374
180 B	6	5	3	1	1	4	370.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	7	5	2	1	1	4	370.	1.000	1.000	1.000	SC374
180 M	9	3	2	1	2	5	426.	1.000	1.000	1.000	2
180 M BEND	9	3	2	1	2	5	426.	1.000	1.000	1.000	SC374
180 E	9	2	2	0	2	5	446.	1.000	1.000	1.000	2
180 E TNGT	13	2	1	0	2	5	446.	1.000	1.000	1.000	SC374
185	13	2	1	0	1	4	360.	1.000	1.000	1.000	2
185 TNGT	20	4	1	0	1	4	360.	1.000	1.000	1.000	SC374
185A	20	4	1	0	1	4	340.	1.000	1.000	1.000	2
185A TNGT	24	3	1	0	1	4	340.	1.000	1.000	1.000	SC374
190	24	3	1	0	1	10	852.	1.000	1.000	1.000	2
190 TNGT	28	12	1	0	1	10	852.	1.000	1.000	1.000	SC374
190A	28	12	1	0	2	14	1185.	1.000	1.000	1.000	2
190A TNGT	33	8	1	0	2	14	1185.	1.000	1.000	1.000	SC374
195	33	8	1	0	0	31	2552.	1.000	1.000	1.000	2
195 TNGT	36	45	1	0	0	31	2552.	1.000	1.000	1.000	SC374
200	36	45	1	0	1	8	622.	1.300	1.000	1.000	2
200 TNGT	43	37	1	1	0	8	622.	1.300	1.000	1.000	SC374
205	43	37	1	1	1	34	2828.	1.000	1.000	1.000	2
205 TNGT	40	12	1	1	1	34	2828.	1.000	1.000	1.000	SC374
205A	40	12	1	1	2	15	1248.	1.000	1.000	1.000	2
205A TNGT	36	14	0	1	2	15	1248.	1.000	1.000	1.000	SC374
210	36	14	0	1	2	8	666.	1.000	1.000	1.000	2
210 TNGT	31	3	2	1	2	8	666.	1.000	1.000	1.000	SC374
210A	31	3	2	1	3	5	510.	1.000	1.000	1.000	2
210A TNGT	25	4	2	1	3	5	510.	1.000	1.000	1.000	SC374
215	25	4	2	1	3	5	453.	1.000	1.000	1.000	2
215 TNGT	18	3	2	1	3	5	453.	1.000	1.000	1.000	SC374
215A	18	3	2	1	5	5	579.	1.000	1.000	1.000	2
215A TNGT	10	2	2	1	5	5	579.	1.000	1.000	1.000	SC374
220	10	2	2	1	3	6	548.	1.000	1.000	1.000	2
220 TNGT	3	3	4	1	3	6	548.	1.000	1.000	1.000	SC374
225 B	3	3	4	1	7	1	565.	1.000	1.000	1.000	2
225 B BEND	1	4	1	1	1	7	565.	1.000	1.000	1.000	SC374
225 M	3	2	1	0	1	8	641.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	3	2	1	0	1	8	641.	1.000	1.000	1.000	SC374
225 E	4	1	1	1	1	8	658.	1.000	1.000	1.000	2
225 E TNGT	4	2	5	1	8	1	658.	1.000	1.000	1.000	SC374
230	4	2	5	1	5	5	560.	1.000	1.000	1.000	2
230 TNGT	6	2	2	1	5	5	560.	1.000	1.000	1.000	SC374
230A	6	2	2	1	8	5	778.	1.000	1.000	1.000	2
230A TNGT	8	3	4	1	8	5	778.	1.000	1.000	1.000	SC374
235	8	3	4	1	4	4	440.	1.000	1.000	1.000	2
235 TNGT	10	2	2	1	4	4	440.	1.000	1.000	1.000	SC374
235A	10	2	2	1	6	4	594.	1.000	1.000	1.000	2
235A TNGT	13	2	3	1	6	4	594.	1.000	1.000	1.000	SC374
240	13	2	3	1	3	3	353.	1.000	1.000	1.000	2
240 TNGT	15	1	4	1	3	3	353.	1.000	1.000	1.000	SC374
245	15	1	4	1	10	3	857.	1.300	1.000	1.000	2
245 TNGT	4	2	16	3	10	1	857.	1.300	1.000	1.000	SC374
250	2	2	23	1	10	1	812.	1.000	1.000	1.000	2
250 TNGT	2	2	23	1	10	1	812.	1.000	1.000	1.000	SC374
255 B	4	3	6	3	5	3	541.	1.000	1.000	1.000	2
255 B BEND	4	6	3	3	3	5	541.	1.000	1.000	1.000	SC374
255 M	5	5	3	4	1	6	593.	1.000	1.000	1.000	2
255 M BEND	5	5	3	4	1	6	593.	1.000	1.000	1.000	SC374
255 E	6	4	3	4	1	6	600.	1.000	1.000	1.000	2
255 E TNGT	5	3	4	4	6	1	600.	1.000	1.000	1.000	SC374
260	5	3	4	4	6	1	592.	1.000	1.000	1.000	2
260 TNGT	3	1	3	4	6	1	592.	1.000	1.000	1.000	SC374
265 B	3	1	3	4	9	4	864.	1.000	1.000	1.000	2
265 B BEND	3	3	4	4	4	9	864.	1.000	1.000	1.000	SC374
265 M	2	4	4	3	5	8	805.	1.000	1.000	1.000	2
265 M BEND	2	4	4	3	5	8	805.	1.000	1.000	1.000	SC374
265 E	2	4	4	3	4	7	738.	1.000	1.000	1.000	2
265 E TNGT	3	6	6	3	7	4	738.	1.000	1.000	1.000	SC374
270	3	6	6	3	1	4	364.	1.300	1.000	1.000	2
270 TNGT	6	9	5	1	4	2	364.	1.300	1.000	1.000	SC374
275	6	9	5	1	4	15	1285.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	8	3	1	1	4	15	1285.	1.000	1.000	1.000	SC374
280		11	2	3	1	1	3	246.	1.300	1.000	1.000	2
280	TNGT	2	11	3	1	1	3	246.	1.300	1.000	1.000	SC374
285		3	10	3	1	1	6	479.	1.300	1.000	1.000	2
285	TNGT	10	3	3	1	1	6	479.	1.300	1.000	1.000	SC374
290		10	3	3	1	1	6	533.	1.000	1.000	1.000	2
290	TNGT	11	3	2	1	1	6	533.	1.000	1.000	1.000	SC374
290A		11	3	2	1	3	4	422.	1.000	1.000	1.000	2
290A	TNGT	12	3	2	1	3	4	422.	1.000	1.000	1.000	SC374
295		17	3	3	1	2	4	405.	1.000	1.000	1.000	2
295	TNGT	17	3	3	1	2	4	405.	1.000	1.000	1.000	SC374
300		18	2	2	1	1	5	410.	1.300	1.000	1.000	2
300	TNGT	2	18	2	1	1	5	410.	1.300	1.000	1.000	SC374
305		2	19	2	1	0	3	267.	1.000	1.000	1.000	2
305	TNGT	2	2	2	1	0	3	267.	1.000	1.000	1.000	SC374
310 B		2	2	2	1	0	3	253.	1.000	1.000	1.000	2
310 B	BEND	2	2	2	1	3	0	253.	1.000	1.000	1.000	SC374
310 M		2	1	2	2	2	1	209.	1.000	1.000	1.000	2
310 M	BEND	2	1	2	2	2	1	209.	1.000	1.000	1.000	SC374
310 E		1	2	1	2	0	0	189.	1.000	1.000	1.000	2
310 E	TNGT	1	1	2	2	0	0	189.	1.000	1.000	1.000	SC374
315		1	1	1	2	1	1	218.	1.300	1.000	1.000	2
315	TNGT	1	1	1	1	1	2	218.	1.300	1.000	1.000	SC374
320 B		0	1	1	1	1	2	186.	1.000	1.000	1.000	2
320 B	BEND	0	1	1	1	1	2	186.	1.000	1.000	1.000	SC374
320 M		1	1	1	1	1	2	177.	1.000	1.000	1.000	2
320 M	BEND	1	1	1	1	1	2	177.	1.000	1.000	1.000	SC374
320 E		1	1	2	0	2	2	200.	1.000	1.000	1.000	2
320 E	TNGT	1	1	2	0	2	2	200.	1.000	1.000	1.000	SC374
500		1	1	2	0	3	2	319.	1.000	1.000	1.000	2

*** AT THE MEMBER END 20 OF ELEMENT FROM 15 TO 20 , MAX. STRESS (PSI) IS 8150.

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

PAGE 487

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

EARTHQUAKE COMPONENT : X+Y+Z
 RESULTS OF MODAL SYNTHESIS

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
5	.000	.000	.000	.000
10	.006	.069	.013	.070
15	.056	.645	.133	.661
20	.081	.953	.193	.976
25	.212	.955	.090	.982
30	.574	.957	.244	1.142
35	1.331	.958	.743	1.800
40	2.214	.958	1.325	2.752
45 B	1.254	.947	.577	1.674
45 E	1.789	.318	1.004	2.076
50	1.743	.000	1.004	2.011
55	1.146	1.284	1.002	1.992
60	.130	.218	.663	.710
65	.000	.000	.664	.664
70	.456	.901	.664	1.209
75	.735	1.754	.663	2.014
80 B	.686	1.953	.662	2.173
80 E	.249	2.218	.239	2.245
85	.000	2.218	.000	2.218
90	2.374	2.214	1.829	3.726
95	1.233	.000	1.829	2.206
100 B	1.056	.395	1.828	2.148
100 E	.702	.634	1.559	1.824
105	.000	.634	.832	1.046
110	.504	.634	.360	.886
115	.504	.000	.000	.504

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	.504	2.645	.414	2.724
120 E	.421	2.571	.463	2.646
125	.170	.018	.462	.492
130	.000	.017	.000	.017
130A	.261	.016	.551	.609
135	.000	.015	.000	.015
135A	.393	.013	.735	.833
137	.335	.012	.887	.948
138	.469	.914	.888	1.358
140	.000	.009	.000	.009
140A	.164	.004	.410	.442
145	.000	.000	.000	.000
145A	.961	.002	.933	1.339
150	.000	.004	.000	.004
155	.224	.004	.200	.301
160	.229	1.141	.000	1.163
165	.233	1.200	.161	1.233
170	.233	1.258	.000	1.279
175	.234	1.306	.249	1.350
180 B	1.459	.711	1.040	1.928
180 E	1.742	.713	1.365	2.325
185	.000	.710	.000	.710
185A	.680	.708	.569	1.134
190	.000	.705	.000	.705
190A	1.132	.701	.779	1.543
195	.000	.697	.000	.697
200	.672	.695	.709	1.199
205	.000	.000	.710	.710
205A	.953	.832	.713	1.453
210	.000	.000	.716	.716
210A	2.209	1.708	.719	2.883
215	.000	.000	.721	.721
215A	.728	.550	.724	1.165
220	.000	.000	.725	.725
225 B	.780	.508	.726	1.180
225 E	.876	.531	.658	1.217

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	.873	.000	.000	.873
230A	.867	.527	1.843	2.104
235	.857	.000	.000	.857
235A	.842	.465	1.739	1.987
240	.824	.000	.000	.824
245	.802	.134	.882	1.199
250	.000	.000	.881	.881
255 B	.318	.255	.879	.969
255 E	.517	.165	.400	.674
260	.517	.000	.000	.517
265 B	.519	1.006	.940	1.471
265 E	.468	.823	.860	1.279
270	.641	.561	.943	1.271
275	.000	.561	.000	.561
280	1.179	.559	.183	1.318
285	.156	.332	.183	.410
290	.000	.332	.000	.332
290A	1.486	.329	1.337	2.026
295	.000	.326	.000	.326
300	.420	.324	.496	.726
305	.352	.000	.496	.608
310 B	.350	.060	.496	.610
310 E	.388	.301	.352	.604
315	.387	.178	.169	.459
320 B	.275	.178	.146	.359
320 E	.085	.078	.085	.143
500	.000	.000	.000	.000

ACTIONS ON SUPPORTS AND ANCHORS

ME101/12

DATE 040182

PAGE 490

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

GLOBAL FORCES (LB)

GLOBAL MOMENTS (FT-LB)

DATA PT	TYPE	TITLE	FX	FY	FZ	MX	MY	MZ
5	ANC		46.	22.	27.	13.	11.	14.
25	RAD		17.	0.	39.	0.	0.	0.
50	RAD		0.	60.	0.	0.	0.	0.
65	RAD		40.	0.	0.	0.	0.	0.
65	RAD		0.	81.	0.	0.	0.	0.
85	RAD		32.	0.	0.	0.	0.	0.
85	RAD		0.	0.	68.	0.	0.	0.
95	RAD		0.	158.	0.	0.	0.	0.
105	RAD		12.	0.	0.	0.	0.	0.
115	RAD		0.	73.	0.	0.	0.	0.
115	RAD		0.	0.	43.	0.	0.	0.
130	RAD		6.	0.	0.	0.	0.	0.
130	RAD		0.	0.	24.	0.	0.	0.
135	RAD		5.	0.	0.	0.	0.	0.
135	RAD		0.	0.	18.	0.	0.	0.
140	RAD		9.	0.	0.	0.	0.	0.
140	RAD		0.	0.	21.	0.	0.	0.
145	ANC		5.	26.	8.	12.	5.	8.
150	RAD		17.	0.	0.	0.	0.	0.
150	RAD		0.	0.	3.	0.	0.	0.
160	RAD		0.	0.	4.	0.	0.	0.
170	RAD		0.	0.	8.	0.	0.	0.
185	RAD		4.	0.	0.	0.	0.	0.
185	RAD		0.	0.	5.	0.	0.	0.
190	RAD		4.	0.	0.	0.	0.	0.
190	RAD		0.	0.	11.	0.	0.	0.
195	RAD		3.	0.	0.	0.	0.	0.
195	RAD		0.	0.	40.	0.	0.	0.
205	RAD		3.	0.	0.	0.	0.	0.
205	RAD		0.	38.	0.	0.	0.	0.
210	RAD		5.	0.	0.	0.	0.	0.
210	RAD		0.	12.	0.	0.	0.	0.
215	RAD		11.	0.	0.	0.	0.	0.
215	RAD		0.	9.	0.	0.	0.	0.
220	RAD		6.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	4.	0.	0.	0.	0.
230	RAD		0.	4.	0.	0.	0.	0.
230	RAD		0.	0.	10.	0.	0.	0.
235	RAD		0.	4.	0.	0.	0.	0.
235	RAD		0.	0.	16.	0.	0.	0.
240	RAD		0.	3.	0.	0.	0.	0.
240	RAD		0.	0.	11.	0.	0.	0.
250	RAD		50.	0.	0.	0.	0.	0.
250	RAD		0.	4.	0.	0.	0.	0.
260	RAD		0.	3.	0.	0.	0.	0.
260	RAD		0.	0.	13.	0.	0.	0.
275	RAD		6.	0.	0.	0.	0.	0.
275	RAD		0.	0.	10.	0.	0.	0.
290	RAD		10.	0.	0.	0.	0.	0.
290	RAD		0.	0.	6.	0.	0.	0.
295	RAD		7.	0.	0.	0.	0.	0.
295	RAD		0.	0.	5.	0.	0.	0.
305	RAD		0.	15.	0.	0.	0.	0.
500	ANC		5.	2.	3.	2.	5.	2.

ACTIONS ON SUPPORTS AND ANCHORS

ME101/12

DATE 040182

PAGE 492

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : SEISO3

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		46	22	27	13	11	14	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		43	0	0	0	0	0	.391	.000	.920						
50	RAD		60	0	0	0	0	0	.000	1.00	.000						
65	RAD		40	0	0	0	0	0	1.00	.000	.000						
65	RAD		81	0	0	0	0	0	.000	1.00	.000						
85	RAD		32	0	0	0	0	0	1.00	.000	.000						
85	RAD		68	0	0	0	0	0	.000	.000	1.00						
95	RAD		158	0	0	0	0	0	.000	1.00	.000						
105	RAD		12	0	0	0	0	0	1.00	.000	.000						
115	RAD		73	0	0	0	0	0	.000	1.00	.000						
115	RAD		43	0	0	0	0	0	.000	.000	1.00						
130	RAD		6	0	0	0	0	0	1.00	.000	.000						
130	RAD		24	0	0	0	0	0	.000	.000	1.00						
135	RAD		5	0	0	0	0	0	1.00	.000	.000						
135	RAD		18	0	0	0	0	0	.000	.000	1.00						
140	RAD		9	0	0	0	0	0	1.00	.000	.000						
140	RAD		21	0	0	0	0	0	.000	.000	1.00						
145	ANC		5	26	8	12	5	8	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		17	0	0	0	0	0	1.00	.000	.000						
150	RAD		3	0	0	0	0	0	.000	.000	1.00						
160	RAD		4	0	0	0	0	0	.000	.000	1.00						
170	RAD		8	0	0	0	0	0	.000	.000	1.00						
185	RAD		4	0	0	0	0	0	1.00	.000	.000						
185	RAD		5	0	0	0	0	0	.000	.000	1.00						
190	RAD		4	0	0	0	0	0	1.00	.000	.000						
190	RAD		11	0	0	0	0	0	.000	.000	1.00						
195	RAD		3	0	0	0	0	0	1.00	.000	.000						
195	RAD		40	0	0	0	0	0	.000	.000	1.00						
205	RAD		3	0	0	0	0	0	1.00	.000	.000						
205	RAD		38	0	0	0	0	0	.000	1.00	.000						
210	RAD		5	0	0	0	0	0	1.00	.000	.000						
210	RAD		12	0	0	0	0	0	.000	1.00	.000						
215	RAD		11	0	0	0	0	0	1.00	.000	.000						
215	RAD		9	0	0	0	0	0	.000	1.00	.000						
220	RAD		6	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		MC	DIRECTION COSINES								
			FA	FB	FC	MA	MB		COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		4	0	0	0	0	0	.000	1.00	.000						
230	RAD		4	0	0	0	0	0	.000	1.00	.000						
230	RAD		10	0	0	0	0	0	.000	.000	1.00						
235	RAD		4	0	0	0	0	0	.000	1.00	.000						
235	RAD		16	0	0	0	0	0	.000	.000	1.00						
240	RAD		3	0	0	0	0	0	.000	1.00	.000						
240	RAD		11	0	0	0	0	0	.000	.000	1.00						
250	RAD		50	0	0	0	0	0	1.00	.000	.000						
250	RAD		4	0	0	0	0	0	.000	1.00	.000						
260	RAD		3	0	0	0	0	0	.000	1.00	.000						
260	RAD		13	0	0	0	0	0	.000	.000	1.00						
275	RAD		6	0	0	0	0	0	1.00	.000	.000						
275	RAD		10	0	0	0	0	0	.000	.000	1.00						
290	RAD		10	0	0	0	0	0	1.00	.000	.000						
290	RAD		6	0	0	0	0	0	.000	.000	1.00						
295	RAD		7	0	0	0	0	0	1.00	.000	.000						
295	RAD		5	0	0	0	0	0	.000	.000	1.00						
305	RAD		15	0	0	0	0	0	.000	1.00	.000						
500	ANC		5	2	3	2	5	2	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

JOINT DISPLACEMENTS FOR THE SEISO3 LOAD CASE

ME101/I2

DATE 040182

PAGE 494

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.000	.001	.001	.000333	.000212	.000275
15		.002	.006	.005	.000908	.000359	.000735
20		.003	.011	.008	.001164	.000214	.002119
25		.009	.011	.004	.001568	.000214	.003099
30		.024	.011	.008	.001937	.000214	.003797
35		.054	.011	.023	.002215	.000214	.004299
40		.087	.011	.040	.002258	.000214	.004372
45 B		.026	.010	.020	.001147	.000633	.001477
45 E		.029	.003	.025	.001492	.000904	.001309
50		.027	.000	.025	.001403	.000966	.001310
55		.014	.013	.025	.000681	.001200	.001679
60		.002	.009	.018	.002644	.000793	.002379
65		.000	.000	.018	.003178	.000762	.002437
70		.009	.037	.018	.003747	.001049	.002672
75		.020	.074	.018	.002392	.000968	.003034
80 B		.023	.083	.018	.002068	.001034	.003172
80 E		.010	.093	.007	.002296	.001218	.003329
85		.000	.093	.000	.002172	.001287	.003295
90		.083	.092	.021	.003982	.002118	.001916
95		.043	.000	.021	.003367	.002125	.001881
100 B		.033	.014	.021	.001498	.001929	.002115
100 E		.020	.018	.018	.000963	.001653	.002414
105		.000	.018	.010	.001242	.001366	.002738
110		.015	.018	.007	.001258	.001194	.002978
115		.015	.000	.000	.001233	.000840	.002862
120 B		.015	.046	.006	.002005	.000342	.001552
120 E		.013	.042	.007	.002305	.000514	.001230
125		.002	.000	.007	.001770	.000802	.000422
130		.000	.000	.000	.001312	.000761	.000298
130A		.002	.000	.009	.000234	.000813	.000053
135		.000	.000	.000	.000634	.001131	.000196
135A		.004	.000	.013	.000542	.001559	.000193
137		.005	.000	.013	.000726	.002030	.000196
138		.029	.011	.013	.001138	.002271	.000196



DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.000660	.001522	.000264
140A		.002	.000	.004	.000163	.000761	.000065
145		.000	.000	.000	.000000	.000000	.000000
145A		.009	.000	.011	.000118	.000048	.000123
150		.000	.000	.000	.000473	.000095	.000494
155		.003	.000	.002	.000462	.000102	.000579
160		.003	.017	.000	.000477	.000115	.000405
165		.003	.020	.001	.000715	.000319	.000383
170		.003	.020	.000	.000739	.000418	.000380
175		.003	.019	.002	.000767	.000539	.000384
180 B		.009	.017	.006	.000600	.000798	.000266
180 E		.011	.017	.008	.000442	.000794	.000173
185		.000	.017	.000	.000314	.000545	.000267
185A		.004	.017	.005	.000101	.000461	.000047
190		.000	.017	.000	.000497	.000413	.000280
190A		.006	.017	.014	.000295	.000374	.000026
195		.000	.017	.000	.001668	.000359	.000327
200		.003	.017	.020	.002069	.000363	.000318
205		.000	.000	.020	.001469	.000346	.000308
205A		.004	.010	.020	.000237	.000035	.000299
210		.000	.000	.020	.000598	.000442	.000305
210A		.010	.010	.020	.000100	.000051	.000338
215		.000	.000	.020	.000359	.000343	.000393
215A		.008	.011	.020	.000137	.000081	.000493
220		.000	.000	.020	.000633	.000181	.000608
225 B		.004	.019	.020	.000854	.000239	.000685
225 E		.005	.020	.019	.000830	.000415	.000708
230		.004	.000	.000	.000698	.000691	.000506
230A		.004	.009	.019	.000595	.000106	.000078
235		.004	.000	.000	.000505	.000429	.000278
235A		.004	.006	.016	.000416	.000104	.000047
240		.004	.000	.000	.000332	.000432	.000140
245		.004	.002	.006	.000256	.000604	.000165
250		.000	.000	.006	.000234	.000587	.000244
255 B		.007	.003	.006	.000258	.000618	.000430
255 E		.009	.002	.003	.000384	.000730	.000518
260		.009	.000	.000	.000465	.000735	.000527
265 B		.009	.020	.027	.001468	.000372	.000267
265 E		.009	.018	.028	.001538	.000378	.000281
270		.008	.005	.027	.001612	.000472	.000375
275		.000	.005	.000	.001061	.000597	.000346
280		.009	.005	.002	.000596	.001287	.000274
285		.001	.003	.002	.000620	.001276	.000367
290		.000	.003	.000	.000598	.001229	.000404



DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.010	.003	.011	.000105	.000763	.000017
295		.000	.002	.000	.000455	.000357	.000381
300		.003	.002	.004	.000458	.000285	.000257
305		.002	.000	.004	.000459	.000273	.000186
310 B		.002	.000	.004	.000447	.000275	.000174
310 E		.003	.002	.003	.000339	.000280	.000105
315		.003	.001	.001	.000184	.000252	.000126
320 B		.002	.001	.001	.000133	.000216	.000148
320 E		.001	.001	.001	.000072	.000163	.000103
500		.000	.000	.000	.000000	.000000	.000000

DIRECTION COSINES AND GLOBAL FORCES AND MOMENTS

ME101/12

DATE 040182

PAGE 497

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : SEIS03

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000-1.000	.000	.391	.000	.920	46	22	27	13	11	14	
		-.920	.000	.391	.000-1.000	.000	.391	.000	.920	46	22	27	10	7	9	
10 15	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921	46	22	27	10	7	9	
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921	46	22	27	7	3	21	
15 20	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921	47	19	25	7	3	21	
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921	47	19	25	8	8	35	
20 25	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	38	45	26	21	0	56		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	38	45	26	24	0	43		
25 30	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	47	44	25	24	0	43		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	47	44	25	14	0	25		
30 35	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	35	24	20	14	0	25		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	35	24	20	2	0	4		
35 40	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	6	3	4	2	0	4		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	6	3	4	0	0	0		
20 45 B	TNGT	.000 1.000	.000	.000	.000 .000	1.000	1.000	.000	.000	13	59	19	16	8	26	
		.000 1.000	.000	.000	.000 .000	1.000	1.000	.000	.000	13	59	19	19	8	16	
45 B 45 M	BEND	.000 1.000	.000	.000	.000 .000	1.000	1.000	.000	.000	11	61	20	19	8	16	
		.000 .707	.707	.000 -.707	.707	1.000	.000	.000	11	61	20	16	7	14		
45 M 45 E	BEND	.000 .707	.707	.000 -.707	.707	1.000	.000	.000	11	61	20	16	7	14		
		.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	11	61	20	7	7	13		
45 E 50	TNGT	.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	9	62	21	7	7	13		
		.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	9	62	21	15	7	13		
50 55	TNGT	.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	8	16	22	15	7	13		
		.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	8	16	22	21	11	13		
55 60	TNGT	-.707 .000	.707	.000-1.000	.000	.707	.000	.707	8	16	25	21	11	13		
		-.707 .000	.707	.000-1.000	.000	.707	.000	.707	8	16	25	35	25	9		
60 65	TNGT	.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	8	16	25	35	25	9		
		.000 .000	1.000	.000-1.000	.000	1.000	.000	.000	8	16	25	39	26	9		



ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	34	66	24	39	26	9
70		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	34	66	24	18	14	9
70	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	14	20	40	18	14	9
75		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	14	20	40	37	18	9
75	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	27	72	71	37	18	9
80 B		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	27	72	71	17	10	9
80 B	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	27	74	72	17	10	9
80 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	27	74	72	13	6	8
80 M	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	27	74	72	13	6	8
80 E		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	27	74	72	12	7	10
80 E	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	28	77	72	12	7	10
85		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	28	77	72	25	7	14
85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	85	27	25	7	14
90		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	85	27	71	7	18
90	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	6	97	26	71	7	18
95		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	6	97	26	84	5	18
95	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	9	63	27	84	5	18
100 B		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	9	63	27	55	9	18
100 B	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	10	63	28	55	9	18
100 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	10	63	28	35	12	17
100 M	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	10	63	28	35	12	17
100 E		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	10	63	28	22	13	14
100 E	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	11	64	29	22	13	14
105		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	11	64	29	4	13	9
105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	64	30	4	13	9
110		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	64	30	11	13	11
110	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	5	64	30	11	13	11
115		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	5	64	30	11	19	23
115	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	6	10	13	11	19	23
120 B		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	6	10	13	11	6	11
120 B	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	6	10	14	11	6	11
120 M		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	6	10	14	9	9	8
120 M	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	6	10	14	9	9	8
120 E		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	6	10	14	7	9	7

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	15	15	7	9	7
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	15	15	18	4	7
125	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	15	16	18	4	7
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	15	16	23	4	5
130	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	15	9	23	4	5
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	15	9	11	4	3
130A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	15	10	11	4	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	15	10	11	4	3
135	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	15	11	11	4	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	15	11	8	4	3
135A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	15	8	8	4	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	15	8	19	4	6
137	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	10	20	19	18	9	0
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	5	3	5	0	0	0
138	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	25	18	15	5	6
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	25	18	10	5	4
140	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	25	3	10	5	4
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	25	3	4	5	1
140A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	25	5	4	5	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	25	5	7	5	2
145	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	5	5	9	0	7
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	5	5	7	0	7
145A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	5	3	7	0	7
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	5	3	2	0	7
150	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	5	1	2	0	7
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	5	1	2	0	5
155	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	5	1	2	0	5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	5	1	2	2	8
160	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	4	3	2	2	8
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	4	3	2	7	5
165	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	4	3	2	7	5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	4	3	2	8	5
170	TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	5	7	2	8	5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	5	7	2	8	5

ELEMENT TYPE/TITLE FROM TO	DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND	.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	3	1	4	1	6	1
225 M	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	3	1	4	1	6	1
225 M BEND	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	3	1	4	1	6	1
225 E	1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	3	1	4	1	6	1
225 E TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	6	2	5	1	6	1
230	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	6	2	5	1	8	4
230 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	2	7	1	8	4
230A	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	2	7	1	13	5
230A TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	19	3	9	1	13	5
235	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	19	3	9	1	13	3
235 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	26	2	8	1	13	3
235A	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	26	2	8	1	12	4
235A TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	33	2	6	1	12	4
240	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	33	2	6	1	8	2
240 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	40	1	5	1	8	2
245	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	40	1	5	1	11	2
245 TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	43	2	8	1	11	2
250	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	43	2	8	1	16	2
250 TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	3	10	1	16	2
255 B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	3	10	2	8	2
255 B BEND	.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	8	3	12	2	8	2
255 M	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	8	3	12	3	6	2
255 M BEND	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	8	3	12	3	6	2
255 E	1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	8	3	12	3	4	1
255 E TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	7	3	12	3	4	1
260	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	7	3	12	3	6	1
260 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	1	2	3	6	1
265 B	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	1	2	3	7	4
265 B BEND	1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	3	5	4	3	7	4
265 M	.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	5	4	3	6	3
265 M BEND	.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	3	5	4	3	6	3
265 E	.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	3	5	4	3	6	3
265 E TNGT	.707	.000	.707	.000	1.000	.000	-.707	.000	.707	3	7	6	3	6	3
270	.707	.000	.707	.000	1.000	.000	-.707	.000	.707	3	7	6	5	2	5

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	NZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	7	8	5	2	5
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	7	8	12	2	4
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	8	3	12	2	4
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	8	3	6	2	3
280	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	8	11	3	6	2	3
285		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	8	11	3	5	3	3
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	12	3	5	3	3
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	12	3	5	3	3
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	12	4	5	3	3
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	12	4	9	3	9
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	13	5	9	3	9
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	13	5	5	3	4
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	14	1	5	3	4
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	14	1	5	3	2
300	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	15	1	5	3	2
305		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	15	1	3	2	2
305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	1	1	3	2	2
310 B		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	1	1	3	2	2
310 B BEND		.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	3	1	2	3	2	2
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	3	1	2	3	2	2
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	3	1	2	3	2	2
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	4	1	2	3	2	2
310 E TNGT		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	4	1	2	3	2	2
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	4	1	2	3	2	2
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	1	2	3	2	2
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	1	2	2	2	1
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	5	1	2	2	2	1
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	5	1	2	1	2	1
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	5	1	2	1	2	1
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	5	1	2	1	2	2
320 E TNGT		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	5	2	3	1	2	2
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	5	2	3	2	5	2



STRESSES AND LOCAL FORCES AND MOMENTS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO3

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
5	TNGT	53	22	8	9	11	17	1816.	1.000	1.000	1.000	SC374
10		53	22	8	9	7	9	1188.	1.300	1.000	1.000	2
10	TNGT	53	22	8	9	7	9	1188.	1.300	1.000	1.000	SC374
15		53	22	8	9	3	19	1765.	1.300	1.000	1.000	2
15	TNGT	53	19	5	9	3	19	1765.	1.300	1.000	1.000	SC374
20		53	19	5	9	8	35	3018.	1.300	1.000	1.000	2
20	TNGT	45	26	38	0	56	21	4920.	1.300	1.000	1.000	SC374
25		45	26	38	0	43	24	4003.	1.000	1.000	1.000	2
25	TNGT	44	25	47	0	43	24	4003.	1.000	1.000	1.000	SC374
30		44	25	47	0	25	14	2398.	1.300	1.000	1.000	2
30	TNGT	24	20	35	0	25	14	2398.	1.300	1.000	1.000	SC374
35		24	20	35	0	4	2	386.	1.300	1.000	1.000	2
35	TNGT	3	4	6	0	4	2	386.	1.300	1.000	1.000	SC374
40		3	4	6	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	59	19	13	8	26	16	2611.	1.300	1.000	1.000	SC374
45 B		59	19	13	8	16	19	2117.	1.000	1.000	1.000	2
45 B	BEND	61	20	11	8	16	19	2117.	1.000	1.000	1.000	SC374
45 M		55	33	11	6	14	16	1856.	1.000	1.000	1.000	2
45 M	BEND	55	33	11	6	14	16	1856.	1.000	1.000	1.000	SC374
45 E		20	61	11	13	7	7	1353.	1.000	1.000	1.000	2
45 E	TNGT	21	62	9	13	7	7	1353.	1.000	1.000	1.000	SC374
50		21	62	9	13	7	15	1709.	1.000	1.000	1.000	2
50	TNGT	22	16	8	13	7	15	1709.	1.000	1.000	1.000	SC374
55		22	16	8	13	11	21	2205.	1.300	1.000	1.000	2
55	TNGT	18	16	20	23	11	10	2227.	1.300	1.000	1.000	SC374
60		18	16	20	23	25	30	3711.	1.300	1.000	1.000	2
60	TNGT	25	16	8	9	25	35	3619.	1.300	1.000	1.000	SC374
65		25	16	8	9	26	39	3929.	1.000	1.000	1.000	2
65	TNGT	24	66	34	9	26	39	3929.	1.000	1.000	1.000	SC374
70		24	66	34	9	14	18	1982.	1.300	1.000	1.000	2



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ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
70 TNGT	40	20	14	9	14	18	1982.	1.300	1.000	1.000	SC374
75	40	20	14	9	18	37	3436.	1.300	1.000	1.000	2
75 TNGT	71	72	27	9	18	37	3436.	1.300	1.000	1.000	SC374
80 B	71	72	27	9	10	17	1804.	1.000	1.000	1.000	2
80 B BEND	72	74	27	9	10	17	1804.	1.000	1.000	1.000	SC374
80 M	94	42	27	9	4	13	1357.	1.000	1.000	1.000	2
80 M BEND	94	42	27	9	4	13	1357.	1.000	1.000	1.000	SC374
80 E	74	72	27	7	10	12	1353.	1.000	1.000	1.000	2
80 E TNGT	77	72	28	7	10	12	1353.	1.000	1.000	1.000	SC374
85	77	72	28	7	14	25	2427.	1.000	1.000	1.000	2
85 TNGT	85	27	9	7	14	25	2427.	1.000	1.000	1.000	SC374
90	85	27	9	7	18	71	6062.	1.300	1.000	1.000	2
90 TNGT	26	97	6	18	7	71	6062.	1.300	1.000	1.000	SC374
95	26	97	6	18	5	84	7090.	1.000	1.000	1.000	2
95 TNGT	27	63	9	18	5	84	7090.	1.000	1.000	1.000	SC374
100 B	27	63	9	18	9	55	4806.	1.000	1.000	1.000	2
100 B BEND	28	63	10	18	9	55	4806.	1.000	1.000	1.000	SC374
100 M	33	61	10	20	9	35	3422.	1.000	1.000	1.000	2
100 M BEND	33	61	10	20	9	35	3422.	1.000	1.000	1.000	SC374
100 E	63	28	10	13	14	22	2386.	1.000	1.000	1.000	2
100 E TNGT	64	29	11	13	14	22	2386.	1.000	1.000	1.000	SC374
105	64	29	11	13	9	4	1371.	1.000	1.000	1.000	2
105 TNGT	64	30	5	13	9	4	1371.	1.000	1.000	1.000	SC374
110	64	30	5	13	11	11	1640.	1.300	1.000	1.000	2
110 TNGT	5	64	30	11	13	11	1640.	1.300	1.000	1.000	SC374
115	5	64	30	11	19	23	2610.	1.000	1.000	1.000	2
115 TNGT	6	10	13	11	19	23	2610.	1.000	1.000	1.000	SC374
120 B	6	10	13	11	6	11	1315.	1.000	1.000	1.000	2
120 B BEND	6	14	10	11	11	6	1315.	1.000	1.000	1.000	SC374
120 M	14	6	10	3	12	9	1263.	1.000	1.000	1.000	2
120 M BEND	14	6	10	3	12	9	1263.	1.000	1.000	1.000	SC374
120 E	14	6	10	7	7	9	1103.	1.000	1.000	1.000	2
120 E TNGT	15	15	7	7	9	7	1103.	1.000	1.000	1.000	SC374
125	15	15	7	7	4	18	1596.	1.300	1.000	1.000	2

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ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
125	TNGT	15	16	7	4	7	18	1596.	1.300	1.000	1.000	SC374
130		15	16	7	4	5	23	1976.	1.000	1.000	1.000	2
130	TNGT	15	9	2	4	5	23	1976.	1.000	1.000	1.000	SC374
130A		15	9	2	4	3	11	971.	1.000	1.000	1.000	2
130A	TNGT	15	10	3	4	3	11	971.	1.000	1.000	1.000	SC374
135		15	10	3	4	3	11	973.	1.000	1.000	1.000	2
135	TNGT	15	11	3	4	3	11	973.	1.000	1.000	1.000	SC374
135A		15	11	3	4	3	8	794.	1.000	1.000	1.000	2
135A	TNGT	15	8	3	4	3	8	794.	1.000	1.000	1.000	SC374
137		15	8	3	4	6	19	1701.	1.000	1.000	1.000	2
137	TNGT	19	20	10	0	9	18	1653.	1.000	1.000	1.000	SC374
138		5	3	5	0	0	0	0.	1.300	1.000	1.000	2
137	TNGT	25	18	8	5	6	15	1394.	1.000	1.000	1.000	SC374
140		25	18	8	5	4	10	1012.	1.000	1.000	1.000	2
140	TNGT	25	3	2	5	4	10	1012.	1.000	1.000	1.000	SC374
140A		25	3	2	5	1	4	532.	1.000	1.000	1.000	2
140A	TNGT	25	5	2	5	1	4	532.	1.000	1.000	1.000	SC374
145		25	5	2	5	2	7	712.	1.000	1.000	1.000	2
145	TNGT	5	5	5	0	7	9	926.	1.000	1.000	1.000	SC374
145A		5	5	5	0	7	7	810.	1.000	1.000	1.000	2
145A	TNGT	5	3	4	0	7	7	810.	1.000	1.000	1.000	SC374
150		5	3	4	0	7	2	626.	1.000	1.000	1.000	2
150	TNGT	5	1	14	0	7	2	626.	1.000	1.000	1.000	SC374
155		5	1	14	0	5	2	461.	1.300	1.000	1.000	2
155	TNGT	13	5	1	2	0	5	461.	1.300	1.000	1.000	SC374
160		13	5	1	2	2	8	699.	1.000	1.000	1.000	2
160	TNGT	12	4	3	2	2	8	699.	1.000	1.000	1.000	SC374
165		12	4	3	2	7	5	736.	1.000	1.000	1.000	2
165	TNGT	11	4	3	2	7	5	736.	1.000	1.000	1.000	SC374
170		11	4	3	2	8	5	766.	1.000	1.000	1.000	2
170	TNGT	11	5	7	2	8	5	766.	1.000	1.000	1.000	SC374
175		11	5	7	2	8	5	765.	1.300	1.000	1.000	2
175	TNGT	5	9	11	3	9	2	764.	1.300	1.000	1.000	SC374
180 B		5	9	11	3	3	7	682.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	5	8	8	3	3	7	682.	1.000	1.000	1.000	SC374
180 M	7	7	8	1	5	8	809.	1.000	1.000	1.000	2
180 M BEND	7	7	8	1	5	8	809.	1.000	1.000	1.000	SC374
180 E	8	5	8	1	6	9	928.	1.000	1.000	1.000	2
180 E TNGT	11	3	2	1	6	9	928.	1.000	1.000	1.000	SC374
185	11	3	2	1	3	4	421.	1.000	1.000	1.000	2
185 TNGT	16	3	2	1	3	4	421.	1.000	1.000	1.000	SC374
185A	16	3	2	1	4	4	495.	1.000	1.000	1.000	2
185A TNGT	20	3	2	1	4	4	495.	1.000	1.000	1.000	SC374
190	20	3	2	1	2	7	640.	1.000	1.000	1.000	2
190 TNGT	24	9	4	1	2	7	640.	1.000	1.000	1.000	SC374
190A	24	9	4	1	6	11	1000.	1.000	1.000	1.000	2
190A TNGT	28	6	3	1	6	11	1000.	1.000	1.000	1.000	SC374
195	28	6	3	1	1	22	1801.	1.000	1.000	1.000	2
195 TNGT	30	35	1	1	1	22	1801.	1.000	1.000	1.000	SC374
200	30	35	1	1	1	13	1087.	1.300	1.000	1.000	2
200 TNGT	34	32	2	1	1	13	1087.	1.300	1.000	1.000	SC374
205	34	32	2	1	1	24	1998.	1.000	1.000	1.000	2
205 TNGT	32	9	3	1	1	24	1998.	1.000	1.000	1.000	SC374
205A	32	9	3	1	6	12	1072.	1.000	1.000	1.000	2
205A TNGT	28	10	1	1	6	12	1072.	1.000	1.000	1.000	SC374
210	28	10	1	1	4	6	607.	1.000	1.000	1.000	2
210 TNGT	25	5	6	1	4	6	607.	1.000	1.000	1.000	SC374
210A	25	5	6	1	11	9	1162.	1.000	1.000	1.000	2
210A TNGT	20	6	8	1	11	9	1162.	1.000	1.000	1.000	SC374
215	20	6	8	1	7	7	819.	1.000	1.000	1.000	2
215 TNGT	15	3	4	1	7	7	819.	1.000	1.000	1.000	SC374
215A	15	3	4	1	5	5	621.	1.000	1.000	1.000	2
215A TNGT	9	2	3	1	5	5	621.	1.000	1.000	1.000	SC374
220	9	2	3	1	4	5	537.	1.000	1.000	1.000	2
220 TNGT	4	3	4	1	4	5	537.	1.000	1.000	1.000	SC374
225 B	4	3	4	1	6	1	464.	1.000	1.000	1.000	2
225 B BEND	4	3	1	1	1	6	464.	1.000	1.000	1.000	SC374
225 M	4	2	1	0	1	6	507.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT. FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	4	2	1	0	1	6	507.	1.000	1.000	1.000	SC374
225 E	3	4	1	1	1	6	499.	1.000	1.000	1.000	2
225 E TNGT	6	2	5	1	6	1	499.	1.000	1.000	1.000	SC374
230	6	2	5	1	8	4	755.	1.000	1.000	1.000	2
230 TNGT	12	2	7	1	8	4	755.	1.000	1.000	1.000	SC374
230A	12	2	7	1	13	5	1157.	1.000	1.000	1.000	2
230A TNGT	19	3	9	1	13	5	1157.	1.000	1.000	1.000	SC374
235	19	3	9	1	13	3	1074.	1.000	1.000	1.000	2
235 TNGT	26	2	8	1	13	3	1074.	1.000	1.000	1.000	SC374
235A	26	2	8	1	12	4	1047.	1.000	1.000	1.000	2
235A TNGT	33	2	6	1	12	4	1047.	1.000	1.000	1.000	SC374
240	33	2	6	1	8	2	658.	1.000	1.000	1.000	2
240 TNGT	40	1	5	1	8	2	658.	1.000	1.000	1.000	SC374
245	40	1	5	1	11	2	900.	1.300	1.000	1.000	2
245 TNGT	8	2	43	2	11	1	900.	1.300	1.000	1.000	SC374
250	8	2	43	2	16	1	1310.	1.000	1.000	1.000	2
250 TNGT	10	3	8	2	16	1	1310.	1.000	1.000	1.000	SC374
255 B	10	3	8	2	8	2	738.	1.000	1.000	1.000	2
255 B BEND	12	8	3	2	2	8	738.	1.000	1.000	1.000	SC374
255 M	6	13	3	3	1	6	575.	1.000	1.000	1.000	2
255 M BEND	6	13	3	3	1	6	575.	1.000	1.000	1.000	SC374
255 E	8	12	3	3	1	4	451.	1.000	1.000	1.000	2
255 E TNGT	7	3	12	3	4	1	451.	1.000	1.000	1.000	SC374
260	7	3	12	3	6	1	530.	1.000	1.000	1.000	2
260 TNGT	5	1	2	3	6	1	530.	1.000	1.000	1.000	SC374
265 B	5	1	2	3	7	4	707.	1.000	1.000	1.000	2
265 B BEND	3	4	5	3	4	7	707.	1.000	1.000	1.000	SC374
265 M	4	4	5	2	4	6	643.	1.000	1.000	1.000	2
265 M BEND	4	4	5	2	4	6	643.	1.000	1.000	1.000	SC374
265 E	4	3	5	2	3	6	581.	1.000	1.000	1.000	2
265 E TNGT	5	7	5	2	6	3	581.	1.000	1.000	1.000	SC374
270	5	7	5	2	2	7	595.	1.300	1.000	1.000	2
270 TNGT	7	8	5	2	5	5	601.	1.300	1.000	1.000	SC374
275	7	8	5	2	4	12	1028.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
275 TNGT	8	3	1	2	4	12	1028.	1.000	1.000	1.000	SC374
280	8	3	1	2	3	6	566.	1.300	1.000	1.000	2
280 TNGT	3	11	8	3	2	6	566.	1.300	1.000	1.000	SC374
285	3	11	8	3	3	5	534.	1.300	1.000	1.000	2
285 TNGT	12	3	8	3	3	5	534.	1.300	1.000	1.000	SC374
290	12	3	8	3	3	5	550.	1.000	1.000	1.000	2
290 TNGT	12	4	5	3	3	5	550.	1.000	1.000	1.000	SC374
290A	12	4	5	3	9	9	1042.	1.000	1.000	1.000	2
290A TNGT	13	5	5	3	9	9	1042.	1.000	1.000	1.000	SC374
295	13	5	5	3	4	5	586.	1.000	1.000	1.000	2
295 TNGT	14	1	2	3	4	5	586.	1.000	1.000	1.000	SC374
300	14	1	2	3	2	5	531.	1.300	1.000	1.000	2
300 TNGT	1	15	3	2	3	5	531.	1.300	1.000	1.000	SC374
305	1	15	3	2	2	3	337.	1.000	1.000	1.000	2
305 TNGT	1	1	3	2	2	3	337.	1.000	1.000	1.000	SC374
310 B	1	1	3	2	2	3	334.	1.000	1.000	1.000	2
310 B BEND	2	3	1	2	3	2	334.	1.000	1.000	1.000	SC374
310 M	3	3	1	2	3	2	334.	1.000	1.000	1.000	2
310 M BEND	3	3	1	2	3	2	334.	1.000	1.000	1.000	SC374
310 E	3	2	1	3	2	2	327.	1.000	1.000	1.000	2
310 E TNGT	4	1	2	3	2	2	327.	1.000	1.000	1.000	SC374
315	4	1	2	3	2	2	324.	1.300	1.000	1.000	2
315 TNGT	1	2	5	2	2	3	324.	1.300	1.000	1.000	SC374
320 B	1	2	5	2	1	2	209.	1.000	1.000	1.000	2
320 B BEND	1	3	4	2	1	2	209.	1.000	1.000	1.000	SC374
320 M	3	2	4	2	1	2	213.	1.000	1.000	1.000	2
320 M BEND	3	2	4	2	1	2	213.	1.000	1.000	1.000	SC374
320 E	3	1	4	1	2	2	273.	1.000	1.000	1.000	2
320 E TNGT	3	2	5	1	2	2	273.	1.000	1.000	1.000	SC374
500	3	2	5	1	5	3	509.	1.000	1.000	1.000	2

*** AT THE MEMBER END 95 OF ELEMENT FROM 95 TO 100 B., MAX. STRESS (PSI) IS 7090.



EFFECTIVE ACCELERATIONS

ME101/12

DATE 040182

PAGE 509

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO4

EARTHQUAKE COMPONENT : X+Y+Z
 RESULTS OF MODAL SYNTHESIS

DATA PT	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	RESULTANT
5	.000	.000	.000	.000
10	.017	.314	.036	.316
15	.148	2.991	.342	3.014
20	.207	4.327	.479	4.358
25	.351	4.334	.149	4.351
30	1.011	4.341	.965	4.561
35	2.937	4.348	3.261	6.178
40	5.372	4.349	6.016	9.163
45 B	4.919	4.300	2.058	6.850
45 E	7.467	1.423	4.348	8.757
50	7.354	.000	4.348	8.543
55	5.276	5.717	4.342	8.909
60	.919	.456	2.987	3.159
65	.000	.000	2.988	2.988
70	3.249	1.784	2.992	4.763
75	3.850	2.614	2.984	5.528
80 B	2.750	2.928	2.977	5.000
80 E	.458	4.018	1.024	4.171
85	.000	4.017	.000	4.017
90	11.622	4.011	8.354	14.865
95	4.951	.000	8.355	9.712
100 B	4.671	1.413	8.355	9.675
100 E	3.375	2.999	6.694	8.075
105	.000	3.001	3.196	4.384
110	2.395	3.002	1.298	4.054
115	2.395	.000	.000	2.395

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	2.396	12.887	1.725	13.220
120 E	1.922	12.228	2.072	12.551
125	.753	.076	2.069	2.203
130	.000	.075	.000	.075
130A	1.052	.069	2.607	2.812
135	.000	.064	.000	.064
135A	1.407	.058	5.627	5.800
137	1.183	.053	5.942	6.059
138	.624	5.322	5.949	8.007
140	.000	.040	.000	.040
140A	.590	.020	2.156	2.236
145	.000	.000	.000	.000
145A	3.697	.006	5.489	6.618
150	.000	.012	.000	.012
155	.805	.013	1.175	1.424
160	.816	4.046	.000	4.128
165	.828	3.524	.591	3.667
170	.829	3.730	.000	3.821
175	.830	3.955	.912	4.143
180 B	5.320	1.719	3.659	6.682
180 E	6.386	1.736	4.722	8.130
185	.000	1.729	.000	1.729
185A	2.287	1.722	1.852	3.410
190	.000	1.713	.000	1.713
190A	3.619	1.701	2.155	4.543
195	.000	1.686	.000	1.686
200	2.148	1.679	1.503	3.113
205	.000	.000	1.507	1.507
205A	3.057	2.485	1.516	4.221
210	.000	.000	1.524	1.524
210A	7.164	5.418	1.534	9.112
215	.000	.000	1.543	1.543
215A	4.135	1.885	1.551	4.802
220	.000	.000	1.556	1.556
225 B	2.545	.914	1.557	3.120
225 E	2.862	.981	1.379	3.325

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	2.854	.000	.000	2.854
230A	2.834	1.784	8.218	8.874
235	2.800	.000	.000	2.800
235A	2.753	1.804	7.815	8.480
240	2.693	.000	.000	2.693
245	2.621	.451	2.882	3.922
250	.000	.000	2.879	2.879
255 B	1.236	.855	2.873	3.243
255 E	1.897	.547	1.304	2.366
260	1.898	.000	.000	1.898
265 B	1.906	3.163	2.439	4.426
265 E	1.749	2.529	2.008	3.673
270	2.367	1.919	2.422	3.893
275	.000	1.920	.000	1.920
280	4.894	1.911	.725	5.304
285	.628	1.152	.726	1.499
290	.000	1.151	.000	1.151
290A	5.959	1.142	5.452	8.157
295	.000	1.130	.000	1.130
300	1.684	1.126	1.876	2.761
305	1.386	.000	1.876	2.333
310 B	1.363	.207	1.876	2.328
310 E	1.427	1.039	1.369	2.234
315	1.425	.613	.668	1.689
320 B	1.012	.613	.585	1.320
320 E	.316	.268	.315	.520
500	.000	.000	.000	.000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEIS04

GLOBAL FORCES (LB)

GLOBAL MOMENTS (FT-LB)

DATA PT	TYPE	TITLE	FX	FY	FZ	MX	MY	MZ
5	ANC		318.	98.	179.	56.	49.	57.
25	RAD		141.	0.	332.	0.	0.	0.
50	RAD		0.	263.	0.	0.	0.	0.
65	RAD		271.	0.	0.	0.	0.	0.
65	RAD		0.	155.	0.	0.	0.	0.
85	RAD		307.	0.	0.	0.	0.	0.
85	RAD		0.	0.	488.	0.	0.	0.
95	RAD		0.	260.	0.	0.	0.	0.
105	RAD		32.	0.	0.	0.	0.	0.
115	RAD		0.	152.	0.	0.	0.	0.
115	RAD		0.	0.	83.	0.	0.	0.
130	RAD		44.	0.	0.	0.	0.	0.
130	RAD		0.	0.	71.	0.	0.	0.
135	RAD		80.	0.	0.	0.	0.	0.
135	RAD		0.	0.	116.	0.	0.	0.
140	RAD		141.	0.	0.	0.	0.	0.
140	RAD		0.	0.	139.	0.	0.	0.
145	ANC		45.	144.	52.	76.	49.	44.
150	RAD		142.	0.	0.	0.	0.	0.
150	RAD		0.	0.	48.	0.	0.	0.
160	RAD		0.	0.	37.	0.	0.	0.
170	RAD		0.	0.	52.	0.	0.	0.
185	RAD		59.	0.	0.	0.	0.	0.
185	RAD		0.	0.	69.	0.	0.	0.
190	RAD		47.	0.	0.	0.	0.	0.
190	RAD		0.	0.	21.	0.	0.	0.
195	RAD		39.	0.	0.	0.	0.	0.
195	RAD		0.	0.	266.	0.	0.	0.
205	RAD		18.	0.	0.	0.	0.	0.
205	RAD		0.	80.	0.	0.	0.	0.
210	RAD		48.	0.	0.	0.	0.	0.
210	RAD		0.	29.	0.	0.	0.	0.
215	RAD		70.	0.	0.	0.	0.	0.
215	RAD		0.	28.	0.	0.	0.	0.
220	RAD		75.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	12.	0.	0.	0.	0.
230	RAD		0.	13.	0.	0.	0.	0.
230	RAD		0.	0.	78.	0.	0.	0.
235	RAD		0.	12.	0.	0.	0.	0.
235	RAD		0.	0.	73.	0.	0.	0.
240	RAD		0.	13.	0.	0.	0.	0.
240	RAD		0.	0.	56.	0.	0.	0.
250	RAD		289.	0.	0.	0.	0.	0.
250	RAD		0.	9.	0.	0.	0.	0.
260	RAD		0.	8.	0.	0.	0.	0.
260	RAD		0.	0.	84.	0.	0.	0.
275	RAD		72.	0.	0.	0.	0.	0.
275	RAD		0.	0.	87.	0.	0.	0.
290	RAD		63.	0.	0.	0.	0.	0.
290	RAD		0.	0.	59.	0.	0.	0.
295	RAD		60.	0.	0.	0.	0.	0.
295	RAD		0.	0.	63.	0.	0.	0.
305	RAD		0.	49.	0.	0.	0.	0.
500	ANC		26.	6.	23.	6.	20.	9.

ACTIONS ON SUPPORTS AND ANCHORS

ME101/12

DATE 040182

PAGE 514

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO4

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		MC	DIRECTION COSINES								
			FA	FB	FC	MA	MB		COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		318	98	179	56	49	57	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		361	0	0	0	0	0	.391	.000	.920						
50	RAD		263	0	0	0	0	0	.000	1.00	.000						
65	RAD		271	0	0	0	0	0	1.00	.000	.000						
65	RAD		155	0	0	0	0	0	.000	1.00	.000						
85	RAD		307	0	0	0	0	0	1.00	.000	.000						
85	RAD		488	0	0	0	0	0	.000	.000	1.00						
95	RAD		260	0	0	0	0	0	.000	1.00	.000						
105	RAD		32	0	0	0	0	0	1.00	.000	.000						
115	RAD		152	0	0	0	0	0	.000	1.00	.000						
115	RAD		83	0	0	0	0	0	.000	.000	1.00						
130	RAD		44	0	0	0	0	0	1.00	.000	.000						
130	RAD		71	0	0	0	0	0	.000	.000	1.00						
135	RAD		80	0	0	0	0	0	1.00	.000	.000						
135	RAD		116	0	0	0	0	0	.000	.000	1.00						
140	RAD		141	0	0	0	0	0	1.00	.000	.000						
140	RAD		139	0	0	0	0	0	.000	.000	1.00						
145	ANC		45	144	52	76	49	44	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		142	0	0	0	0	0	1.00	.000	.000						
150	RAD		48	0	0	0	0	0	.000	.000	1.00						
160	RAD		37	0	0	0	0	0	.000	.000	1.00						
170	RAD		52	0	0	0	0	0	.000	.000	1.00						
185	RAD		59	0	0	0	0	0	1.00	.000	.000						
185	RAD		69	0	0	0	0	0	.000	.000	1.00						
190	RAD		47	0	0	0	0	0	1.00	.000	.000						
190	RAD		21	0	0	0	0	0	.000	.000	1.00						
195	RAD		39	0	0	0	0	0	1.00	.000	.000						
195	RAD		266	0	0	0	0	0	.000	.000	1.00						
205	RAD		18	0	0	0	0	0	1.00	.000	.000						
205	RAD		80	0	0	0	0	0	.000	1.00	.000						
210	RAD		48	0	0	0	0	0	1.00	.000	.000						
210	RAD		29	0	0	0	0	0	.000	1.00	.000						
215	RAD		70	0	0	0	0	0	1.00	.000	.000						
215	RAD		28	0	0	0	0	0	.000	1.00	.000						
220	RAD		75	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		12	0	0	0	0	0	.000	1.00	.000						
230	RAD		13	0	0	0	0	0	.000	1.00	.000						
230	RAD		78	0	0	0	0	0	.000	.000	1.00						
235	RAD		12	0	0	0	0	0	.000	1.00	.000						
235	RAD		73	0	0	0	0	0	.000	.000	1.00						
240	RAD		13	0	0	0	0	0	.000	1.00	.000						
240	RAD		56	0	0	0	0	0	.000	.000	1.00						
250	RAD		289	0	0	0	0	0	1.00	.000	.000						
250	RAD		9	0	0	0	0	0	.000	1.00	.000						
260	RAD		8	0	0	0	0	0	.000	1.00	.000						
260	RAD		84	0	0	0	0	0	.000	.000	1.00						
275	RAD		72	0	0	0	0	0	1.00	.000	.000						
275	RAD		87	0	0	0	0	0	.000	.000	1.00						
290	RAD		63	0	0	0	0	0	1.00	.000	.000						
290	RAD		59	0	0	0	0	0	.000	.000	1.00						
295	RAD		60	0	0	0	0	0	1.00	.000	.000						
295	RAD		63	0	0	0	0	0	.000	.000	1.00						
305	RAD		49	0	0	0	0	0	.000	1.00	.000						
500	ANC		26	6	23	6	20	9	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

JOINT DISPLACEMENTS FOR THE SEISO4 LOAD CASE

ME101/I2

DATE 040182

PAGE 516

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO4

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.001	.003	.002	.001373	.000888	.000636
15		.004	.030	.009	.003309	.001449	.003545
20		.011	.050	.028	.002697	.001652	.010910
25		.045	.050	.019	.002780	.001652	.014563
30		.115	.050	.022	.004694	.001652	.016832
35		.243	.050	.057	.006000	.001652	.018220
40		.385	.050	.104	.006130	.001652	.018355
45 B		.152	.050	.087	.006371	.002676	.010257
45 E		.189	.016	.121	.006975	.003836	.010453
50		.181	.000	.121	.006820	.004090	.010498
55		.121	.078	.121	.005491	.005725	.010797
60		.028	.009	.067	.003156	.008987	.011281
65		.000	.000	.067	.002871	.009616	.011521
70		.092	.024	.067	.001861	.007369	.012344
75		.131	.039	.067	.004080	.001056	.013414
80 B		.122	.052	.067	.006135	.003018	.013790
80 E		.015	.138	.016	.008615	.003050	.013030
85		.000	.138	.000	.007296	.002457	.011413
90		.203	.138	.097	.006877	.007450	.007311
95		.088	.000	.097	.005242	.007075	.005491
100 B		.073	.026	.097	.004134	.006474	.005646
100 E		.051	.046	.076	.005124	.005203	.006174
105		.000	.046	.034	.006139	.003816	.006868
110		.036	.046	.016	.006416	.002987	.007275
115		.036	.000	.000	.006636	.002036	.007548
120 B		.036	.162	.020	.008115	.001144	.006580
120 E		.030	.150	.025	.008560	.001540	.005337
125		.008	.001	.025	.006052	.002039	.002007
130		.000	.001	.000	.004506	.001902	.001417
130A		.010	.001	.036	.000382	.006716	.000227
135		.000	.001	.000	.001546	.011034	.001800
135A		.008	.001	.093	.002137	.015357	.002143
137		.007	.001	.095	.002194	.019683	.002263
138		.285	.025	.051	.002269	.021902	.002263

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.002493	.014762	.002553
140A		.003	.000	.031	.000614	.007381	.000629
145		.000	.000	.000	.000000	.000000	.000000
145A		.037	.000	.065	.000701	.000262	.000453
150		.000	.000	.000	.002821	.000524	.001824
155		.010	.000	.014	.002733	.000560	.001989
160		.010	.049	.000	.002268	.000501	.000894
165		.004	.061	.003	.002589	.001240	.001769
170		.004	.062	.000	.002651	.001623	.001762
175		.004	.064	.004	.002729	.002076	.001755
180 B		.025	.051	.013	.002111	.003033	.001159
180 E		.032	.049	.018	.001552	.003022	.000766
185		.000	.049	.000	.001111	.002130	.001045
185A		.003	.049	.010	.000211	.001789	.000166
190		.000	.049	.000	.001042	.001539	.000938
190A		.015	.049	.039	.001170	.001000	.000068
195		.000	.049	.000	.006017	.000819	.000771
200		.006	.049	.072	.006903	.000747	.000577
205		.000	.000	.072	.003943	.000660	.000555
205A		.006	.026	.073	.000426	.000133	.000912
210		.000	.000	.073	.001406	.001492	.000846
210A		.003	.011	.073	.000216	.000292	.000784
215		.000	.000	.073	.000983	.001817	.000769
215A		.057	.009	.074	.000286	.000290	.000829
220		.000	.000	.074	.001013	.001065	.000965
225 B		.010	.007	.074	.001322	.000713	.001078
225 E		.013	.007	.067	.001289	.000993	.001109
230		.014	.000	.000	.001090	.002001	.000907
230A		.014	.027	.079	.000941	.000433	.000189
235		.014	.000	.000	.000820	.002045	.001136
235A		.014	.027	.074	.000714	.000483	.000152
240		.014	.000	.000	.000633	.001631	.000591
245		.012	.003	.024	.000589	.001943	.000442
250		.000	.000	.024	.000549	.001806	.000590
255 B		.021	.006	.024	.000573	.002658	.000902
255 E		.034	.004	.011	.000886	.002684	.001095
260		.034	.000	.000	.001082	.002747	.001134
265 B		.034	.044	.091	.003565	.000785	.000708
265 E		.033	.041	.088	.003752	.001072	.000770
270		.021	.007	.075	.004372	.001534	.001274
275		.000	.014	.000	.001745	.002293	.000952
280		.037	.014	.006	.001654	.005253	.001070
285		.004	.009	.006	.002023	.005208	.001459
290		.000	.009	.000	.002056	.005014	.001613

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.040	.009	.042	.000286	.003087	.000060
295		.000	.009	.000	.001776	.001369	.001527
300		.012	.009	.015	.001629	.001045	.001020
305		.009	.000	.015	.001601	.000988	.000728
310 B		.009	.002	.015	.001557	.000995	.000676
310 E		.010	.008	.011	.001172	.001016	.000384
315		.010	.004	.005	.000627	.000917	.000460
320 B		.007	.004	.004	.000455	.000789	.000554
320 E		.002	.002	.002	.000247	.000606	.000387
500		.000	.000	.000	.000000	.000000	.000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISO4

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000-1.000	.000	.391	.000	.920		318	98	179	56	49	46
		-.920	.000	.391	.000-1.000	.000	.391	.000	.920		314	98	175	41	27	17
10 15	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		314	98	175	41	27	17
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		301	97	165	7	43	104
15 20	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		230	97	124	7	43	104
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		222	97	123	39	32	182
20 25	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			191	33	174	124	0	202
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			188	33	176	146	0	146
25 30	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			202	33	202	146	0	146
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			198	32	198	73	0	73
30 35	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			111	18	111	73	0	73
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			79	107	88	11	0	10
35 40	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			15	12	17	11	0	10
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			9	1	9	0	0	0
20 45 B	TNGT	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			57	242	85	90	14	89
		.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			57	242	85	83	14	33
45 B 45 M	BEND	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			47	253	86	83	14	33
		.000 .707	.707	.000	.000 -.707 .707	1.000	.000	.000			47	253	86	69	13	26
45 M 45 E	BEND	.000 .707	.707	.000	.000 -.707 .707	1.000	.000	.000			47	253	86	69	13	26
		.000 .000 1.000	.000-1.000	.000	1.000	.000	1.000	.000	.000		23	107	88	39	31	11
45 E 50	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	1.000	.000	.000		23	107	88	39	31	11
		.000 .000 1.000	.000-1.000	.000	1.000	.000	1.000	.000	.000		40	255	88	57	25	25
50 55	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	1.000	.000	.000		30	31	91	57	25	25
		.000 .000 1.000	.000-1.000	.000	1.000	.000	1.000	.000	.000		30	31	91	49	52	25
55 60	TNGT	-.707 .000 .707	.000-1.000	.000	.707 .000 .707	.000	.707 .000 .707	.000	.707		19	41	99	49	52	25
		-.707 .000 .707	.000-1.000	.000	.000 .707 .707	.000	.707 .000 .707	.000	.707		19	41	99	55	85	26
60 65	TNGT	.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	.000	1.000 .000 .000	.000	.000		17	40	96	55	85	26
		.000 .000 1.000	.000-1.000	.000	1.000 .000 .000	.000	1.000 .000 .000	.000	.000		17	40	96	61	87	26

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	201	125	94	61	87	26
70		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	223	69	47	50	140	18
70	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	6	57	182	50	140	18
75		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	6	57	194	98	140	18
75	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	224	65	410	98	140	18
80 B		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	228	65	414	114	62	18
80 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	228	65	414	114	62	18
80 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	232	66	418	79	7	15
80 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	232	66	418	79	7	15
80 E		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	236	66	422	38	34	82
80 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	236	66	422	38	34	82
85		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	239	66	425	144	34	141
85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	68	66	64	144	34	141
90		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	57	127	77	115	15	43
90	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	19	146	49	115	15	43
95		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	19	146	49	144	17	43
95	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	23	126	47	144	17	43
100 B		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	23	126	47	94	28	43
100 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	25	125	52	94	28	43
100 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	25	125	52	68	34	41
100 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	25	125	52	68	34	41
100 E		.000	1.000	.000	.000	.000-1.000	-1.000	.000	.000	.000	25	125	52	50	37	34
100 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	124	58	50	37	34
105		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	124	58	18	37	22
105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	17	123	62	18	37	22
110		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	17	123	62	22	37	19
110	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	14	122	63	22	37	19
115		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	14	122	63	22	43	51
115	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	10	38	28	22	43	51
120 B		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	10	38	28	22	12	33
120 B BEND		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	11	18	31	22	12	33
120 M		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	11	18	31	20	19	29
120 M BEND		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	11	18	31	20	19	29
120 E		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	11	18	31	18	19	28

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	39	22	25	7	28	17
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	39	22	25	26	1	17
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	30	23	18	26	1	17
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	30	23	18	30	2	21
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	30	23	18	30	2	21
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	30	23	18	33	3	25
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	27	11	33	3	25
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	16	35	31	1	26
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	16	34	31	1	26
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	37	6	13	3	14
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	46	9	13	3	14
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	23	12	11	1	16
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	23	4	11	1	16
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	12	54	16	21	3	19
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	64	11	21	3	19
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	23	31	53	105	1	9
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	31	214	105	1	9
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	33	204	70	1	0
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	5	33	204	70	1	0
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	34	195	69	2	0
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	26	195	69	2	0
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	11	16	67	24	19	1
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	5	18	61	24	19	1
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	25	25	155	15	16	0
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	5	155	15	16	0
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	22	16	53	27	37	1
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	25	19	44	27	37	1
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	32	7	100	7	36	0
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	38	6	100	7	36	0
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	18	10	34	15	35	1
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	7	23	15	35	1
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	39	6	23	7	39	0
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	37	5	23	7	39	0
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	16	1	5	0	22	0

ELEMENT TYPE/TITLE FROM TO	DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND	.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	16	1	5	0	22	0
225 M	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	13	1	8	0	26	0
225 M BEND	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	13	1	8	0	26	0
225 E	1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	12	0	11	0	24	1
225 E TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	0	11	0	24	1
230	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	31	5	41	0	44	6
230 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	31	6	37	0	44	6
230A	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	41	9	31	1	58	16
230A TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	63	7	37	1	58	16
235	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	63	7	37	1	54	7
235 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	85	6	35	1	54	7
235A	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	85	6	35	1	55	16
235A TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	108	9	30	1	55	16
240	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	108	9	30	1	36	10
240 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	130	4	21	1	36	10
245	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	130	4	21	1	35	5
245 TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	143	5	29	1	35	5
250	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	215	3	22	1	90	5
250 TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	74	6	22	1	90	5
255 B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	32	5	34	4	26	5
255 B BEND	.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	30	6	40	4	26	5
255 M	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	30	6	40	5	20	4
255 M BEND	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	30	6	40	5	20	4
255 E	1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	53	6	43	8	24	3
255 E TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	53	6	43	8	24	3
260	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	49	6	47	8	38	3
260 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	49	6	38	8	38	3
265 B	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	4	12	8	20	8
265 B BEND	1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	3	4	12	8	20	8
265 M	.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	4	4	14	8	18	8
265 M BEND	.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	4	4	14	8	18	8
265 E	.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	5	4	16	8	17	8
265 E TNGT	.707	.000	.707	.000	1.000	.000	-.707	.000	.707	5	4	16	8	17	8
270	.707	.000	.707	.000	1.000	.000	-.707	.000	.707	9	22	17	18	9	15

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	16	21	19	18	9	15
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	38	9	49	55	8	36
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	34	9	38	55	8	36
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	27	8	23	9	14
280	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	34	38	5	23	9	14
285		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	34	38	5	13	11	14
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	34	38	5	13	11	14
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	34	20	30	19	8	19
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	29	20	29	19	8	19
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	39	17	35	11	35
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	43	20	35	11	35
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	29	29	30	21	8	21
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	31	29	34	21	8	21
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	46	4	19	11	10
300	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	12	48	4	19	11	10
305		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	12	48	4	10	8	10
305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	13	5	5	10	8	10
310 B		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	13	5	5	10	8	10
310 B BEND		.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	14	5	6	10	8	10
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	14	5	6	9	8	10
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	14	5	6	9	8	10
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	14	5	6	9	7	10
310 E TNGT		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	16	5	9	9	6	10
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	16	5	9	9	6	10
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	18	5	9	9	6	10
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	18	5	9	6	6	3
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	19	6	10	6	6	3
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	19	6	10	5	6	5
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	19	6	10	5	6	5
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	19	6	10	5	8	7
320 E TNGT		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	20	6	10	5	8	7
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	20	6	10	6	20	9

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
125 TNGT	50	39	14	7	28	69	6125.	1.300	1.000	1.000	SC374
130	50	39	14	7	24	80	6890.	1.000	1.000	1.000	2
130 TNGT	50	42	9	7	24	80	6890.	1.000	1.000	1.000	SC374
130A	50	42	9	7	12	44	3767.	1.000	1.000	1.000	2
130A TNGT	50	45	12	7	12	44	3767.	1.000	1.000	1.000	SC374
135	50	45	12	7	8	72	5991.	1.000	1.000	1.000	2
135 TNGT	50	81	7	7	8	72	5991.	1.000	1.000	1.000	SC374
135A	50	81	7	7	7	59	4950.	1.000	1.000	1.000	2
135A TNGT	50	57	5	7	7	59	4950.	1.000	1.000	1.000	SC374
137	50	57	5	7	9	148	12179.	1.000	1.000	1.000	2
137 TNGT	127	114	13	0	12	104	8624.	1.000	1.000	1.000	SC374
138	87	14	87	0	0	0	0.	1.300	1.000	1.000	2
137 TNGT	38	83	84	49	64	63	8401.	1.000	1.000	1.000	SC374
140	40	99	100	49	60	59	7954.	1.000	1.000	1.000	2
140 TNGT	40	40	40	49	60	59	7954.	1.000	1.000	1.000	SC374
140A	44	16	16	49	3	3	4019.	1.000	1.000	1.000	2
140A TNGT	44	16	16	49	3	3	4019.	1.000	1.000	1.000	SC374
145	47	8	8	49	6	5	4057.	1.000	1.000	1.000	2
145 TNGT	19	42	37	1	38	49	5140.	1.000	1.000	1.000	SC374
145A	18	31	18	1	27	43	4173.	1.000	1.000	1.000	2
145A TNGT	18	16	14	1	27	43	4173.	1.000	1.000	1.000	SC374
150	8	31	36	1	36	14	3175.	1.000	1.000	1.000	2
150 TNGT	8	17	106	1	36	14	3175.	1.000	1.000	1.000	SC374
155	18	4	49	1	19	7	1698.	1.300	1.000	1.000	2
155 TNGT	47	18	4	7	1	19	1698.	1.300	1.000	1.000	SC374
160	47	18	4	7	10	30	2640.	1.000	1.000	1.000	2
160 TNGT	43	13	12	7	10	30	2640.	1.000	1.000	1.000	SC374
165	43	13	12	7	28	15	2669.	1.000	1.000	1.000	2
165 TNGT	41	15	10	7	28	15	2669.	1.000	1.000	1.000	SC374
170	41	15	10	7	30	16	2838.	1.000	1.000	1.000	2
170 TNGT	40	17	25	7	30	16	2838.	1.000	1.000	1.000	SC374
175	40	17	25	7	28	17	2760.	1.300	1.000	1.000	2
175 TNGT	14	30	39	13	30	7	2754.	1.300	1.000	1.000	SC374
180 B	14	30	39	13	12	26	2534.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
180 B	BEND	13	26	30	13	12	26	2534.	1.000	1.000	1.000	SC374
180 M		18	23	30	6	20	30	2971.	1.000	1.000	1.000	2
180 M	BEND	18	23	30	6	20	30	2971.	1.000	1.000	1.000	SC374
180 E		23	18	30	3	25	33	3398.	1.000	1.000	1.000	2
180 E	TNGT	27	11	9	3	25	33	3398.	1.000	1.000	1.000	SC374
185		16	35	33	1	26	31	3348.	1.000	1.000	1.000	2
185	TNGT	16	34	26	1	26	31	3348.	1.000	1.000	1.000	SC374
185A		37	6	7	3	14	13	1602.	1.000	1.000	1.000	2
185A	TNGT	46	9	7	3	14	13	1602.	1.000	1.000	1.000	SC374
190		23	12	20	1	16	11	1567.	1.000	1.000	1.000	2
190	TNGT	23	4	27	1	16	11	1567.	1.000	1.000	1.000	SC374
190A		54	16	12	3	19	21	2344.	1.000	1.000	1.000	2
190A	TNGT	64	11	10	3	19	21	2344.	1.000	1.000	1.000	SC374
195		31	53	23	1	9	105	8694.	1.000	1.000	1.000	2
195	TNGT	31	214	15	1	9	105	8694.	1.000	1.000	1.000	SC374
200		33	204	5	1	0	70	5719.	1.300	1.000	1.000	2
200	TNGT	204	33	5	0	1	70	5719.	1.300	1.000	1.000	SC374
205		195	34	4	0	2	69	5700.	1.000	1.000	1.000	2
205	TNGT	195	26	15	0	2	69	5700.	1.000	1.000	1.000	SC374
205A		67	16	11	1	19	24	2526.	1.000	1.000	1.000	2
205A	TNGT	61	18	5	1	19	24	2526.	1.000	1.000	1.000	SC374
210		155	25	25	0	16	15	1771.	1.000	1.000	1.000	2
210	TNGT	155	5	23	0	16	15	1771.	1.000	1.000	1.000	SC374
210A		53	16	22	1	37	27	3765.	1.000	1.000	1.000	2
210A	TNGT	44	19	25	1	37	27	3765.	1.000	1.000	1.000	SC374
215		100	7	32	0	36	7	2983.	1.000	1.000	1.000	2
215	TNGT	100	6	38	0	36	7	2983.	1.000	1.000	1.000	SC374
215A		34	10	18	1	35	15	3182.	1.000	1.000	1.000	2
215A	TNGT	23	7	19	1	35	15	3182.	1.000	1.000	1.000	SC374
220		23	6	39	0	39	7	3283.	1.000	1.000	1.000	2
220	TNGT	23	5	37	0	39	7	3283.	1.000	1.000	1.000	SC374
225 B		5	1	16	0	22	0	1833.	1.000	1.000	1.000	2
225 B	BEND	5	16	1	0	0	22	1833.	1.000	1.000	1.000	SC374
225 M		15	4	1	0	1	26	2107.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	15	4	1	0	1	26	2107.	1.000	1.000	1.000	SC374
225 E	12	11	0	0	1	24	2008.	1.000	1.000	1.000	2
225 E TNGT	12	0	11	0	24	1	2008.	1.000	1.000	1.000	SC374
230	31	5	41	0	44	6	3636.	1.000	1.000	1.000	2
230 TNGT	31	6	37	0	44	6	3636.	1.000	1.000	1.000	SC374
230A	41	9	31	1	58	16	4954.	1.000	1.000	1.000	2
230A TNGT	63	7	37	1	58	16	4954.	1.000	1.000	1.000	SC374
235	63	7	37	1	54	7	4491.	1.000	1.000	1.000	2
235 TNGT	85	6	35	1	54	7	4491.	1.000	1.000	1.000	SC374
235A	85	6	35	1	55	16	4723.	1.000	1.000	1.000	2
235A TNGT	108	9	30	1	55	16	4723.	1.000	1.000	1.000	SC374
240	108	9	30	1	36	10	3119.	1.000	1.000	1.000	2
240 TNGT	130	4	21	1	36	10	3119.	1.000	1.000	1.000	SC374
245	130	4	21	1	35	5	2932.	1.300	1.000	1.000	2
245 TNGT	29	5	143	5	35	1	2932.	1.300	1.000	1.000	SC374
250	22	3	215	5	90	1	7402.	1.000	1.000	1.000	2
250 TNGT	22	6	74	5	90	1	7402.	1.000	1.000	1.000	SC374
255 B	34	5	32	5	26	4	2236.	1.000	1.000	1.000	2
255 B BEND	40	30	6	5	4	26	2236.	1.000	1.000	1.000	SC374
255 M	28	42	6	6	3	20	1699.	1.000	1.000	1.000	2
255 M BEND	28	42	6	6	3	20	1699.	1.000	1.000	1.000	SC374
255 E	53	43	6	8	3	24	2099.	1.000	1.000	1.000	2
255 E TNGT	53	6	43	8	24	3	2099.	1.000	1.000	1.000	SC374
260	49	6	47	8	38	3	3193.	1.000	1.000	1.000	2
260 TNGT	49	6	38	8	38	3	3193.	1.000	1.000	1.000	SC374
265 B	3	4	12	8	20	8	1917.	1.000	1.000	1.000	2
265 B BEND	3	12	4	8	8	20	1917.	1.000	1.000	1.000	SC374
265 M	8	12	4	7	9	18	1783.	1.000	1.000	1.000	2
265 M BEND	8	12	4	7	9	18	1783.	1.000	1.000	1.000	SC374
265 E	13	10	4	7	9	17	1663.	1.000	1.000	1.000	2
265 E TNGT	13	4	10	7	17	9	1663.	1.000	1.000	1.000	SC374
270	16	22	11	7	9	22	2015.	1.300	1.000	1.000	2
270 TNGT	21	19	16	9	15	18	2046.	1.300	1.000	1.000	SC374
275	9	49	38	8	36	55	5447.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
275	TNGT	9	38	34	8	36	55	5447.	1.000	1.000	1.000	SC374
280		27	8	5	9	14	23	2298.	1.300	1.000	1.000	2
280	TNGT	5	38	34	14	9	23	2298.	1.300	1.000	1.000	SC374
285		5	38	34	14	11	13	1815.	1.300	1.000	1.000	2
285	TNGT	38	5	34	11	14	13	1815.	1.300	1.000	1.000	SC374
290		20	30	34	8	19	19	2338.	1.000	1.000	1.000	2
290	TNGT	20	29	29	8	19	19	2338.	1.000	1.000	1.000	SC374
290A		39	17	20	11	35	35	4189.	1.000	1.000	1.000	2
290A	TNGT	43	20	20	11	35	35	4189.	1.000	1.000	1.000	SC374
295		29	30	29	8	21	21	2542.	1.000	1.000	1.000	2
295	TNGT	29	34	31	8	21	21	2542.	1.000	1.000	1.000	SC374
300		46	4	10	11	10	19	1955.	1.300	1.000	1.000	2
300	TNGT	4	48	12	10	11	19	1955.	1.300	1.000	1.000	SC374
305		4	48	12	10	8	10	1327.	1.000	1.000	1.000	2
305	TNGT	5	5	13	10	8	10	1327.	1.000	1.000	1.000	SC374
310 B		5	5	13	10	8	10	1310.	1.000	1.000	1.000	2
310 B	BEND	6	14	5	10	10	8	1310.	1.000	1.000	1.000	SC374
310 M		11	11	5	8	11	8	1301.	1.000	1.000	1.000	2
310 M	BEND	11	11	5	8	11	8	1301.	1.000	1.000	1.000	SC374
310 E		14	6	5	9	10	7	1254.	1.000	1.000	1.000	2
310 E	TNGT	16	5	9	9	7	10	1254.	1.000	1.000	1.000	SC374
315		16	5	9	9	6	10	1227.	1.300	1.000	1.000	2
315	TNGT	5	9	18	6	10	9	1227.	1.300	1.000	1.000	SC374
320 B		5	9	18	6	3	6	758.	1.000	1.000	1.000	2
320 B	BEND	6	12	17	6	4	6	760.	1.000	1.000	1.000	SC374
320 M		11	8	17	6	4	6	769.	1.000	1.000	1.000	2
320 M	BEND	11	8	17	6	4	6	769.	1.000	1.000	1.000	SC374
320 E		12	6	17	5	8	7	990.	1.000	1.000	1.000	2
320 E	TNGT	12	6	18	5	8	7	990.	1.000	1.000	1.000	SC374
500		12	6	18	5	20	10	1897.	1.000	1.000	1.000	2

*** AT THE MEMBER END 20 OF ELEMENT FROM 20 TO 25 i , MAX. STRESS (PSI) IS 19525.

EFFECTIVE ACCELERATIONS

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DATE 040182

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISUP

EARTHQUAKE COMPONENT : X+Y+Z
 RESULTS OF MODAL SYNTHESIS

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
5	.000	.000	.000	.000
10	.016	.084	.038	.093
15	.163	.720	.388	.834
20	.245	1.201	.583	1.358
25	.601	1.203	.255	1.369
30	1.596	1.205	.550	2.074
35	3.519	1.206	1.665	4.076
40	5.687	1.206	2.964	6.525
45 B	2.479	1.195	1.625	3.196
45 E	3.157	.394	2.183	3.858
50	3.026	.000	2.183	3.731
55	1.914	1.696	2.181	3.361
60	.310	.524	1.216	1.360
65	.000	.000	1.216	1.216
70	.973	2.107	1.216	2.621
75	1.652	4.197	1.214	4.671
80 B	1.737	4.659	1.213	5.118
80 E	.704	5.212	.457	5.279
85	.000	5.211	.000	5.211
90	5.863	5.201	2.193	8.138
95	2.526	.000	2.193	3.345
100 B	1.953	.816	2.192	3.047
100 E	1.261	1.159	1.847	2.519
105	.000	1.158	.978	1.515
110	.922	1.157	.500	1.562
115	.922	.000	.000	.922

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	.922	3.574	.510	3.726
120 E	.788	3.367	.594	3.509
125	.219	.020	.593	.632
130	.000	.020	.000	.020
130A	.389	.018	.732	.829
135	.000	.017	.000	.017
135A	.908	.015	1.166	1.478
137	.992	.014	1.264	1.607
138	5.970	1.194	1.265	6.218
140	.000	.010	.000	.010
140A	.357	.005	.507	.620
145	.000	.000	.000	.000
145A	1.157	.002	1.054	1.565
150	.000	.004	.000	.004
155	.328	.004	.227	.399
160	.331	1.870	.000	1.899
165	.335	2.141	.165	2.173
170	.335	2.157	.000	2.183
175	.335	2.166	.255	2.206
180 B	1.499	1.728	1.078	2.529
180 E	1.785	1.715	1.413	2.850
185	.000	1.711	.000	1.711
185A	.692	1.708	.657	1.957
190	.000	1.705	.000	1.705
190A	1.157	1.700	1.528	2.562
195	.000	1.695	.000	1.695
200	.687	1.693	1.981	2.694
205	.000	.000	1.983	1.983
205A	.976	1.241	1.988	2.538
210	.000	.000	1.992	1.992
210A	2.268	1.820	1.997	3.527
215	.000	.000	2.001	2.001
215A	.925	.969	2.005	2.411
220	.000	.000	2.007	2.007
225 B	.821	1.235	2.007	2.496
225 E	.929	1.294	1.847	2.439

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	.927	.000	.000	.927
230A	.920	.853	2.148	2.488
235	.910	.000	.000	.910
235A	.895	.788	1.920	2.260
240	.877	.000	.000	.877
245	.854	.170	1.003	1.328
250	.000	.000	1.002	1.002
255 B	.710	.338	1.000	1.272
255 E	1.016	.224	.453	1.135
260	1.017	.000	.000	1.017
265 B	1.018	1.783	2.155	2.976
265 E	.971	1.583	2.151	2.842
270	.895	.669	2.179	2.448
275	.000	.669	.000	.669
280	1.246	.665	.203	1.427
285	.162	.393	.203	.471
290	.000	.393	.000	.393
290A	1.533	.390	1.420	2.126
295	.000	.386	.000	.386
300	.439	.384	.579	.822
305	.364	.000	.579	.684
310 B	.363	.071	.579	.687
310 E	.428	.346	.400	.681
315	.428	.199	.177	.504
320 B	.304	.199	.155	.395
320 E	.094	.086	.094	.159
500	.000	.000	.000	.000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISUP

GLOBAL FORCES (LB)

GLOBAL MOMENTS (FT-LB)

DATA PT	TYPE	TITLE	FX	FY	FZ	MX	MY	MZ
5	ANC		92.	71.	66.	48.	40.	32.
25	RAD		49.	0.	115.	0.	0.	0.
50	RAD		0.	106.	0.	0.	0.	0.
65	RAD		67.	0.	0.	0.	0.	0.
65	RAD		0.	184.	0.	0.	0.	0.
85	RAD		96.	0.	0.	0.	0.	0.
85	RAD		0.	0.	143.	0.	0.	0.
95	RAD		0.	378.	0.	0.	0.	0.
105	RAD		57.	0.	0.	0.	0.	0.
115	RAD		0.	166.	0.	0.	0.	0.
115	RAD		0.	0.	90.	0.	0.	0.
130	RAD		20.	0.	0.	0.	0.	0.
130	RAD		0.	0.	51.	0.	0.	0.
135	RAD		43.	0.	0.	0.	0.	0.
135	RAD		0.	0.	30.	0.	0.	0.
140	RAD		120.	0.	0.	0.	0.	0.
140	RAD		0.	0.	29.	0.	0.	0.
145	ANC		23.	41.	10.	15.	68.	31.
150	RAD		21.	0.	0.	0.	0.	0.
150	RAD		0.	0.	4.	0.	0.	0.
160	RAD		0.	0.	5.	0.	0.	0.
170	RAD		0.	0.	8.	0.	0.	0.
185	RAD		6.	0.	0.	0.	0.	0.
185	RAD		0.	0.	13.	0.	0.	0.
190	RAD		5.	0.	0.	0.	0.	0.
190	RAD		0.	0.	32.	0.	0.	0.
195	RAD		5.	0.	0.	0.	0.	0.
195	RAD		0.	0.	114.	0.	0.	0.
205	RAD		3.	0.	0.	0.	0.	0.
205	RAD		0.	105.	0.	0.	0.	0.
210	RAD		7.	0.	0.	0.	0.	0.
210	RAD		0.	33.	0.	0.	0.	0.
215	RAD		13.	0.	0.	0.	0.	0.
215	RAD		0.	14.	0.	0.	0.	0.
220	RAD		10.	0.	0.	0.	0.	0.



DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	9.	0.	0.	0.	0.
230	RAD		0.	7.	0.	0.	0.	0.
230	RAD		0.	0.	13.	0.	0.	0.
235	RAD		0.	7.	0.	0.	0.	0.
235	RAD		0.	0.	17.	0.	0.	0.
240	RAD		0.	6.	0.	0.	0.	0.
240	RAD		0.	0.	13.	0.	0.	0.
250	RAD		56.	0.	0.	0.	0.	0.
250	RAD		0.	9.	0.	0.	0.	0.
260	RAD		0.	6.	0.	0.	0.	0.
260	RAD		0.	0.	15.	0.	0.	0.
275	RAD		12.	0.	0.	0.	0.	0.
275	RAD		0.	0.	26.	0.	0.	0.
290	RAD		12.	0.	0.	0.	0.	0.
290	RAD		0.	0.	11.	0.	0.	0.
295	RAD		9.	0.	0.	0.	0.	0.
295	RAD		0.	0.	7.	0.	0.	0.
305	RAD		0.	24.	0.	0.	0.	0.
500	ANC		6.	2.	3.	3.	6.	3.

ACTIONS ON SUPPORTS AND ANCHORS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISUP

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		92	71	66	48	40	32	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		125	0	0	0	0	0	.391	.000	.920						
50	RAD		106	0	0	0	0	0	.000	1.00	.000						
65	RAD		67	0	0	0	0	0	1.00	.000	.000						
65	RAD		184	0	0	0	0	0	.000	1.00	.000						
85	RAD		96	0	0	0	0	0	1.00	.000	.000						
85	RAD		143	0	0	0	0	0	.000	.000	1.00						
95	RAD		378	0	0	0	0	0	.000	1.00	.000						
105	RAD		57	0	0	0	0	0	1.00	.000	.000						
115	RAD		166	0	0	0	0	0	.000	1.00	.000						
115	RAD		90	0	0	0	0	0	.000	.000	1.00						
130	RAD		20	0	0	0	0	0	1.00	.000	.000						
130	RAD		51	0	0	0	0	0	.000	.000	1.00						
135	RAD		43	0	0	0	0	0	1.00	.000	.000						
135	RAD		30	0	0	0	0	0	.000	.000	1.00						
140	RAD		120	0	0	0	0	0	1.00	.000	.000						
140	RAD		29	0	0	0	0	0	.000	.000	1.00						
145	ANC		23	41	10	15	68	31	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		21	0	0	0	0	0	1.00	.000	.000						
150	RAD		4	0	0	0	0	0	.000	.000	1.00						
160	RAD		5	0	0	0	0	0	.000	.000	1.00						
170	RAD		8	0	0	0	0	0	.000	.000	1.00						
185	RAD		6	0	0	0	0	0	1.00	.000	.000						
185	RAD		13	0	0	0	0	0	.000	.000	1.00						
190	RAD		5	0	0	0	0	0	1.00	.000	.000						
190	RAD		32	0	0	0	0	0	.000	.000	1.00						
195	RAD		5	0	0	0	0	0	1.00	.000	.000						
195	RAD		114	0	0	0	0	0	.000	.000	1.00						
205	RAD		3	0	0	0	0	0	1.00	.000	.000						
205	RAD		105	0	0	0	0	0	.000	1.00	.000						
210	RAD		7	0	0	0	0	0	1.00	.000	.000						
210	RAD		33	0	0	0	0	0	.000	1.00	.000						
215	RAD		13	0	0	0	0	0	1.00	.000	.000						
215	RAD		14	0	0	0	0	0	.000	1.00	.000						
220	RAD		10	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		MC	DIRECTION COSINES									
			FA	FB	FC	MA	MB		COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ	
220	RAD		9	0	0	0	0	0	.000	1.00	.000							
230	RAD		7	0	0	0	0	0	.000	1.00	.000							
230	RAD		13	0	0	0	0	0	.000	.000	1.00							
235	RAD		7	0	0	0	0	0	.000	1.00	.000							
235	RAD		17	0	0	0	0	0	.000	.000	1.00							
240	RAD		6	0	0	0	0	0	.000	1.00	.000							
240	RAD		13	0	0	0	0	0	.000	.000	1.00							
250	RAD		56	0	0	0	0	0	1.00	.000	.000							
250	RAD		9	0	0	0	0	0	.000	1.00	.000							
260	RAD		6	0	0	0	0	0	.000	1.00	.000							
260	RAD		15	0	0	0	0	0	.000	.000	1.00							
275	RAD		12	0	0	0	0	0	1.00	.000	.000							
275	RAD		26	0	0	0	0	0	.000	.000	1.00							
290	RAD		12	0	0	0	0	0	1.00	.000	.000							
290	RAD		11	0	0	0	0	0	.000	.000	1.00							
295	RAD		9	0	0	0	0	0	1.00	.000	.000							
295	RAD		7	0	0	0	0	0	.000	.000	1.00							
305	RAD		24	0	0	0	0	0	.000	1.00	.000							
500	ANC		6	2	3	3	6	3	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00	

JOINT DISPLACEMENTS FOR THE SEISUP LOAD CASE

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DATE 040182

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISUP

DATA_PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.001	.002	.002	.001236	.000796	.000505
15		.008	.010	.020	.003509	.001410	.003191
20		.012	.040	.030	.004016	.000540	.008761
25		.033	.040	.014	.004654	.000540	.011342
30		.087	.040	.018	.005442	.000540	.013183
35		.188	.040	.058	.006045	.000540	.014498
40		.302	.040	.105	.006139	.000540	.014688
45 B		.130	.040	.083	.004525	.002220	.008856
45 E		.159	.013	.107	.005634	.003477	.008988
50		.151	.000	.107	.005608	.003805	.009024
55		.093	.065	.107	.004615	.005601	.009553
60		.017	.023	.045	.007159	.005708	.010670
65		.000	.000	.045	.008185	.005407	.010851
70		.048	.090	.045	.009060	.004188	.011516
75		.086	.180	.045	.005701	.002482	.012460
80 B		.094	.200	.045	.005028	.002306	.012808
80 E		.039	.222	.017	.005768	.003113	.012994
85		.000	.222	.000	.005513	.003644	.012570
90		.295	.222	.040	.009410	.009508	.007203
95		.115	.000	.040	.008090	.010176	.004760
100 B		.077	.033	.040	.003498	.009409	.004903
100 E		.047	.044	.034	.002247	.007395	.005625
105		.000	.043	.020	.002938	.005066	.006488
110		.035	.043	.018	.002953	.003624	.007055
115		.035	.000	.000	.002835	.002267	.006671
120 B		.035	.101	.014	.004381	.000794	.003149
120 E		.031	.091	.016	.005021	.001229	.002596
125		.008	.000	.016	.003795	.003085	.001665
130		.000	.000	.000	.002807	.004306	.001520
130A		.018	.000	.019	.000465	.009899	.000198
135		.000	.000	.000	.001232	.015707	.002182
135A		.052	.000	.022	.000847	.021559	.002398
137		.060	.000	.021	.001187	.027425	.002401
138		.385	.017	.021	.001744	.030544	.002401

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.001027	.020569	.003279
140A		.020	.000	.007	.000253	.010284	.000808
145		.000	.000	.000	.000000	.000000	.000000
145A		.017	.000	.012	.000137	.000054	.000314
150		.000	.000	.000	.000550	.000108	.001265
155		.007	.000	.003	.000542	.000115	.001487
160		.007	.045	.000	.000604	.000121	.001156
165		.007	.057	.001	.000909	.000328	.000520
170		.007	.056	.000	.000938	.000430	.000525
175		.007	.056	.002	.000972	.000554	.000515
180 B		.011	.051	.008	.000728	.000818	.000340
180 E		.012	.050	.010	.000510	.000814	.000249
185		.000	.050	.000	.000403	.000560	.000277
185A		.004	.050	.010	.000286	.000474	.000049
190		.000	.050	.000	.001411	.000424	.000286
190A		.006	.050	.042	.000886	.000384	.000028
195		.000	.050	.000	.004995	.000370	.000335
200		.003	.050	.060	.006247	.000375	.000332
205		.000	.000	.060	.004352	.000357	.000342
205A		.005	.030	.060	.000709	.000038	.000410
210		.000	.000	.060	.001501	.000459	.000520
210A		.011	.017	.060	.000275	.000068	.000707
215		.000	.000	.060	.000769	.000435	.000910
215A		.013	.027	.060	.000321	.000092	.001208
220		.000	.000	.060	.001562	.000379	.001512
225 B		.006	.049	.061	.002150	.000595	.001707
225 E		.008	.051	.056	.002099	.001182	.001765
230		.008	.000	.000	.001811	.001835	.001251
230A		.008	.020	.036	.001503	.000220	.000194
235		.007	.000	.000	.001210	.001130	.000625
235A		.007	.012	.027	.000935	.000176	.000104
240		.007	.000	.000	.000706	.000928	.000268
245		.007	.004	.015	.000578	.000928	.000413
250		.000	.000	.015	.000549	.001251	.000628
255 B		.019	.008	.015	.000686	.001598	.001102
255 E		.027	.005	.007	.001040	.001697	.001331
260		.027	.000	.000	.001261	.001758	.001361
265 B		.027	.054	.076	.003992	.000811	.000677
265 E		.027	.050	.077	.004185	.000741	.000666
270		.021	.011	.076	.004456	.000923	.000990
275		.000	.011	.000	.002955	.001025	.000899
280		.012	.011	.003	.001385	.001631	.000348
285		.001	.003	.003	.001243	.001610	.000417
290		.000	.003	.000	.001115	.001554	.000447

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.010	.003	.014	.000228	.000994	.000028
295		.000	.003	.000	.000563	.000498	.000411
300		.003	.003	.005	.000614	.000396	.000290
305		.002	.000	.005	.000630	.000374	.000218
310 B		.002	.001	.005	.000615	.000373	.000206
310 E		.003	.003	.003	.000470	.000371	.000140
315		.003	.002	.001	.000260	.000330	.000159
320 B		.002	.002	.001	.000186	.000278	.000175
320 E		.001	.001	.001	.000100	.000200	.000119
500		.000	.000	.000	.000000	.000000	.000000

DIRECTION COSINES AND GLOBAL FORCES AND MOMENTS

ME101/12

DATE 040182

PAGE 541

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISUP

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000-1.000	.000	.391	.000	.920	92	71	66	48	40	32	
		-.920	.000	.391	.000-1.000	.000	.391	.000	.920	92	71	66	37	27	16	
10 15	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921	92	71	66	37	27	16	
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921	92	71	66	15	11	80	
15 20	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921	95	69	59	15	11	80	
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921	95	69	59	26	30	135	
20 25	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	91	57	86	51	0	145		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	91	57	86	53	0	113		
25 30	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	127	56	56	53	0	113		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	127	56	56	32	0	66		
30 35	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	93	30	45	32	0	66		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	93	30	45	5	0	10		
35 40	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	16	3	8	5	0	10		
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000	16	3	8	0	0	0		
20 45 B	TNGT	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000	20	114	42	34	30	48		
		.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000	20	114	42	42	30	33		
45 B 45 M	BEND	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000	17	117	46	42	30	33		
		.000 .707	.707	.000	.000 -.707 .707	1.000	.000	.000	17	117	46	39	30	30		
45 M 45 E	BEND	.000 .707	.707	.000	.000 -.707 .707	1.000	.000	.000	17	117	46	39	30	30		
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	17	117	46	19	31	29			
45 E 50	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	16	117	48	19	31	29			
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	16	117	48	24	32	29			
50 55	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	15	35	51	24	32	29			
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	15	35	51	51	35	29			
55 60	TNGT	-.707 .000 .707	.000-1.000	.000	.707 .000 .707	.000	.707	.000	.707	15	33	58	51	35	29	
		-.707 .000 .707	.000-1.000	.000	.707 .000 .707	.000	.707	.000	.707	15	33	58	83	47	21	
60 65	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	15	32	59	83	47	21			
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	15	32	59	91	50	21			

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65 70	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	58	154	60	91	50	21
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	58	154	60	53	47	21
70 75	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	27	46	104	53	47	21
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	27	46	104	91	38	21
75 80 B	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	86	175	162	91	38	21
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	86	175	162	46	15	21
80 B 80 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	88	181	163	46	15	21
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	88	181	163	33	23	16
80 M 80 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	88	181	163	33	23	16
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	88	181	163	18	33	27
80 E 85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	89	187	164	18	33	27
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	89	187	164	47	33	47
85 90	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	17	207	63	47	33	47
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	17	207	63	173	33	44
90 95	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	31	236	64	173	33	44
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	31	236	64	202	18	44
95 100 B	TNGT	.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	36	143	65	202	18	44
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	36	143	65	133	36	44
100 B 100 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	38	145	67	133	36	44
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	38	145	67	85	47	40
100 M 100 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	38	145	67	85	47	40
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	38	145	67	51	52	32
100 E 105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	38	146	68	51	52	32
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	38	146	68	9	52	24
105 110	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	148	69	9	52	24
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	148	69	24	52	24
110 115	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	26	149	69	24	52	24
		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	26	149	69	24	51	53
115 120 B	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	27	19	32	24	51	53
		-1.000	.000	.000	.000-1.000	.000	.000	.000	1.000	.000	27	19	32	24	14	23
120 B 120 M	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	27	24	33	24	14	23
		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	27	24	33	21	20	16
120 M 120 E	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	27	24	33	21	20	16
		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	27	24	33	14	22	13

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E TNGT 125		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	28	32	34	14	22	13
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	28	32	34	38	49	13
125 TNGT 130		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	28	32	35	38	49	13
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	28	32	35	49	49	11
130 TNGT 130A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	32	18	49	49	11
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	32	18	22	49	20
130A TNGT 135		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	32	20	22	49	20
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	32	20	17	49	31
135 TNGT 135A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	32	16	17	49	31
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	32	16	14	49	26
135A TNGT 137		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	32	12	14	49	26
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	32	12	30	49	78
137 TNGT 138		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	127	26	27	23	117	0
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000	.000	127	17	20	0	0	0
137 TNGT 140		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	100	39	24	18	68	78
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	100	39	24	16	68	55
140 TNGT 140A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	39	5	16	68	55
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	39	5	6	68	15
140A TNGT 145		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	22	39	8	6	68	15
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	22	39	8	10	68	29
145 TNGT 145A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	10	6	10	0	13
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	10	6	8	0	10
145A TNGT 150		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	9	3	8	0	10
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	9	3	2	0	12
150 TNGT 155		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	9	1	2	0	12
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	9	1	2	0	9
155 TNGT 160		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	14	9	1	2	0	9
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	14	9	1	2	2	14
160 TNGT 165		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	5	3	2	2	14
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	5	3	2	7	7
165 TNGT 170		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	11	3	2	7	7
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	11	3	2	8	5
170 TNGT 175		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	13	8	2	8	5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	12	13	8	2	8	5



ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	11	16	8	2	8	5
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	11	16	8	10	0	4
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	8	19	6	10	0	4
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	8	19	6	12	1	5
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	8	19	6	12	1	5
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	8	19	6	13	1	7
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	29	5	13	1	7
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	29	5	9	1	3
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	42	9	9	1	3
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	42	9	9	1	4
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	51	8	9	1	4
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	51	8	22	1	2
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	61	25	22	1	2
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	61	25	31	1	6
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	70	17	31	1	6
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	70	17	66	1	1
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	77	97	66	1	1
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	77	97	19	1	1
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	81	93	19	1	1
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	81	93	73	2	1
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	25	87	73	2	1
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	25	87	32	6	1
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	29	78	32	6	1
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	29	78	17	4	1
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	7	67	17	4	1
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	7	67	13	11	1
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	9	54	13	11	1
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	9	54	11	8	1
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	5	6	39	11	8	1
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	5	6	39	11	8	1
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	4	21	11	8	1
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	4	21	12	5	1
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	6	7	12	5	1
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	6	7	1	15	1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	8	2	4	1	15	1
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	8	2	4	1	17	1
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	8	2	4	1	17	1
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	8	2	4	2	17	2
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	4	10	2	17	2
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	10	4	10	2	12	10
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	3	7	2	12	10
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	3	7	2	20	10
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	22	5	11	2	20	10
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	22	5	11	2	14	6
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	29	3	9	2	14	6
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	29	3	9	2	16	7
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	36	4	8	2	16	7
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	36	4	8	2	9	5
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	43	3	8	2	9	5
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	43	3	8	2	21	6
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	47	3	10	2	21	6
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	47	3	10	2	20	6
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	14	6	11	2	20	6
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	14	6	11	6	12	6
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	12	7	12	6	12	6
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	12	7	12	8	12	5
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	12	7	12	8	12	5
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	12	7	12	9	11	3
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	7	13	9	11	3
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	7	13	9	12	1
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	6	2	6	9	12	1
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	6	2	6	9	18	9
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	6	9	7	9	18	9
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	6	9	7	9	17	8
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	6	9	7	9	17	8
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	6	9	7	8	15	7
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	7	12	12	8	15	7
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	7	12	12	6	2	8

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	13	19	6	2	8
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	13	19	31	2	9
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	16	7	31	2	9
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	16	7	6	2	4
280	TNGT	.000	.000-1.000		.000	1.000	.000	1.000	.000	.000	9	20	7	6	2	4
285		.000	.000-1.000		.000	1.000	.000	1.000	.000	.000	9	20	7	11	3	4
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	20	7	11	3	4
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	20	7	13	3	4
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	21	6	13	3	4
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	21	6	10	3	9
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	22	7	10	3	9
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	22	7	8	3	4
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	23	1	8	3	4
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	23	1	8	3	3
300	TNGT	.000	.000-1.000		.000	1.000	.000	1.000	.000	.000	3	24	1	8	3	3
305		.000	.000-1.000		.000	1.000	.000	1.000	.000	.000	3	24	1	3	2	3
305	TNGT	.000	.000-1.000		.000	1.000	.000	1.000	.000	.000	3	2	1	3	2	3
310 B		.000	.000-1.000		.000	1.000	.000	1.000	.000	.000	3	2	1	3	2	3
310 B	BEND	.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	4	2	2	3	2	3
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	4	2	2	3	2	3
310 M	BEND	-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	4	2	2	3	2	3
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	4	2	2	3	2	3
310 E	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	4	2	3	3	2	3
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	4	2	3	3	2	3
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	2	3	3	2	3
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	2	3	3	2	1
320 B	BEND	.000	1.000	.000	-.707	.000	.707	.707	.000	.707	5	2	3	3	2	1
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	5	2	3	2	2	2
320 M	BEND	-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	5	2	3	2	2	2
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	5	2	3	2	3	2
320 E	TNGT	-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	5	2	3	2	3	2
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	5	2	3	3	6	3

STRESSES AND LOCAL FORCES AND MOMENTS

ME101/I2

DATE 040182

PAGE 547

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISUP

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
5 TNGT	110	71	31	36	40	45	5760.	1.000	1.000	1.000	SC374
10	110	71	31	36	27	18	3987.	1.300	1.000	1.000	2
10 TNGT	110	71	31	36	27	18	3987.	1.300	1.000	1.000	SC374
15	110	71	31	36	11	73	6769.	1.300	1.000	1.000	2
15 TNGT	109	69	22	36	11	73	6769.	1.300	1.000	1.000	SC374
20	109	69	22	36	30	133	11577.	1.300	1.000	1.000	2
20 TNGT	57	86	91	0	145	51	12607.	1.300	1.000	1.000	SC374
25	57	86	91	0	113	53	10230.	1.000	1.000	1.000	2
25 TNGT	56	56	127	0	113	53	10230.	1.000	1.000	1.000	SC374
30	56	56	127	0	66	32	6075.	1.300	1.000	1.000	2
30 TNGT	30	45	93	0	66	32	6075.	1.300	1.000	1.000	SC374
35	30	45	93	0	10	5	960.	1.300	1.000	1.000	2
35 TNGT	3	8	16	0	10	5	960.	1.300	1.000	1.000	SC374
40	3	8	16	0	0	0	0.	1.000	1.000	1.000	2
20 TNGT	114	42	20	30	48	34	5434.	1.300	1.000	1.000	SC374
45 B	114	42	20	30	33	42	4990.	1.000	1.000	1.000	2
45 B BEND	117	46	17	30	33	42	4990.	1.000	1.000	1.000	SC374
45 M	111	59	17	24	34	39	4718.	1.000	1.000	1.000	2
45 M BEND	111	59	17	24	34	39	4718.	1.000	1.000	1.000	SC374
45 E	46	117	17	29	31	19	3804.	1.000	1.000	1.000	2
45 E TNGT	48	117	16	29	31	19	3804.	1.000	1.000	1.000	SC374
50	48	117	16	29	32	24	4053.	1.000	1.000	1.000	2
50 TNGT	51	35	15	29	32	24	4053.	1.000	1.000	1.000	SC374
55	51	35	15	29	35	51	5572.	1.300	1.000	1.000	2
55 TNGT	39	33	46	54	35	21	5580.	1.300	1.000	1.000	SC374
60	39	33	46	54	47	67	8088.	1.300	1.000	1.000	2
60 TNGT	59	32	15	21	47	83	8046.	1.300	1.000	1.000	SC374
65	59	32	15	21	50	91	8715.	1.000	1.000	1.000	2
65 TNGT	60	154	58	21	50	91	8715.	1.000	1.000	1.000	SC374
70	60	154	58	21	47	53	6074.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	11	7	7	2	8	5
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	11	7	7	7	0	4
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	8	8	5	7	0	4
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	8	8	5	8	1	5
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	8	8	5	8	1	5
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	8	8	5	9	1	6
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	11	3	9	1	6
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	11	3	4	1	3
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	16	3	4	1	3
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	16	3	4	1	4
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	20	3	4	1	4
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	20	3	7	1	2
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	24	9	7	1	2
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	24	9	11	1	6
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	28	6	11	1	6
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	28	6	22	1	1
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	30	35	22	1	1
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	30	35	13	1	1
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	32	34	13	1	1
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	32	34	24	1	1
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	9	32	24	1	1
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	9	32	12	6	1
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	10	28	12	6	1
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	10	28	6	4	1
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	5	25	6	4	1
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	5	25	9	11	1
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	6	20	9	11	1
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	8	6	20	7	7	1
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	3	15	7	7	1
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	3	15	5	5	1
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	2	9	5	5	1
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	2	9	5	4	1
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	2	9	5	4	1
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	3	4	5	4	1
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	3	4	1	6	1



ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
70 TNGT	104	46	27	21	47	53	6074.	1.300	1.000	1.000	SC374
75	104	46	27	21	38	91	8314.	1.300	1.000	1.000	2
75 TNGT	162	175	86	21	38	91	8314.	1.300	1.000	1.000	SC374
80 B	162	175	86	21	15	46	4334.	1.000	1.000	1.000	2
80 B BEND	163	181	88	21	15	46	4334.	1.000	1.000	1.000	SC374
80 M	223	97	88	24	15	33	3578.	1.000	1.000	1.000	2
80 M BEND	223	97	88	24	15	33	3578.	1.000	1.000	1.000	SC374
80 E	181	163	88	33	27	18	3783.	1.000	1.000	1.000	2
80 E TNGT	187	164	89	33	27	18	3783.	1.000	1.000	1.000	SC374
85	187	164	89	33	47	47	6073.	1.000	1.000	1.000	2
85 TNGT	207	63	17	33	47	47	6073.	1.000	1.000	1.000	SC374
90	207	63	17	33	44	173	14899.	1.300	1.000	1.000	2
90 TNGT	64	236	31	44	33	173	14899.	1.300	1.000	1.000	SC374
95	64	236	31	44	18	202	17061.	1.000	1.000	1.000	2
95 TNGT	65	143	36	44	18	202	17061.	1.000	1.000	1.000	SC374
100 B	65	143	36	44	36	133	11879.	1.000	1.000	1.000	2
100 B BEND	67	145	38	44	36	133	11879.	1.000	1.000	1.000	SC374
100 M	65	145	38	58	22	85	8691.	1.000	1.000	1.000	2
100 M BEND	65	145	38	58	22	85	8691.	1.000	1.000	1.000	SC374
100 E	145	67	38	52	32	51	6509.	1.000	1.000	1.000	2
100 E TNGT	146	68	38	52	32	51	6509.	1.000	1.000	1.000	SC374
105	146	68	38	52	24	9	4718.	1.000	1.000	1.000	2
105 TNGT	148	69	26	52	24	9	4718.	1.000	1.000	1.000	SC374
110	148	69	26	52	24	24	5072.	1.300	1.000	1.000	2
110 TNGT	26	149	69	24	52	24	5072.	1.300	1.000	1.000	SC374
115	26	149	69	24	51	53	6346.	1.000	1.000	1.000	2
115 TNGT	27	19	32	24	51	53	6346.	1.000	1.000	1.000	SC374
120 B	27	19	32	24	14	23	2923.	1.000	1.000	1.000	2
120 B BEND	27	33	24	24	23	14	2923.	1.000	1.000	1.000	SC374
120 M	31	30	24	7	25	20	2697.	1.000	1.000	1.000	2
120 M BEND	31	30	24	7	25	20	2697.	1.000	1.000	1.000	SC374
120 E	33	27	24	13	14	22	2440.	1.000	1.000	1.000	2
120 E TNGT	34	32	28	13	22	14	2440.	1.000	1.000	1.000	SC374
125	34	32	28	13	49	38	5223.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
125 TNGT	32	35	28	49	13	38	5223.	1.300	1.000	1.000	SC374
130	32	35	28	49	11	49	5783.	1.000	1.000	1.000	2
130 TNGT	32	18	9	49	11	49	5783.	1.000	1.000	1.000	SC374
130A	32	18	9	49	20	22	4734.	1.000	1.000	1.000	2
130A TNGT	32	20	8	49	20	22	4734.	1.000	1.000	1.000	SC374
135	32	20	8	49	31	17	4974.	1.000	1.000	1.000	2
135 TNGT	32	16	36	49	31	17	4974.	1.000	1.000	1.000	SC374
135A	32	16	36	49	26	14	4728.	1.000	1.000	1.000	2
135A TNGT	32	12	33	49	26	14	4728.	1.000	1.000	1.000	SC374
137	32	12	33	49	78	30	7961.	1.000	1.000	1.000	2
137 TNGT	27	26	127	0	117	23	9799.	1.000	1.000	1.000	SC374
138	20	17	127	0	0	0	0.	1.300	1.000	1.000	2
137 TNGT	39	24	100	68	78	18	8614.	1.000	1.000	1.000	SC374
140	39	24	100	68	55	16	7318.	1.000	1.000	1.000	2
140 TNGT	39	5	20	68	55	16	7318.	1.000	1.000	1.000	SC374
140A	39	5	20	68	15	6	5733.	1.000	1.000	1.000	2
140A TNGT	39	8	22	68	15	6	5733.	1.000	1.000	1.000	SC374
145	39	8	22	68	29	10	6118.	1.000	1.000	1.000	2
145 TNGT	10	6	7	0	13	10	1311.	1.000	1.000	1.000	SC374
145A	10	6	7	0	10	8	1051.	1.000	1.000	1.000	2
145A TNGT	9	3	4	0	10	8	1051.	1.000	1.000	1.000	SC374
150	9	3	4	0	12	2	1022.	1.000	1.000	1.000	2
150 TNGT	9	1	15	0	12	2	1022.	1.000	1.000	1.000	SC374
155	9	1	15	0	9	2	787.	1.300	1.000	1.000	2
155 TNGT	14	9	1	2	0	9	787.	1.300	1.000	1.000	SC374
160	14	9	1	2	2	14	1213.	1.000	1.000	1.000	2
160 TNGT	13	5	3	2	2	14	1213.	1.000	1.000	1.000	SC374
165	13	5	3	2	7	7	825.	1.000	1.000	1.000	2
165 TNGT	12	11	3	2	7	7	825.	1.000	1.000	1.000	SC374
170	12	11	3	2	8	5	807.	1.000	1.000	1.000	2
170 TNGT	12	13	8	2	8	5	807.	1.000	1.000	1.000	SC374
175	12	13	8	2	8	5	816.	1.300	1.000	1.000	2
175 TNGT	13	12	11	3	9	2	814.	1.300	1.000	1.000	SC374
180 B	13	12	11	3	3	10	930.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	15	13	8	3	3	10	930.	1.000	1.000	1.000	SC374
180 M	18	8	8	2	5	12	1087.	1.000	1.000	1.000	2
180 M BEND	18	8	8	2	5	12	1087.	1.000	1.000	1.000	SC374
180 E	19	6	8	1	7	13	1184.	1.000	1.000	1.000	2
180 E TNGT	29	5	2	1	7	13	1184.	1.000	1.000	1.000	SC374
185	29	5	2	1	3	9	814.	1.000	1.000	1.000	2
185 TNGT	42	9	2	1	3	9	814.	1.000	1.000	1.000	SC374
185A	42	9	2	1	4	9	812.	1.000	1.000	1.000	2
185A TNGT	51	8	2	1	4	9	812.	1.000	1.000	1.000	SC374
190	51	8	2	1	2	22	1821.	1.000	1.000	1.000	2
190 TNGT	61	25	4	1	2	22	1821.	1.000	1.000	1.000	SC374
190A	61	25	4	1	6	31	2562.	1.000	1.000	1.000	2
190A TNGT	70	17	3	1	6	31	2562.	1.000	1.000	1.000	SC374
195	70	17	3	1	1	66	5426.	1.000	1.000	1.000	2
195 TNGT	77	97	1	1	1	66	5426.	1.000	1.000	1.000	SC374
200	77	97	1	1	1	19	1569.	1.300	1.000	1.000	2
200 TNGT	93	81	2	1	1	19	1569.	1.300	1.000	1.000	SC374
205	93	81	2	1	2	73	6014.	1.000	1.000	1.000	2
205 TNGT	87	25	3	1	2	73	6014.	1.000	1.000	1.000	SC374
205A	87	25	3	1	6	32	2703.	1.000	1.000	1.000	2
205A TNGT	78	29	2	1	6	32	2703.	1.000	1.000	1.000	SC374
210	78	29	2	1	4	17	1441.	1.000	1.000	1.000	2
210 TNGT	67	7	7	1	4	17	1441.	1.000	1.000	1.000	SC374
210A	67	7	7	1	11	13	1403.	1.000	1.000	1.000	2
210A TNGT	54	9	8	1	11	13	1403.	1.000	1.000	1.000	SC374
215	54	9	8	1	8	11	1115.	1.000	1.000	1.000	2
215 TNGT	39	6	5	1	8	11	1115.	1.000	1.000	1.000	SC374
215A	39	6	5	1	8	11	1137.	1.000	1.000	1.000	2
215A TNGT	21	4	4	1	8	11	1137.	1.000	1.000	1.000	SC374
220	21	4	4	1	5	12	1115.	1.000	1.000	1.000	2
220 TNGT	7	6	8	1	5	12	1115.	1.000	1.000	1.000	SC374
225 B	7	6	8	1	15	1	1214.	1.000	1.000	1.000	2
225 B BEND	4	8	2	1	1	15	1214.	1.000	1.000	1.000	SC374
225 M	8	5	2	0	2	17	1371.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (1)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	8	5	2	0	2	17	1371.	1.000	1.000	1.000	SC374
225 E	8	4	2	2	2	17	1401.	1.000	1.000	1.000	2
225 E TNGT	10	4	10	2	17	2	1401.	1.000	1.000	1.000	SC374
230	10	4	10	2	12	10	1254.	1.000	1.000	1.000	2
230 TNGT	15	3	7	2	12	10	1254.	1.000	1.000	1.000	SC374
230A	15	3	7	2	20	10	1792.	1.000	1.000	1.000	2
230A TNGT	22	5	11	2	20	10	1792.	1.000	1.000	1.000	SC374
235	22	5	11	2	14	6	1234.	1.000	1.000	1.000	2
235 TNGT	29	3	9	2	14	6	1234.	1.000	1.000	1.000	SC374
235A	29	3	9	2	16	7	1414.	1.000	1.000	1.000	2
235A TNGT	36	4	8	2	16	7	1414.	1.000	1.000	1.000	SC374
240	36	4	8	2	9	5	854.	1.000	1.000	1.000	2
240 TNGT	43	3	8	2	9	5	854.	1.000	1.000	1.000	SC374
245	43	3	8	2	21	6	1772.	1.300	1.000	1.000	2
245 TNGT	10	3	47	6	21	2	1772.	1.300	1.000	1.000	SC374
250	10	3	47	6	20	2	1720.	1.000	1.000	1.000	2
250 TNGT	11	6	14	6	20	2	1720.	1.000	1.000	1.000	SC374
255 B	11	6	14	6	12	6	1214.	1.000	1.000	1.000	2
255 B BEND	12	12	7	6	6	12	1214.	1.000	1.000	1.000	SC374
255 M	10	14	7	9	3	12	1236.	1.000	1.000	1.000	2
255 M BEND	10	14	7	9	3	12	1236.	1.000	1.000	1.000	SC374
255 E	12	12	7	9	3	11	1212.	1.000	1.000	1.000	2
255 E TNGT	11	7	13	9	11	3	1212.	1.000	1.000	1.000	SC374
260	11	7	13	9	12	1	1225.	1.000	1.000	1.000	2
260 TNGT	6	2	6	9	12	1	1225.	1.000	1.000	1.000	SC374
265 B	6	2	6	9	18	9	1791.	1.000	1.000	1.000	2
265 B BEND	6	7	9	9	9	18	1791.	1.000	1.000	1.000	SC374
265 M	5	8	9	7	9	17	1665.	1.000	1.000	1.000	2
265 M BEND	5	8	9	7	9	17	1665.	1.000	1.000	1.000	SC374
265 E	5	8	9	5	9	15	1524.	1.000	1.000	1.000	2
265 E TNGT	6	12	12	5	15	9	1524.	1.000	1.000	1.000	SC374
270	6	12	12	5	2	8	820.	1.300	1.000	1.000	2
270 TNGT	13	19	10	2	8	6	824.	1.300	1.000	1.000	SC374
275	13	19	10	2	9	31	2673.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	16	7	2	2	9	31	2673.	1.000	1.000	1.000	SC374
280		16	7	2	2	4	6	601.	1.300	1.000	1.000	2
280	TNGT	7	20	9	4	2	6	601.	1.300	1.000	1.000	SC374
285		7	20	9	4	3	11	991.	1.300	1.000	1.000	2
285	TNGT	20	7	9	3	4	11	991.	1.300	1.000	1.000	SC374
290		20	7	9	3	4	13	1103.	1.000	1.000	1.000	2
290	TNGT	21	6	5	3	4	13	1103.	1.000	1.000	1.000	SC374
290A		21	6	5	3	9	10	1169.	1.000	1.000	1.000	2
290A	TNGT	22	7	5	3	9	10	1169.	1.000	1.000	1.000	SC374
295		22	7	5	3	4	8	787.	1.000	1.000	1.000	2
295	TNGT	23	1	3	3	4	8	787.	1.000	1.000	1.000	SC374
300		23	1	3	3	3	8	759.	1.300	1.000	1.000	2
300	TNGT	1	24	3	3	3	8	759.	1.300	1.000	1.000	SC374
305		1	24	3	3	2	3	406.	1.000	1.000	1.000	2
305	TNGT	1	2	3	3	2	3	406.	1.000	1.000	1.000	SC374
310 B		1	2	3	3	2	3	402.	1.000	1.000	1.000	2
310 B	BEND	2	4	2	3	3	2	402.	1.000	1.000	1.000	SC374
310 M		3	3	2	3	3	2	396.	1.000	1.000	1.000	2
310 M	BEND	3	3	2	3	3	2	396.	1.000	1.000	1.000	SC374
310 E		4	2	2	3	3	2	385.	1.000	1.000	1.000	2
310 E	TNGT	4	2	3	3	2	3	389.	1.300	1.000	1.000	SC374
315		4	2	3	3	2	3	389.	1.300	1.000	1.000	2
315	TNGT	2	3	5	2	3	3	389.	1.300	1.000	1.000	SC374
320 B		2	3	5	2	1	3	275.	1.000	1.000	1.000	2
320 B	BEND	2	3	5	2	1	2	275.	1.000	1.000	1.000	SC374
320 M		3	2	5	2	1	3	282.	1.000	1.000	1.000	2
320 M	BEND	3	2	5	2	1	3	282.	1.000	1.000	1.000	SC374
320 E		3	2	5	1	3	3	351.	1.000	1.000	1.000	2
320 E	TNGT	3	2	5	1	3	3	351.	1.000	1.000	1.000	SC374
500		3	2	5	1	6	4	613.	1.000	1.000	1.000	2

*** AT THE MEMBER END 95 OF ELEMENT FROM 95 TO 100 B , MAX. STRESS (PSI) IS 17061.

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEIS05

EARTHQUAKE COMPONENT : X+Y+Z
 RESULTS OF MODAL SYNTHESIS

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
5	.000	.000	.000	.000
10	.015	.048	.035	.061
15	.153	.320	.365	.509
20	.231	.731	.550	.944
25	.562	.732	.238	.953
30	1.489	.732	.493	1.731
35	3.258	.732	1.491	3.657
40	5.238	.733	2.651	5.917
45 B	2.139	.729	1.519	2.723
45 E	2.601	.233	1.938	3.252
50	2.474	.000	1.938	3.143
55	1.533	1.109	1.937	2.708
60	.282	.477	1.020	1.160
65	.000	.000	1.019	1.019
70	.859	1.905	1.019	2.325
75	1.480	3.813	1.017	4.214
80 B	1.596	4.230	1.016	4.634
80 E	.658	4.716	.390	4.778
85	.000	4.715	.000	4.715
90	5.361	4.706	1.211	7.235
95	2.204	.000	1.210	2.515
100 B	1.643	.714	1.210	2.162
100 E	1.048	.970	.990	1.737
105	.000	.969	.514	1.096
110	.772	.968	.347	1.286
115	.772	.000	.000	.772

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	.772	2.403	.298	2.542
120 E	.667	2.175	.373	2.305
125	.138	.010	.372	.397
130	.000	.010	.000	.010
130A	.288	.009	.483	.562
135	.000	.008	.000	.008
135A	.819	.007	.905	1.220
137	.934	.007	.900	1.297
138	5.952	.769	.901	6.068
140	.000	.005	.000	.005
140A	.317	.002	.297	.435
145	.000	.000	.000	.000
145A	.645	.001	.491	.811
150	.000	.002	.000	.002
155	.239	.002	.108	.263
160	.240	1.482	.000	1.502
165	.240	1.773	.034	1.790
170	.240	1.753	.000	1.769
175	.240	1.728	.052	1.745
180 B	.344	1.575	.284	1.636
180 E	.389	1.560	.363	1.648
185	.000	1.557	.000	1.557
185A	.129	1.555	.330	1.595
190	.000	1.552	.000	1.552
190A	.237	1.549	1.315	2.046
195	.000	1.545	.000	1.545
200	.143	1.543	1.850	2.413
205	.000	.000	1.851	1.851
205A	.211	.920	1.855	2.082
210	.000	.000	1.859	1.859
210A	.517	.628	1.863	2.033
215	.000	.000	1.866	1.866
215A	.571	.797	1.869	2.111
220	.000	.000	1.871	1.871
225 B	.256	1.126	1.871	2.199
225 E	.311	1.180	1.726	2.114

EFFECTIVE ACCELERATIONS

ME101/12

DATE 040182

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	.311	.000	.000	.311
230A	.309	.671	1.104	1.329
235	.307	.000	.000	.307
235A	.303	.635	.815	1.077
240	.299	.000	.000	.299
245	.294	.104	.477	.570
250	.000	.000	.477	.477
255 B	.635	.222	.477	.824
255 E	.875	.152	.212	.913
260	.875	.000	.000	.875
265 B	.876	1.471	1.939	2.587
265 E	.851	1.353	1.971	2.537
270	.625	.364	1.964	2.093
275	.000	.363	.000	.363
280	.403	.361	.088	.548
285	.041	.210	.088	.232
290	.000	.210	.000	.210
290A	.462	.206	.491	.705
295	.000	.207	.000	.207
300	.145	.203	.296	.387
305	.111	.000	.296	.316
310 B	.117	.037	.296	.320
310 E	.188	.172	.190	.318
315	.188	.091	.056	.216
320 B	.134	.091	.056	.171
320 E	.042	.039	.042	.071
500	.000	.000	.000	.000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : SEIS05

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
5	ANC		80.	68.	61.	46.	38.	29.
25	RAD		46.	.0.	108.	0.	0.	0.
50	RAD		0.	88.	0.	0.	0.	0.
65	RAD		54.	0.	0.	0.	0.	0.
65	RAD		0.	165.	0.	0.	0.	0.
85	RAD		91.	.0.	0.	0.	0.	0.
85	RAD		0.	0.	126.	0.	0.	0.
95	RAD		0.	343.	0.	0.	0.	0.
105	RAD		56.	0.	0.	0.	0.	0.
115	RAD		0.	149.	0.	0.	0.	0.
115	RAD		0.	0.	79.	0.	0.	0.
130	RAD		19.	0.	0.	0.	0.	0.
130	RAD		0.	0.	45.	0.	0.	0.
135	RAD		43.	0.	0.	0.	0.	0.
135	RAD		0.	0.	24.	0.	0.	0.
140	RAD		120.	0.	0.	0.	0.	0.
140	RAD		0.	0.	21.	0.	0.	0.
145	ANC		23.	38.	6.	9.	68.	30.
150	RAD		15.	0.	0.	0.	0.	0.
150	RAD		0.	0.	4.	0.	0.	0.
160	RAD		0.	0.	3.	0.	0.	0.
170	RAD		0.	0.	4.	0.	0.	0.
185	RAD		6.	0.	0.	0.	0.	0.
185	RAD		0.	0.	13.	0.	0.	0.
190	RAD		5.	0.	0.	0.	0.	0.
190	RAD		0.	0.	30.	0.	0.	0.
195	RAD		4.	0.	0.	0.	0.	0.
195	RAD		0.	0.	107.	0.	0.	0.
205	RAD		2.	0.	0.	0.	0.	0.
205	RAD		0.	98.	0.	0.	0.	0.
210	RAD		5.	0.	0.	0.	0.	0.
210	RAD		0.	31.	0.	0.	0.	0.
215	RAD		8.	0.	0.	0.	0.	0.
215	RAD		0.	10.	0.	0.	0.	0.
220	RAD		8.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	8.	0.	0.	0.	0.
230	RAD		0.	6.	0.	0.	0.	0.
230	RAD		0.	0.	8.	0.	0.	0.
235	RAD		0.	7.	0.	0.	0.	0.
235	RAD		0.	0.	6.	0.	0.	0.
240	RAD		0.	5.	0.	0.	0.	0.
240	RAD		0.	0.	7.	0.	0.	0.
250	RAD		31.	0.	0.	0.	0.	0.
250	RAD		0.	8.	0.	0.	0.	0.
260	RAD		0.	5.	0.	0.	0.	0.
260	RAD		0.	0.	8.	0.	0.	0.
275	RAD		11.	0.	0.	0.	0.	0.
275	RAD		0.	0.	24.	0.	0.	0.
290	RAD		7.	0.	0.	0.	0.	0.
290	RAD		0.	0.	9.	0.	0.	0.
295	RAD		7.	0.	0.	0.	0.	0.
295	RAD		0.	0.	5.	0.	0.	0.
305	RAD		0.	21.	0.	0.	0.	0.
500	ANC		3.	2.	2.	2.	3.	2.

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEIS05

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		80	68	61	46	38	29	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		118	0	0	0	0	0	.391	.000	.920						
50	RAD		88	0	0	0	0	0	.000	1.00	.000						
65	RAD		54	0	0	0	0	0	1.00	.000	.000						
65	RAD		165	0	0	0	0	0	.000	1.00	.000						
85	RAD		91	0	0	0	0	0	1.00	.000	.000						
85	RAD		126	0	0	0	0	0	.000	.000	1.00						
95	RAD		343	0	0	0	0	0	.000	1.00	.000						
105	RAD		56	0	0	0	0	0	1.00	.000	.000						
115	RAD		149	0	0	0	0	0	.000	1.00	.000						
115	RAD		79	0	0	0	0	0	.000	.000	1.00						
130	RAD		19	0	0	0	0	0	1.00	.000	.000						
130	RAD		45	0	0	0	0	0	.000	.000	1.00						
135	RAD		43	0	0	0	0	0	1.00	.000	.000						
135	RAD		24	0	0	0	0	0	.000	.000	1.00						
140	RAD		120	0	0	0	0	0	1.00	.000	.000						
140	RAD		21	0	0	0	0	0	.000	.000	1.00						
145	ANC		23	38	6	9	68	30	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		15	0	0	0	0	0	1.00	.000	.000						
150	RAD		4	0	0	0	0	0	.000	.000	1.00						
160	RAD		3	0	0	0	0	0	.000	.000	1.00						
170	RAD		4	0	0	0	0	0	.000	.000	1.00						
185	RAD		6	0	0	0	0	0	1.00	.000	.000						
185	RAD		13	0	0	0	0	0	.000	.000	1.00						
190	RAD		5	0	0	0	0	0	1.00	.000	.000						
190	RAD		30	0	0	0	0	0	.000	.000	1.00						
195	RAD		4	0	0	0	0	0	1.00	.000	.000						
195	RAD		107	0	0	0	0	0	.000	.000	1.00						
205	RAD		2	0	0	0	0	0	1.00	.000	.000						
205	RAD		98	0	0	0	0	0	.000	1.00	.000						
210	RAD		5	0	0	0	0	0	1.00	.000	.000						
210	RAD		31	0	0	0	0	0	.000	1.00	.000						
215	RAD		8	0	0	0	0	0	1.00	.000	.000						
215	RAD		10	0	0	0	0	0	.000	1.00	.000						
220	RAD		8	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220	RAD		8	0	0	0	0	0	.000	1.00	.000						
230	RAD		6	0	0	0	0	0	.000	1.00	.000						
230	RAD		8	0	0	0	0	0	.000	.000	1.00						
235	RAD		7	0	0	0	0	0	.000	1.00	.000						
235	RAD		6	0	0	0	0	0	.000	.000	1.00						
240	RAD		5	0	0	0	0	0	.000	1.00	.000						
240	RAD		7	0	0	0	0	0	.000	.000	1.00						
250	RAD		31	0	0	0	0	0	1.00	.000	.000						
250	RAD		8	0	0	0	0	0	.000	1.00	.000						
260	RAD		5	0	0	0	0	0	.000	1.00	.000						
260	RAD		8	0	0	0	0	0	.000	.000	1.00						
275	RAD		11	0	0	0	0	0	1.00	.000	.000						
275	RAD		24	0	0	0	0	0	.000	.000	1.00						
290	RAD		7	0	0	0	0	0	1.00	.000	.000						
290	RAD		9	0	0	0	0	0	.000	.000	1.00						
295	RAD		7	0	0	0	0	0	1.00	.000	.000						
295	RAD		5	0	0	0	0	0	.000	.000	1.00						
305	RAD		21	0	0	0	0	0	.000	1.00	.000						
500	ANC		3	2	2	2	3	2	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00

JOINT DISPLACEMENTS FOR THE SEIS05 LOAD CASE

ME101/I2

DATE 040182

PAGE 560

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J. ABISAMRA
 LOAD CASE : SEIS05

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.001	.002	.002	.001190	.000767	.000423
15		.008	.008	.019	.003390	.001363	.003105
20		.012	.038	.029	.003844	.000496	.008501
25		.032	.038	.013	.004382	.000496	.010911
30		.083	.038	.016	.005085	.000496	.012624
35		.181	.038	.053	.005625	.000496	.013846
40		.289	.038	.097	.005709	.000496	.014022
45 B		.128	.038	.080	.004377	.002128	.008732
45 E		.157	.012	.104	.005433	.003357	.008892
50		.149	.000	.104	.005429	.003681	.008928
55		.092	.064	.104	.004564	.005471	.009405
60		.016	.021	.041	.006653	.005653	.010401
65		.000	.000	.041	.007543	.005353	.010573
70		.047	.083	.041	.008249	.004054	.011202
75		.083	.164	.041	.005176	.002285	.012085
80 B		.091	.182	.041	.004583	.002061	.012409
80 E		.037	.202	.016	.005292	.002865	.012560
85		.000	.202	.000	.005067	.003410	.012130
90		.283	.202	.034	.008526	.009269	.006943
95		.106	.000	.034	.007356	.009951	.004373
100 B		.069	.030	.034	.003162	.009209	.004424
100 E		.042	.039	.029	.002030	.007208	.005081
105		.000	.039	.017	.002662	.004879	.005882
110		.031	.039	.017	.002672	.003421	.006396
115		.031	.000	.000	.002553	.002105	.006025
120 B		.031	.090	.012	.003895	.000717	.002741
120 E		.028	.081	.014	.004461	.001116	.002286
125		.007	.000	.014	.003357	.002979	.001611
130		.000	.000	.000	.002482	.004239	.001491
130A		.017	.000	.017	.000402	.009865	.000190
135		.000	.000	.000	.001056	.015667	.002173
135A		.052	.000	.017	.000651	.021502	.002390
137		.060	.000	.016	.000939	.027350	.002393
138		.384	.013	.016	.001321	.030460	.002393

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.000786	.020512	.003268
140A		.020	.000	.005	.000194	.010256	.000805
145		.000	.000	.000	.000000	.000000	.000000
145A		.015	.000	.006	.000070	.000025	.000289
150		.000	.000	.000	.000280	.000050	.001165
155		.006	.000	.001	.000284	.000054	.001369
160		.006	.042	.000	.000371	.000040	.001083
165		.006	.053	.000	.000561	.000075	.000352
170		.006	.053	.000	.000577	.000098	.000361
175		.006	.052	.000	.000597	.000125	.000342
180 B		.005	.048	.005	.000411	.000180	.000211
180 E		.005	.048	.006	.000254	.000179	.000179
185		.000	.047	.000	.000254	.000129	.000071
185A		.001	.047	.009	.000268	.000110	.000013
190		.000	.047	.000	.001321	.000095	.000057
190A		.001	.047	.040	.000836	.000087	.000009
195		.000	.047	.000	.004708	.000090	.000076
200		.001	.047	.056	.005895	.000094	.000097
205		.000	.000	.056	.004097	.000088	.000148
205A		.001	.028	.057	.000668	.000015	.000282
210		.000	.000	.057	.001377	.000126	.000422
210A		.004	.014	.057	.000256	.000045	.000621
215		.000	.000	.057	.000680	.000268	.000821
215A		.010	.024	.057	.000291	.000045	.001103
220		.000	.000	.057	.001428	.000333	.001384
225 B		.004	.045	.057	.001973	.000545	.001563
225 E		.006	.046	.053	.001928	.001106	.001617
230		.006	.000	.000	.001672	.001700	.001144
230A		.006	.018	.031	.001381	.000192	.000177
235		.006	.000	.000	.001100	.001046	.000560
235A		.006	.010	.021	.000838	.000142	.000093
240		.006	.000	.000	.000623	.000821	.000228
245		.006	.003	.014	.000519	.000705	.000379
250		.000	.000	.014	.000497	.001105	.000579
255 B		.018	.007	.014	.000635	.001474	.001015
255 E		.025	.005	.006	.000967	.001532	.001226
260		.025	.000	.000	.001172	.001597	.001255
265 B		.025	.050	.071	.003712	.000721	.000622
265 E		.025	.047	.072	.003892	.000637	.000604
270		.019	.010	.071	.004155	.000793	.000916
275		.000	.010	.000	.002758	.000833	.000830
280		.007	.009	.003	.001250	.001002	.000214
285		.001	.002	.003	.001077	.000981	.000199
290		.000	.002	.000	.000941	.000951	.000192

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.003	.002	.009	.000203	.000637	.000022
295		.000	.002	.000	.000332	.000348	.000155
300		.001	.002	.003	.000409	.000275	.000134
305		.001	.000	.003	.000432	.000255	.000114
310 B		.001	.000	.003	.000422	.000252	.000111
310 E		.002	.002	.002	.000325	.000244	.000093
315		.002	.001	.001	.000184	.000213	.000097
320 B		.001	.001	.001	.000131	.000175	.000093
320 E		.000	.000	.000	.000069	.000116	.000060
500		.000	.000	.000	.000000	.000000	.000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEIS05

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000-1.000	.000	.391	.000	.920		80	68	61	46	38	29
		-.920	.000	.391	.000-1.000	.000	.391	.000	.920		80	68	61	36	26	13
10 15	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		80	68	61	36	26	13
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		80	68	61	14	10	78
15 20	TNGT	-.921	.000	.390	.000-1.000	.000	.390	.000	.921		82	66	54	14	10	78
		-.921	.000	.390	.000-1.000	.000	.390	.000	.921		82	66	54	25	28	130
20 25	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			83	34	82	46	0	133
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			83	34	82	47	0	104
25 30	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			118	34	50	47	0	104
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			118	34	50	29	0	61
30 35	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			86	18	40	29	0	61
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			86	18	40	5	0	10
35 40	TNGT	.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			15	2	7	5	0	10
		.000-1.000	.000	.000	.000-1.000	1.000	.000	.000			15	2	7	0	0	0
20 45 B	TNGT	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			16	98	38	30	28	41
		.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			16	98	38	37	28	29
45 B 45 M	BEND	.000 1.000	.000	.000	.000 .000 1.000	1.000	.000	.000			14	100	41	37	28	29
		.000 .707 .707	.000 -.707 .707	1.000	1.000	.000	.000	.000			14	100	41	35	29	27
45 M 45 E	BEND	.000 .707 .707	.000 -.707 .707	1.000	.000-1.000	.000	1.000	.000	.000		14	100	41	35	29	27
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			14	100	41	17	30	26
45 E 50	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			13	100	43	17	30	26
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			13	100	43	20	31	26
50 55	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			12	31	46	20	31	26
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			12	31	46	46	33	26
55 60	TNGT	-.707 .000 .707	.000-1.000	.000	.707 .000 .707	.000	.707 .000 .707	.000	.707		13	29	52	46	33	26
		-.707 .000 .707	.000-1.000	.000	.000	.000	.707 .000 .707	.000	.707		13	29	52	75	40	19
60 65	TNGT	.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			13	28	54	75	40	19
		.000 .000 1.000	.000-1.000	.000	1.000	.000	.000	.000			13	28	54	82	43	19

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65 70	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	46	139	54	82	43	19
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	46	139	54	50	45	19
70 75	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	41	96	50	45	19
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	41	96	84	34	19
75 80 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	81	159	145	84	34	19
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	81	159	145	43	11	19
80 B 80 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	83	165	147	43	11	19
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	83	165	147	30	22	14
80 M 80 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	83	165	147	30	22	14
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	83	165	147	13	32	26
80 E 85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	84	171	147	13	32	26
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	84	171	147	39	32	45
85 90	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	189	57	39	32	45
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	189	57	157	32	40
90 95	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	31	215	59	157	32	40
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	31	215	59	184	17	40
95 100 B	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	35	129	60	184	17	40
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	35	129	60	121	35	40
100 B 100 M	BEND	.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	36	130	60	121	35	40
		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	36	130	60	78	45	37
100 M 100 E	BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	36	130	60	78	45	37
		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	36	130	60	46	50	29
100 E 105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	132	61	46	50	29
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	132	61	8	50	22
105 110	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	133	62	8	50	22
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	133	62	21	50	22
110 115	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	134	62	21	50	22
		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	134	62	21	47	47
115 120 B	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	16	29	21	47	47
		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	26	16	29	21	13	20
120 B 120 M	BEND	-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	26	22	30	21	13	20
		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	26	22	30	19	17	14
120 M 120 E	BEND	-.707	.000	.707	.707	.000	.707	.000	1.000	.000	26	22	30	19	17	14
		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	26	22	30	12	20	11

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E TNGT 125		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		27	28	30	12	20	11
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		27	28	30	34	49	11
125 TNGT 130		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	28	31	34	49	11
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	28	31	43	49	10
130 TNGT 130A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	28	16	43	49	10
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	28	16	19	49	20
130A TNGT 135		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	28	17	19	49	20
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	7	28	17	13	49	31
135 TNGT 135A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	28	12	13	49	31
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	28	12	12	49	26
135A TNGT 137		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	28	9	12	49	26
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	28	9	23	49	78
137 TNGT 138		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		127	16	19	15	116	0
		.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		99	13	15	0	0	0
137 TNGT 140		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	99	31	16	9	68	78
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	99	31	16	13	68	55
140 TNGT 140A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	31	4	13	68	55
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	31	4	4	68	15
140A TNGT 145		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	22	31	6	4	68	15
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	22	31	6	7	68	29
145 TNGT 145A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	3	5	0	10
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	3	4	0	7
145A TNGT 150		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	1	4	0	7
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	8	1	1	0	10
150 TNGT 155		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	0	1	0	10
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	8	0	1	0	8
155 TNGT 160		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	8	0	1	0	8
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	5	8	0	1	1	12
160 TNGT 165		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	3	1	1	1	12
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	3	1	1	2	4
165 TNGT 170		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	10	1	1	2	4
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	10	1	1	2	2
170 TNGT 175		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	12	3	1	2	2
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	3	12	3	1	2	3

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	3	14	3	1	2	3
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	3	14	3	7	0	2
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	2	17	3	7	0	2
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	2	17	3	9	0	2
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	2	17	3	9	0	2
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	2	17	3	9	0	2
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	26	4	9	0	2
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	26	4	8	0	1
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	39	8	8	0	1
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	39	8	8	0	1
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	47	7	8	0	1
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	0	47	7	21	0	1
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	56	24	21	0	1
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	56	24	29	0	1
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	65	16	29	0	1
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	65	16	62	0	1
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	71	91	62	0	1
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	71	91	14	0	1
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	74	87	14	0	1
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	74	87	69	1	1
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	24	81	69	1	1
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	24	81	30	1	1
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	28	72	30	1	1
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	1	28	72	16	2	1
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	4	62	16	2	1
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	4	62	9	3	1
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	6	50	9	3	1
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	2	6	50	9	3	1
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	36	9	3	1
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	5	36	10	5	1
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	4	19	10	5	1
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	3	4	19	11	3	1
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	6	6	11	3	1
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	7	6	6	1	14	1

ELEMENT TYPE/TITLE FROM TO	DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND	.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	7	2	2	1	14	1
225 M	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	7	2	2	1	15	1
225 M BEND	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	7	2	2	1	15	1
225 E	1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	7	2	2	1	16	2
225 E TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	4	9	1	16	2
230	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	4	9	1	8	9
230 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	9	3	3	1	8	9
230A	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	9	3	3	1	14	8
230A TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	4	6	1	14	8
235	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	11	4	6	1	6	5
235 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	2	3	1	6	5
235A	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	13	2	3	1	10	6
235A TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	3	4	1	10	6
240	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	3	4	1	5	4
240 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	18	2	7	1	5	4
245	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	18	2	7	1	18	5
245 TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	3	5	1	18	5
250	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	3	5	2	12	5
250 TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	11	6	4	2	12	5
255 B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	11	6	4	6	9	5
255 B BEND	.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	9	6	4	6	9	5
255 M	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	9	6	4	7	10	4
255 M BEND	.707	.000	.707	.707	.000	-.707	.000	1.000	.000	9	6	4	7	10	4
255 E	1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	9	6	4	8	11	3
255 E TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	7	4	8	11	3
260	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	8	7	4	8	11	1
260 TNGT	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	6	8	11	1
265 B	1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	4	2	6	8	17	8
265 B BEND	1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	5	7	6	8	17	8
265 M	.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	5	7	6	8	15	7
265 M BEND	.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	5	7	6	8	15	7
265 E	.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	5	7	6	7	14	6
265 E TNGT	.707	.000	.707	.000	1.000	.000	-.707	.000	.707	7	10	10	7	14	6
270	.707	.000	.707	.000	1.000	.000	-.707	.000	.707	7	10	10	3	1	6

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270 275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	11	18	3	1	6
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	11	18	29	1	8
275 280	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	2	14	6	29	1	8
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	3	11	2	3	1	1
280 285	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	3	11	2	3	1	1
		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	4	16	7	10	2	1
285 290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	17	7	10	2	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	4	17	7	11	2	2
290 290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	17	3	11	2	2
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	17	3	6	2	3
290A 295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	4	6	2	3
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	4	6	2	1
295 300	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	1	6	2	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	18	1	6	2	1
300 305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	1	18	1	6	2	1
		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	19	2	3	0	1
305 310 B	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	2	2	3	0	1
		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	2	2	2	3	0	1
310 B 310 M	BEND	.000	.000-1.000	-1.000	.000	.000	.000	.000	1.000	.000	2	2	2	3	0	1
		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	1	1	2	1	1
310 M 310 E	BEND	-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	1	1	1	2	1	1
		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	1	1	1	2	1	1
310 E 315	TNGT	-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	2	1	1	2	1	1
		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	1	1	1	2	1	1
315 320 B	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	1	1	2	1	1
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	1	0	1	2	1	1
320 B 320 M	BEND	.000	1.000	.000	-.707	.000	.707	.707	.000	.707	1	0	1	2	1	1
		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	2	1	1	2	1	1
320 M 320 E	BEND	-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	2	1	1	2	1	1
		-.707	.000	.707	.000-1.000	.000	.707	.000	.707	.000	2	1	1	1	2	1
320 E 500	TNGT	-.707	.000	.707	.000-1.000	.000	.707	.000	.707	.000	2	1	1	1	2	1
		-.707	.000	.707	.000-1.000	.000	.707	.000	.707	.000	2	1	1	2	3	2

STRESSES AND LOCAL FORCES AND MOMENTS

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEIS05

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
5	TNGT	96	68	30	35	38	42	5466.	1.000	1.000	1.000	SC374
10		96	68	30	35	26	15	3805.	1.300	1.000	1.000	2
10	TNGT	96	68	30	35	26	15	3805.	1.300	1.000	1.000	SC374
15		96	68	30	35	10	71	6535.	1.300	1.000	1.000	2
15	TNGT	96	66	21	35	10	71	6535.	1.300	1.000	1.000	SC374
20		96	66	21	35	28	128	11177.	1.300	1.000	1.000	2
20	TNGT	34	82	83	0	133	46	11607.	1.300	1.000	1.000	SC374
25		34	82	83	0	104	47	9415.	1.000	1.000	1.000	2
25	TNGT	34	50	118	0	104	47	9415.	1.000	1.000	1.000	SC374
30		34	50	118	0	61	29	5582.	1.300	1.000	1.000	2
30	TNGT	18	40	86	0	61	29	5582.	1.300	1.000	1.000	SC374
35		18	40	86	0	10	5	879.	1.300	1.000	1.000	2
35	TNGT	2	7	15	0	10	5	879.	1.300	1.000	1.000	SC374
40		2	7	15	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	98	38	16	28	41	30	4765.	1.300	1.000	1.000	SC374
45 B		98	38	16	28	29	37	4519.	1.000	1.000	1.000	2
45 B	BEND	100	41	14	28	29	37	4519.	1.000	1.000	1.000	SC374
45 M		96	49	14	24	31	35	4337.	1.000	1.000	1.000	2
45 M	BEND	96	49	14	24	31	35	4337.	1.000	1.000	1.000	SC374
45 E		41	100	14	26	30	17	3555.	1.000	1.000	1.000	2
45 E	TNGT	43	100	13	26	30	17	3555.	1.000	1.000	1.000	SC374
50		43	100	13	26	31	20	3675.	1.000	1.000	1.000	2
50	TNGT	46	31	12	26	31	20	3675.	1.000	1.000	1.000	SC374
55		46	31	12	26	33	46	5117.	1.300	1.000	1.000	2
55	TNGT	34	29	41	49	33	19	5117.	1.300	1.000	1.000	SC374
60		34	29	41	49	40	60	7186.	1.300	1.000	1.000	2
60	TNGT	54	28	13	19	40	75	7186.	1.300	1.000	1.000	SC374
65		54	28	13	19	43	82	7779.	1.000	1.000	1.000	2
65	TNGT	54	139	46	19	43	82	7779.	1.000	1.000	1.000	SC374
70		54	139	46	19	45	50	5742.	1.300	1.000	1.000	2

STRESSES AND LOCAL FORCES AND MOMENTS

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ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
70	TNGT	96	41	23	19	45	50	5742.	1.300	1.000	1.000	SC374
75		96	41	23	19	34	84	7570.	1.300	1.000	1.000	2
75	TNGT	145	159	81	19	34	84	7570.	1.300	1.000	1.000	SC374
80 B		145	159	81	19	11	43	3941.	1.000	1.000	1.000	2
80 B	BEND	147	165	83	19	11	43	3941.	1.000	1.000	1.000	SC374
80 M		203	88	83	22	15	30	3311.	1.000	1.000	1.000	2
80 M	BEND	203	88	83	22	15	30	3311.	1.000	1.000	1.000	SC374
80 E		165	147	83	32	26	13	3533.	1.000	1.000	1.000	2
80 E	TNGT	171	147	84	32	26	13	3533.	1.000	1.000	1.000	SC374
85		171	147	84	32	45	39	5567.	1.000	1.000	1.000	2
85	TNGT	189	57	14	32	45	39	5567.	1.000	1.000	1.000	SC374
90		189	57	14	32	40	157	13610.	1.300	1.000	1.000	2
90	TNGT	59	215	31	40	32	157	13610.	1.300	1.000	1.000	SC374
95		59	215	31	40	17	184	15518.	1.000	1.000	1.000	2
95	TNGT	60	129	35	40	17	184	15518.	1.000	1.000	1.000	SC374
100 B		60	129	35	40	35	121	10863.	1.000	1.000	1.000	2
100 B	BEND	60	130	36	40	35	121	10863.	1.000	1.000	1.000	SC374
100 M		57	132	36	54	21	78	7989.	1.000	1.000	1.000	2
100 M	BEND	57	132	36	54	21	78	7989.	1.000	1.000	1.000	SC374
100 E		130	60	36	50	29	46	6055.	1.000	1.000	1.000	2
100 E	TNGT	132	61	36	50	29	46	6055.	1.000	1.000	1.000	SC374
105		132	61	36	50	22	8	4514.	1.000	1.000	1.000	2
105	TNGT	133	62	26	50	22	8	4514.	1.000	1.000	1.000	SC374
110		133	62	26	50	22	21	4799.	1.300	1.000	1.000	2
110	TNGT	26	134	62	21	50	22	4799.	1.300	1.000	1.000	SC374
115		26	134	62	21	47	47	5784.	1.000	1.000	1.000	2
115	TNGT	26	16	29	21	47	47	5784.	1.000	1.000	1.000	SC374
120 B		26	16	29	21	13	20	2610.	1.000	1.000	1.000	2
120 B	BEND	26	30	22	21	20	13	2610.	1.000	1.000	1.000	SC374
120 M		27	29	22	6	22	17	2383.	1.000	1.000	1.000	2
120 M	BEND	27	29	22	6	22	17	2383.	1.000	1.000	1.000	SC374
120 E		30	26	22	11	12	20	2177.	1.000	1.000	1.000	2
120 E	TNGT	30	28	27	11	20	12	2177.	1.000	1.000	1.000	SC374
125		30	28	27	11	49	34	4973.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
125	TNGT	28	31	27	49	11	34	4973.	1.300	1.000	1.000	SC374
130		28	31	27	49	10	43	5435.	1.000	1.000	1.000	2
130	TNGT	28	16	8	49	10	43	5435.	1.000	1.000	1.000	SC374
130A		28	16	8	49	20	19	4633.	1.000	1.000	1.000	2
130A	TNGT	28	17	7	49	20	19	4633.	1.000	1.000	1.000	SC374
135		28	17	7	49	31	13	4878.	1.000	1.000	1.000	2
135	TNGT	28	12	36	49	31	13	4878.	1.000	1.000	1.000	SC374
135A		28	12	36	49	26	12	4661.	1.000	1.000	1.000	2
135A	TNGT	28	9	33	49	26	12	4661.	1.000	1.000	1.000	SC374
137		28	9	33	49	78	23	7777.	1.000	1.000	1.000	2
137	TNGT	19	16	127	0	116	15	9658.	1.000	1.000	1.000	SC374
138		15	13	99	0	0	0	0.	1.300	1.000	1.000	2
137	TNGT	31	16	99	68	78	9	8501.	1.000	1.000	1.000	SC374
140		31	16	99	68	55	13	7248.	1.000	1.000	1.000	2
140	TNGT	31	4	20	68	55	13	7248.	1.000	1.000	1.000	SC374
140A		31	4	20	68	15	4	5708.	1.000	1.000	1.000	2
140A	TNGT	31	6	22	68	15	4	5708.	1.000	1.000	1.000	SC374
145		31	6	22	68	29	7	6076.	1.000	1.000	1.000	2
145	TNGT	8	3	6	0	10	5	928.	1.000	1.000	1.000	SC374
145A		8	3	6	0	7	4	669.	1.000	1.000	1.000	2
145A	TNGT	8	1	2	0	7	4	669.	1.000	1.000	1.000	SC374
150		8	1	2	0	10	1	808.	1.000	1.000	1.000	2
150	TNGT	8	0	6	0	10	1	808.	1.000	1.000	1.000	SC374
155		8	0	6	0	8	1	638.	1.300	1.000	1.000	2
155	TNGT	5	8	0	1	0	8	638.	1.300	1.000	1.000	SC374
160		5	8	0	1	1	12	991.	1.000	1.000	1.000	2
160	TNGT	4	3	1	1	1	12	991.	1.000	1.000	1.000	SC374
165		4	3	1	1	2	4	373.	1.000	1.000	1.000	2
165	TNGT	3	10	1	1	2	4	373.	1.000	1.000	1.000	SC374
170		3	10	1	1	2	2	254.	1.000	1.000	1.000	2
170	TNGT	3	12	3	1	2	2	254.	1.000	1.000	1.000	SC374
175		3	12	3	1	2	3	283.	1.300	1.000	1.000	2
175	TNGT	12	8	3	1	3	1	283.	1.300	1.000	1.000	SC374
180 B		12	8	3	1	1	7	632.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	14	10	2	1	1	7	632.	1.000	1.000	1.000	SC374
180 M	17	4	2	1	2	9	726.	1.000	1.000	1.000	2
180 M BEND	17	4	2	1	2	9	726.	1.000	1.000	1.000	SC374
180 E	17	3	2	0	2	9	736.	1.000	1.000	1.000	2
180 E TNGT	26	4	1	0	2	9	736.	1.000	1.000	1.000	SC374
185	26	4	1	0	1	8	697.	1.000	1.000	1.000	2
185 TNGT	39	8	1	0	1	8	697.	1.000	1.000	1.000	SC374
185A	39	8	1	0	1	8	644.	1.000	1.000	1.000	2
185A TNGT	47	7	0	0	1	8	644.	1.000	1.000	1.000	SC374
190	47	7	0	0	1	21	1704.	1.000	1.000	1.000	2
190 TNGT	56	24	1	0	1	21	1704.	1.000	1.000	1.000	SC374
190A	56	24	1	0	1	29	2359.	1.000	1.000	1.000	2
190A TNGT	65	16	1	0	1	29	2359.	1.000	1.000	1.000	SC374
195	65	16	1	0	1	62	5119.	1.000	1.000	1.000	2
195 TNGT	71	91	1	0	1	62	5119.	1.000	1.000	1.000	SC374
200	71	91	1	0	1	14	1132.	1.300	1.000	1.000	2
200 TNGT	87	74	1	1	0	14	1132.	1.300	1.000	1.000	SC374
205	87	74	1	1	1	69	5672.	1.000	1.000	1.000	2
205 TNGT	81	24	1	1	1	69	5672.	1.000	1.000	1.000	SC374
205A	81	24	1	1	1	30	2482.	1.000	1.000	1.000	2
205A TNGT	72	28	1	1	1	30	2482.	1.000	1.000	1.000	SC374
210	72	28	1	1	2	16	1307.	1.000	1.000	1.000	2
210 TNGT	62	4	2	1	2	16	1307.	1.000	1.000	1.000	SC374
210A	62	4	2	1	3	9	787.	1.000	1.000	1.000	2
210A TNGT	50	6	2	1	3	9	787.	1.000	1.000	1.000	SC374
215	50	6	2	1	3	9	757.	1.000	1.000	1.000	2
215 TNGT	36	5	3	1	3	9	757.	1.000	1.000	1.000	SC374
215A	36	5	3	1	5	10	952.	1.000	1.000	1.000	2
215A TNGT	19	4	3	1	5	10	952.	1.000	1.000	1.000	SC374
220	19	4	3	1	3	11	978.	1.000	1.000	1.000	2
220 TNGT	6	6	7	1	3	11	978.	1.000	1.000	1.000	SC374
225 B	6	6	7	1	14	1	1121.	1.000	1.000	1.000	2
225 B BEND	2	7	2	1	1	14	1121.	1.000	1.000	1.000	SC374
225 M	6	4	2	0	2	15	1274.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	6	4	2	0	2	15	1274.	1.000	1.000	1.000	SC374
225 E	7	2	2	1	2	16	1309.	1.000	1.000	1.000	2
225 E TNGT	8	4	9	1	16	2	1309.	1.000	1.000	1.000	SC374
230	8	4	9	1	8	9	1000.	1.000	1.000	1.000	2
230 TNGT	9	3	3	1	8	9	1000.	1.000	1.000	1.000	SC374
230A	9	3	3	1	14	8	1368.	1.000	1.000	1.000	2
230A TNGT	11	4	6	1	14	8	1368.	1.000	1.000	1.000	SC374
235	11	4	6	1	6	5	606.	1.000	1.000	1.000	2
235 TNGT	13	2	3	1	6	5	606.	1.000	1.000	1.000	SC374
235A	13	2	3	1	10	6	949.	1.000	1.000	1.000	2
235A TNGT	15	3	4	1	10	6	949.	1.000	1.000	1.000	SC374
240	15	3	4	1	5	4	545.	1.000	1.000	1.000	2
240 TNGT	18	2	7	1	5	4	545.	1.000	1.000	1.000	SC374
245	18	2	7	1	18	5	1526.	1.300	1.000	1.000	2
245 TNGT	5	3	19	5	18	1	1526.	1.300	1.000	1.000	SC374
250	5	3	19	5	12	2	1115.	1.000	1.000	1.000	2
250 TNGT	4	6	11	5	12	2	1115.	1.000	1.000	1.000	SC374
255 B	4	6	11	5	9	6	964.	1.000	1.000	1.000	2
255 B BEND	4	9	6	5	6	9	964.	1.000	1.000	1.000	SC374
255 M	8	6	6	8	3	10	1095.	1.000	1.000	1.000	2
255 M BEND	8	6	6	8	3	10	1095.	1.000	1.000	1.000	SC374
255 E	9	4	6	8	3	11	1126.	1.000	1.000	1.000	2
255 E TNGT	8	7	4	8	11	3	1126.	1.000	1.000	1.000	SC374
260	8	7	4	8	11	1	1105.	1.000	1.000	1.000	2
260 TNGT	4	2	6	8	11	1	1105.	1.000	1.000	1.000	SC374
265 B	4	2	6	8	17	8	1646.	1.000	1.000	1.000	2
265 B BEND	5	6	7	8	8	17	1646.	1.000	1.000	1.000	SC374
265 M	3	7	7	6	9	15	1536.	1.000	1.000	1.000	2
265 M BEND	3	7	7	6	9	15	1536.	1.000	1.000	1.000	SC374
265 E	2	8	7	5	8	14	1409.	1.000	1.000	1.000	2
265 E TNGT	4	10	11	5	14	8	1409.	1.000	1.000	1.000	SC374
270	4	10	11	5	1	5	564.	1.300	1.000	1.000	2
270 TNGT	11	18	9	1	6	3	564.	1.300	1.000	1.000	SC374
275	11	18	9	1	8	29	2467.	1.000	1.000	1.000	2

ELEMENT FROM TO	TYPE/TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	14	6	2	1	8	29	2467.	1.000	1.000	1.000	SC374
280		11	2	3	1	1	3	246.	1.300	1.000	1.000	2
280	TNGT	2	11	3	1	1	3	246.	1.300	1.000	1.000	SC374
285		7	16	4	1	2	10	835.	1.300	1.000	1.000	2
285	TNGT	17	7	4	2	1	10	835.	1.300	1.000	1.000	SC374
290		17	7	4	2	2	11	956.	1.000	1.000	1.000	2
290	TNGT	17	3	1	2	2	11	956.	1.000	1.000	1.000	SC374
290A		17	3	1	2	3	6	529.	1.000	1.000	1.000	2
290A	TNGT	18	4	1	2	3	6	529.	1.000	1.000	1.000	SC374
295		18	4	1	2	1	6	525.	1.000	1.000	1.000	2
295	TNGT	18	1	1	2	1	6	525.	1.000	1.000	1.000	SC374
300		18	1	1	2	1	6	542.	1.300	1.000	1.000	2
300	TNGT	1	18	1	1	2	6	542.	1.300	1.000	1.000	SC374
305		2	19	2	1	0	3	267.	1.000	1.000	1.000	2
305	TNGT	2	2	2	1	0	3	267.	1.000	1.000	1.000	SC374
310 B		2	2	2	1	0	3	253.	1.000	1.000	1.000	2
310 B	BEND	2	2	2	1	3	0	253.	1.000	1.000	1.000	SC374
310 M		1	1	1	2	2	1	213.	1.000	1.000	1.000	2
310 M	BEND	1	1	1	2	2	1	213.	1.000	1.000	1.000	SC374
310 E		1	1	1	2	1	1	204.	1.000	1.000	1.000	2
310 E	TNGT	2	1	1	2	1	1	204.	1.000	1.000	1.000	SC374
315		1	1	1	2	1	1	218.	1.300	1.000	1.000	2
315	TNGT	1	1	1	1	1	2	218.	1.300	1.000	1.000	SC374
320 B		0	1	1	1	1	2	186.	1.000	1.000	1.000	2
320 B	BEND	0	1	1	1	1	2	186.	1.000	1.000	1.000	SC374
320 M		2	1	2	1	1	2	186.	1.000	1.000	1.000	2
320 M	BEND	2	1	2	1	1	2	186.	1.000	1.000	1.000	SC374
320 E		1	1	2	0	2	2	221.	1.000	1.000	1.000	2
320 E	TNGT	1	1	2	0	2	2	221.	1.000	1.000	1.000	SC374
500		1	1	2	0	3	2	342.	1.000	1.000	1.000	2

*** AT THE MEMBER END 95 OF ELEMENT FROM 95 TO 100 B , MAX. STRESS (PSI) IS 15518.

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

PAGE 575

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE : SEISEM

EARTHQUAKE COMPONENT : X+Y+Z
RESULTS OF MODAL SYNTHESIS

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
5	.000	.000	.000	.000
10	.023	.325	.052	.330
15	.220	3.076	.517	3.127
20	.321	4.490	.755	4.565
25	.696	4.498	.295	4.561
30	1.889	4.505	1.111	5.010
35	4.584	4.512	3.662	7.401
40	7.823	4.513	6.706	11.249
45 B	5.509	4.462	2.622	7.559
45 E	8.107	1.476	4.866	9.569
50	7.953	.000	4.865	9.323
55	5.612	5.963	4.859	9.522
60	.970	.695	3.225	3.439
65	.000	.000	3.226	3.226
70	3.392	2.761	3.229	5.437
75	4.190	4.944	3.221	7.237
80 B	3.253	5.503	3.215	7.155
80 E	.840	6.581	1.122	6.728
85	.000	6.580	.000	6.580
90	13.017	6.568	8.637	16.947
95	5.558	.000	8.638	10.272
100 B	5.063	1.632	8.638	10.144
100 E	3.603	3.215	6.945	8.458
105	.000	3.216	3.342	4.639
110	2.566	3.217	1.391	4.344
115	2.567	.000	.000	2.567

EFFECTIVE ACCELERATIONS

ME101/I2

DATE 040182

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DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
120 B	2.567	13.373	1.798	13.736
120 E	2.077	12.684	2.156	13.032
125	.784	.079	2.152	2.292
130	.000	.078	.000	.078
130A	1.121	.072	2.708	2.932
135	.000	.066	.000	.066
135A	1.675	.060	5.746	5.985
137	1.544	.055	6.075	6.269
138	6.003	5.454	6.082	10.138
140	.000	.041	.000	.041
140A	.690	.021	2.215	2.320
145	.000	.000	.000	.000
145A	3.874	.006	5.589	6.801
150	.000	.013	.000	.013
155	.869	.014	1.197	1.479
160	.881	4.457	.000	4.544
165	.893	4.123	.614	4.263
170	.894	4.309	.000	4.400
175	.895	4.509	.947	4.694
180 B	5.527	2.437	3.815	7.144
180 E	6.631	2.440	4.929	8.615
185	.000	2.433	.000	2.433
185A	2.389	2.426	1.966	3.931
190	.000	2.417	.000	2.417
190A	3.800	2.405	2.642	5.215
195	.000	2.391	.000	2.391
200	2.255	2.384	2.486	4.117
205	.000	.000	2.491	2.491
205A	3.209	2.777	2.500	4.926
210	.000	.000	2.508	2.508
210A	7.515	5.715	2.518	9.771
215	.000	.000	2.526	2.526
215A	4.237	2.119	2.535	5.373
220	.000	.000	2.539	2.539
225 B	2.674	1.536	2.540	3.995
225 E	3.009	1.624	2.305	4.123

DATA PT	EFFECTIVE ACCELERATIONS (G'S)			RESULTANT
	GLOBAL-X	GLOBAL-Y	GLOBAL-Z	
230	3.001	.000	.000	3.001
230A	2.979	1.978	8.494	9.216
235	2.944	.000	.000	2.944
235A	2.895	1.969	8.048	8.776
240	2.832	.000	.000	2.832
245	2.757	.482	3.051	4.140
250	.000	.000	3.049	3.049
255 B	1.425	.920	3.042	3.483
255 E	2.152	.591	1.380	2.624
260	2.153	.000	.000	2.153
265 B	2.161	3.631	3.255	5.333
265 E	2.001	2.984	2.943	4.644
270	2.531	2.032	3.258	4.599
275	.000	2.033	.000	2.033
280	5.050	2.023	.753	5.492
285	.648	1.217	.754	1.571
290	.000	1.216	.000	1.216
290A	6.159	1.206	5.635	8.434
295	.000	1.194	.000	1.194
300	1.742	1.189	1.963	2.881
305	1.435	.000	1.963	2.431
310 B	1.411	.219	1.963	2.428
310 E	1.490	1.095	1.426	2.336
315	1.489	.645	.692	1.764
320 B	1.057	.645	.606	1.378
320 E	.330	.282	.329	.544
500	.000	.000	.000	.000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISEM

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
5	ANC		331.	121.	191.	74.	63.	65.
25	RAD		149.	0.	352.	0.	0.	0.
50	RAD		0.	283.	0.	0.	0.	0.
65	RAD		279.	0.	0.	0.	0.	0.
65	RAD		0.	240.	0.	0.	0.	0.
85	RAD		321.	0.	0.	0.	0.	0.
85	RAD		0.	0.	508.	0.	0.	0.
95	RAD		0.	459.	0.	0.	0.	0.
105	RAD		66.	0.	0.	0.	0.	0.
115	RAD		0.	225.	0.	0.	0.	0.
115	RAD		0.	0.	122.	0.	0.	0.
130	RAD		49.	0.	0.	0.	0.	0.
130	RAD		0.	0.	88.	0.	0.	0.
135	RAD		91.	0.	0.	0.	0.	0.
135	RAD		0.	0.	120.	0.	0.	0.
140	RAD		185.	0.	0.	0.	0.	0.
140	RAD		0.	0.	142.	0.	0.	0.
145	ANC		50.	151.	53.	78.	84.	54.
150	RAD		144.	0.	0.	0.	0.	0.
150	RAD		0.	0.	48.	0.	0.	0.
160	RAD		0.	0.	37.	0.	0.	0.
170	RAD		0.	0.	53.	0.	0.	0.
185	RAD		59.	0.	0.	0.	0.	0.
185	RAD		0.	0.	70.	0.	0.	0.
190	RAD		47.	0.	0.	0.	0.	0.
190	RAD		0.	0.	38.	0.	0.	0.
195	RAD		39.	0.	0.	0.	0.	0.
195	RAD		0.	0.	290.	0.	0.	0.
205	RAD		19.	0.	0.	0.	0.	0.
205	RAD		0.	132.	0.	0.	0.	0.
210	RAD		49.	0.	0.	0.	0.	0.
210	RAD		0.	44.	0.	0.	0.	0.
215	RAD		72.	0.	0.	0.	0.	0.
215	RAD		0.	32.	0.	0.	0.	0.
220	RAD		76.	0.	0.	0.	0.	0.

DATA PT	TYPE	TITLE	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
			FX	FY	FZ	MX	MY	MZ
220	RAD		0.	16.	0.	0.	0.	0.
230	RAD		0.	15.	0.	0.	0.	0.
230	RAD		0.	0.	79.	0.	0.	0.
235	RAD		0.	14.	0.	0.	0.	0.
235	RAD		0.	0.	75.	0.	0.	0.
240	RAD		0.	14.	0.	0.	0.	0.
240	RAD		0.	0.	58.	0.	0.	0.
250	RAD		295.	0.	0.	0.	0.	0.
250	RAD		0.	13.	0.	0.	0.	0.
260	RAD		0.	10.	0.	0.	0.	0.
260	RAD		0.	0.	86.	0.	0.	0.
275	RAD		73.	0.	0.	0.	0.	0.
275	RAD		0.	0.	91.	0.	0.	0.
290	RAD		64.	0.	0.	0.	0.	0.
290	RAD		0.	0.	60.	0.	0.	0.
295	RAD		61.	0.	0.	0.	0.	0.
295	RAD		0.	0.	64.	0.	0.	0.
305	RAD		0.	55.	0.	0.	0.	0.
500	ANC		27.	7.	23.	7.	21.	10.

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISEM

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5	ANC		331	121	191	74	63	65	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
25	RAD		382	0	0	0	0	0	.391	.000	.920						
50	RAD		283	0	0	0	0	0	.000	1.00	.000						
65	RAD		279	0	0	0	0	0	1.00	.000	.000						
65	RAD		240	0	0	0	0	0	.000	1.00	.000						
85	RAD		321	0	0	0	0	0	1.00	.000	.000						
85	RAD		508	0	0	0	0	0	.000	.000	1.00						
95	RAD		459	0	0	0	0	0	.000	1.00	.000						
105	RAD		66	0	0	0	0	0	1.00	.000	.000						
115	RAD		225	0	0	0	0	0	.000	1.00	.000						
115	RAD		122	0	0	0	0	0	.000	.000	1.00						
130	RAD		49	0	0	0	0	0	1.00	.000	.000						
130	RAD		88	0	0	0	0	0	.000	.000	1.00						
135	RAD		91	0	0	0	0	0	1.00	.000	.000						
135	RAD		120	0	0	0	0	0	.000	.000	1.00						
140	RAD		185	0	0	0	0	0	1.00	.000	.000						
140	RAD		142	0	0	0	0	0	.000	.000	1.00						
145	ANC		50	151	53	78	84	54	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00
150	RAD		144	0	0	0	0	0	1.00	.000	.000						
150	RAD		48	0	0	0	0	0	.000	.000	1.00						
160	RAD		37	0	0	0	0	0	.000	.000	1.00						
170	RAD		53	0	0	0	0	0	.000	.000	1.00						
185	RAD		59	0	0	0	0	0	1.00	.000	.000						
185	RAD		70	0	0	0	0	0	.000	.000	1.00						
190	RAD		47	0	0	0	0	0	1.00	.000	.000						
190	RAD		38	0	0	0	0	0	.000	.000	1.00						
195	RAD		39	0	0	0	0	0	1.00	.000	.000						
195	RAD		290	0	0	0	0	0	.000	.000	1.00						
205	RAD		19	0	0	0	0	0	1.00	.000	.000						
205	RAD		132	0	0	0	0	0	.000	1.00	.000						
210	RAD		49	0	0	0	0	0	1.00	.000	.000						
210	RAD		44	0	0	0	0	0	.000	1.00	.000						
215	RAD		72	0	0	0	0	0	1.00	.000	.000						
215	RAD		32	0	0	0	0	0	.000	1.00	.000						
220	RAD		76	0	0	0	0	0	1.00	.000	.000						

DATA PT	TYPE	TITLE	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES									
			FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ	
220	RAD		16	0	0	0	0	0	.000	1.00	.000							
230	RAD		15	0	0	0	0	0	.000	1.00	.000							
230	RAD		79	0	0	0	0	0	.000	.000	1.00							
235	RAD		14	0	0	0	0	0	.000	1.00	.000							
235	RAD		75	0	0	0	0	0	.000	.000	1.00							
240	RAD		14	0	0	0	0	0	.000	1.00	.000							
240	RAD		58	0	0	0	0	0	.000	.000	1.00							
250	RAD		295	0	0	0	0	0	1.00	.000	.000							
250	RAD		13	0	0	0	0	0	.000	1.00	.000							
260	RAD		10	0	0	0	0	0	.000	1.00	.000							
260	RAD		86	0	0	0	0	0	.000	.000	1.00							
275	RAD		73	0	0	0	0	0	1.00	.000	.000							
275	RAD		91	0	0	0	0	0	.000	.000	1.00							
290	RAD		64	0	0	0	0	0	1.00	.000	.000							
290	RAD		60	0	0	0	0	0	.000	.000	1.00							
295	RAD		61	0	0	0	0	0	1.00	.000	.000							
295	RAD		64	0	0	0	0	0	.000	.000	1.00							
305	RAD		55	0	0	0	0	0	.000	1.00	.000							
500	ANC		27	7	23	7	21	10	1.00	.000	.000	.000	1.00	.000	.000	.000	1.00	

JOINT DISPLACEMENTS FOR THE SEISEM LOAD CASE

ME101/12

DATE 040182

PAGE 582

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISEM

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
5		.000	.000	.000	.000000	.000000	.000000
10		.001	.004	.003	.001847	.001193	.000812
15		.009	.032	.022	.004823	.002022	.004769
20		.017	.064	.041	.004837	.001738	.013992
25		.056	.064	.024	.005421	.001738	.018459
30		.144	.064	.028	.007186	.001738	.021380
35		.308	.064	.081	.008518	.001738	.023284
40		.489	.064	.148	.008675	.001738	.023508
45 B		.200	.064	.120	.007814	.003477	.013551
45 E		.247	.020	.161	.008966	.005177	.013786
50		.236	.000	.161	.008830	.005586	.013844
55		.153	.102	.161	.007173	.008009	.014417
60		.032	.025	.081	.007824	.010647	.015528
65		.000	.000	.081	.008674	.011032	.015826
70		.104	.093	.081	.009250	.008476	.016882
75		.157	.184	.081	.007011	.002697	.018308
80 B		.154	.206	.080	.007932	.003798	.018820
80 E		.041	.262	.023	.010368	.004358	.018402
85		.000	.262	.000	.009145	.004395	.016978
90		.358	.261	.105	.011655	.012079	.010263
95		.145	.000	.105	.009640	.012394	.007267
100 B		.106	.042	.105	.005416	.011421	.007478
100 E		.069	.063	.083	.005595	.009042	.008353
105		.000	.063	.039	.006806	.006342	.009449
110		.050	.063	.024	.007063	.004696	.010135
115		.050	.000	.000	.007216	.003047	.010073
120 B		.050	.191	.024	.009222	.001393	.007295
120 E		.043	.176	.030	.009924	.001970	.005935
125		.011	.001	.030	.007144	.003697	.002608
130		.000	.001	.000	.005309	.004708	.002078
130A		.020	.001	.041	.000602	.011962	.000301
135		.000	.001	.000	.001976	.019196	.002828
135A		.053	.001	.096	.002299	.026469	.003216
137		.060	.001	.097	.002494	.033757	.003299
138		.479	.030	.055	.002862	.037585	.003299

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
140		.000	.000	.000	.002696	.025318	.004155
140A		.020	.000	.032	.000664	.012659	.001024
145		.000	.000	.000	.000000	.000000	.000000
145A		.041	.000	.066	.000714	.000268	.000552
150		.000	.000	.000	.002874	.000535	.002220
155		.012	.000	.014	.002786	.000571	.002483
160		.012	.067	.000	.002347	.000516	.001462
165		.008	.083	.003	.002744	.001282	.001843
170		.008	.084	.000	.002811	.001678	.001838
175		.008	.085	.004	.002897	.002148	.001829
180 B		.027	.072	.015	.002233	.003141	.001207
180 E		.034	.070	.021	.001634	.003129	.000805
185		.000	.070	.000	.001182	.002202	.001081
185A		.005	.070	.015	.000356	.001851	.000173
190		.000	.070	.000	.001754	.001597	.000981
190A		.016	.070	.058	.001468	.001071	.000073
195		.000	.070	.000	.007820	.000899	.000840
200		.007	.070	.094	.009310	.000836	.000666
205		.000	.000	.094	.005873	.000750	.000652
205A		.008	.039	.094	.000827	.000138	.001000
210		.000	.000	.095	.002057	.001561	.000993
210A		.011	.021	.095	.000350	.000299	.001056
215		.000	.000	.095	.001248	.001868	.001192
215A		.058	.028	.095	.000431	.000304	.001465
220		.000	.000	.095	.001862	.001131	.001794
225 B		.012	.049	.095	.002524	.000929	.002019
225 E		.015	.051	.088	.002464	.001544	.002084
230		.016	.000	.000	.002114	.002715	.001545
230A		.016	.034	.087	.001774	.000486	.000270
235		.016	.000	.000	.001462	.002337	.001297
235A		.016	.029	.079	.001177	.000514	.000184
240		.015	.000	.000	.000948	.001877	.000649
245		.014	.005	.029	.000825	.002154	.000605
250		.000	.000	.029	.000777	.002197	.000862
255 B		.028	.010	.029	.000894	.003101	.001424
255 E		.044	.007	.013	.001366	.003175	.001724
260		.044	.000	.000	.001661	.003262	.001772
265 B		.044	.070	.118	.005352	.001129	.000980
265 E		.042	.064	.117	.005621	.001303	.001018
270		.030	.013	.107	.006243	.001790	.001613
275		.000	.018	.000	.003432	.002511	.001310
280		.039	.018	.006	.002158	.005500	.001125
285		.004	.010	.006	.002374	.005451	.001517
290		.000	.009	.000	.002339	.005249	.001674

DATA PT	TYPE/TITLE	DISPLACEMENTS (IN)			ROTATIONS (RAD)		
		DX	DY	DZ	RX	RY	RZ
290A		.041	.009	.045	.000366	.003243	.000066
295		.000	.009	.000	.001863	.001457	.001581
300		.012	.009	.016	.001741	.001118	.001060
305		.009	.000	.016	.001721	.001056	.000760
310 B		.009	.002	.016	.001674	.001062	.000706
310 E		.010	.008	.011	.001263	.001082	.000409
315		.010	.004	.005	.000679	.000974	.000487
320 B		.007	.004	.004	.000491	.000837	.000581
320 E		.002	.002	.002	.000267	.000638	.000405
500		.000	.000	.000	.000000	.000000	.000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISEM

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
5 10	TNGT	-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	331	121	191	74	63	56
		-.920	.000	.391	.000	-1.000	.000	.391	.000	.920	327	121	188	55	39	23
10 15	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	327	121	188	55	39	23
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	315	121	178	17	45	131
15 20	TNGT	-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	248	119	138	17	45	131
		-.921	.000	.390	.000	-1.000	.000	.390	.000	.921	241	119	136	47	44	226
20 25	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	212	66	194	134	0	249
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	209	65	196	155	0	184
25 30	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	239	64	210	155	0	184
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	235	64	205	80	0	99
30 35	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	144	35	119	80	0	99
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	122	111	99	12	0	14
35 40	TNGT	.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	22	13	19	12	0	14
		.000	-1.000	.000	.000	.000	-1.000	1.000	.000	.000	18	4	12	0	0	0
20 45 B	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	61	268	95	96	33	101
		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	61	268	95	93	33	47
45 B 45 M	BEND	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	50	279	97	93	33	47
		.000	.707	.707	.000	-.707	.707	1.000	.000	.000	50	279	97	79	32	40
45 M 45 E	BEND	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	50	279	97	79	32	40
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	29	158	99	43	44	31
45 E 50	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	28	158	100	43	44	31
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	43	280	100	62	40	38
50 55	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	33	47	104	62	40	38
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	33	47	104	70	63	38
55 60	TNGT	-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	24	53	115	70	63	38
		-.707	.000	.707	.000	-1.000	.000	.707	.000	.707	24	53	115	100	97	33
60 65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	52	113	100	97	33
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	52	113	110	100	33

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
65	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	209	198	112	110	100	33
70		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	231	169	76	72	148	28
70	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	28	73	210	72	148	28
75		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	28	73	220	134	145	28
75	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	239	186	441	134	145	28
80 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	243	187	445	123	64	28
80 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	244	192	445	123	64	28
80 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	248	193	449	86	24	22
80 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	248	193	449	86	24	22
80 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	251	193	452	42	47	86
80 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	252	199	453	42	47	86
85		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	255	199	455	151	47	148
85	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	70	217	90	151	47	148
90		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	60	243	99	207	36	62
90	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	36	277	80	207	36	62
95		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	36	277	80	248	25	62
95	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	43	191	81	248	25	62
100 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	43	191	81	163	45	62
100 B BEND		.000	.000	1.000	.000	1.000	.000	-1.000	.000	.000	45	191	84	163	45	62
100 M		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	45	191	84	110	58	57
100 M BEND		.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	45	191	84	110	58	57
100 E		.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	45	191	84	71	63	47
100 E TNGT		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	46	192	90	71	63	47
105		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	46	192	90	20	63	32
105	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	31	192	92	20	63	32
110		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	31	192	92	32	63	31
110	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	30	193	93	32	63	31
115		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	30	193	93	32	67	73
115	TNGT	-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	28	42	42	32	67	73
120 B		-1.000	.000	.000	.000	-1.000	.000	.000	.000	1.000	28	42	42	32	19	40
120 B BEND		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	30	30	45	32	19	40
120 M		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	30	30	45	29	27	34
120 M BEND		-.707	.000	.707	.707	.000	.707	.000	1.000	.000	30	30	45	29	27	34
120 E		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	30	30	45	23	29	31

ELEMENT TYPE/TITLE			DIRECTION COSINES							GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)				
FROM TO			COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
120 E TNGT 125			.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		32	59	49	23	29	31
			.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		32	59	49	79	50	31
125 TNGT 130			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	32	59	52	79	50	31
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	32	59	52	94	50	27
130 TNGT 130A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	12	59	46	94	50	27
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	12	59	46	49	50	24
130A TNGT 135			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	59	49	49	50	24
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	14	59	49	74	50	32
135 TNGT 135A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	37	59	82	74	50	32
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	37	59	82	61	50	27
135A TNGT 137			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	60	58	61	50	27
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	60	58	151	50	78
137 TNGT 138			.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		128	116	130	107	117	0
			.000	.000	1.000	.000-1.000	.000	1.000	.000	.000		132	19	88	0	0	0
137 TNGT 140			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	131	54	87	66	84	100
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	141	56	102	61	84	81
140 TNGT 140A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	45	56	40	61	84	81
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	59	17	6	84	15
140A TNGT 145			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	59	18	6	84	15
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	23	62	11	11	84	29
145 TNGT 145A			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	38	21	43	50	1	40
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	21	31	44	1	28
145A TNGT 150			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	21	16	44	1	28
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	36	12	31	14	1	38
150 TNGT 155			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	107	12	17	14	1	38
			.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	51	21	5	7	1	22
155 TNGT 160			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	49	20	4	7	1	22
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	49	20	4	7	10	33
160 TNGT 165			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	45	14	13	7	10	33
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	45	14	13	7	29	17
165 TNGT 170			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	42	19	10	7	29	17
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	42	19	10	7	31	17
170 TNGT 175			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	42	21	26	7	31	17
			1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	42	21	26	7	29	18

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
175	TNGT	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	41	27	26	7	29	18
180	B	.000	.707	.707	.000	-.707	.707	1.000	.000	.000	41	27	26	28	1	18
180	B BEND	.000	.707	.707	.000	.707	-.707	-1.000	.000	.000	31	30	19	28	1	18
180	M	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	31	30	19	32	2	21
180	M BEND	.000	.924	.383	.000	.383	-.924	-1.000	.000	.000	31	30	19	32	2	21
180	E	.000	1.000	.000	.000	.000	-1.000	-1.000	.000	.000	31	30	19	35	3	26
180	E TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	9	39	12	35	3	26
185		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	33	33	35	32	1	26
185	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	26	45	35	32	1	26
185A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	56	11	16	3	15
185A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	8	69	12	16	3	15
190		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	56	14	25	1	16
190	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	27	65	25	25	1	16
190A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	12	81	30	37	3	20
190A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	95	20	37	3	20
195		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	24	77	55	124	1	9
195	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	15	83	235	124	1	9
200		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	5	84	226	72	1	1
200	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	6	87	224	72	1	1
205		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	4	88	216	101	2	1
205	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	15	36	213	101	2	1
205A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	11	30	110	40	20	2
205A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	5	34	98	40	20	2
210		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	25	39	174	23	16	1
210	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	24	8	169	23	16	1
210A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	23	17	85	30	38	2
210A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	26	21	70	30	38	2
215		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	33	12	114	13	36	1
215	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	39	9	107	13	36	1
215A		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	12	51	19	36	2
215A	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	19	9	31	19	36	2
220		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	40	8	31	14	40	1
220	TNGT	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	38	8	24	14	40	1
225	B	.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	18	6	9	1	27	1

ELEMENT TYPE/TITLE		DIRECTION COSINES								GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			
FROM TO		COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
225 B BEND 225 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	17	3	6	1	27	1
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	15	2	9	1	31	2
225 M BEND 225 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	15	2	9	1	31	2
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	14	2	12	2	30	2
225 E TNGT 230		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	15	4	15	2	30	2
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	33	7	43	2	45	11
230 TNGT 230A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	35	7	38	2	45	11
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	43	9	32	2	61	18
230A TNGT 235		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	67	8	38	2	61	18
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	67	8	38	2	56	9
235 TNGT 235A		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	90	7	36	2	56	9
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	90	7	36	2	57	17
235A TNGT 240		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	114	9	31	2	57	17
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	114	9	31	2	38	11
240 TNGT 245		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	137	5	23	2	38	11
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	137	5	23	2	41	8
245 TNGT 250		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	150	6	30	2	41	8
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	220	5	24	3	92	7
250 TNGT 255 B		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	76	9	24	3	92	7
		.000	.000	1.000	.000	-1.000	.000	1.000	.000	.000	35	8	36	7	29	8
255 B BEND 255 M		.000	.000	1.000	1.000	.000	.000	.000	1.000	.000	33	9	42	7	29	8
		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	33	9	42	9	23	6
255 M BEND 255 E		.707	.000	.707	.707	.000	-.707	.000	1.000	.000	33	9	42	9	23	6
		1.000	.000	.000	.000	.000	-1.000	.000	1.000	.000	54	9	44	12	27	4
255 E TNGT 260		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	54	9	45	12	27	4
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	50	9	48	12	40	3
260 TNGT 265 B		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	49	6	38	12	40	3
		1.000	.000	.000	.000	1.000	.000	.000	.000	1.000	7	4	13	12	27	12
265 B BEND 265 M		1.000	.000	.000	.000	.000	1.000	.000	-1.000	.000	7	10	14	12	27	12
		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	7	10	16	12	25	11
265 M BEND 265 E		.924	.000	.383	-.383	.000	.924	.000	-1.000	.000	7	10	16	12	25	11
		.707	.000	.707	-.707	.000	.707	.000	-1.000	.000	8	10	17	11	23	11
265 E TNGT 270		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	9	13	19	11	23	11
		.707	.000	.707	.000	1.000	.000	-.707	.000	.707	12	25	20	19	9	17

ELEMENT TYPE/TITLE		DIRECTION COSINES									GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)		
FROM	TO	COSAX	COSAY	COSAZ	COSBX	COSBY	COSBZ	COSCX	COSCY	COSCZ	FX	FY	FZ	MX	MY	MZ
270	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	19	24	27	19	9	17
275		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	39	16	53	63	8	37
275	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	34	19	39	63	8	37
280		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	6	30	9	23	9	14
280	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	35	41	6	23	9	14
285		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	35	43	9	17	12	14
285	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	35	43	9	17	12	14
290		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	35	28	31	23	9	20
290	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	29	29	29	23	9	20
290A		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	20	45	18	36	12	36
290A	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	21	48	22	36	12	36
295		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	30	37	31	23	9	21
295	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	31	37	34	23	9	21
300		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	10	52	5	20	12	10
300	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	12	53	5	20	12	10
305		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	12	53	5	11	9	10
305	TNGT	.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	13	6	6	11	9	10
310 B		.000	.000-1.000	.000	.000	1.000	.000	1.000	.000	.000	13	6	6	10	8	10
310 B BEND		.000	.000-1.000	-1.000	.000	.000	.000	1.000	.000	.000	14	6	7	10	8	10
310 M		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	14	5	7	10	8	10
310 M BEND		-.707	.000	-.707	-.707	.000	.707	.000	1.000	.000	14	5	7	10	8	10
310 E		-1.000	.000	.000	.000	.000	1.000	.000	1.000	.000	14	5	7	10	8	10
310 E TNGT		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	16	5	9	10	8	10
315		-1.000	.000	.000	.000-1.000	.000	.000	.000	.000	1.000	16	5	9	10	7	10
315	TNGT	.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	18	6	9	10	7	10
320 B		.000	1.000	.000	.000	.000	1.000	1.000	.000	.000	18	6	9	7	7	3
320 B BEND		.000	1.000	.000	-.707	.000	.707	.707	.000	.707	20	6	10	7	7	3
320 M		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	20	6	10	5	7	5
320 M BEND		-.500	.707	.500	-.500	-.707	.500	.707	.000	.707	20	6	10	5	7	5
320 E		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	20	6	10	5	9	8
320 E TNGT		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	20	6	10	5	9	8
500		-.707	.000	.707	.000-1.000	.000	.000	.707	.000	.707	20	6	10	7	21	10

STRESSES AND LOCAL FORCES AND MOMENTS

ME101/12

DATE 040182

PAGE 591

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE : SEISEM

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT. FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
5	TNGT	376	121	69	50	63	78	9224.	1.000	1.000	1.000	SC374
10		371	121	65	50	39	31	5823.	1.300	1.000	1.000	2
10	TNGT	371	121	66	50	39	31	5823.	1.300	1.000	1.000	SC374
15		358	121	55	50	45	122	11487.	1.300	1.000	1.000	2
15	TNGT	277	119	61	50	45	122	11487.	1.300	1.000	1.000	SC374
20		268	119	70	50	44	226	19355.	1.300	1.000	1.000	2
20	TNGT	66	194	212	0	249	134	23241.	1.300	1.000	1.000	SC374
25		65	196	209	0	184	155	19785.	1.000	1.000	1.000	2
25	TNGT	64	210	239	0	184	155	19785.	1.000	1.000	1.000	SC374
30		64	205	235	0	99	80	10418.	1.300	1.000	1.000	2
30	TNGT	35	119	144	0	99	80	10418.	1.300	1.000	1.000	SC374
35		111	99	122	0	14	12	1543.	1.300	1.000	1.000	2
35	TNGT	13	19	22	0	14	12	1543.	1.300	1.000	1.000	SC374
40		4	12	18	0	0	0	0.	1.000	1.000	1.000	2
20	TNGT	268	95	61	33	101	96	11774.	1.300	1.000	1.000	SC374
45 B		268	95	61	33	47	93	8935.	1.000	1.000	1.000	2
45 B	BEND	279	97	50	33	47	93	8935.	1.000	1.000	1.000	SC374
45 M		247	162	50	29	42	79	7737.	1.000	1.000	1.000	2
45 M	BEND	247	162	50	29	42	79	7737.	1.000	1.000	1.000	SC374
45 E		99	158	29	31	44	43	5664.	1.000	1.000	1.000	2
45 E	TNGT	100	158	28	31	44	43	5664.	1.000	1.000	1.000	SC374
50		100	280	43	38	40	62	6803.	1.000	1.000	1.000	2
50	TNGT	104	47	33	38	40	62	6803.	1.000	1.000	1.000	SC374
55		104	47	33	38	63	70	8343.	1.300	1.000	1.000	2
55	TNGT	82	53	85	67	63	43	8363.	1.300	1.000	1.000	SC374
60		82	53	85	67	97	83	11843.	1.300	1.000	1.000	2
60	TNGT	113	52	23	33	97	100	11760.	1.300	1.000	1.000	SC374
65		113	52	23	33	100	110	12521.	1.000	1.000	1.000	2
65	TNGT	112	198	209	33	100	110	12521.	1.000	1.000	1.000	SC374
70		76	169	231	28	148	72	13730.	1.300	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (1)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
70 TNGT	210	73	28	28	148	72	13730.	1.300	1.000	1.000	SC374
75	220	73	28	28	145	134	16375.	1.300	1.000	1.000	2
75 TNGT	441	186	239	28	145	134	16375.	1.300	1.000	1.000	SC374
80 B	445	187	243	28	64	123	11656.	1.000	1.000	1.000	2
80 B BEND	445	192	244	28	64	123	11656.	1.000	1.000	1.000	SC374
80 M	403	276	248	25	21	86	7568.	1.000	1.000	1.000	2
80 M BEND	403	276	248	25	21	86	7568.	1.000	1.000	1.000	SC374
80 E	193	452	251	47	86	42	8790.	1.000	1.000	1.000	2
80 E TNGT	199	453	252	47	86	42	8790.	1.000	1.000	1.000	SC374
85	199	455	255	47	148	151	17850.	1.000	1.000	1.000	2
85 TNGT	217	90	70	47	148	151	17850.	1.000	1.000	1.000	SC374
90	243	99	60	36	62	207	18025.	1.300	1.000	1.000	2
90 TNGT	80	277	36	62	36	207	18025.	1.300	1.000	1.000	SC374
95	80	277	36	62	25	248	21130.	1.000	1.000	1.000	2
95 TNGT	81	191	43	62	25	248	21130.	1.000	1.000	1.000	SC374
100 B	81	191	43	62	45	163	14791.	1.000	1.000	1.000	2
100 B BEND	84	191	45	62	45	163	14791.	1.000	1.000	1.000	SC374
100 M	112	176	45	75	34	110	11264.	1.000	1.000	1.000	2
100 M BEND	112	176	45	75	34	110	11264.	1.000	1.000	1.000	SC374
100 E	191	84	45	63	47	71	8754.	1.000	1.000	1.000	2
100 E TNGT	192	90	46	63	47	71	8754.	1.000	1.000	1.000	SC374
105	192	90	46	63	32	20	6073.	1.000	1.000	1.000	2
105 TNGT	192	92	31	63	32	20	6073.	1.000	1.000	1.000	SC374
110	192	92	31	63	31	32	6374.	1.300	1.000	1.000	2
110 TNGT	30	193	93	32	63	31	6374.	1.300	1.000	1.000	SC374
115	30	193	93	32	67	73	8581.	1.000	1.000	1.000	2
115 TNGT	28	42	42	32	67	73	8581.	1.000	1.000	1.000	SC374
120 B	28	42	42	32	19	40	4501.	1.000	1.000	1.000	2
120 B BEND	30	45	30	32	40	19	4501.	1.000	1.000	1.000	SC374
120 M	42	33	30	16	41	27	4272.	1.000	1.000	1.000	2
120 M BEND	42	33	30	16	41	27	4272.	1.000	1.000	1.000	SC374
120 E	45	30	30	31	23	29	3974.	1.000	1.000	1.000	2
120 E TNGT	49	59	32	31	29	23	3974.	1.000	1.000	1.000	SC374
125	49	59	32	31	50	79	8050.	1.300	1.000	1.000	2

STRESSES AND LOCAL FORCES AND MOMENTS

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DATE 040182

PAGE 593

ELEMENT TYPE/TITLE		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
FROM TO		FA	FB	FC	MA	MB	MC					
125	TNGT	59	52	32	50	31	79	8050.	1.300	1.000	1.000	SC374
130		59	52	32	50	27	94	8995.	1.000	1.000	1.000	2
130	TNGT	59	46	12	50	27	94	8995.	1.000	1.000	1.000	SC374
130A		59	46	12	50	24	49	6050.	1.000	1.000	1.000	2
130A	TNGT	59	49	14	50	24	49	6050.	1.000	1.000	1.000	SC374
135		59	49	14	50	32	74	7787.	1.000	1.000	1.000	2
135	TNGT	59	82	37	50	32	74	7787.	1.000	1.000	1.000	SC374
135A		59	82	37	50	27	61	6845.	1.000	1.000	1.000	2
135A	TNGT	60	58	33	50	27	61	6845.	1.000	1.000	1.000	SC374
137		60	58	33	50	78	151	14550.	1.000	1.000	1.000	2
137	TNGT	130	116	128	0	117	107	13054.	1.000	1.000	1.000	SC374
138		88	19	132	0	0	0	0.	1.300	1.000	1.000	2
137	TNGT	54	87	131	84	100	66	12033.	1.000	1.000	1.000	SC374
140		56	102	141	84	81	61	10808.	1.000	1.000	1.000	2
140	TNGT	56	40	45	84	81	61	10808.	1.000	1.000	1.000	SC374
140A		59	17	26	84	15	6	7001.	1.000	1.000	1.000	2
140A	TNGT	59	18	27	84	15	6	7001.	1.000	1.000	1.000	SC374
145		62	11	23	84	29	11	7340.	1.000	1.000	1.000	2
145	TNGT	21	43	38	1	40	50	5304.	1.000	1.000	1.000	SC374
145A		21	31	20	1	28	44	4303.	1.000	1.000	1.000	2
145A	TNGT	21	16	15	1	28	44	4303.	1.000	1.000	1.000	SC374
150		12	31	36	1	38	14	3335.	1.000	1.000	1.000	2
150	TNGT	12	17	107	1	38	14	3335.	1.000	1.000	1.000	SC374
155		21	5	51	1	22	7	1871.	1.300	1.000	1.000	2
155	TNGT	49	20	4	7	1	22	1871.	1.300	1.000	1.000	SC374
160		49	20	4	7	10	33	2905.	1.000	1.000	1.000	2
160	TNGT	45	14	13	7	10	33	2905.	1.000	1.000	1.000	SC374
165		45	14	13	7	29	17	2794.	1.000	1.000	1.000	2
165	TNGT	42	19	10	7	29	17	2794.	1.000	1.000	1.000	SC374
170		42	19	10	7	31	17	2950.	1.000	1.000	1.000	2
170	TNGT	42	21	26	7	31	17	2950.	1.000	1.000	1.000	SC374
175		42	21	26	7	29	18	2878.	1.300	1.000	1.000	2
175	TNGT	19	33	41	13	32	7	2872.	1.300	1.000	1.000	SC374
180 B		19	33	41	13	12	28	2699.	1.000	1.000	1.000	2

STRESSES AND LOCAL FORCES AND MOMENTS

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DATE 040182

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ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
180 B BEND	20	29	31	13	12	28	2699.	1.000	1.000	1.000	SC374
180 M	26	25	31	7	20	32	3163.	1.000	1.000	1.000	2
180 M BEND	26	25	31	7	20	32	3163.	1.000	1.000	1.000	SC374
180 E	30	19	31	3	26	35	3599.	1.000	1.000	1.000	2
180 E TNGT	39	12	9	3	26	35	3599.	1.000	1.000	1.000	SC374
185	33	35	33	1	26	32	3446.	1.000	1.000	1.000	2
185 TNGT	45	35	26	1	26	32	3446.	1.000	1.000	1.000	SC374
185A	56	11	8	3	15	16	1796.	1.000	1.000	1.000	2
185A TNGT	69	12	8	3	15	16	1796.	1.000	1.000	1.000	SC374
190	56	14	20	1	16	25	2402.	1.000	1.000	1.000	2
190 TNGT	65	25	27	1	16	25	2402.	1.000	1.000	1.000	SC374
190A	81	30	12	3	20	37	3472.	1.000	1.000	1.000	2
190A TNGT	95	20	10	3	20	37	3472.	1.000	1.000	1.000	SC374
195	77	55	24	1	9	124	10249.	1.000	1.000	1.000	2
195 TNGT	83	235	15	1	9	124	10249.	1.000	1.000	1.000	SC374
200	84	226	5	1	1	72	5930.	1.300	1.000	1.000	2
200 TNGT	224	87	6	1	1	72	5930.	1.300	1.000	1.000	SC374
205	216	88	4	1	2	101	8286.	1.000	1.000	1.000	2
205 TNGT	213	36	15	1	2	101	8286.	1.000	1.000	1.000	SC374
205A	110	30	11	2	20	40	3700.	1.000	1.000	1.000	2
205A TNGT	98	34	5	2	20	40	3700.	1.000	1.000	1.000	SC374
210	174	39	25	1	16	23	2283.	1.000	1.000	1.000	2
210 TNGT	169	8	24	1	16	23	2283.	1.000	1.000	1.000	SC374
210A	85	17	23	2	38	30	4018.	1.000	1.000	1.000	2
210A TNGT	70	21	26	2	38	30	4018.	1.000	1.000	1.000	SC374
215	114	12	33	1	36	13	3185.	1.000	1.000	1.000	2
215 TNGT	107	9	39	1	36	13	3185.	1.000	1.000	1.000	SC374
215A	51	12	19	2	36	19	3379.	1.000	1.000	1.000	2
215A TNGT	31	9	19	2	36	19	3379.	1.000	1.000	1.000	SC374
220	31	8	40	1	40	14	3468.	1.000	1.000	1.000	2
220 TNGT	24	8	38	1	40	14	3468.	1.000	1.000	1.000	SC374
225 B	9	6	18	1	27	1	2198.	1.000	1.000	1.000	2
225 B BEND.	6	17	3	1	1	27	2198.	1.000	1.000	1.000	SC374
225 M	17	6	2	1	2	31	2514.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO	LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
	FA	FB	FC	MA	MB	MC					
225 M BEND	17	6	2	1	2	31	2514.	1.000	1.000	1.000	SC374
225 E	14	12	2	2	2	30	2448.	1.000	1.000	1.000	2
225 E TNGT	15	4	15	2	30	2	2448.	1.000	1.000	1.000	SC374
230	33	7	43	2	45	11	3846.	1.000	1.000	1.000	2
230 TNGT	35	7	38	2	45	11	3846.	1.000	1.000	1.000	SC374
230A	43	9	32	2	61	18	5268.	1.000	1.000	1.000	2
230A TNGT	67	8	38	2	61	18	5268.	1.000	1.000	1.000	SC374
235	67	8	38	2	56	9	4657.	1.000	1.000	1.000	2
235 TNGT	90	7	36	2	56	9	4657.	1.000	1.000	1.000	SC374
235A	90	7	36	2	57	17	4930.	1.000	1.000	1.000	2
235A TNGT	114	9	31	2	57	17	4930.	1.000	1.000	1.000	SC374
240	114	9	31	2	38	11	3234.	1.000	1.000	1.000	2
240 TNGT	137	5	23	2	38	11	3234.	1.000	1.000	1.000	SC374
245	137	5	23	2	41	8	3425.	1.300	1.000	1.000	2
245 TNGT	30	6	150	8	41	2	3425.	1.300	1.000	1.000	SC374
250	24	5	220	7	92	3	7599.	1.000	1.000	1.000	2
250 TNGT	24	9	76	7	92	3	7599.	1.000	1.000	1.000	SC374
255 B	36	8	35	8	29	7	2545.	1.000	1.000	1.000	2
255 B BEND	42	33	9	8	7	29	2545.	1.000	1.000	1.000	SC374
255 M	30	44	9	11	4	23	2101.	1.000	1.000	1.000	2
255 M BEND	30	44	9	11	4	23	2101.	1.000	1.000	1.000	SC374
255 E	54	44	9	12	4	27	2424.	1.000	1.000	1.000	2
255 E TNGT	54	9	45	12	27	4	2424.	1.000	1.000	1.000	SC374
260	50	9	48	12	40	3	3420.	1.000	1.000	1.000	2
260 TNGT	49	6	38	12	40	3	3420.	1.000	1.000	1.000	SC374
265 B	7	4	13	12	27	12	2623.	1.000	1.000	1.000	2
265 B BEND	7	14	10	12	12	27	2623.	1.000	1.000	1.000	SC374
265 M	9	15	10	10	13	25	2440.	1.000	1.000	1.000	2
265 M BEND	9	15	10	10	13	25	2440.	1.000	1.000	1.000	SC374
265 E	14	13	10	9	13	23	2256.	1.000	1.000	1.000	2
265 E TNGT	14	13	16	9	23	13	2256.	1.000	1.000	1.000	SC374
270	18	25	16	9	9	23	2176.	1.300	1.000	1.000	2
270 TNGT	24	27	19	9	17	19	2206.	1.300	1.000	1.000	SC374
275	16	53	39	8	37	63	6067.	1.000	1.000	1.000	2

ELEMENT TYPE/TITLE FROM TO		LOCAL FORCES (LB)			LOCAL MOMENTS (FT-LB)			STRESS (PSI)	STRESS INT.FAC. (I)	FLEX. IN PLANE	FACTOR OUT PLANE	CODE AND CLASS
		FA	FB	FC	MA	MB	MC					
275	TNGT	19	39	34	8	37	63	6067.	1.000	1.000	1.000	SC374
280		30	9	6	9	14	23	2379.	1.300	1.000	1.000	2
280	TNGT	6	41	35	14	9	23	2379.	1.300	1.000	1.000	SC374
285		9	43	35	14	12	17	2068.	1.300	1.000	1.000	2
285	TNGT	43	9	35	12	14	17	2068.	1.300	1.000	1.000	SC374
290		28	31	35	9	20	23	2586.	1.000	1.000	1.000	2
290	TNGT	29	29	29	9	20	23	2586.	1.000	1.000	1.000	SC374
290A		45	18	20	12	36	36	4349.	1.000	1.000	1.000	2
290A	TNGT	48	22	21	12	36	36	4349.	1.000	1.000	1.000	SC374
295		37	31	30	9	21	23	2661.	1.000	1.000	1.000	2
295	TNGT	37	34	31	9	21	23	2661.	1.000	1.000	1.000	SC374
300		52	5	10	12	10	20	2097.	1.300	1.000	1.000	2
300	TNGT	5	53	12	10	12	20	2097.	1.300	1.000	1.000	SC374
305		5	53	12	10	9	11	1395.	1.000	1.000	1.000	2
305	TNGT	6	6	13	10	9	11	1395.	1.000	1.000	1.000	SC374
310 B		6	6	13	10	8	10	1376.	1.000	1.000	1.000	2
310 B	BEND	7	14	6	10	10	8	1376.	1.000	1.000	1.000	SC374
310 M		11	11	5	8	12	8	1360.	1.000	1.000	1.000	2
310 M	BEND	11	11	5	8	12	8	1360.	1.000	1.000	1.000	SC374
310 E		14	7	5	10	10	8	1312.	1.000	1.000	1.000	2
310 E	TNGT	16	5	9	10	8	10	1312.	1.000	1.000	1.000	SC374
315		16	5	9	10	7	10	1287.	1.300	1.000	1.000	2
315	TNGT	6	9	18	7	10	10	1287.	1.300	1.000	1.000	SC374
320 B		6	9	18	7	3	7	808.	1.000	1.000	1.000	2
320 B	BEND	6	13	18	7	4	6	810.	1.000	1.000	1.000	SC374
320 M		12	8	18	6	4	7	819.	1.000	1.000	1.000	2
320 M	BEND	12	8	18	6	4	7	819.	1.000	1.000	1.000	SC374
320 E		13	6	18	5	9	8	1051.	1.000	1.000	1.000	2
320 E	TNGT	13	6	19	5	9	8	1051.	1.000	1.000	1.000	SC374
500		13	6	19	5	21	11	1993.	1.000	1.000	1.000	2

*** AT THE MEMBER END 20 OF ELEMENT FROM 20 TO 25 , MAX. STRESS (PSI) IS 23241.

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 597

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
5	ANC	WT01	-8.	-16.	4.	6.	0.	14.	.000	.000	.000
		THRM01	55.	-52.	-51.	-1.	-32.	69.	-.045	.021	.019
		SEISUP	92.	71.	66.	48.	40.	32.	.000	.000	.000
		SEISEM	331.	121.	191.	74.	63.	65.	.000	.000	.000
		SAM01	20.	17.	19.	6.	13.	24.	.007	.000	.007
		SAM02	24.	21.	23.	7.	16.	29.	.008	.001	.008
25	RAD	WT01	4.	0.	9.	0.	0.	0.	.000	-.008	-.000
		THRM01	-11.	0.	-25.	0.	0.	0.	-.077	-.028	.033
		SEISUP	49.	0.	115.	0.	0.	0.	.033	.040	.014
		SEISEM	149.	0.	352.	0.	0.	0.	.056	.064	.024
		SAM01	5.	0.	12.	0.	0.	0.	.008	.014	.007
		SAM02	6.	0.	15.	0.	0.	0.	.009	.017	.008
50	RAD	WT01	0.	-62.	0.	0.	0.	0.	-.002	.000	-.008
		THRM01	0.	37.	0.	0.	0.	0.	-.061	.021	-.076
		SEISUP	0.	106.	0.	0.	0.	0.	.151	.000	.107
		SEISEM	0.	283.	0.	0.	0.	0.	.236	.000	.161
		SAM01	0.	10.	0.	0.	0.	0.	.020	.000	.054
		SAM02	0.	12.	0.	0.	0.	0.	.024	.001	.065
65	RAD	WT01	2.	0.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	-52.	0.	0.	0.	0.	0.	.000	.000	-.022
		SEISUP	67.	0.	0.	0.	0.	0.	.000	.000	.045
		SEISEM	279.	0.	0.	0.	0.	0.	.000	.000	.081
		SAM01	17.	0.	0.	0.	0.	0.	.032	.002	.052
		SAM02	20.	0.	0.	0.	0.	0.	.039	.002	.063
65	RAD	WT01	0.	-68.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	0.	-5.	0.	0.	0.	0.	.000	.000	-.022
		SEISUP	0.	184.	0.	0.	0.	0.	.000	.000	.045
		SEISEM	0.	240.	0.	0.	0.	0.	.000	.000	.081
		SAM01	0.	3.	0.	0.	0.	0.	.032	.002	.052
		SAM02	0.	4.	0.	0.	0.	0.	.039	.002	.063
85	RAD	WT01	3.	0.	0.	0.	0.	0.	.000	-.054	.000
		THRM01	14.	0.	0.	0.	0.	0.	.000	-.019	.000
		SEISUP	96.	0.	0.	0.	0.	0.	.000	.222	.000
		SEISEM	321.	0.	0.	0.	0.	0.	.000	.262	.000
		SAM01	3.	0.	0.	0.	0.	0.	.032	.006	.056
		SAM02	4.	0.	0.	0.	0.	0.	.039	.007	.068



RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 598

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
85	RAD	WTO1	0.	0.	4.	0.	0.	0.	.000	-.054	.000
		THRMO1	0.	0.	68.	0.	0.	0.	.000	-.019	.000
		SEISUP	0.	0.	143.	0.	0.	0.	.000	.222	.000
		SEISEM	0.	0.	508.	0.	0.	0.	.000	.262	.000
		SAMO1	0.	0.	32.	0.	0.	0.	.032	.006	.056
		SAMO2	0.	0.	39.	0.	0.	0.	.039	.007	.068
95	RAD	WTO1	0.	-96.	0.	0.	0.	0.	.008	.000	-.007
		THRMO1	0.	30.	0.	0.	0.	0.	.014	.000	-.011
		SEISUP	0.	378.	0.	0.	0.	0.	.115	.000	.040
		SEISEM	0.	459.	0.	0.	0.	0.	.145	.000	.105
		SAMO1	0.	12.	0.	0.	0.	0.	.031	.002	.060
		SAMO2	0.	15.	0.	0.	0.	0.	.038	.002	.073
105	RAD	WTO1	2.	0.	0.	0.	0.	0.	.000	.009	-.005
		THRMO1	19.	0.	0.	0.	0.	0.	.000	.008	.007
		SEISUP	57.	0.	0.	0.	0.	0.	.000	.043	.020
		SEISEM	66.	0.	0.	0.	0.	0.	.000	.063	.039
		SAMO1	2.	0.	0.	0.	0.	0.	.032	.002	.058
		SAMO2	3.	0.	0.	0.	0.	0.	.039	.003	.070
115	RAD	WTO1	0.	27.	0.	0.	0.	0.	-.007	.000	.000
		THRMO1	0.	-30.	0.	0.	0.	0.	-.015	.000	.000
		SEISUP	0.	166.	0.	0.	0.	0.	.035	.000	.000
		SEISEM	0.	225.	0.	0.	0.	0.	.050	.000	.000
		SAMO1	0.	10.	0.	0.	0.	0.	.033	.002	.056
		SAMO2	0.	11.	0.	0.	0.	0.	.040	.002	.068
115	RAD	WTO1	0.	0.	-24.	0.	0.	0.	-.007	.000	.000
		THRMO1	0.	0.	-17.	0.	0.	0.	-.015	.000	.000
		SEISUP	0.	0.	90.	0.	0.	0.	.035	.000	.000
		SEISEM	0.	0.	122.	0.	0.	0.	.050	.000	.000
		SAMO1	0.	0.	3.	0.	0.	0.	.033	.002	.056
		SAMO2	0.	0.	4.	0.	0.	0.	.040	.002	.068
130	RAD	WTO1	-2.	0.	0.	0.	0.	0.	.000	-.000	.000
		THRMO1	-22.	0.	0.	0.	0.	0.	.000	-.153	.000
		SEISUP	20.	0.	0.	0.	0.	0.	.000	.000	.000
		SEISEM	49.	0.	0.	0.	0.	0.	.000	.001	.000
		SAMO1	7.	0.	0.	0.	0.	0.	.032	.004	.056
		SAMO2	9.	0.	0.	0.	0.	0.	.039	.005	.068

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 599

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
130	RAD	WTO1	0.	0.	12.	0.	0.	0.	.000	-.000	.000
		THRM01	0.	0.	17.	0.	0.	0.	.000	-.153	.000
		SEISUP	0.	0.	51.	0.	0.	0.	.000	.000	.000
		SEISEM	0.	0.	88.	0.	0.	0.	.000	.001	.000
		SAM01	0.	0.	3.	0.	0.	0.	.032	.004	.056
		SAM02	0.	0.	4.	0.	0.	0.	.039	.005	.068
135	RAD	WTO1	-1.	0.	0.	0.	0.	0.	.000	-.000	.000
		THRM01	-4.	0.	0.	0.	0.	0.	.000	-.111	.000
		SEISUP	43.	0.	0.	0.	0.	0.	.000	.000	.000
		SEISEM	91.	0.	0.	0.	0.	0.	.000	.001	.000
		SAM01	9.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	11.	0.	0.	0.	0.	0.	.102	.005	.077
135	RAD	WTO1	0.	0.	-11.	0.	0.	0.	.000	-.000	.000
		THRM01	0.	0.	9.	0.	0.	0.	.000	-.111	.000
		SEISUP	0.	0.	30.	0.	0.	0.	.000	.000	.000
		SEISEM	0.	0.	120.	0.	0.	0.	.000	.001	.000
		SAM01	0.	0.	3.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	3.	0.	0.	0.	.102	.005	.077
140	RAD	WTO1	0.	0.	0.	0.	0.	0.	.000	-.000	.000
		THRM01	1.	0.	0.	0.	0.	0.	.000	-.052	.000
		SEISUP	120.	0.	0.	0.	0.	0.	.000	.000	.000
		SEISEM	185.	0.	0.	0.	0.	0.	.000	.000	.000
		SAM01	5.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	6.	0.	0.	0.	0.	0.	.102	.005	.077
140	RAD	WTO1	0.	0.	5.	0.	0.	0.	.000	-.000	.000
		THRM01	0.	0.	-2.	0.	0.	0.	.000	-.052	.000
		SEISUP	0.	0.	29.	0.	0.	0.	.000	.000	.000
		SEISEM	0.	0.	142.	0.	0.	0.	.000	.000	.000
		SAM01	0.	0.	1.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	1.	0.	0.	0.	.102	.005	.077
145	ANC	WTO1	-1.	-91.	0.	-1.	0.	1.	.000	.000	.000
		THRM01	-6.	10.	0.	-1.	3.	12.	.000	.000	.000
		SEISUP	23.	41.	10.	15.	68.	31.	.000	.000	.000
		SEISEM	50.	151.	53.	78.	84.	54.	.000	.000	.000
		SAM01	1.	2.	0.	0.	0.	2.	.084	.004	.064
		SAM02	2.	3.	0.	0.	0.	2.	.102	.005	.077

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 600

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
		FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
150 RAD	WT01	0.	0.	0.	0.	0.	0.	.000	.000	.000
	THRM01	-5.	0.	0.	0.	0.	0.	.000	.080	.000
	SEISUP	21.	0.	0.	0.	0.	0.	.000	.000	.000
	SEISEM	144.	0.	0.	0.	0.	0.	.000	.000	.000
	SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
	SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
150 RAD	WT01	0.	0.	0.	0.	0.	0.	.000	.000	.000
	THRM01	0.	0.	1.	0.	0.	0.	.000	.080	.000
	SEISUP	0.	0.	4.	0.	0.	0.	.000	.000	.000
	SEISEM	0.	0.	48.	0.	0.	0.	.000	.000	.000
	SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
	SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
160 RAD	WT01	0.	0.	0.	0.	0.	0.	.001	-.007	.000
	THRM01	0.	0.	-4.	0.	0.	0.	.044	-.034	.000
	SEISUP	0.	0.	5.	0.	0.	0.	.007	.045	.000
	SEISEM	0.	0.	37.	0.	0.	0.	.012	.067	.000
	SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
	SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
165 SPD	WT01	0.	-26.	0.	0.	0.	0.	.001	.000	.000
	THRM01							.082	-.183	-.001
	SEISUP							.007	.057	.001
	SEISEM							.008	.083	.003
	SAM01							.084	.004	.064
	SAM02							.102	.005	.077
170 RAD	WT01	0.	0.	-3.	0.	0.	0.	.001	.000	.000
	THRM01	0.	0.	1.	0.	0.	0.	.085	-.190	.000
	SEISUP	0.	0.	8.	0.	0.	0.	.007	.056	.000
	SEISEM	0.	0.	53.	0.	0.	0.	.008	.084	.000
	SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
	SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
185 RAD	WT01	0.	0.	0.	0.	0.	0.	.000	-.006	.000
	THRM01	17.	0.	0.	0.	0.	0.	.000	-.133	.000
	SEISUP	6.	0.	0.	0.	0.	0.	.000	.050	.000
	SEISEM	59.	0.	0.	0.	0.	0.	.000	.070	.000
	SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
	SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 601

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
185	RAD	WT01	0.	0.	3.	0.	0.	0.	.000	-.006	.000
		THRM01	0.	0.	0.	0.	0.	0.	.000	-.133	.000
		SEISUP	0.	0.	13.	0.	0.	0.	.000	.050	.000
		SEISEM	0.	0.	70.	0.	0.	0.	.000	.070	.000
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
190	RAD	WT01	-0.	0.	0.	0.	0.	0.	.000	-.006	.000
		THRM01	-7.	0.	0.	0.	0.	0.	.000	-.083	.000
		SEISUP	5.	0.	0.	0.	0.	0.	.000	.050	.000
		SEISEM	47.	0.	0.	0.	0.	0.	.000	.070	.000
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
190	RAD	WT01	0.	0.	1.	0.	0.	0.	.000	-.006	.000
		THRM01	0.	0.	12.	0.	0.	0.	.000	-.083	.000
		SEISUP	0.	0.	32.	0.	0.	0.	.000	.050	.000
		SEISEM	0.	0.	38.	0.	0.	0.	.000	.070	.000
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
195	RAD	WT01	0.	0.	0.	0.	0.	0.	.000	-.006	.000
		THRM01	1.	0.	0.	0.	0.	0.	.000	-.028	.000
		SEISUP	5.	0.	0.	0.	0.	0.	.000	.050	.000
		SEISEM	39.	0.	0.	0.	0.	0.	.000	.070	.000
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
195	RAD	WT01	0.	0.	-0.	0.	0.	0.	.000	-.006	.000
		THRM01	0.	0.	-91.	0.	0.	0.	.000	-.028	.000
		SEISUP	0.	0.	114.	0.	0.	0.	.000	.050	.000
		SEISEM	0.	0.	290.	0.	0.	0.	.000	.070	.000
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
205	RAD	WT01	-0.	0.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	2.	0.	0.	0.	0.	0.	.000	.000	-.019
		SEISUP	3.	0.	0.	0.	0.	0.	.000	.000	.060
		SEISEM	19.	0.	0.	0.	0.	0.	.000	.000	.094
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 602

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
205	RAD	WTO1	0.	-33.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	0.	2.	0.	0.	0.	0.	.000	.000	-.019
		SEISUP	0.	105.	0.	0.	0.	0.	.000	.000	.060
		SEISEM	0.	132.	0.	0.	0.	0.	.000	.000	.094
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
210	RAD	WTO1	0.	0.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	-9.	0.	0.	0.	0.	0.	.000	.000	.024
		SEISUP	7.	0.	0.	0.	0.	0.	.000	.000	.060
		SEISEM	49.	0.	0.	0.	0.	0.	.000	.000	.095
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
210	RAD	WTO1	0.	-6.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	0.	10.	0.	0.	0.	0.	.000	.000	.024
		SEISUP	0.	33.	0.	0.	0.	0.	.000	.000	.060
		SEISEM	0.	44.	0.	0.	0.	0.	.000	.000	.095
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
215	RAD	WTO1	0.	0.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	21.	0.	0.	0.	0.	0.	.000	.000	.085
		SEISUP	13.	0.	0.	0.	0.	0.	.000	.000	.060
		SEISEM	72.	0.	0.	0.	0.	0.	.000	.000	.095
		SAM01	0.	0.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.005	.077
			0.	-17.	0.	0.	0.	0.	.000	.000	-.005
			0.	-2.	0.	0.	0.	0.	.000	.000	.085
			0.	14.	0.	0.	0.	0.	.000	.000	.060
			0.	32.	0.	0.	0.	0.	.000	.000	.095
			0.	0.	0.	0.	0.	0.	.084	.004	.064
			0.	0.	0.	0.	0.	0.	.102	.005	.077
			1.	0.	0.	0.	0.	0.	.000	.000	-.005
			-116.	0.	0.	0.	0.	0.	.000	.000	.170
			10.	0.	0.	0.	0.	0.	.000	.000	.060
			76.	0.	0.	0.	0.	0.	.000	.000	.095
			0.	0.	0.	0.	0.	0.	.084	.004	.064
			0.	0.	0.	0.	0.	0.	.102	.005	.077

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 603

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
220	RAD	WT01	0.	-17.	0.	0.	0.	0.	.000	.000	-.005
		THRM01	0.	0.	0.	0.	0.	0.	.000	.000	.170
		SEISUP	0.	9.	0.	0.	0.	0.	.000	.000	.060
		SEISEM	0.	16.	0.	0.	0.	0.	.000	.000	.095
		SAM01	0.	1.	0.	0.	0.	0.	.084	.004	.064
		SAM02	0.	1.	0.	0.	0.	0.	.102	.005	.077
230	RAD	WT01	0.	-15.	0.	0.	0.	0.	-.001	.000	.000
		THRM01	0.	0.	0.	0.	0.	0.	-.179	.000	.000
		SEISUP	0.	7.	0.	0.	0.	0.	.008	.000	.000
		SEISEM	0.	15.	0.	0.	0.	0.	.016	.000	.000
		SAM01	0.	1.	0.	0.	0.	0.	.085	.015	.064
		SAM02	0.	1.	0.	0.	0.	0.	.103	.018	.077
230	RAD	WT01	0.	0.	-1.	0.	0.	0.	-.001	.000	.000
		THRM01	0.	0.	94.	0.	0.	0.	-.179	.000	.000
		SEISUP	0.	0.	13.	0.	0.	0.	.008	.000	.000
		SEISEM	0.	0.	79.	0.	0.	0.	.016	.000	.000
		SAM01	0.	0.	0.	0.	0.	0.	.085	.015	.064
		SAM02	0.	0.	0.	0.	0.	0.	.103	.018	.077
235	RAD	WT01	0.	-17.	0.	0.	0.	0.	-.001	.000	.000
		THRM01	0.	-0.	0.	0.	0.	0.	-.101	.000	.000
		SEISUP	0.	7.	0.	0.	0.	0.	.007	.000	.000
		SEISEM	0.	14.	0.	0.	0.	0.	.016	.000	.000
		SAM01	0.	0.	0.	0.	0.	0.	.085	.015	.064
		SAM02	0.	0.	0.	0.	0.	0.	.103	.018	.077
235	RAD	WT01	0.	0.	0.	0.	0.	0.	-.001	.000	.000
		THRM01	0.	0.	-14.	0.	0.	0.	-.101	.000	.000
		SEISUP	0.	0.	17.	0.	0.	0.	.007	.000	.000
		SEISEM	0.	0.	75.	0.	0.	0.	.016	.000	.000
		SAM01	0.	0.	0.	0.	0.	0.	.085	.015	.064
		SAM02	0.	0.	0.	0.	0.	0.	.103	.018	.077
240	RAD	WT01	0.	-13.	0.	0.	0.	0.	-.001	.000	.000
		THRM01	0.	4.	0.	0.	0.	0.	-.023	.000	.000
		SEISUP	0.	6.	0.	0.	0.	0.	.007	.000	.000
		SEISEM	0.	14.	0.	0.	0.	0.	.015	.000	.000
		SAM01	0.	0.	0.	0.	0.	0.	.085	.015	.064
		SAM02	0.	0.	0.	0.	0.	0.	.103	.018	.077

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 604

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
240	RAD	WTO1	0.	0.	1.	0.	0.	0.	-.001	.000	.000
		THRMO1	0.	0.	-22.	0.	0.	0.	-.023	.000	.000
		SEISUP	0.	0.	13.	0.	0.	0.	.007	.000	.000
		SEISEM	0.	0.	58.	0.	0.	0.	.015	.000	.000
		SAM01	0.	0.	1.	0.	0.	0.	.085	.015	.064
		SAM02	0.	0.	1.	0.	0.	0.	.103	.018	.077
250	RAD	WTO1	2.	0.	0.	0.	0.	0.	.000	.000	.000
		THRMO1	75.	0.	0.	0.	0.	0.	.000	.000	-.031
		SEISUP	56.	0.	0.	0.	0.	0.	.000	.000	.015
		SEISEM	295.	0.	0.	0.	0.	0.	.000	.000	.029
		SAM01	3.	0.	0.	0.	0.	0.	.084	.015	.064
		SAM02	4.	0.	0.	0.	0.	0.	.102	.018	.077
250	RAD	WTO1	0.	-9.	0.	0.	0.	0.	.000	.000	.000
		THRMO1	0.	-4.	0.	0.	0.	0.	.000	.000	-.031
		SEISUP	0.	9.	0.	0.	0.	0.	.000	.000	.015
		SEISEM	0.	13.	0.	0.	0.	0.	.000	.000	.029
		SAM01	0.	0.	0.	0.	0.	0.	.084	.015	.064
		SAM02	0.	0.	0.	0.	0.	0.	.102	.018	.077
260	RAD	WTO1	0.	-9.	0.	0.	0.	0.	.002	.000	.000
		THRMO1	0.	-8.	0.	0.	0.	0.	-.035	.000	.000
		SEISUP	0.	6.	0.	0.	0.	0.	.027	.000	.000
		SEISEM	0.	10.	0.	0.	0.	0.	.044	.000	.000
		SAM01	0.	1.	0.	0.	0.	0.	.081	.015	.064
		SAM02	0.	1.	0.	0.	0.	0.	.098	.018	.077
260	RAD	WTO1	0.	0.	0.	0.	0.	0.	.002	.000	.000
		THRMO1	0.	0.	14.	0.	0.	0.	-.035	.000	.000
		SEISUP	0.	0.	15.	0.	0.	0.	.027	.000	.000
		SEISEM	0.	0.	86.	0.	0.	0.	.044	.000	.000
		SAM01	0.	0.	0.	0.	0.	0.	.081	.015	.064
		SAM02	0.	0.	0.	0.	0.	0.	.098	.018	.077
275	RAD	WTO1	-3.	0.	0.	0.	0.	0.	.000	-.010	.000
		THRMO1	28.	0.	0.	0.	0.	0.	.000	-.141	.000
		SEISUP	12.	0.	0.	0.	0.	0.	.000	.011	.000
		SEISEM	73.	0.	0.	0.	0.	0.	.000	.018	.000
		SAM01	5.	0.	0.	0.	0.	0.	.084	.020	.064
		SAM02	6.	0.	0.	0.	0.	0.	.102	.024	.077

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 605

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA PT	TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
			FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
275	RAD	WTO1	0.	0.	-2.	0.	0.	0.	.000	-.010	.000
		THRM01	0.	0.	11.	0.	0.	0.	.000	-.141	.000
		SEISUP	0.	0.	26.	0.	0.	0.	.000	.011	.000
		SEISEM	0.	0.	91.	0.	0.	0.	.000	.018	.000
		SAM01	0.	0.	1.	0.	0.	0.	.084	.020	.064
		SAM02	0.	0.	2.	0.	0.	0.	.102	.024	.077
290	RAD	WTO1	1.	0.	0.	0.	0.	0.	.000	-.005	.000
		THRM01	-5.	0.	0.	0.	0.	0.	.000	-.074	.000
		SEISUP	12.	0.	0.	0.	0.	0.	.000	.003	.000
		SEISEM	64.	0.	0.	0.	0.	0.	.000	.009	.000
		SAM01	3.	0.	0.	0.	0.	0.	.138	.020	.071
		SAM02	4.	0.	0.	0.	0.	0.	.166	.024	.086
290	RAD	WTO1	0.	0.	-3.	0.	0.	0.	.000	-.005	.000
		THRM01	0.	0.	-3.	0.	0.	0.	.000	-.074	.000
		SEISUP	0.	0.	11.	0.	0.	0.	.000	.003	.000
		SEISEM	0.	0.	60.	0.	0.	0.	.000	.009	.000
		SAM01	0.	0.	1.	0.	0.	0.	.138	.020	.071
		SAM02	0.	0.	1.	0.	0.	0.	.166	.024	.086
295	RAD	WTO1	-1.	0.	0.	0.	0.	0.	.000	-.005	.000
		THRM01	28.	0.	0.	0.	0.	0.	.000	-.010	.000
		SEISUP	9.	0.	0.	0.	0.	0.	.000	.003	.000
		SEISEM	61.	0.	0.	0.	0.	0.	.000	.009	.000
		SAM01	1.	0.	0.	0.	0.	0.	.138	.020	.071
		SAM02	2.	0.	0.	0.	0.	0.	.166	.024	.086
295	RAD	WTO1	0.	0.	1.	0.	0.	0.	.000	-.005	.000
		THRM01	0.	0.	12.	0.	0.	0.	.000	-.010	.000
		SEISUP	0.	0.	7.	0.	0.	0.	.000	.003	.000
		SEISEM	0.	0.	64.	0.	0.	0.	.000	.009	.000
		SAM01	0.	0.	1.	0.	0.	0.	.138	.020	.071
		SAM02	0.	0.	1.	0.	0.	0.	.166	.024	.086
305	RAD	WTO1	0.	-50.	0.	0.	0.	0.	.001	.000	.006
		THRM01	0.	-13.	0.	0.	0.	0.	.015	.000	-.004
		SEISUP	0.	24.	0.	0.	0.	0.	.002	.000	.005
		SEISEM	0.	55.	0.	0.	0.	0.	.009	.000	.016
		SAM01	0.	0.	0.	0.	0.	0.	.137	.020	.071
		SAM02	0.	0.	0.	0.	0.	0.	.165	.024	.086

RESTRAINT LOAD SUMMARY

ME101/12

DATE 040182

PAGE 606

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE :

DATA TYPE	LOAD	GLOBAL FORCES (LB)			GLOBAL MOMENTS (FT-LB)			DISPLACEMENT (IN)		
		FX	FY	FZ	MX	MY	MZ	DX	DY	DZ
500	ANC									
	WTO1	1.	-4.	3.	1.	-6.	1.	.000	.000	.000
	THRM01	-26.	21.	-11.	19.	20.	9.	.000	.000	.000
	SEISUP	6.	2.	3.	3.	6.	3.	.000	.000	.000
	SEISEM	27.	7.	23.	7.	21.	10.	.000	.000	.000
	SAM01	0.	0.	0.	0.	0.	0.	.138	.020	.071
	SAM02	0.	1.	1.	0.	0.	0.	.166	.024	.086

RESTRAINT LOAD SUMMARY

ME101/12

DATE 040182

PAGE 607

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
5 ANC	WTO1	-8	-16	4	6	0	14	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	THRM01	55	-52	-51	-1	-32	69	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SEISUP	92	71	66	48	40	32	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SEISEM	331	121	191	74	63	65	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SAM01	20	17	19	6	13	24	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SAM02	24	21	23	7	16	29	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
25 RAD	WTO1	10	0	0	0	0	0	.39	.00	.92						
	THRM01	-27	0	0	0	0	0	.39	.00	.92						
	SEISUP	125	0	0	0	0	0	.39	.00	.92						
	SEISEM	382	0	0	0	0	0	.39	.00	.92						
	SAM01	13	0	0	0	0	0	.39	.00	.92						
	SAM02	16	0	0	0	0	0	.39	.00	.92						
50 RAD	WTO1	-62	0	0	0	0	0	.00	1.00	.00						
	THRM01	37	0	0	0	0	0	.00	1.00	.00						
	SEISUP	106	0	0	0	0	0	.00	1.00	.00						
	SEISEM	283	0	0	0	0	0	.00	1.00	.00						
	SAM01	10	0	0	0	0	0	.00	1.00	.00						
	SAM02	12	0	0	0	0	0	.00	1.00	.00						
65 RAD	WTO1	2	0	0	0	0	0	1.00	.00	.00						
	THRM01	-52	0	0	0	0	0	1.00	.00	.00						
	SEISUP	67	0	0	0	0	0	1.00	.00	.00						
	SEISEM	279	0	0	0	0	0	1.00	.00	.00						
	SAM01	17	0	0	0	0	0	1.00	.00	.00						
	SAM02	20	0	0	0	0	0	1.00	.00	.00						
65 RAD	WTO1	-68	0	0	0	0	0	.00	1.00	.00						
	THRM01	-5	0	0	0	0	0	.00	1.00	.00						
	SEISUP	184	0	0	0	0	0	.00	1.00	.00						
	SEISEM	240	0	0	0	0	0	.00	1.00	.00						
	SAM01	3	0	0	0	0	0	.00	1.00	.00						
	SAM02	4	0	0	0	0	0	.00	1.00	.00						
85 RAD	WTO1	3	0	0	0	0	0	1.00	.00	.00						
	THRM01	14	0	0	0	0	0	1.00	.00	.00						
	SEISUP	96	0	0	0	0	0	1.00	.00	.00						
	SEISEM	321	0	0	0	0	0	1.00	.00	.00						
	SAM01	3	0	0	0	0	0	1.00	.00	.00						
	SAM02	4	0	0	0	0	0	1.00	.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 608

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
85 RAD	WTO1	4	0	0	0	0	0	.00	.00	1.00						
	THRM01	68	0	0	0	0	0	.00	.00	1.00						
	SEISUP	143	0	0	0	0	0	.00	.00	1.00						
	SEISEM	508	0	0	0	0	0	.00	.00	1.00						
	SAMO1	32	0	0	0	0	0	.00	.00	1.00						
	SAMO2	39	0	0	0	0	0	.00	.00	1.00						
95 RAD	WTO1	-96	0	0	0	0	0	.00	1.00	.00						
	THRM01	30	0	0	0	0	0	.00	1.00	.00						
	SEISUP	378	0	0	0	0	0	.00	1.00	.00						
	SEISEM	459	0	0	0	0	0	.00	1.00	.00						
	SAMO1	12	0	0	0	0	0	.00	1.00	.00						
	SAMO2	15	0	0	0	0	0	.00	1.00	.00						
105 RAD	WTO1	2	0	0	0	0	0	1.00	.00	.00						
	THRM01	19	0	0	0	0	0	1.00	.00	.00						
	SEISUP	57	0	0	0	0	0	1.00	.00	.00						
	SEISEM	66	0	0	0	0	0	1.00	.00	.00						
	SAMO1	2	0	0	0	0	0	1.00	.00	.00						
	SAMO2	3	0	0	0	0	0	1.00	.00	.00						
115 RAD	WTO1	27	0	0	0	0	0	.00	1.00	.00						
	THRM01	-30	0	0	0	0	0	.00	1.00	.00						
	SEISUP	166	0	0	0	0	0	.00	1.00	.00						
	SEISEM	225	0	0	0	0	0	.00	1.00	.00						
	SAMO1	10	0	0	0	0	0	.00	1.00	.00						
	SAMO2	11	0	0	0	0	0	.00	1.00	.00						
115 RAD	WTO1	-24	0	0	0	0	0	.00	.00	1.00						
	THRM01	-17	0	0	0	0	0	.00	.00	1.00						
	SEISUP	90	0	0	0	0	0	.00	.00	1.00						
	SEISEM	122	0	0	0	0	0	.00	.00	1.00						
	SAMO1	3	0	0	0	0	0	.00	.00	1.00						
	SAMO2	4	0	0	0	0	0	.00	.00	1.00						
130 RAD	WTO1	-2	0	0	0	0	0	1.00	.00	.00						
	THRM01	-22	0	0	0	0	0	1.00	.00	.00						
	SEISUP	20	0	0	0	0	0	1.00	.00	.00						
	SEISEM	49	0	0	0	0	0	1.00	.00	.00						
	SAMO1	7	0	0	0	0	0	1.00	.00	.00						
	SAMO2	9	0	0	0	0	0	1.00	.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 609

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
130 RAD	WTO1	12	0	0	0	0	0	.00	.00	1.00						
	THRM01	17	0	0	0	0	0	.00	.00	1.00						
	SEISUP	51	0	0	0	0	0	.00	.00	1.00						
	SEISEM	88	0	0	0	0	0	.00	.00	1.00						
	SAM01	3	0	0	0	0	0	.00	.00	1.00						
	SAM02	4	0	0	0	0	0	.00	.00	1.00						
135 RAD	WTO1	-1	0	0	0	0	0	1.00	.00	.00						
	THRM01	-4	0	0	0	0	0	1.00	.00	.00						
	SEISUP	43	0	0	0	0	0	1.00	.00	.00						
	SEISEM	91	0	0	0	0	0	1.00	.00	.00						
	SAM01	9	0	0	0	0	0	1.00	.00	.00						
	SAM02	11	0	0	0	0	0	1.00	.00	.00						
135 RAD	WTO1	-11	0	0	0	0	0	.00	.00	1.00						
	THRM01	9	0	0	0	0	0	.00	.00	1.00						
	SEISUP	30	0	0	0	0	0	.00	.00	1.00						
	SEISEM	120	0	0	0	0	0	.00	.00	1.00						
	SAM01	3	0	0	0	0	0	.00	.00	1.00						
	SAM02	3	0	0	0	0	0	.00	.00	1.00						
140 RAD	WTO1	0	0	0	0	0	0	1.00	.00	.00						
	THRM01	1	0	0	0	0	0	1.00	.00	.00						
	SEISUP	120	0	0	0	0	0	1.00	.00	.00						
	SEISEM	185	0	0	0	0	0	1.00	.00	.00						
	SAM01	5	0	0	0	0	0	1.00	.00	.00						
	SAM02	6	0	0	0	0	0	1.00	.00	.00						
140 RAD	WTO1	5	0	0	0	0	0	.00	.00	1.00						
	THRM01	-2	0	0	0	0	0	.00	.00	1.00						
	SEISUP	29	0	0	0	0	0	.00	.00	1.00						
	SEISEM	142	0	0	0	0	0	.00	.00	1.00						
	SAM01	1	0	0	0	0	0	.00	.00	1.00						
	SAM02	1	0	0	0	0	0	.00	.00	1.00						
145 ANC	WTO1	-1	-91	0	-1	0	1	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	THRM01	-6	10	0	-1	3	12	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SEISUP	23	41	10	15	68	31	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SEISEM	50	151	53	78	84	54	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SAM01	1	2	0	0	0	2	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SAM02	2	3	0	0	0	2	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 610

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
150 RAD	WTO1	0	0	0	0	0	0	1.00	.00	.00						
	THRM01	-5	0	0	0	0	0	1.00	.00	.00						
	SEISUP	21	0	0	0	0	0	1.00	.00	.00						
	SEISEM	144	0	0	0	0	0	1.00	.00	.00						
	SAM01	0	0	0	0	0	0	1.00	.00	.00						
	SAM02	0	0	0	0	0	0	1.00	.00	.00						
150 RAD	WTO1	0	0	0	0	0	0	.00	.00	1.00						
	THRM01	1	0	0	0	0	0	.00	.00	1.00						
	SEISUP	4	0	0	0	0	0	.00	.00	1.00						
	SEISEM	48	0	0	0	0	0	.00	.00	1.00						
	SAM01	0	0	0	0	0	0	.00	.00	1.00						
	SAM02	0	0	0	0	0	0	.00	.00	1.00						
160 RAD	WTO1	0	0	0	0	0	0	.00	.00	1.00						
	THRM01	-4	0	0	0	0	0	.00	.00	1.00						
	SEISUP	5	0	0	0	0	0	.00	.00	1.00						
	SEISEM	37	0	0	0	0	0	.00	.00	1.00						
	SAM01	0	0	0	0	0	0	.00	.00	1.00						
	SAM02	0	0	0	0	0	0	.00	.00	1.00						
165 SPD	WTO1	-26	0	0	0	0	0	.00	1.00	.00						
	THRM01															
	SEISUP															
	SEISEM															
	SAM01															
	SAM02															
170 RAD	WTO1	-3	0	0	0	0	0	.00	.00	1.00						
	THRM01	1	0	0	0	0	0	.00	.00	1.00						
	SEISUP	8	0	0	0	0	0	.00	.00	1.00						
	SEISEM	53	0	0	0	0	0	.00	.00	1.00						
	SAM01	0	0	0	0	0	0	.00	.00	1.00						
	SAM02	0	0	0	0	0	0	.00	.00	1.00						
185 RAD	WTO1	0	0	0	0	0	0	1.00	.00	.00						
	THRM01	17	0	0	0	0	0	1.00	.00	.00						
	SEISUP	6	0	0	0	0	0	1.00	.00	.00						
	SEISEM	59	0	0	0	0	0	1.00	.00	.00						
	SAM01	0	0	0	0	0	0	1.00	.00	.00						
	SAM02	0	0	0	0	0	0	1.00	.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 611

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
185 RAD	WT01	3	0	0	0	0	0	0	.00	.00	1.00					
	THRM01	0	0	0	0	0	0	0	.00	.00	1.00					
	SEISUP	13	0	0	0	0	0	0	.00	.00	1.00					
	SEISEM	70	0	0	0	0	0	0	.00	.00	1.00					
	SAM01	0	0	0	0	0	0	0	.00	.00	1.00					
	SAM02	0	0	0	0	0	0	0	.00	.00	1.00					
190 RAD	WT01	-0	0	0	0	0	0	0	1.00	.00	.00					
	THRM01	-7	0	0	0	0	0	0	1.00	.00	.00					
	SEISUP	5	0	0	0	0	0	0	1.00	.00	.00					
	SEISEM	47	0	0	0	0	0	0	1.00	.00	.00					
	SAM01	0	0	0	0	0	0	0	1.00	.00	.00					
	SAM02	0	0	0	0	0	0	0	1.00	.00	.00					
190 RAD	WT01	1	0	0	0	0	0	0	.00	.00	1.00					
	THRM01	12	0	0	0	0	0	0	.00	.00	1.00					
	SEISUP	32	0	0	0	0	0	0	.00	.00	1.00					
	SEISEM	38	0	0	0	0	0	0	.00	.00	1.00					
	SAM01	0	0	0	0	0	0	0	.00	.00	1.00					
	SAM02	0	0	0	0	0	0	0	.00	.00	1.00					
195 RAD	WT01	0	0	0	0	0	0	0	1.00	.00	.00					
	THRM01	1	0	0	0	0	0	0	1.00	.00	.00					
	SEISUP	5	0	0	0	0	0	0	1.00	.00	.00					
	SEISEM	39	0	0	0	0	0	0	1.00	.00	.00					
	SAM01	0	0	0	0	0	0	0	1.00	.00	.00					
	SAM02	0	0	0	0	0	0	0	1.00	.00	.00					
195 RAD	WT01	-0	0	0	0	0	0	0	.00	.00	1.00					
	THRM01	-91	0	0	0	0	0	0	.00	.00	1.00					
	SEISUP	114	0	0	0	0	0	0	.00	.00	1.00					
	SEISEM	290	0	0	0	0	0	0	.00	.00	1.00					
	SAM01	0	0	0	0	0	0	0	.00	.00	1.00					
	SAM02	0	0	0	0	0	0	0	.00	.00	1.00					
205 RAD	WT01	-0	0	0	0	0	0	0	1.00	.00	.00					
	THRM01	2	0	0	0	0	0	0	1.00	.00	.00					
	SEISUP	3	0	0	0	0	0	0	1.00	.00	.00					
	SEISEM	19	0	0	0	0	0	0	1.00	.00	.00					
	SAM01	0	0	0	0	0	0	0	1.00	.00	.00					
	SAM02	0	0	0	0	0	0	0	1.00	.00	.00					

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 612

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
205 RAD	WT01	-33	0	0	0	0	0	.00	1.00	.00						
	THRM01	2	0	0	0	0	0	.00	1.00	.00						
	SEISUP	105	0	0	0	0	0	.00	1.00	.00						
	SEISEM	132	0	0	0	0	0	.00	1.00	.00						
	SAM01	0	0	0	0	0	0	.00	1.00	.00						
	SAM02	0	0	0	0	0	0	.00	1.00	.00						
210 RAD	WT01	0	0	0	0	0	0	1.00	.00	.00						
	THRM01	-9	0	0	0	0	0	1.00	.00	.00						
	SEISUP	7	0	0	0	0	0	1.00	.00	.00						
	SEISEM	49	0	0	0	0	0	1.00	.00	.00						
	SAM01	0	0	0	0	0	0	1.00	.00	.00						
	SAM02	0	0	0	0	0	0	1.00	.00	.00						
210 RAD	WT01	-6	0	0	0	0	0	.00	1.00	.00						
	THRM01	10	0	0	0	0	0	.00	1.00	.00						
	SEISUP	33	0	0	0	0	0	.00	1.00	.00						
	SEISEM	44	0	0	0	0	0	.00	1.00	.00						
	SAM01	0	0	0	0	0	0	.00	1.00	.00						
	SAM02	0	0	0	0	0	0	.00	1.00	.00						
215 RAD	WT01	0	0	0	0	0	0	1.00	.00	.00						
	THRM01	21	0	0	0	0	0	1.00	.00	.00						
	SEISUP	13	0	0	0	0	0	1.00	.00	.00						
	SEISEM	72	0	0	0	0	0	1.00	.00	.00						
	SAM01	0	0	0	0	0	0	1.00	.00	.00						
	SAM02	0	0	0	0	0	0	1.00	.00	.00						
215 RAD	WT01	-17	0	0	0	0	0	.00	1.00	.00						
	THRM01	-2	0	0	0	0	0	.00	1.00	.00						
	SEISUP	14	0	0	0	0	0	.00	1.00	.00						
	SEISEM	32	0	0	0	0	0	.00	1.00	.00						
	SAM01	0	0	0	0	0	0	.00	1.00	.00						
	SAM02	0	0	0	0	0	0	.00	1.00	.00						
220 RAD	WT01	1	0	0	0	0	0	1.00	.00	.00						
	THRM01	-116	0	0	0	0	0	1.00	.00	.00						
	SEISUP	10	0	0	0	0	0	1.00	.00	.00						
	SEISEM	76	0	0	0	0	0	1.00	.00	.00						
	SAM01	0	0	0	0	0	0	1.00	.00	.00						
	SAM02	0	0	0	0	0	0	1.00	.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 613

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
220 RAD	WTO1	-17	0	0	0	0	0	.00	1.00	.00						
	THRM01	0	0	0	0	0	0	.00	1.00	.00						
	SEISUP	9	0	0	0	0	0	.00	1.00	.00						
	SEISEM	16	0	0	0	0	0	.00	1.00	.00						
	SAM01	1	0	0	0	0	0	.00	1.00	.00						
	SAM02	1	0	0	0	0	0	.00	1.00	.00						
230 RAD	WTO1	-15	0	0	0	0	0	.00	1.00	.00						
	THRM01	0	0	0	0	0	0	.00	1.00	.00						
	SEISUP	7	0	0	0	0	0	.00	1.00	.00						
	SEISEM	15	0	0	0	0	0	.00	1.00	.00						
	SAM01	1	0	0	0	0	0	.00	1.00	.00						
	SAM02	1	0	0	0	0	0	.00	1.00	.00						
230 RAD	WTO1	-1	0	0	0	0	0	.00	.00	1.00						
	THRM01	94	0	0	0	0	0	.00	.00	1.00						
	SEISUP	13	0	0	0	0	0	.00	.00	1.00						
	SEISEM	79	0	0	0	0	0	.00	.00	1.00						
	SAM01	0	0	0	0	0	0	.00	.00	1.00						
	SAM02	0	0	0	0	0	0	.00	.00	1.00						
235 RAD	WTO1	-17	0	0	0	0	0	.00	1.00	.00						
	THRM01	-0	0	0	0	0	0	.00	1.00	.00						
	SEISUP	7	0	0	0	0	0	.00	1.00	.00						
	SEISEM	14	0	0	0	0	0	.00	1.00	.00						
	SAM01	0	0	0	0	0	0	.00	1.00	.00						
	SAM02	0	0	0	0	0	0	.00	1.00	.00						
235 RAD	WTO1	0	0	0	0	0	0	.00	.00	1.00						
	THRM01	-14	0	0	0	0	0	.00	.00	1.00						
	SEISUP	17	0	0	0	0	0	.00	.00	1.00						
	SEISEM	75	0	0	0	0	0	.00	.00	1.00						
	SAM01	0	0	0	0	0	0	.00	.00	1.00						
	SAM02	0	0	0	0	0	0	.00	.00	1.00						
240 RAD	WTO1	-13	0	0	0	0	0	.00	1.00	.00						
	THRM01	4	0	0	0	0	0	.00	1.00	.00						
	SEISUP	6	0	0	0	0	0	.00	1.00	.00						
	SEISEM	14	0	0	0	0	0	.00	1.00	.00						
	SAM01	0	0	0	0	0	0	.00	1.00	.00						
	SAM02	0	0	0	0	0	0	.00	1.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 614

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
240 RAD	WTO1	1	0	0	0	0	0	.00	.00	1.00						
	THRM01	-22	0	0	0	0	0	.00	.00	1.00						
	SEISUP	13	0	0	0	0	0	.00	.00	1.00						
	SEISEM	58	0	0	0	0	0	.00	.00	1.00						
	SAM01	1	0	0	0	0	0	.00	.00	1.00						
	SAM02	1	0	0	0	0	0	.00	.00	1.00						
250 RAD	WTO1	2	0	0	0	0	0	1.00	.00	.00						
	THRM01	75	0	0	0	0	0	1.00	.00	.00						
	SEISUP	56	0	0	0	0	0	1.00	.00	.00						
	SEISEM	295	0	0	0	0	0	1.00	.00	.00						
	SAM01	3	0	0	0	0	0	1.00	.00	.00						
	SAM02	4	0	0	0	0	0	1.00	.00	.00						
250 RAD	WTO1	-9	0	0	0	0	0	.00	1.00	.00						
	THRM01	-4	0	0	0	0	0	.00	1.00	.00						
	SEISUP	9	0	0	0	0	0	.00	1.00	.00						
	SEISEM	13	0	0	0	0	0	.00	1.00	.00						
	SAM01	0	0	0	0	0	0	.00	1.00	.00						
	SAM02	0	0	0	0	0	0	.00	1.00	.00						
260 RAD	WTO1	-9	0	0	0	0	0	.00	1.00	.00						
	THRM01	-8	0	0	0	0	0	.00	1.00	.00						
	SEISUP	6	0	0	0	0	0	.00	1.00	.00						
	SEISEM	10	0	0	0	0	0	.00	1.00	.00						
	SAM01	1	0	0	0	0	0	.00	1.00	.00						
	SAM02	1	0	0	0	0	0	.00	1.00	.00						
260 RAD	WTO1	0	0	0	0	0	0	.00	.00	1.00						
	THRM01	14	0	0	0	0	0	.00	.00	1.00						
	SEISUP	15	0	0	0	0	0	.00	.00	1.00						
	SEISEM	86	0	0	0	0	0	.00	.00	1.00						
	SAM01	0	0	0	0	0	0	.00	.00	1.00						
	SAM02	0	0	0	0	0	0	.00	.00	1.00						
275 RAD	WTO1	-3	0	0	0	0	0	1.00	.00	.00						
	THRM01	28	0	0	0	0	0	1.00	.00	.00						
	SEISUP	12	0	0	0	0	0	1.00	.00	.00						
	SEISEM	73	0	0	0	0	0	1.00	.00	.00						
	SAM01	5	0	0	0	0	0	1.00	.00	.00						
	SAM02	6	0	0	0	0	0	1.00	.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 615

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASE :

		LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)			DIRECTION COSINES								
DATA TYPE PT	LOAD	FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
275 RAD	WTO1	-2	0	0	0	0	0	.00	.00	1.00						
	THRM01	11	0	0	0	0	0	.00	.00	1.00						
	SEISUP	26	0	0	0	0	0	.00	.00	1.00						
	SEISEM	91	0	0	0	0	0	.00	.00	1.00						
	SAMO1	1	0	0	0	0	0	.00	.00	1.00						
	SAMO2	2	0	0	0	0	0	.00	.00	1.00						
290 RAD	WTO1	1	0	0	0	0	0	1.00	.00	.00						
	THRM01	-5	0	0	0	0	0	1.00	.00	.00						
	SEISUP	12	0	0	0	0	0	1.00	.00	.00						
	SEISEM	64	0	0	0	0	0	1.00	.00	.00						
	SAMO1	3	0	0	0	0	0	1.00	.00	.00						
	SAMO2	4	0	0	0	0	0	1.00	.00	.00						
290 RAD	WTO1	-3	0	0	0	0	0	.00	.00	1.00						
	THRM01	-3	0	0	0	0	0	.00	.00	1.00						
	SEISUP	11	0	0	0	0	0	.00	.00	1.00						
	SEISEM	60	0	0	0	0	0	.00	.00	1.00						
	SAMO1	1	0	0	0	0	0	.00	.00	1.00						
	SAMO2	1	0	0	0	0	0	.00	.00	1.00						
295 RAD	WTO1	-1	0	0	0	0	0	1.00	.00	.00						
	THRM01	28	0	0	0	0	0	1.00	.00	.00						
	SEISUP	9	0	0	0	0	0	1.00	.00	.00						
	SEISEM	61	0	0	0	0	0	1.00	.00	.00						
	SAMO1	1	0	0	0	0	0	1.00	.00	.00						
	SAMO2	2	0	0	0	0	0	1.00	.00	.00						
295 RAD	WTO1	1	0	0	0	0	0	.00	.00	1.00						
	THRM01	12	0	0	0	0	0	.00	.00	1.00						
	SEISUP	7	0	0	0	0	0	.00	.00	1.00						
	SEISEM	64	0	0	0	0	0	.00	.00	1.00						
	SAMO1	1	0	0	0	0	0	.00	.00	1.00						
	SAMO2	1	0	0	0	0	0	.00	.00	1.00						
305 RAD	WTO1	-50	0	0	0	0	0	.00	1.00	.00						
	THRM01	-13	0	0	0	0	0	.00	1.00	.00						
	SEISUP	24	0	0	0	0	0	.00	1.00	.00						
	SEISEM	55	0	0	0	0	0	.00	1.00	.00						
	SAMO1	0	0	0	0	0	0	.00	1.00	.00						
	SAMO2	0	0	0	0	0	0	.00	1.00	.00						

RESTRAINT LOAD SUMMARY

ME101/I2

DATE 040182

PAGE 616

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASE :

DATA TYPE PT	LOAD	LOCAL FORCES(LB)			LOCAL MOMENTS (FT-LB)		DIRECTION COSINES									
		FA	FB	FC	MA	MB	MC	COS AX	COS AY	COS AZ	COS BX	COS BY	COS BZ	COS CX	COS CY	COS CZ
500 ANC	WTO1	1	-4	3	1	-6	1	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	THRM01	-26	21	-11	19	20	9	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SEISUP	6	2	3	3	6	3	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SEISEM	27	7	23	7	21	10	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SAM01	0	0	0	0	0	0	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00
	SAM02	0	1	1	0	0	0	1.00	.00	.00	.00	1.00	.00	.00	.00	1.00

@XQT *ME101.ME101SA
ME101SA VERSION *TEST*04/01/82.08:57:24



STRESS ANALYSIS

ME101/12

DATE 040182

PAGE 617

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : ALL

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD			OCCASIONAL LOAD					LEVEL D		THERMAL EXPANSION		NON-REPEATED ANCHOR MOV	
		PD/4T PSI	EQN 8 CALC PSI	ALLOW PSI	PD/4T PSI	LEVEL B EQN 9 CALC PSI	ALLOW PSI	LEVEL C EQN 9 CALC PSI	ALLOW PSI	EQN 9 CALC PSI	ALLOW PSI	EQNS 10/11 CALC PSI	ALLOW PSI	EQN 10A CALC PSI	ALLOW PSI
5	TNGT	52	1300	17800	52	7061	21360	10524	32040	0	0	8548	27950	0	0
10			773	17800		4760	21360	6596	32040	0	0	8139	27950	0	0
10	TNGT	52	773	17800	52	4760	21360	6596	32040	0	0	8139	27950	0	0
15			699	17800		7468	21360	12186	32040	0	0	5696	27950	0	0
15	TNGT	52	699	17800	52	7468	21360	12186	32040	0	0	5696	27950	0	0
20			130	17800		11707	21360	19485	32040	0	0	11664	27950	0	0
20	TNGT	52	359	17800	52	12966	21360	23600	32040	0	0	1582	27950	0	0
25			52	17800		10283	21360	19838	32040	0	0	0	27950	0	0
25	TNGT	52	52	17800	52	10283	21360	19838	32040	0	0	0	27950	0	0
30			52	17800		6128	21360	10470	32040	0	0	0	27950	0	0
30	TNGT	52	52	17800	52	6128	21360	10470	32040	0	0	0	27950	0	0
35			52	17800		1013	21360	1596	32040	0	0	0	27950	0	0
35	TNGT	52	52	17800	52	1013	21360	1596	32040	0	0	0	27950	0	0
40			52	17800		52	21360	52	32040	0	0	0	27950	0	0
40	TNGT	52	52	17800	52	52	21360	52	32040	0	0	0	27950	0	0
20	TNGT	52	376	17800	52	5810	21360	12150	32040	0	0	11158	27950	0	0
45 B			1580	17800		6570	21360	10515	32040	0	0	6127	27950	0	0
45 B	BEND	52	1580	17800	52	6570	21360	10515	32040	0	0	6127	27950	0	0
45 M			1305	17800		6022	21360	9042	32040	0	0	7498	27950	0	0
45 M	BEND	52	1305	17800	52	6022	21360	9042	32040	0	0	7498	27950	0	0
45 E			434	17800		4238	21360	6098	32040	0	0	6568	27950	0	0
45 E	TNGT	52	434	17800	52	4238	21360	6098	32040	0	0	6568	27950	0	0
50			1247	17800		5300	21360	8050	32040	0	0	5388	27950	0	0
50	TNGT	52	1247	17800	52	5300	21360	8050	32040	0	0	5388	27950	0	0
55			1583	17800		7155	21360	9927	32040	0	0	7350	27950	0	0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD			OCCASIONAL LOAD					LEVEL D EQN 9 CALC PSI ALLOW PSI		THERMAL EXPANSION		NON-REPEATED ANCHOR MOV	
		PD/4T PSI	EQN 8 CALC PSI ALLOW PSI		PD/4T PSI	LEVEL B EQN 9 CALC PSI ALLOW PSI		LEVEL C EQN 9 CALC PSI ALLOW PSI				EQNS CALC PSI	10/11 ALLOW PSI	EQN CALC PSI	10A ALLOW PSI
55 60	TNGT	52	1583 2114	17800 17800	52	7164 10201	21360 21360	9947 13957	32040 32040	0 0	0 0	7351 2111	27950 27950	0 0	0 0
60 65	TNGT	52	2114 2286	17800 17800	52	10160 11001	21360 21360	13874 14807	32040 32040	0 0	0 0	2099 2181	27950 27950	0 0	0 0
65 70	TNGT	52	2286 1789	17800 17800	52	11001 7863	21360 21360	14807 15520	32040 32040	0 0	0 0	2181 2423	27950 27950	0 0	0 0
70 75	TNGT	52	1789 2220	17800 17800	52	7863 10534	21360 21360	15520 18595	32040 32040	0 0	0 0	2423 4449	27950 27950	0 0	0 0
75 80 B	TNGT	52	2220 931	17800 17800	52	10534 5265	21360 21360	18595 12587	32040 32040	0 0	0 0	4449 4120	27950 27950	0 0	0 0
80 B 80 M	BEND	52	931 378	17800 17800	52	5265 3956	21360 21360	12587 7946	32040 32040	0 0	0 0	4120 3698	27950 27950	0 0	0 0
80 M 80 E	BEND	52	378 471	17800 17800	52	3956 4255	21360 21360	7946 9261	32040 32040	0 0	0 0	3698 1738	27950 27950	0 0	0 0
80 E 85	TNGT	52	471 276	17800 17800	52	4255 6349	21360 21360	9261 18126	32040 32040	0 0	0 0	1738 1486	27950 27950	0 0	0 0
85 90	TNGT	52	276 3525	17800 17800	52	6349 18424	21360 21360	18126 21550	32040 32040	0 0	0 0	1486 2987	27950 27950	0 0	0 0
90 95	TNGT	52	3525 4239	17800 17800	52	18424 21301	21360 21360	21550 25369	32040 32040	0 0	0 0	2987 1476	27950 27950	0 0	0 0
95 100 B	TNGT	52	4239 2810	17800 17800	52	21301 14689	21360 21360	25369 17602	32040 32040	0 0	0 0	1476 1209	27950 27950	0 0	0 0
100 B 100 M	BEND	52	2810 1833	17800 17800	52	14689 10524	21360 21360	17602 13096	32040 32040	0 0	0 0	1209 1274	27950 27950	0 0	0 0
100 M 100 E	BEND	52	1833 1118	17800 17800	52	10524 7627	21360 21360	13096 9873	32040 32040	0 0	0 0	1274 1424	27950 27950	0 0	0 0
100 E 105	TNGT	52	1118 479	17800 17800	52	7627 5197	21360 21360	9873 6553	32040 32040	0 0	0 0	1424 1724	27950 27950	0 0	0 0
105 110	TNGT	52	479 782	17800 17800	52	5197 5854	21360 21360	6553 7156	32040 32040	0 0	0 0	1724 3302	27950 27950	0 0	0 0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD			OCCASIONAL LOAD						THERMAL EXPANSION		NON-REPEATED ANCHOR MOV		
		PD/4T PSI	EQN 8		PD/4T PSI	LEVEL B EQN 9		LEVEL C EQN 9		LEVEL D EQN 9		EQNS CALC PSI	10/11 ALLOW PSI	EQN CALC PSI	10A ALLOW PSI
			CALC PSI	ALLOW PSI		CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI				
110	TNGT	52	782	17800	52	5854	21360	7156	32040	0	0	3302	27950	0	0
115			1189	17800		7535	21360	9770	32040	0	0	2857	27950	0	0
115	TNGT	52	1189	17800	52	7535	21360	9770	32040	0	0	2857	27950	0	0
120 B			742	17800		3666	21360	5243	32040	0	0	3646	27950	0	0
120 B	BEND	52	742	17800	52	3666	21360	5243	32040	0	0	3646	27950	0	0
120 M			704	17800		3400	21360	4976	32040	0	0	4130	27950	0	0
120 M	BEND	52	704	17800	52	3400	21360	4976	32040	0	0	4130	27950	0	0
120 E			583	17800		3023	21360	4557	32040	0	0	3821	27950	0	0
120 E	TNGT	52	583	17800	52	3023	21360	4557	32040	0	0	3821	27950	0	0
125			858	17800		6081	21360	8908	32040	0	0	4485	27950	0	0
125	TNGT	52	858	17800	52	6081	21360	8908	32040	0	0	4485	27950	0	0
130			1047	17800		6831	21360	10043	32040	0	0	2371	27950	0	0
130	TNGT	52	1047	17800	52	6831	21360	10043	32040	0	0	2371	27950	0	0
130A			291	17800		5025	21360	6341	32040	0	0	957	27950	0	0
130A	TNGT	52	291	17800	52	5025	21360	6341	32040	0	0	957	27950	0	0
135			580	17800		5554	21360	8367	32040	0	0	1905	27950	0	0
135	TNGT	52	580	17800	52	5554	21360	8367	32040	0	0	1905	27950	0	0
135A			253	17800		4981	21360	7098	32040	0	0	1036	27950	0	0
135A	TNGT	52	253	17800	52	4981	21360	7098	32040	0	0	1036	27950	0	0
137			971	17800		8932	21360	15521	32040	0	0	300	27950	0	0
137	TNGT	52	971	17800	52	8932	21360	15521	32040	0	0	300	27950	0	0
138			1655	17800		11454	21360	14709	32040	0	0	0	27950	0	0
138	TNGT	52	1655	17800	52	11454	21360	14709	32040	0	0	0	27950	0	0
137	TNGT	52	738	17800	52	9352	21360	12771	32040	0	0	300	27950	0	0
140			138	17800		7456	21360	10946	32040	0	0	572	27950	0	0
140	TNGT	52	138	17800	52	7456	21360	10946	32040	0	0	572	27950	0	0
140A			93	17800		5826	21360	7095	32040	0	0	295	27950	0	0
140A	TNGT	52	93	17800	52	5826	21360	7095	32040	0	0	295	27950	0	0
145			105	17800		6223	21360	7446	32040	0	0	334	27950	0	0
145	TNGT	52	105	17800	52	6223	21360	7446	32040	0	0	334	27950	0	0
145			178	17800		1489	21360	5482	32040	0	0	973	27950	0	0
145A	TNGT	52	178	17800	52	1489	21360	5482	32040	0	0	973	27950	0	0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD			OCCASIONAL LOAD						THERMAL EXPANSION		NON-REPEATED ANCHOR MOV		
		PD/4T PSI	EQN 8		PD/4T PSI	LEVEL B EQN 9		LEVEL C EQN 9		LEVEL D EQN 9		EQNS CALC PSI	10/11 ALLOW PSI	EQN CALC PSI	10A ALLOW PSI
			CALC PSI	ALLOW PSI		CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI				
145A 150	TNGT	52	116 304	17800 17800	52	1167 1326	21360 21360	4419 3639	32040 32040	0 0	0 0	488 1949	27950 27950	0 0	0 0
150 155	TNGT	52	304 312	17800 17800	52	1326 1100	21360 21360	3639 2184	32040 32040	0 0	0 0	1949 2999	27950 27950	0 0	0 0
155 160	TNGT	52	312 452	17800 17800	52	1100 1665	21360 21360	2184 3358	32040 32040	0 0	0 0	2999 266	27950 27950	0 0	0 0
160 165	TNGT	52	452 699	17800 17800	52	1665 1524	21360 21360	3358 3492	32040 32040	0 0	0 0	266 2412	27950 27950	0 0	0 0
165 170	TNGT	52	699 386	17800 17800	52	1524 1193	21360 21360	3492 3336	32040 32040	0 0	0 0	2412 2619	27950 27950	0 0	0 0
170 175	TNGT	52	386 171	17800 17800	52	1193 986	21360 21360	3336 3048	32040 32040	0 0	0 0	2619 3716	27950 27950	0 0	0 0
175 180 B	TNGT	52	171 645	17800 17800	52	985 1575	21360 21360	3042 3344	32040 32040	0 0	0 0	3716 2223	27950 27950	0 0	0 0
180 B 180 M	BEND	52	645 712	17800 17800	52	1575 1799	21360 21360	3344 3875	32040 32040	0 0	0 0	2223 2121	27950 27950	0 0	0 0
180 M 180 E	BEND	52	712 710	17800 17800	52	1799 1894	21360 21360	3875 4309	32040 32040	0 0	0 0	2121 1989	27950 27950	0 0	0 0
180 E 185	TNGT	52	710 286	17800 17800	52	1894 1100	21360 21360	4309 3732	32040 32040	0 0	0 0	1989 1561	27950 27950	0 0	0 0
185 185A	TNGT	52	286 198	17800 17800	52	1100 1010	21360 21360	3732 1994	32040 32040	0 0	0 0	1561 729	27950 27950	0 0	0 0
185A 190	TNGT	52	198 111	17800 17800	52	1010 1931	21360 21360	1994 2513	32040 32040	0 0	0 0	729 816	27950 27950	0 0	0 0
190 190A	TNGT	52	111 241	17800 17800	52	1931 2803	21360 21360	2513 3713	32040 32040	0 0	0 0	816 1100	27950 27950	0 0	0 0
190A 195	TNGT	52	241 487	17800 17800	52	2803 5913	21360 21360	3713 10736	32040 32040	0 0	0 0	1100 2890	27950 27950	0 0	0 0
195 200	TNGT	52	487 554	17800 17800	52	5913 2123	21360 21360	10736 6485	32040 32040	0 0	0 0	2890 3405	27950 27950	0 0	0 0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD			OCCASIONAL LOAD						THERMAL EXPANSION		NON-REPEATED ANCHOR MOV		
		PD/4T PSI	EQN 8		PD/4T PSI	LEVEL B EQN 9		LEVEL C EQN 9		LEVEL D EQN 9		EQNS CALC PSI	10/11 ALLOW PSI	EQN CALC PSI	10A ALLOW PSI
			CALC PSI	ALLOW PSI		CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI				
200	TNGT	52	554	17800	52	2123	21360	6485	32040	0	0	3405	27950	0	0
205			1033	17800		7047	21360	9319	32040	0	0	1968	27950	0	0
205	TNGT	52	1033	17800	52	7047	21360	9319	32040	0	0	1968	27950	0	0
205A			274	17800		2978	21360	3974	32040	0	0	810	27950	0	0
205A	TNGT	52	274	17800	52	2978	21360	3974	32040	0	0	810	27950	0	0
210			133	17800		1574	21360	2416	32040	0	0	719	27950	0	0
210	TNGT	52	133	17800	52	1574	21360	2416	32040	0	0	719	27950	0	0
210A			276	17800		1679	21360	4294	32040	0	0	694	27950	0	0
210A	TNGT	52	276	17800	52	1679	21360	4294	32040	0	0	694	27950	0	0
215			744	17800		1860	21360	3929	32040	0	0	1910	27950	0	0
215	TNGT	52	744	17800	52	1860	21360	3929	32040	0	0	1910	27950	0	0
215A			487	17800		1624	21360	3866	32040	0	0	2117	27950	0	0
215A	TNGT	52	487	17800	52	1624	21360	3866	32040	0	0	2117	27950	0	0
220			882	17800		1997	21360	4349	32040	0	0	6139	27950	0	0
220	TNGT	52	882	17800	52	1997	21360	4349	32040	0	0	6139	27950	0	0
225 B			170	17800		1383	21360	2368	32040	0	0	10944	27950	0	0
225 B	TNGT	52	170	17800	52	1383	21360	2368	32040	0	0	10944	27950	0	0
225 M	BEND		187	17800		1558	21360	2701	32040	0	0	12578	27950	0	0
225 M	TNGT	52	187	17800	52	1558	21360	2701	32040	0	0	12578	27950	0	0
225 E	BEND		181	17800		1582	21360	2629	32040	0	0	11641	27950	0	0
225 E	TNGT	52	181	17800	52	1582	21360	2629	32040	0	0	11641	27950	0	0
230			712	17800		1966	21360	4558	32040	0	0	5434	27950	0	0
230	TNGT	52	712	17800	52	1966	21360	4558	32040	0	0	5434	27950	0	0
230A			378	17800		2170	21360	5646	32040	0	0	2154	27950	0	0
230A	TNGT	52	378	17800	52	2170	21360	5646	32040	0	0	2154	27950	0	0
235			779	17800		2012	21360	5436	32040	0	0	1143	27950	0	0
235	TNGT	52	779	17800	52	2012	21360	5436	32040	0	0	1143	27950	0	0
235A			460	17800		1874	21360	5390	32040	0	0	1027	27950	0	0
235A	TNGT	52	460	17800	52	1874	21360	5390	32040	0	0	1027	27950	0	0
240			571	17800		1425	21360	3805	32040	0	0	939	27950	0	0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD				OCCASIONAL LOAD				THERMAL EXPANSION		NON-REPEATED ANCHOR MOV			
		EQN 8		LEVEL B EQN 9		LEVEL C EQN 9		LEVEL D EQN 9							
		PD/4T PSI	CALC PSI	ALLOW PSI	PD/4T PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI					CALC PSI	ALLOW PSI
240	TNGT	52	571	17800	52	1425	21360	3805	32040	0	0	939	27950	0	0
245			332	17800		2104	21360	3758	32040	0	0	6404	27950	0	0
245	TNGT	52	332	17800	52	2104	21360	3758	32040	0	0	6404	27950	0	0
250			338	17800		2059	21360	7938	32040	0	0	1056	27950	0	0
250	TNGT	52	338	17800	52	2059	21360	7938	32040	0	0	1056	27950	0	0
255 B			375	17800		1589	21360	2920	32040	0	0	2395	27950	0	0
255 B	BEND	52	375	17800	52	1589	21360	2920	32040	0	0	2395	27950	0	0
255 M			416	17800		1652	21360	2516	32040	0	0	2821	27950	0	0
255 M	BEND	52	416	17800	52	1652	21360	2516	32040	0	0	2821	27950	0	0
255 E			430	17800		1643	21360	2855	32040	0	0	2560	27950	0	0
255 E	TNGT	52	430	17800	52	1643	21360	2855	32040	0	0	2560	27950	0	0
260			444	17800		1670	21360	3864	32040	0	0	1992	27950	0	0
260	TNGT	52	444	17800	52	1670	21360	3864	32040	0	0	1992	27950	0	0
265 B			375	17800		2166	21360	2998	32040	0	0	2299	27950	0	0
265 B	BEND	52	375	17800	52	2166	21360	2998	32040	0	0	2299	27950	0	0
265 M			328	17800		1993	21360	2768	32040	0	0	2411	27950	0	0
265 M	BEND	52	328	17800	52	1993	21360	2768	32040	0	0	2411	27950	0	0
265 E			269	17800		1793	21360	2525	32040	0	0	2411	27950	0	0
265 E	TNGT	52	269	17800	52	1793	21360	2525	32040	0	0	2411	27950	0	0
270			534	17800		1353	21360	2709	32040	0	0	3268	27950	0	0
270	TNGT	52	534	17800	52	1358	21360	2739	32040	0	0	3273	27950	0	0
275			301	17800		2974	21360	6368	32040	0	0	1661	27950	0	0
275	TNGT	52	301	17800	52	2974	21360	6368	32040	0	0	1661	27950	0	0
280			536	17800		1137	21360	2915	32040	0	0	982	27950	0	0
280	TNGT	52	536	17800	52	1137	21360	2915	32040	0	0	982	27950	0	0
285			865	17800		1856	21360	2933	32040	0	0	994	27950	0	0
285	TNGT	52	865	17800	52	1856	21360	2933	32040	0	0	994	27950	0	0
290			854	17800		1957	21360	3440	32040	0	0	845	27950	0	0
290	TNGT	52	854	17800	52	1957	21360	3440	32040	0	0	845	27950	0	0
290A			113	17800		1281	21360	4461	32040	0	0	361	27950	0	0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

CODE SC374, CLASS 2

ELEMENT FROM TO TYPE TITLE		SUSTAINED LOAD				OCCASIONAL LOAD						THERMAL EXPANSION		NON-REPEATED ANCHOR MOV	
		EQN 8				LEVEL B EQN 9		LEVEL C EQN 9		LEVEL D EQN 9		EQNS 10/11		EQN 10A	
		PD/4T PSI	CALC PSI	ALLOW PSI		PD/4T PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI	CALC PSI	ALLOW PSI	CALC PSI
290A 295	TNGT	52	113 852	17800 17800	52	1281 1639	21360 21360	4461 3513	32040 32040	0 0	0 0	361 748	27950 27950	0 0	0 0
295 300	TNGT	52	852 1027	17800 17800	52	1639 1786	21360 21360	3513 3124	32040 32040	0 0	0 0	748 1562	27950 27950	0 0	0 0
300 305	TNGT	52	1027 696	17800 17800	52	1786 1102	21360 21360	3124 2091	32040 32040	0 0	0 0	1562 1494	27950 27950	0 0	0 0
305 310 B	TNGT	52	696 662	17800 17800	52	1102 1064	21360 21360	2091 2038	32040 32040	0 0	0 0	1494 1602	27950 27950	0 0	0 0
310 B 310 M	BEND	52	662 546	17800 17800	52	1064 943	21360 21360	2038 1906	32040 32040	0 0	0 0	1602 1944	27950 27950	0 0	0 0
310 M 310 E	BEND	52	546 502	17800 17800	52	943 887	21360 21360	1906 1814	32040 32040	0 0	0 0	1944 1820	27950 27950	0 0	0 0
310 E 315	TNGT	52	502 571	17800 17800	52	887 961	21360 21360	1814 1859	32040 32040	0 0	0 0	1820 2089	27950 27950	0 0	0 0
315 320 B	TNGT	52	571 494	17800 17800	52	961 769	21360 21360	1859 1302	32040 32040	0 0	0 0	2089 937	27950 27950	0 0	0 0
320 B 320 M	BEND	52	494 460	17800 17800	52	769 742	21360 21360	1304 1279	32040 32040	0 0	0 0	930 719	27950 27950	0 0	0 0
320 M 320 E	BEND	52	460 458	17800 17800	52	742 810	21360 21360	1279 1509	32040 32040	0 0	0 0	719 735	27950 27950	0 0	0 0
320 E 500	TNGT	52	458 521	17800 17800	52	810 1134	21360 21360	1509 2514	32040 32040	0 0	0 0	735 2425	27950 27950	0 0	0 0

* EXCEEDED ALLOWABLE IN EQUATION 10, EQUATION 11 USED

** EXCEEDED ALLOWABLE

PIPING STRESS SUMMARY CHECK AND COVER SHEET

DATE 040182

PAGE 624

ANALYSIS INPUT DATA

PROJECT

JOB NO. 8856 PLANT DESIGN GROUP

SYSTEM SP-HCB-108 LINE

CALC NO 5280 ISO NO REV NO

CASES: WTO1 THRM01 SAM01 SEISUP SEISEM

PIPING DATA

1
2) MATERIAL SA376-TP304
3) E (PSI) .283+08
4) PIPE OD (IN) 1.315
5) NOM WALL (IN) .133
6) DESN PRES(PSI) 30.000
7) PEAK PRES(PSI) 30.000
8) TEMP (DEG-F)
9) EXPAN (IN/100-FT)
10) EXPAN (IN/IN)
11) WT PIPE (LB/FT) 1.681
12) WT CONTNT (LB/FT)
13) WT INSUL (LB/FT)
14) TOTAL WT (LB/FT) 2.750
15) FLANGE WT (LB)

VALVE DATA

1) VALVE SZ & NO
2) LENGTH (E-E) (IN)
3) OPR YOKE LEN (IN)
4) WT BODY (LB)
5) WT OPERATOR (LB)
6) WT CONTENTS (LB)
7) WT INSUL (LB)
8) TOTAL WT (LB)

INPUT SOURCE DOCUMENTS

1) PIPING SPECIFICATION

2) VALVE DRAWINGS

NAME

SIGNATURE

DATE

PREPARED BY

REVIEWED BY

APPROVED BY

PIPING STRESS SUMMARY CHECK AND COVER SHEET

DATE 040182

PAGE 625

ASME SECT. III, CLASSES 2 & 3

PROJECT

JOB NO. 8856 PLANT DESIGN GROUP
 SYSTEM SP-HCB-108 LINE
 CALC NO 5280 ISO NO REV NO

DESIGN CONDITION	LEVEL	LOCATION OF MAXIMUM END ELEMENT	MAXIMUM COMPUTED STRESS(PSI)	ALLOWABLE STRESS (PSI)	COMPUTED ALLOWABLE
SUSTAINED LOADS EQN. 8		95 90 95	4239	SH 17800	.238
OCCASIONAL LOADS EQN. 9	B	95 90 95	21301	1.2 SH 21360	.997
OCCASIONAL LOADS EQN. 9	C	95 90 95	25369	1.8 SH 32040	.792
THERMAL EXPANSION EQN. 10		225 M 225 B 225 M	12578	SA 27950	.450

REFERENCE CALCULATIONS:

WEIGHT SEISMIC-INERTIA PORTION OTHERS
 THERMAL EXP SEISMIC-ANCHOR MOVEMENT
 DYNAMIC

NAME SIGNATURE DATE

PREPARED BY
 REVIEWED BY
 APPROVED BY

OFIN

PAGE 626

START: 08:21:31 APR 01, 1982 FIN: 08:57:31 APR 01, 1982

PAGE 605

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ATTACHMENT# : 1

SK-14-5280

PREPARED BY: ~~Alana~~ 4/1/82
 Checked BY: ~~JWK~~
 608 SHEETS a REV 1

NAME :

PART :

SYS:

ESTIMATED PAGES: 627
INPUT DEVICE:
WRITTEN BY: X1017
QUEUED TO: CMAQ05
PRINTED ON: CMAQ05



PAGE 606



@RUN,ST/R 860669,08856004,ME101,200,900/900
04/01/82 08:21:32

@SYM PRINT\$,CMAQ05

@ASG,A P\$*ME101.
FAC WARNING 040200104000
THE FILE WAS PREVIOUSLY CATALOGUED.
WRITE KEY EXISTS BUT WAS NOT SPECIFIED.
FILE ASSIGNED IN READ-ONLY MODE.
FIND WAS MADE ON A CATALOGUED FILE REQUEST AND THE FILE WAS
ALREADY ASSIGNED TO ANOTHER RUN.
READ-ONLY FILE CATALOGUED WITH AN R OPTION.

@ASG,A 5280.
FAC WARNING 0400000000200
THE FILE WAS PREVIOUSLY CATALOGUED.
FILE SPECIFIED IN AN @ASG CONTROL STATEMENT HAS BEEN DISABLED
BECAUSE THE FILE WAS ASSIGNED DURING A FILE RECOVERY.

@ADD,LP P\$*ME101.RUN1

@QUAL P\$

@XQT *ME101.ME101DK

@ADD,P 5280.

@ADD,LP P\$*ME101.RUN2

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MMM      MMM      EEEEEEEE      11      0000000      11
MMM      MMM      EE      E      111      00      00      111
MM MM MM MM      EE      11      00      00      11
MM      MMM      EEEE      11      00      00      11
MM      M      MM      EE      11      00      00      11
MM      MM      EE      E      11      00      00      11
MMMM      MMMM      EEEEEEEE      1111      0000000      1111

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VERSION : I2
RELEASED : SEPTEMBER 15, 1981
USER MANUAL VERSION : I2
THEORETICAL MANUAL VERSION : 2
VERIFICATION MANUAL VERSION : I2

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*****
* IN CASE OF PROBLEMS WITH ME101, CONTACT THE
* PIPE STRESS USER REPRESENTATIVES :
*
* NAME LOCATION EXTENSION
* - ANN ARBOR - C. H. PERRON AAO 7055
* - GAITHERSBURG - R. GANTI GPD 3160
* - HOUSTON - J. B. VANTILBORG HO 2356
* - NORWALK - D. J. FREELAND LAPD 4830
* - NORWALK - D. W. PHILLIPS LAPD
* - SAN FRANCISCO - L. T. NICHOLSON SF MET35 0688
*
* *****
* PROGRAM SPONSOR - F. E. VINSON SF MET35 768-0680
* TECHNICAL SPECIALIST - M. Y. DONG SF MET35 768-0686
*
* *****

```

1. Question:

The old Detail 600 uses SA-307 Bolt of lesser strength than SPA-600 and SPA-1312 drawing implying that the bolt clamping force in detail 600 is less than the new design. Additionally the allowable anchor torsional moment on SPA-600 and 1312 was reduced. Provide a justification that the Detail 600 is still acceptable to function as a pipe anchor.

Response:

Detail 600 anchor does not specify any bolting material. The bolting material used on installation of detail 600 is SA-307. These bolts (SA-307) are qualified per attachment 1 for use on detail 600 for the allowable loads. Additionally, use of SA-325 bolts on SPA-600 and SPA-1312 does not result in higher allowable loads (higher clamping forces).

During the As-built Reconciliation, the least allowable loads (as listed on revision 2 of SPA-600) were used when reviewing the Detail 600 or SPA 600's called out on the hanger drawings. If the allowables were exceeded, a fix was implemented.

The allowable torsional moment (M_x) shown for the detail 600 was not reduced for the SPA-600 and SPA-1312. The moment about the "Y" axis was reduced for the SPA-600 only. The reduction of the allowable moment about the "Y" axis is not a function of either the clamping force or the bolt material. The reduction is associated with the structural strength of the lower half of the anchor.

The reduction was overcome in the SPA-1312 by adding angle stiffeners on its lower half. The added angles increased the section modulus thereby increasing the allowable moment about the Y-axis. A study calculation was performed to justify the use of SA-307 bolts in the anchors (see attachment 1).

8209200228

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2. Question:

How were the differential building movements (SAM) for the following three sets of hangers considered in small pipe design:

- i) SP-HCB-108-1-H2039
SP-HCB-108-1-H2041
- ii) SP-HCB-133-H8
SP-HCB-133-H10
SP-HCB-133-H11
- iii) SP-HCB-126-H2021
SP-HCB-126-H2024

Response:

- i) SP-HCB-108-H2039
SP-HCB-108-H2041

Both supports are attached to containment wall. Calc. #5280 was performed by ME101. Computer output (see attachment II) shows that the right response spectra and seismic anchor movements (SAM) analysis were used.

- ii) SP-HCB-133-H8
SP-HCB-133-H10
SP-HCB-133-H11

Supports are part of calc. #5499 (see attachment III). In the original stress analysis all supports were considered to be attached to reactor building. (See note on sheet 1 of the original calc. dated 6/11/82).

The calc. used the right spectra and differential movements between containment penetration and the first support in the reactor building. The final as-built drawings showed SP-HCB-133-H11 attached to containment wall, and H8 and H10 attached to the reactor building. Reevaluation on the effect of seismic anchor movements was done for H11 and found to be negligible at the elevations of the pipe (less than 1/32"). This was considered as a minor difference in the final as-built review and the support design was accepted.

- iii) SP-HCB-126-H2021
SP-HCB-126-H2024

Appropriate containment and reactor building displacements were used in calc. #5371 (see attachment IV).

Please note that the paragraph 4.4.2 of specification M-241 provides the guidelines for considering small pipe anchor movement and relative movements.

ORIGINATOR

L. BENSON

DATE 7-23-82

DICKED

DATE

PROJECT

S.S.E.S. UNIT

JOB NO

8856

SUBJECT

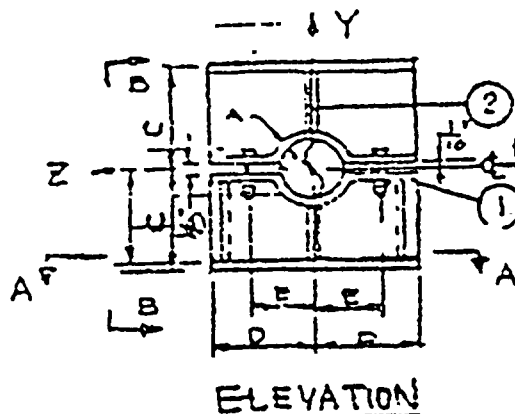
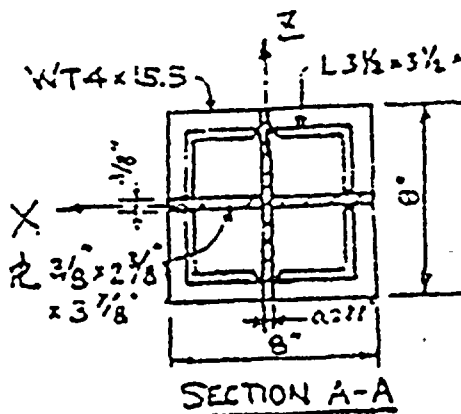
SPA 1312 (STUDY CALCULATION)

SHEET NO

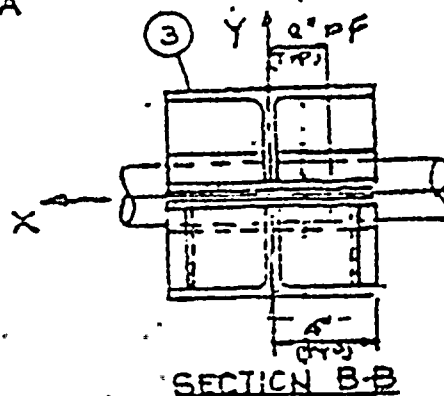
1 OF 1

ATTACHMENT A

(2 φ PIPE)



C = 4 1/2"
D = 4"
E = 2 1/2"
F = 2"
BOLT (4) 3/4 φ S



MAX. ALLOW. LOAD

$$F_x = F_y = F_z = 3^k$$

$$M_x = 25^k$$

$$M_y = M_z = 32^k$$

CRITICAL LOAD AT SECTION A-A

$$F_x = F_y = F_z = 3^k$$

$$M_y = 32^k$$

$$M_x = 25 + 3(4 1/2) = 37.2^k$$

$$M_z = 32 + 3(4 1/2) = 44.2^k$$

SECTION-PROPERTIES (Neglected stiffener & web area)

$$S_x \approx S_z = \frac{b^3 d - b d^3}{6d} = \frac{7.288^3 - 6.788^3}{6 \times 7.288} = 15.96^4$$

$$A \approx 4 \times 1.69 = 6.76 \text{ in}^2$$

$$r = \sqrt{\frac{15.96 \times 3.64}{6.76}} = 2.93^4$$

COMPRESSION & BENDING

$$f_a = \frac{F_y}{A} = \frac{3}{6.76} = 0.44^k \text{ ksi}$$

$$f_{bx} = \frac{M_x}{S_x} = \frac{37.2}{15.96} = 2.33^k \text{ ksi}, \quad f_{bz} = \frac{M_z}{S_z} = \frac{44.2}{15.96} = 2.77^k \text{ ksi}$$

SECH

CALC NO _____ REV NO _____

ORIGINATOR L. BENSON DATE 7-23-82 CHECKED _____ DATE _____
 PROJECT S.S.E.S. UNIT 1 JOB NO. 8856
 SUBJECT SPA 1312 (STUDY CALCULATION) SHEET NO. 2 OF 4

$$\frac{KL}{r} = \frac{2(4\frac{1}{2})}{2.93} = 2.8 \quad \xrightarrow{(300^\circ\text{F})} F_a = 19.04 \quad \left(\frac{12.6}{19.1} = 12.6 \text{ ksi} \right)$$

$$\frac{f_a}{F_a} + \frac{f_{bx} + f_{bz}}{F_b} = \frac{0.44}{12.6} + \frac{2.33 + 2.8}{12.6} = 0.44 < 0.6$$

CHECK SHEAR STRESS

Direct shear $f_{vx} = \left(\frac{3}{2}\right) \frac{3}{2 \times 7.28 \times 0.35} = 1.3 \text{ ksi}$

$f_{vz} = \left(\frac{3}{2}\right) \frac{3}{2 \times 7.31 \times 0.35} = 1.3 \text{ ksi}$

Torsional Shear

$$f_{vt} = \frac{M_y}{2bd t} = \frac{32}{2 \times 7.03 \times 7.13 \times \frac{1}{4}} = 1.3 \text{ ksi}$$

Total shear stress = $1.3 + 1.3 = 2.6 \text{ ksi} < F_v = 12.6 \text{ ksi}$
 O.K.

BOLT CHECK (4 - $\frac{3}{4}$ ϕ , A307, preload $T_b = 7.33 \text{ k/bolt}$)

Tension ;
on bolt

$$T = \frac{F_z}{4} + \frac{M_z}{2d_z} + \frac{F_z \left(\frac{L_{\text{bolt}}(F)}{L_{\text{height}}(C)} \right) + \frac{3M_y \left(\frac{L_{\text{bolt}}(F)}{L_{\text{height}}(C)} \right)}{8G}}{4}$$

$$= \frac{3}{4} + \frac{32}{(2)(4)} + \frac{3 \left(\frac{4}{4.5} \right) + \frac{(3)(32)}{(8)(4)} \left(\frac{4}{4.5} \right)}{4}$$

$$= 8.75 \text{ k/bolt} < 9.69 \text{ k/bolt OK}$$

Shear ;
on bolt

Due to the condition of the concave shape of the clamp, the reliability of friction function is expected. So, bolt shear check for empirical equation can be avoided for this particular friction type bolt.



BOLT WITHOUT WASHER

TORQUE FORMULAR SEE AISC ENG. JOURNAL Page 22 JAN
 BOLT ALLOWABLE: (REF.: ASME SECT III, NF: 1980 Edition, 9.413,

SA307 $\Rightarrow S_u = 58 \text{ ksi (300°F)}$

Allow. Tension $F_{tb} = \frac{S_u}{2} = 29 \text{ ksi}$

For $\frac{3}{4} \phi$ Bolt. Allow. Tension = $0.334 \times 29 = 9.69 \text{ ksi}$

CHECK FRICTIONAL FORCE FOR ROTATIONAL CAPACITY

\therefore TOTAL FRICTION FORCE FOR CALC. OF T_b
SEE SHT 4 OF 4 **

$F_1 = 4 (7.33) (0.58) = 17 \text{ K}$ (FOR BOLT TORQUE = 110 FT-LB)

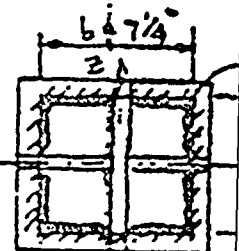
$F_2 = 4 (5.67) (0.58) = 13.15 \text{ K}$ (FOR BOLT TORQUE = 85 FT-LB)

TOTAL FORCE DUE TO M_x & F_x

$P = \left[\left(\frac{M_x}{d} \right)^2 + F_x^2 \right]^{1/2} = \left[\left(\frac{25}{2.35} \right)^2 + 3^2 \right]^{1/2} = 11.1$

$\therefore F_1 = 17 \text{ K} > P = 11.1 \text{ K}$ o.k.
 $F_2 = 13.15 \text{ K} >$

CHECK WELD @ Joint between $L 3\frac{1}{2} \times 3\frac{1}{2} \times \frac{1}{4}$ to the flange of WT 4



$f_w = \left[\left(\frac{F_y}{L_w} + \frac{M_x}{S_{wx}} + \frac{M_z}{S_{wz}} \right)^2 + \left(\frac{F_x}{L_w} + \frac{M_y \cdot z}{J_w} \right)^2 + \left(\frac{F_z}{L_w} + \frac{M_y \cdot x}{J_w} \right)^2 \right]^{1/2}$
 $= \left[\left(\frac{3}{29} + \frac{37.2}{71} + \frac{44.2}{71} \right)^2 + \left(\frac{3}{29} + \frac{32 \times 3.62}{521} \right)^2 + \left(\frac{3}{29} + \frac{32 \times 3.69}{521} \right)^2 \right]^{1/2} = 1.34$

Neglect cross weld
 $L_w = 2(b+d)$
 $S_{wx} = S_{wz} = bd + \frac{b^3 + d^3}{6}$
 $J_w = \frac{(b+d)^3}{6}$

So, req'd fillet weld size = $\frac{1.34}{0.707 \times 11.34} = 0.167" \approx \frac{3}{16}"$

* USING FAULTED ALLOWABLE OF 11.34 KSI PER SEC. 121.1.2 OF ANSI B31.1 (1973)

ATM
 8-28-82

1951

1951

1951

1951



DESIGN BY L. BENSON DATE 7-23-87 CHECKED BY _____ SHEET NO 4 of 4
 PROJECT S.S.E.S. UNIT 1 JOB NO. 8856
 SUBJECT SPA 1312 (STUDY CALCULATION) CALCULATION NO. _____ FILE NO. _____

CONCLUSIONS OF STUDY

BOLTING MATERIAL SA-307 IS ACCEPTABLE FOR USE WITH SPA-1312. ALSO, SINCE THE LOADS USED FOR SPA-1312 ARE LARGER THAN THE LOADS USED FOR SPA-600, SA-307 BOLTING MATERIAL IS ACCEPTABLE FOR USE WITH SPA-600.

* * * CALCULATION OF T_b UTILIZING TORQUE EQUATION FROM AISC ENG. JOURNAL, Pg 26 JAN. 1967

$$T_R = \frac{K T_b D_b}{12} \dots \dots \dots (a)$$

WHERE

T_R = REQUIRED BOLT TORQUE (ft-lb.)

K = FRICTION COEFFICIENT (0.24 - AVERAGE BETWEEN STAINLESS STEEL & UNPLATED STEEL)

T_b = BOLT TENSION (lb.)

D_b = BOLT DIAMETER (in.) - $\frac{3}{4}$ " ϕ BOLT

SOLVING (a) FOR T_b WE HAVE

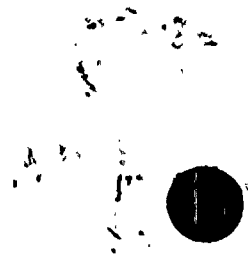
$$T_b = \frac{12 T_R}{K D_b}$$

ASSUMING $T_R = 110$ ft-lb

$$T_b = \frac{(12)(110)}{(0.24)(0.75)} = 7333 \text{ lb.} = 7.33 \text{ K}$$

ASSUMING $T_R = 85$ ft-lb.

$$T_b = \frac{(12)(85)}{(0.24)(0.75)} = 5667 \text{ lb.} = 5.67 \text{ K}$$





CALCULATION COVER SHEET

PROJECT SUSQUEHANNA STEAM ELECTRIC STATION UNIT-1 JOB NO. 8856 DISCIPLINE PLANT DESIGN
SUBJECT WETWELL ATMOS. SAMPLE RETURN FROM FILE NO. -
ANALYZER IC-226A CALC. NO. ABS- 5280
NO. OF SHEETS 1

RECORD OF ISSUES								
NO.	DESCRIPTION	BY	DATE	CHKD	DATE	APPRO	DATE	
<u>0</u>	FINAL AS BUILT RECONCILIATION	<u>EY</u>	<u>5-13-82</u>	<u>M.M</u>	<u>5.13.82</u>	<u>Q.102</u>	<u>5/14/82</u>	
<u>1</u>	REVISED SHEET 1	<u>JH</u>	<u>6-27-82</u>	<u>EY</u>	<u>6-28-82</u>	<u>JH</u>	<u>6-28-82</u>	
<u>△</u>								
<u>△</u>								
<u>△</u>								
<u>△</u>								

1. SK-M- 5280

2. REF : CALC # : 5280

3. ATTACHMENTS :

N/A EY 6-28-82
△ JH 6/27/82



CALCULATION SHEET

Q



ORIGINATOR

Thomas K. Kojima

DATE

4-29-82

CALC. NO.

ABS 5280

REV. NO.

CHECKED

FMQ

DATE

4/29/82

PROJECT

SSES / UNIT 1

JOB NO.

8856

SUBJECT

WETWELL ATMOS. SAMPLE

SHEET NO.

1

1. AS BUILT FAB. ISO. & REV.

ENGINEERING REV.

SP-HCB-108-1 REV 1511SP-HCB-108-2 REV 1491/8/27/82
EY 628-82

2. CONCLUSION OF COMPARISON.

NO DIFFERENCE

MINOR DIFFERENCE*

MAJOR DIFFERENCE**



3. COMMENTS.

1. Dimensions are changed by 1" between H2052
and H2056.

2. SP-HCB-108-2: DIMENSION OF THE 1ST RISER AFTER VALVE SV-15734A

WAS REDUCED FROM 3'-2" TO 2'-0" b. DISTANCE BETWEEN H2001 AND ELBOW
WAS INCREASED BY 3/8". C. DISTANCE BETWEEN H2002 AND ELBOW INCREASED
BY 3/4". D. DISTANCE BETWEEN H2008 AND H2053 INCREASED BY 1/2".

* BY ENGINEERING JUDGMENT NO REANALYSIS IS REQUIRED.

** SEE INSIDE FOR NEW COMMENTS AND CALCULATION.



CALCULATION COVER SHEET

Q

PROJECT SUSQUEHANNA STEAM ELECTRIC STATION UNIT-1 JOB NO. 8856 DISCIPLINE PLANT DESIGN
SUBJECT 1" HCB-108 WETWELL ATMOS SAMPLE FILE NO.
RETURN FROM ANALYZER IC-226A CALC. NO. 5280
NO. OF SHEETS 55

RECORD OF ISSUES

NO.	DESCRIPTION	BY	DATE	CHKD	DATE	APPRD	DATE	PROCEDURAL 2A-OC
△	LEGIBILITY AND PAGES SEQUENCING	JH *	4-2-82	HJ *	4/3/82	LJA	6/5/82	MH 6/9/82
△	REVI COVER SHT SUPERSEDES REV O OLD COVER SHT & REVISED & REPLACED							
△	PAGES 1 & 9 added shts 10 - 55 ADDED ATTACH 1 AND 2 -							
△								
△								
△								

1. STATEMENT OF PROBLEM:

- ☒ WEIGHT
- ☒ THERMAL
- ☒ SEISMIC ANALYSIS
- ☒ SAM
- ☒ PIPE SUPPORT ANALYSIS

2. SOURCES OF DATA

FAB ISO SP-HCB-108-1 REV 11, SP-HCB-108-2 Rev 9
SP-HCB-108-3 Rev 11
SKM 5280

3. ATTACHMENTS

#1: ME 101 COMPUTER RUN AX1017 (608) pages
#2: COMPUTER: MASH MODEL - 3 shts

4. SOURCES OF FORMULAE AND REFERENCES

* For Hgr calcs see
individual shts.

N-199 REV 36
N-241 REV
ASNE SECTION III, 1971, WINTER '72
POWER PIPING CODE B-31.1 1973 ED.
AISC MANUAL OF STEEL CONSTRUCTION 7-TH ED.
ITT GRINNELL CATALOG PH- 74, 79, 81 EDS.
SFP SM ACTIVE REVISION
SPA ACTIVE REVISION



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY Alh...DATE 4/2/82CHECKED BY HSSHEET NO. 1PROJECT SSES / UNIT 1JOB NO. 8856SUBJECT STRESS CALCSCALCULATION NO. 5280

FILE NO. _____

PROB # 5280 HAS BEEN ANALYZED
USING THE ME101 COMPUTER DETAILED
ANALYSIS. ALL STRESSES ARE OK. FOR
FURTHER INFORMATION ON STRESSES AND
HANGER LOADS PLEASE REFER TO ATTACHMENT
#1 (ME101 RUN # X1017).



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY W. H. H. H. H.DATE 4/2/82CHECKED BY HSSHEET NO. 9PROJECT SSES / UNIT 1JOB NO. 8856SUBJECT Dead weight loads / SP-HCB-108-1CALCULATION NO. 5280

FILE NO.

$$\text{LBS/FT} = 2.75$$

H2039

$$F_{\text{SKW}} = \frac{1}{2} \left(4\frac{3}{8} + 14.75 + 10.5 + 4\frac{3}{8} \right) \frac{2.75}{12} + \left(4\frac{3}{8} + 7.25 + 7.75 \right) \frac{2.75}{12} + 20 + 20$$

$$+ \frac{1}{2} \left(18.5 + 18 + 8 \right) \frac{2.75}{12} + \frac{20.25}{12} \times \frac{2.75 \times (18 + 8)}{(18.5 + 18 + 8)} + \left[\left(12\frac{1}{8} + 12\frac{1}{8} + 9\frac{1}{8} \right) \frac{2.75}{12} + 100 \right] \frac{8}{(18.5 + 18 + 8)}$$

$$F_{\text{SKW}} = 75 \text{ lbs}$$

H2041

$$F_y = 62 \text{ lbs AS PER ME 101 COMPUTER RUN}$$

H2040

$$F_y = 68 \text{ lbs AS PER ME 101 COMPUTER RUN}$$

$$F_x = \frac{1}{2} \left(9\frac{1}{8} + 12\frac{1}{8} + 9\frac{1}{8} + 8 \right) \frac{2.75}{12} + \frac{1(3 + 12.75 + 20.25 + 18.5 + 4\frac{3}{8})}{2} \frac{2.75}{12}$$

$$+ 50 \frac{(12\frac{1}{8} + 9\frac{1}{8} + 8)}{(9\frac{1}{8} + 12\frac{1}{8} + 9\frac{1}{8} + 8)} + 50 \frac{(9\frac{1}{8} + 8)}{(9\frac{1}{8} + 12\frac{1}{8} + 9\frac{1}{8} + 8)}$$

$$F_x = 71 \text{ lbs}$$





CALCULATION SHEET

REV 1

DATE 4/5/82

DESIGN BY A. Hanna

DATE 4/2/82

CHECKED BY HY

SHEET NO. 3

PROJECT SSES / UNIT 1

JOB NO. 8856

SUBJECT Dead weight Loads / SP-HCB-108-2

CALCULATION NO. 5280

FILE NO.

H2050

$$F_x = \frac{1}{2} (12.75" + 30" + 38" + 9\frac{1}{8}" + 12\frac{1}{8}" + 9\frac{7}{8}") \frac{2.75}{12} + \frac{50 (12\frac{1}{8} + 9\frac{7}{8})}{(9\frac{7}{8} + 12\frac{1}{8} + 9\frac{1}{8} + 8)} + \frac{50 (9\frac{7}{8})}{(9\frac{7}{8} + 12\frac{1}{8} + 9\frac{1}{8} + 8)}$$

$$F_x = 54 \text{ lbs}$$

$$F_z = \frac{1}{2} (8 + 18 + 18.5 + 4\frac{3}{8}) \frac{2.75}{12} + (9\frac{1}{8} + 12\frac{1}{8} + 12\frac{7}{8}) \frac{2.75}{12} + 10.0$$

$$+ \frac{20.25 \times 2.75}{12} \times \frac{(18.5 + 4\frac{3}{8})}{(8 + 18 + 18.5 + 4\frac{3}{8})} + \frac{(30 + 17\frac{7}{8} + 6\frac{1}{8}) \frac{2.75}{2 \times 12}}{2 \times 12} + \frac{2.5 \times 2.75 \times (17\frac{7}{8} + 6\frac{1}{8})}{(30 + 17\frac{7}{8} + 6\frac{1}{8})}$$

$$F_z = 125 \text{ lbs}$$

H2000

$$F_y = 96 \text{ lbs} \quad \text{AS PER ME101 COMPUTER RUN}$$

H2002

$$F_x = \frac{1}{2} (30 + 30 + 17\frac{7}{8} + 24 + 4.75) \frac{2.75}{12} + 2.75 \times 2.75 \times \frac{(20 + 4.75)}{(4.75 + 24 + 5\frac{1}{8})}$$

$$F_x = 19 \text{ lbs}$$



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY M. J. J. J. DATE 4/2/82 CHECKED BY MJ SHEET NO. 4PROJECT SSES / UNIT 1 JOB NO. 8856SUBJECT DEAD WT LOADS / SP-HCB-108-2 CALCULATION NO. 5280 FILE NO. _____H2001 $F_y = 27 \text{ lbs}$ as per ME101 computer run.

$$F_z = (4.75 + 33 + 17\frac{1}{8} + 30) \frac{2.75}{2 \times 12} + \frac{2 \times 2.75 \times 4.75}{(4.75 + 26\frac{1}{8})}$$

$$F_z = 11 \text{ lbs}$$

H2051

$$F_x = \frac{1}{2} (4.75 + 24 + 5\frac{1}{8} + 38) \frac{2.75}{12} + \frac{2.75 \times 2.75 \times 5\frac{1}{8}}{(4\frac{3}{4} + 24 + 5\frac{1}{8})}$$

$$F_x = 10 \text{ lbs}$$

$$F_z = \frac{1}{2} (4.75 + 26\frac{1}{8} + 38) \frac{2.75}{12} + \frac{2 \times 2.75 \times 26\frac{1}{8}}{(4.75 + 26\frac{1}{8})}$$

$$F_z = 13 \text{ lbs}$$

H2056

$$F_x = F_z = (38 + 54) \frac{2.75}{2 \times 12} = 11 \text{ lbs}$$

H2052

$$F_x = F_z = (54 + 48) \frac{2.75}{2 \times 12} = 12 \text{ lbs}$$



CALCULATION SHEET

REV 1

Q

DATE 4/5/82DESIGN BY A. HannaDATE 4/2/82CHECKED BY HJSHEET NO. 5PROJECT SSIS / UNIT 1JOB NO. 8856SUBJECT Dead wt Loads / SP-HLB-108-2CALCULATION NO. 5280

FILE NO.

H2003

$$F_x = F_z = (48 + 73.5) \times \frac{2.75}{2 \times 12} = 14 \text{ lbs}$$

$F_y = 91 \text{ lbs}$ AS PER ME 101 COMPUTER RUN

H2004

$$F_z = (73.5 + 5 + 29) \frac{2.75}{2 \times 12} = 13 \text{ lbs}$$

$$F_x = (73.5 + 5 + 14 + 50.5) \frac{2.75}{2 \times 12} + \frac{70.25}{12} \times 2.75 = 33 \text{ lbs}$$

H2005

$$F_z = \frac{1}{2} (5 + 29 + 38) \frac{2.75}{12} = 9 \text{ lbs}$$

H2055

$$F_z = \frac{1}{2} (38 + 3.25 + 14 + 50.5) \frac{2.75}{12} = 13 \text{ lbs}$$

H2007

$$F_z = \frac{1}{2} (3.25 + 14 + 50.5 + 4.6) \frac{2.75}{12} = 13 \text{ lbs}$$

$$F_x = \frac{1}{2} (5 + 14 + 50.5 + 4.6) \frac{2.75}{12} + \frac{70.25}{12} \times 2.75 \times \frac{5}{(5 + 14 + 50.5)}$$

$$F_x = 15 \text{ lbs}$$



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY [Signature]DATE 4/2/82CHECKED BY FMSHEET NO. 6PROJECT SSFS / UNIT 1JOB NO. 8856SUBJECT Dead Wt Loads / SP-HCB-108-2CALCULATION NO. 5280FILE NO. H2053

$$F_x = F_z = \left(4.6 + 50.25 \right) \frac{2.75}{2 \times 12} = 11.16 \text{ lbs}$$

H2008

$$F_x = \left(50.25 + 10 + 9 \right) \frac{2.75}{2 \times 12} = 8.16 \text{ lbs}$$

$$F_z = \left(10 + 36 \right) \frac{2.75}{2 \times 12} + \left(17.67 \times 2.75 \right) \frac{36}{(36 + 10)} = 44.16 \text{ lbs}$$

H2009

$$F_y = 33.16 \text{ lbs} \quad \text{AS PER ME 101 COMPUTER RUN}$$

$$F_x = \frac{1}{2} \left(9 + 10 + 39\frac{5}{8} \right) \frac{2.75}{12} = 7.16 \text{ lbs}$$

H2054

$$F_y = 6.16 \text{ lbs} \quad \text{AS PER ME 101 COMPUTER RUN}$$

$$F_x = \frac{1}{2} \left(39\frac{5}{8} + 55\frac{5}{8} \right) \frac{2.75}{12} = 11.16 \text{ lbs}$$

H2010

$$F_y = 17.16 \text{ lbs} \quad \text{AS PER ME 101 COMPUTER RUN}$$

$$F_x = \frac{1}{2} \left(55\frac{5}{8} + 7.8 \right) \frac{2.75}{12} = 16.16 \text{ lbs}$$



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY AdhunaDATE 4/2/82CHECKED BY PMSHEET NO. 7PROJECT SSES / UNIT 1JOB NO. 8856SUBJECT Dead wt Loads / SP-HCB-108-2CALCULATION NO. 5280

FILE NO. _____

H2011 $F_y = 17 \text{ lbs AS PER ME 101 COMPUTER RUN}$

$$F_x = \frac{1}{2} (78 + 29.75 + 6\frac{3}{8}) \frac{2.75}{12} + 18 \times 2.75 \times \frac{6\frac{3}{8}}{(29.75 + 6\frac{3}{8})} = 22 \text{ lbs}$$

H2012 $F_y = 15 \text{ lbs AS PER ME 101 COMPUTER RUN}$

$$F_z = (71\frac{5}{8} + 36 + 10) \frac{2.75}{2 \times 12} + 17.67 \times \frac{2.75 \times 10}{46} = 24 \text{ lbs}$$

H2013 $F_y = 17 \text{ lbs AS PER ME 101 COMPUTER RUN}$

$$F_z = \frac{1}{2} (71\frac{5}{8} + 72.25) \frac{2.75}{12} = 17 \text{ lbs}$$

H2014 $F_y = 13 \text{ lbs AS PER ME 101 COMPUTER RUN}$

$$F_z = \frac{1}{2} (72.25 + 36 + 9) \frac{2.75}{12} + \frac{25}{12} \times \frac{2.75 \times 9}{(36 + 9)} = 15 \text{ lbs}$$

H2015 $F_y = 9 \text{ lbs AS PER ME 101 COMPUTER RUN}$



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY AdhamaDATE 2/2/82CHECKED BY TMSHEET NO. 9PROJECT SSES/UNIT 1JOB NO. 8856SUBJECT Dead WT Loads / SP-HCB-108-2 1/3CALCULATION NO. 5280

FILE NO. _____

$$F_x = \frac{1}{2} (29.75 + 25 + 19.25) \frac{2.75}{12} + \frac{(60.25 + 16 \frac{5}{8}) (19.25)}{(18 \frac{5}{8} + 19.25)} \times \frac{2.75}{12}$$

$$+ 18 \times 2.75 \times \frac{29.75}{(29.75 + 6 \frac{3}{8})}$$

$$F_x = 59 \text{ lbs}$$

H2016

$$F_y = 9 \text{ lbs AS PER ME 101 COMPUTER RUN}$$

$$F_z = (36 + 60.25 + 16 \frac{5}{8} + 19.25) \frac{2.75}{2 \times 12} + \frac{25}{12} \times 2.75 \times \frac{36}{45}$$

$$F_z = 20 \text{ lbs.}$$

H18

$$F_x = (2.75 + 7 + 78 + 16 \frac{5}{8} + 18 \frac{5}{8}) \frac{2.75}{2 \times 12} + \frac{60.25}{12} \times 2.75 \times \frac{18 \frac{5}{8}}{(16 \frac{5}{8} + 18 \frac{5}{8})}$$

$$F_x = 22 \text{ lbs}$$

$$F_z = (2.75 + 78 + 16 \frac{5}{8} + 51.25) \frac{2.75}{2 \times 12} = 17 \text{ lbs}$$



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY ShawDATE 4/2/82CHECKED BY WSHEET NO. 9PROJECT SSES / UNIT 1JOB NO. 8856SUBJECT Dead WT Loads / SP-HL3-108-3CALCULATION NO. 5280

FILE NO. _____

H2030

$$F_x = (58.5 + 2.75 + 7 + 58.75) \times \frac{2.75}{2 \times 12} = 15 \text{ lbs}$$

$$F_z = (58.5 + 2.75 + 58.75) \frac{2.75}{2 \times 12} + \frac{7}{12} \times 2.75 = 16 \text{ lbs}$$

H2037

$$F_x = (58.5 + 9.25 + 11.25 + 10.5 + 14) \frac{2.75}{2 \times 12} + \frac{15}{12} \times 2.75 \times \frac{(10.5 + 14)}{(9.25 + 11.25 + 10.5 + 14)}$$

$$F_x = 14 \text{ lbs}$$

$$F_z = (58.5 + 9.25 + 15 + 10.5 + 14) \frac{2.75}{2 \times 12} + \frac{11.25 \times 2.75}{12} \times \frac{(15 + 10.5 + 14)}{(9.25 + 15 + 10.5 + 14)}$$

$$F_z = 15 \text{ lbs}$$

H2051

$$F_y = 50 \text{ lbs} \quad \text{AS PER ME 101 COMPUTER RUN}$$

H2032

$$F_y = 13 \text{ lbs} \quad \text{AS PER ME 101 COMPUTER RUN}$$

$$F_x = \frac{14}{12} \times 2.75 + \frac{1}{2} (10.5 + 11.25 + 9.25) \frac{2.75}{12} + \frac{15}{12} \times 2.75 \times \frac{(11.25 + 9.25)}{(10.5 + 11.25 + 9.25)}$$

$$F_x = 9 \text{ lbs}$$



CALCULATION SHEET

REV 1

DATE 4/5/82DESIGN BY A. H. H. H.DATE 4/2/82CHECKED BY WJSHEET NO. 10PROJECT SSES / UNIT 1JOB NO. 8856SUBJECT Dead wt Loads / SP-HCB-108-3CALCULATION NO. 5280

FILE NO. _____

$$F_z = \frac{44}{12} \times 2.75 + \frac{1}{2} (10.5 + 15 + 9.25) \frac{2.75}{12} + \frac{11.25}{12} \times \frac{2.75 \times 9.25}{(9.25 + 15 + 10.5)}$$

$$F_z = 8 \text{ lbs}$$

Loads from other side of anchor (see calc 5491)

$$F_x = 25, F_y = 13, F_z = 37$$

Total dead wt Loads:

$$F_x = 34 \text{ lbs}$$

$$F_y = 26 \text{ lbs}$$

$$F_z = 45 \text{ lbs}$$



CALCULATION SHEET

Q
CALC. NO. 5280 REV. NO. 1
CHECKED H. PATEL DATE 4-9-82
JOB NO. 08856
SHEET NO. 11

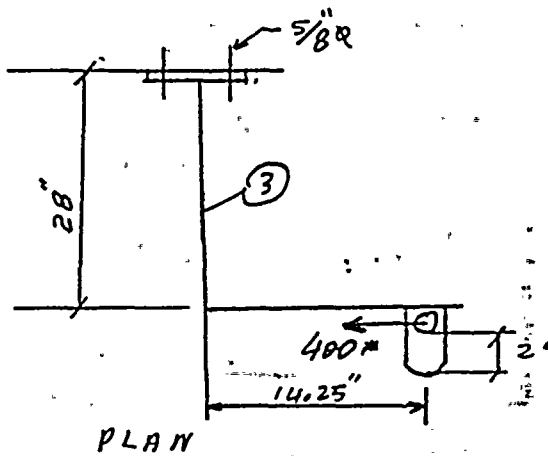
ORIGINATOR A.T. Morrow DATE 4-5-82
PROJECT SSES
SUBJECT PIPE SPS STRUCTURAL SAMPLE CALC'S
SP-HCB-108-H2039

R.O.F.

1
2 H2039 Dead weight
3 $F_x = 75 \#$

5 Design Load
6 $F_x = 400 \#$

8 Installed Hgr Rev OFI



NOTE: 1) IGNORE SMALL
ECCENTRICITIES < 2"
2) SINCE AXIAL MVT $\Delta Y = -1028 \times 1/16$
IGNORE FRICTIONAL
AFFECTS

20 i) CHECK STRESS (at 3 4x4x 3/8)

$$\sigma_b = \frac{400 \times 28}{5.1} = 2196 \text{ PSI} < 18100 \text{ PSI ALLOW} \therefore \text{OK}$$

24 ii) CHECK DEFLECTION UNDER 400# (1/16 MAX.)

$$\delta = \frac{400 \times 28^3}{3EI_{10.2}} = .01 < 1/16 \therefore \text{OK}$$

28 iii) FREQUENCY CHECK (.33 CPS OF .009 IN DEFL) UNDER 75#

$$\delta = \frac{75 \times 28^3}{3EI} = 0.0002 < .009 \therefore \text{OK}$$

32 iv) CHECK BASE PLATE & ANCHORAGE

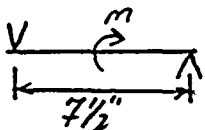
35 DUE TO SYMMETRY it is conservative
36 TO ASSUME SIMPLY SUPPORTED



CALCULATION SHEET

DESIGN BY A.T. DATE 4-6-82 CHECKED BY H. PATEL SHEET NO. 12
 PROJECT SSES JOB NO. 8850
 SUBJECT SP-HCB-108-H2039 CALCULATION NO. 5280 REV 1

RFP'S

H2039 iv cont'da) TENSION DUE TO BENDING MOM $M = 400 \times 28 = 11200 \text{ in-lb}$ 

$$\text{TENSION/BOLT } T = \frac{11200}{2 \times 7.5} = 747 \text{ #/BOLT}$$

$$\text{SHEAR/BOLT } S = \frac{400}{4} = 100 \text{ #/BOLT}$$

INTERACTION $5/8" \text{ R ANCHORS} \rightarrow T_A = S_A = 1600 \text{ #}$

$$T/T_A + S/S_A = 0.53 < 1 \therefore \text{OK}$$

iv. b) CHECK BASE PLATE

$$M_b = 2T \cdot 7.5/2 = 2 \times 747 \times 3.75 = 2809 \text{ in-lb}$$

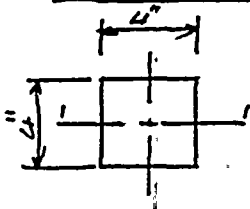
$$S_{\text{PL}} = \frac{10.5 \times (6.5)^2}{12} = 0.438$$

$$\sigma = \frac{M}{S} = \frac{2809}{0.438} = 6413 \text{ PSI} < 19100 \text{ PSI ALLOW} \therefore \text{OK}$$

v) CHECK IF 1 FORMED PL

OK AS PER SPA 552

SPA

vi) CHECK WELDS (CONNECTION OF TS 4x4x1/2 TO BASE PL)

$$A_w = 16 \text{ in}, S_w = 21.3$$

$$F_w = \frac{400}{16} + \frac{400 \times 28}{21.3} = 551 \text{ #/in} < 18 \times 10^3 \times 1/4 \times 707 = 3182 \text{ #/in}$$

ALLOW FOR 1/4 MIN
 $\therefore \text{OK}$

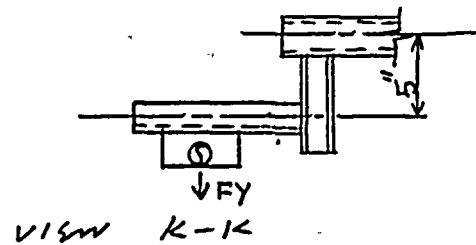
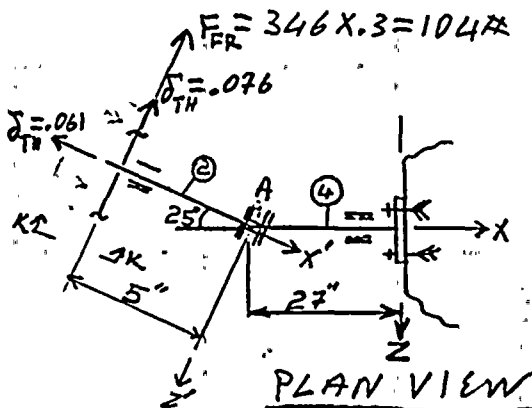


CALCULATION SHEET

DATE 4-9-82DESIGN BY A.T.DATE 4.6.82CHECKED BY H. PATELSHEET NO. 13PROJECT S. S. E. S.JOB NO. 8856SUBJECT SP-HCB-108-H2041CALCULATION NO. 5220REV 1

REF'S

H2041

DWT; $F_y = 62 \#$ DESIGN $F_y = 346 \#$ 

LOAD TRANSFERING (AT CON A ON MUMB (4) assume
FIXED CON.S)

$$F_y = 346 \# \rightarrow M_z = 5 \times 346 = 1730 \text{ in-}\#$$

$$F_z = 104 \# \rightarrow M_y = 104 \times 5 = 520 \text{ in-}\#, M_x = 104 \times 5 = 520$$

TRANSFERING ON XYZ coord.:

$$F_x = F_z \sin 25, F_z = F_z \cos 25, M_x = M_x \cos 25 + M_z \sin 25, M_z = M_x \sin 25 + M_z \cos 25$$

Hence

$F_x = 44 \#$	$M_x = 1202 \text{ in-}\#$
$F_y = 346 \#$	$M_y = 520 \text{ in-}\#$
$F_z = 94 \#$	$M_z = 1788 \text{ in-}\#$



CALCULATION SHEET

Q

DATE 4/9/82DESIGN BY ATDATE 4-8-82CHECKED BY H. PATELSHEET NO. 14PROJECT S.S.F.S.JOB NO. 8856SUBJECT SP-HCB-108-H2041CALCULATION NO. 5280Rev 1
FILE NO.

REP'S

H2041 CONT'D

(i) CHECK STRESS (BOM IT. ④ T.S 4x4x3/8)

$$\sigma_B = \frac{520 + 1788}{5.1} = 453 \text{ PSI no problem!}$$

ignore axial DUE TO small LOAD

ignore TORSION DUE TO SECTION GLOM. & LOW TORQUE

(ii) CHECK DEFLECTIONAT ④ ONLY DUE TO M_Y , M_Z & F_Y others insignificant
RESULT

$$\delta = \frac{1788 \times 27^2}{2E \times 10.2} + \frac{520 \times 27^2}{2E \times 10.2} + \frac{346 \times 27^3}{3E \times 10.2} = .011$$

$$\text{AT APL } \delta = \frac{346 \times 5^3}{3E \times 2.2} + \frac{346 \times 5^2 \times 5}{E \times 10.5} + \frac{104 \times 5^2 \times 5}{GR_{M4 \times 13}} + \frac{104 \times 5^3}{3E \times 10.5} + \frac{104 \times 5^3}{3E \times 2.2} \Rightarrow$$

$\begin{matrix} Y & & Y & & Y \\ .239 & & .15 & & 5.7 \end{matrix}$
 $\begin{matrix} Z & & Z & & Z \\ .015 & & .015 & & .1072 \end{matrix}$

$$\Rightarrow \delta = .006$$

$$\delta_{TOT} = .006 + .011 = .017 \text{ in } < 1/16 \text{ in OK.}$$

(iii) FREQUENCY REQ'T: 33 CPS or .009 in DEFL UNDER
 $F_Y = 62 \#$ CONSERVATIVE
TO SANG

$$\frac{346}{62} = \frac{\delta_{DESIGN}}{\delta_{FR}} \Rightarrow \delta_{FR} \leq \frac{.017}{5.58} = .003 < .009$$

OK



Q

DATE 4/9/82

DESIGN BY

D.T.

DATE

4-8-82

CHECKED BY

H. PASEL

SHEET NO.

15

PROJECT

S.S.E.-S.

JOB NO.

8856

SUBJECT

SP-HCB-108-H2041

CALCULATION NO.

5280

FILE NO.

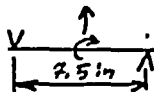
Rev 1

H2041 CONT'D

(iv) CHECK ANCHORAGE

DUE TO SYMMETRY, SEE DET. 1 OF SUP. DWG, CONSERVATIVE TO ASSUME ~~IT~~ SIMPLY SUPPORTED

TENSION/BOLT



$$T = \frac{44}{4} + \frac{520 + 1788 + 346 \times 27 + 94 \times 27}{2 \times 7.5} = 957 \#/\text{BOLT}$$

SHEAR/BOLT (IGNORE SHEAR DUE TO TORQUE)

$$S = \frac{346 + 94}{4} = 110 \#/\text{BOLT}$$

INTERACTION (4) 5/8" ϕ ANCHOR BOLT $\rightarrow T_A = S_A = 1600 \#$

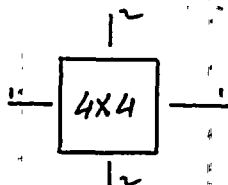
$$\frac{T}{T_A} + \frac{S}{S_A} = 0.667 < 1, \text{ OK}$$

v) CHECK I.T. 1 (FORMED $\frac{1}{4} \times 2"$ FOR 1" ϕ PIPE)

O.K. AS PER SPA 597

SPA

vi) CHECK WELDING (ITEM 4 TO ITEM 7)



$$A_w = 16 \text{ in}, S_w = S_{w2} = 21.3$$

$$F_w = \frac{44 + 346 + 94}{16} + \frac{14188}{21.3} \approx 696$$

1/4 WELD USED
NO PROBLEM



DATE 4-12-82

DESIGN BY

A.T.

DATE

4-8-82

CHECKED BY

ATM

SHEET NO.

16

PROJECT

SSES

JOB NO.

08856

SUBJECT

HGR CALCS

CALCULATION NO.

5280

REV

1

HCB-108
H2040Loading
DWT

$$F_x = 71 \#$$

$$F_y = 68 \#$$

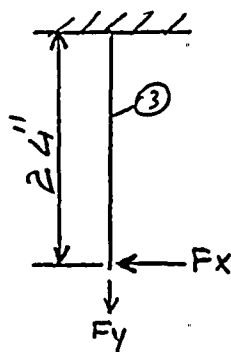
DESIGN

$$F_x = 330 \#$$

$$F_y = 313 \#$$

FOR DIMENS
& CONFIGURATION

SEE SP-HCB-108-H2040

ELEV. VIEWNOTES

1) IGNORE SMALL ECCENTRICITIES OF ABOUT 1" OR LESS.

2) NO THERMAL MVT → NO FRICTION

1) CHECK STRESS (Item 3; 3x3x3/8 WPAK AXIS LOADING) $I = A x^2$

$$\Rightarrow I = 2.11 \times .587^2 = .727 \text{ in}^4$$

$$\sigma_b = \frac{24 \times 330}{.727 / (.888 \times .888)^{1/2}} = 13681 \text{ PSI} < 19100 \text{ PSI ALLOW} \therefore \text{OK}$$

$$K \frac{P}{A} = \frac{2.1 \times 24}{.587} = 86 \rightarrow \sigma_A = 13280 \text{ PSI}$$

$$\sigma_a = \frac{P}{A} = \frac{313}{2.11} = 148 < 13280 \therefore \text{OK}$$

$$\frac{\sigma_a}{\sigma_A} = 0.011 < 0.15 \quad \therefore \quad \frac{\sigma_a}{\sigma_A} + \frac{\sigma_b}{\sigma_B} = .727 < 1 \therefore \text{OK}$$

2) CHECK DEFLECTION

$$\delta = \frac{330 \times 24^3}{3 E 0.727} = .076 > 1/16$$

SUPPORT FAILS DEFLECTION CHECK BY 22%



CALCULATION SHEET

0510 (11-74)

DATE 4-12-82

DESIGN BY A.T.

DATE 4-8-82

CHECKED BY ATM

SHEET NO. 17

PROJECT SSES

JOB NO. 08856

SUBJECT Hqn Colcs

CALCULATION NO. 5280

Rev 1

FILE NO.

REF'S

HCB-108
H2040 cont'd

(i) CHECK FREQUENCY REQUIREMENT (33 CPS or .009 in defl)

$$f = \left(\frac{71 \times 24^3}{35.727} \right)^{1/4} = 0.164 > .009 \dots$$

SUPPORT FAILS FREQUENCY check by 82%

iv) CHECK B.M. at (P) 1/4 x 2 FORMED TE FAT 1/2 PIPE

O.K AS PER SPA-601

SPA

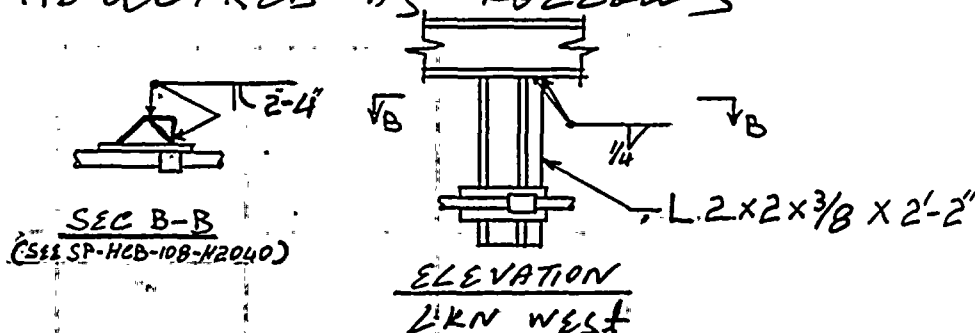
v) CHECK WELDING (ITEM 3 TO EXIST. STEEL)

$$A_w = 6 \text{ in}, S_w = 7.5 \text{ (in)}^2 \text{ (TOP WELDING)}$$

$$F_w = \frac{330 + 313}{6} + \frac{24 \times 330}{7.5} = 1,163 \text{ psi} < 18 \times 10^3 \times .707 \times 1/4 = 3182 \text{ psi}$$

OK

FROM (i) & (ii) FAILURES FIXE OF EXISTING SUPPORT IS REQUIRED AS FOLLOWS



NO FURTHER CHANGES REQ'D. ADDED ANGLE WILL SUPPLY STRUCTURE WITH ENOUGH STIFFNESS TO MEET DEFLECTION & FREQUENCY REQUIREMENTS



9

DATE 4-12-82

DESIGN BY

A.T.

DATE

4-8-82

CHECKED BY

RMM

SHEET NO.

18

PROJECT

SSFS

JOB NO.

8856

SUBJECT

HGR CALCS

CALCULATION NO.

5280

RW
FILE NO.

1

HCB-108

H2050

Loading

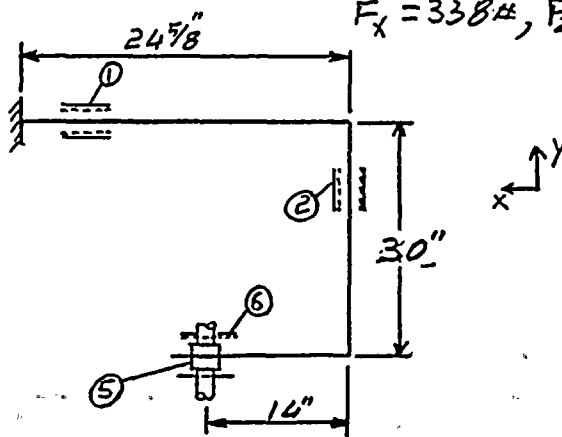
DWT

$$F_x = 54\#, F_z = 125\#$$

DESIGN

$$F_x = 338\#, F_z = 582\#$$

$$mvt \ y = -.019(in)$$



ELEV. DRAWING

1) CHECK STRESS (Item ① TS 4x4x1/8)

$$\text{Bending mom } M = 338 \times 30 + 582 \times 14 + 582 \times 24.6 = 32.6 (in-k)$$

$$\text{Torsional } T = 582 \times 30 = 17.5 (in-k)$$

$$\text{Bending: } \sigma_b = \frac{32.6}{5.1} = 6.4 \text{ ksi} < 18 \text{ ALLOW } \therefore \text{OK}$$

SHEAR DUE TO TORQUE T: MEAN AREA OF A TS 4x4x1/8 $\rightarrow A = (4 - 1/8)^2 = 13.1$

$$\tau = \frac{T}{2Ax} = \frac{17.5}{(2)(13)(.375)} = 1.8 \text{ ksi} < 12.8 \text{ ALLOW } \therefore \text{OK}$$

2) CHECK DEFLECTION

$$\delta_z = \frac{582 \times 14^3}{3EI_{17.6}} + \frac{582 \times 14^2 \times 30}{GR_{17.86}} + \frac{582 \times 30^3}{3EI_{10.2}} + \frac{582 \times 24.6^3}{3EI_{10.2}} + \frac{582 \times 30^2 \times 24.6}{GR_{17.86 \text{ FOR TS 4x4x1/8}}}$$

$$\delta_z = .131$$

DATE 4-12-82DESIGN BY A.T.DATE 4.8.82CHECKED BY ATMSHEET NO. 19PROJECT SS ES Unit 4JOB NO. 8856SUBJECT HGR CALCCALCULATION NO. 5280Rev 1
FILE NO.

H2050

2. cont'd

$$\delta_x = \frac{338 \times 30^3}{3E10.2} + \frac{\overbrace{338 \times 30^2}^{0 \times 30} \times 24.6}{E10.2} = .038 \text{ (in)}$$

~~Ignore δ_y~~

$$\delta_{TOT} = (\delta_x^2 + \delta_y^2)^{1/2} = .136 \times 1/16$$

4. SUPPORT FAILS DEF. check by 118%

3) CHECK FREQUENCYZ-DIR $\delta_z = .028 \text{ in} > .009$ NO GOODX-DIR $\delta_x = .006 \text{ in} < .009$ O.K

4. SUPPORT FAILS FREQUENCY CHECK in Z-DIR BY 211%

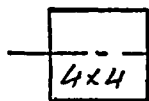
4) CHECK ITEM 5 FORMED IN 1/4x2 FT PIPE

O.K. AS PER SPA 601

SPA

5) CHECK WELDING

CONNECTION ITEM 1 TO EXIST STEEL



$$A_w = 16 \text{ in}, S_w = 21.3, I_w = 85.3$$

$$F_w = \frac{.338 + .582}{16} + \frac{32.6}{21.3} + \left(\frac{17.5 \times 2}{85.3} \right)^2$$

$$F_w = 2.409 < 18 \times .707 \times 1/4 = 3.182 \text{ #/in ALLOW}$$

4. O.K

SUPPORT PENDING FIXING



CALCULATION SHEET

0510 (11-74)

Q

DATE 4-12-82

DESIGN BY

A.T.

DATE

4-8-82

CHECKED BY

A.M.

SHEET NO.

20

PROJECT

SSES UNIT 1

JOB NO.

8856

SUBJECT

HGR CALCS

CALCULATION NO.

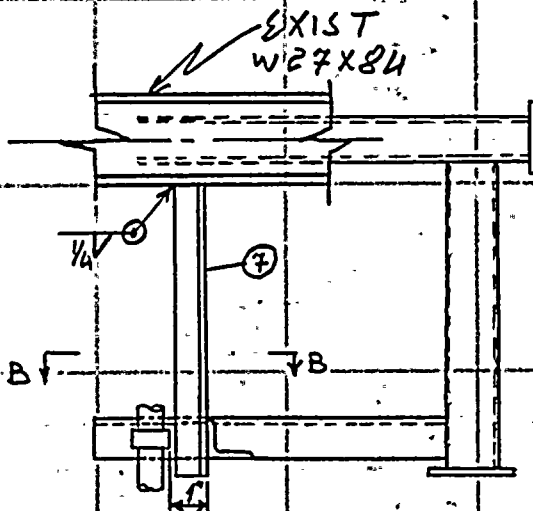
5280

FILE NO.

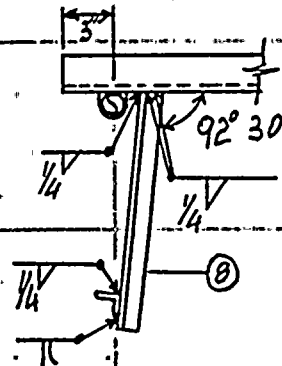
Rev 1

H2050 cont'd

From 2) & 3) we conclude that
SUPPORT STRUCTURE FAIL TO MEET
DEFLECTION & FREQUENCY REQUIREMENTS IN
THE Z DIRECTION. REFOR FIX AS FOLLOWS:

ELEV. LKN S

ADD 1T. ⑦ L3X3X3/8X2'-0" L.G.
& 1T. ⑧ L3X3X3/8X2'-4" L.G.
AS SHOWN

SEC. B-B

ADDED ITEMS AS SHOWN WILL SUPPLY
STRUCTURE WITH ENOUGH STIFFNESS
TO MEET DEFLECTION & FREQUENCY
REQUIREMENT. NO FURTHER CHGS NEEDED.



CALCULATION SHEET

DATE 4-9-82DESIGN BY A.T.DATE 4-6-82CHECKED BY AMSHEET NO. 21PROJECT SSFSJOB NO. 8856SUBJECT HGR CALCSCALCULATION NO. 5280REV 1

PCB-108

H2000

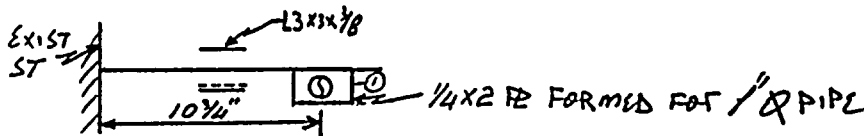
REF'S

LoadingDWT

$$F_y = 96 \#$$

DESIGN

$$F_y = 556 \#$$

ELEV LKN S

1) ITEM ① OK AS PER SPA 567

SPA

2) CHECK L3x3x3/8

$$\sigma_B = \frac{556 \times 10.75}{.833} = 7175 < 18000 \text{ PSI} \therefore \text{OK}$$

$$\left. \begin{array}{l} \text{DEFLECTION} \\ \text{FREQUENCY} \end{array} \right\} \delta = \frac{556 \times 10.7^3}{3 \times 1.76} = .005 < 1/16 \text{ DEFL. ALLOW} \therefore \text{OK}$$

$$.005 < .009 \text{ FREQ. REQ'T} \therefore \text{OK}$$

3) CHECK WELD (L TO EXIST. ST)

$$\text{L3x3} \quad A_w = 6 \text{ in}, S_w = 2.5 \text{ in}$$

$$F_w = \frac{556}{6} + \frac{556 \times 10.75}{2.5} = 2483 < 3182 \#/\text{in ALLOW FOR } 1/4 \text{ WELD}$$

\therefore \text{OK.}



CALCULATION SHEET

0510 (11-74)

Q
DATE 4-9-82

DESIGN BY

A.T.

DATE

4-8-82

CHECKED BY

AYM

SHEET NO.

22

PROJECT

SSES UNIT 4

JOB NO.

8856

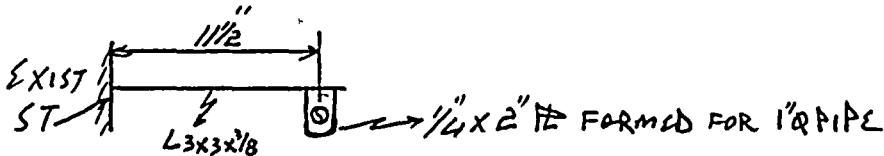
SUBJECT

HGR CALCS

CALCULATION NO.

5280Rev 1

FILE NO.

HCB-108
H2002LoadingDWT $F_x = 19 \text{ k}$ DESIGN $F_x = 87 \text{ k}$ PLANSUPPORT OK AS PER
SPA 572SPA



CALCULATION SHEET

DATE 4-9-82DESIGN BY ATDATE 4-8-82CHECKED BY ATMSHEET NO. 23PROJECT SSES Unit 4JOB NO. 08856SUBJECT HER CALCSCALCULATION NO. 5280FILE NO. Rev I

HCB-108
H2001

Loading

DWT

$$F_y = 274, F_z = 114$$

Design

$$F_y = 253*, F_z = 163*$$

SUPPORT O.K AS PER (SEE)
SPA-623

REF'S

SPA



CALCULATION SHEET

0510 (11-74)

Q

DATE 4-9-82

DESIGN BY

A.T.

DATE

4-8-82

CHECKED BY

PM

SHEET NO.

24

PROJECT

SSSS

JOB NO.

8856

SUBJECT

HGR CALCS

CALCULATION NO.

5280

REV

NO.

1HCB-108H2051

REFS

LoadingDWT $F_x = 10 \#$ $F_z = 13 \#$ Design $F_x = 74 \#$ $F_z = 117 \#$

SUPPORT IS ACCEPTABLE AS
PER (SEE) SPA-624 &/OR 612

SPA



CALCULATION SHEET

DATE 4-9-82

DESIGN BY AT DATE 4-8-82 CHECKED BY ATM SHEET NO. 25

PROJECT SSES JOB NO. 8856

SUBJECT HGR CALLS CALCULATION NO. 5280 RW 1

HCB-108
H2056

Loading

DWT

$$F_x = 11\#$$

$$F_z = 11\#$$

Design

$$F_x = 97\#$$

$$F_z = 131\#$$

SUPPORT O.K AS PER (SEE) SPA-621

REF'S

HCB-108
H2052

Loading

DWT

$$F_x = 12\#$$

$$F_z = 12$$

Design

$$F_x = 186$$

$$F_z = 147$$

SUPPORT O.K AS PER SPA-621

SPA

HCB-108
H2003
(ANCHOR)

Loading (1/2)

	F_x	F_y	F_z	M_x	M_y	M_z
<u>DWT</u>	14	91	14			
<u>Design</u>	57	242	53	80	87	67

SUPPORT O.K AS PER SPA 721A

SPA

SPA



CALCULATION SHEET

Q 0510 (11-74)

DATE 4-9-82DESIGN BY ATDATE 4-8-82CHECKED BY At MoSHEET NO. 26PROJECT SSSSJOB NO. 8856SUBJECT SP-HCB-108CALCULATION NO. 5280FILE NO. RW 1HCB-108
H2004LoadingDWT

$$F_x = 13\#, F_z = 33\#$$

Design

$$F_x = 149\#, F_z = 49\#$$

SUPPORT OK AS PER SPA-621 Δ
& ENGINEERING JUDGMENT

HCB-108
H2005LoadingDWT

$$F_z = 9\#$$

Design

$$F_z = 41\#$$

SUPPORT IS QUALIFIED
AS PER SPA-588 Δ

SPA

HCB-108
H2006SPRINGLoading

$$\text{PIPE (HOT)} \rightarrow 26\#$$

$$\text{MVT} = 3183\downarrow$$

$$\text{HARDWARE} \rightarrow 2.65\#$$

$$\text{H.L.} \approx 28.65\# \text{ B-268 \# "000" INSTALLED}$$

$$R = 7\%, \text{ C.L.} = 27\#, \text{ variability} = 4.5\% \text{ OK}$$

NOTE - SPRING GOES 2" OUT WORKING RANGE
BUT WILL STILL FUNCTION!

SUPPORT STRUCTURALLY ADEQUATE
AS PER SPA-151 Δ

GRINNELL
PH. 79

SPA



CALCULATION SHEET

Q

DATE 4-12-82DESIGN BY ATDATE 4-8-82CHECKED BY ATMSHEET NO. 27PROJECT SSFSJOB NO. 08866SUBJECT HCB CALCSCALCULATION NO. 5280REV 1
FILE NO.

HCB-108

H2055

Loading

DWT

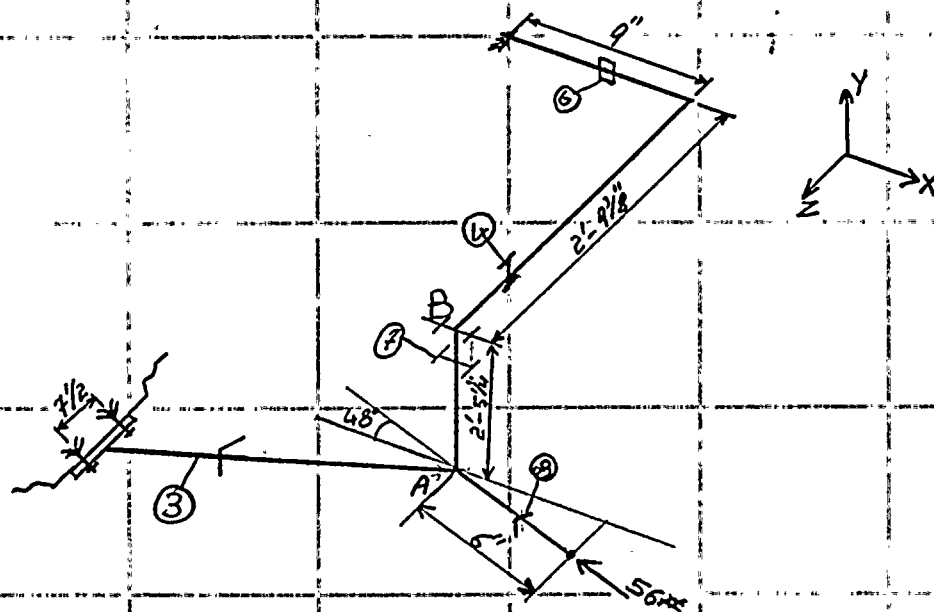
$$F_z = 13 \text{ K}$$

DESIGN

$$F_z = 56 \text{ K}$$

FOT CONFIGURATION & DIM. S SEE
SP-HCB-108-H2055 Δ/F_u CHECK MEMB 3 (UNDER COMPRESSION & BENDING)

$$K L / r = \frac{2 \times 75.5}{.587} = 257 > 200 \therefore L3 \times 3 \times 1/8 \times 6' - 3 1/2 \text{ IS INADEQUATE}$$

SFPSM
AISCASSUME FAILED ANGLE DOES NOT EXIST
THEN CHECK SUPPORT WITHOUT IT (FOLLOWING)



DESIGN BY

D.T.

DATE

4-8-82

CHECKED BY

ATM

SHEET NO.

28

PROJECT

SSES

JOB NO.

SUBJECT

HGR CALCS

CALCULATION NO.

5280

FILE NO.

RW 1

REFS

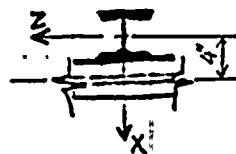
H2055 (cont'd)

1) Load analysis

- Transfer loads AT A (assume fixed con)

$$F_z = 56 \sin 48 \approx 42 \#$$

$$F_x = 56 \cos 48 \approx 38 \#$$

- Transfer loads AT B

(assume fixed con)

$$F_x = 38 \#, F_z = 42 \#$$

$$M_x = F_z (2'-5\frac{1}{4}'') \approx 1229 \text{ in-}\#$$

$$M_y = F_z \times 4 = 168 \text{ in-}\#$$

$$M_z = F_x (2'-5\frac{1}{4}'') \approx 1112 \text{ in-}\#$$

2) Check Stresses (Item 4)

$$\text{- Bending } \sigma_b = \frac{1229 + 168}{5.24} = 267 \text{ PSI} < 18000 \text{ PSI } \therefore \text{OK}$$

$$\text{- Shear Ave. to equal } \tau = \frac{T}{R}$$

$$M 4 \times 13 \quad R = .19 \text{ in}^2$$

$$\tau = \frac{(1112)(.254)}{.19} = 1487 \text{ PSI} < 12800 \text{ PSI allow } \therefore \text{OK}$$

(Along web)

3) Check Deflection

Ø x 29.25

$$\delta_x = \frac{38 \times 29.25^3}{3EI_{10.5}} + \frac{38 \times 33.375^3}{3EI_{10.5}} + \frac{38 \times 29.25^2 \times 33.375}{GR_{4.17}} = .641 \gg \frac{1}{16}$$

∴ NO GOOD

$\delta_y \& \delta_z$ O.K BY Eng Judgment

4)



CALCULATION SHEET

Q

DATE 4-12-82DESIGN BY ATDATE 4-8-82 CHECKED BY ATMSHEET NO. 29PROJECT SSES UNIT 1JOB NO. 8856SUBJECT HGR CALCSCALCULATION NO. 5280 FILE NO. RW 1H2055 (cont'd)

REPS

4) CHECK FREQUENCY (REQUIREMENT \rightarrow 33 CPS AT ω IN ω)DUE TO MASS EQUIVALENT WEIGHT

$$F_x = 13 \cos 48 = 8.7 \approx$$

$$\delta_x = 0.147 \text{ in} \gg 0.009 \therefore \text{NO GOOD}$$

CONCLUSION

SUPPORT NEEDS BE REWORKED,
DUE TO DEFLECTION & FREQUENCY
FAILURES AND FAILURE OF ITEM 3, AS
FOLLOWS: REPLACE ITEM 3 $13 \times 3 \times 3/8$ WITH
TS $4 \times 4 \times 3/8$. ASSUME CONSERVATIVE ALL LOADING
TAKEN BY T.S.. HENCE $\delta = \frac{56(\cos 18)(76)^3}{3E10.2} = .028 \text{ in} < 1/16$

$$\delta = \frac{13(\cos 18)(76)^3}{3E10.2} = .006 < .009$$

FREQUENCY O.K.

DEFL OK

(i) CHECK STRESS $(4 \times 4 \times 3/8) \frac{56 \cos 18(76)}{5.1} = 794 \text{ PSI} < 18 \text{ KSI} \therefore \text{OK}$

(ii) CHECK ANCHOR BOLTS

$$T = \frac{56 \sin 18}{2} + \frac{56 \cos 18(76)}{7.5} = 540 \text{ lb/BOLT}$$

$$S = \frac{56}{2} = 28 \text{ lb/BOLT}, (2) - 5/8 \text{ ANCHORS} \rightarrow T_b = S_b = 1.6 \text{ K} \quad \frac{T}{T_b} + \frac{S}{S_b} = .36 < 1$$

OK

(iii) CHECK BASE PLATE $m = 540 \times 3.5 = 1890, S = \frac{6 \times 5^2}{6} = .25,$

$$\sigma_b = \frac{m}{S} = 7560 \text{ PSI} < 19.1 \text{ KSI} \therefore \text{OK}$$

(v) CHECK WELD IT. 3 TO IT. 2

$$A_w = 16, S_w = 21.3$$

$$F_w = \frac{56}{16} + \frac{56 \times 76}{21.3} = 203 \text{ lb/in}, 1/4 \text{ FILLET WELD, NO PROBLEM}$$



CALCULATION SHEET

DATE 4-9-82DESIGN BY ATDATE 4-8-82CHECKED BY AMSHEET NO. 30PROJECT SSES Unit IJOB NO. 8856SUBJECT HGR CALCSCALCULATION NO. 5250Rev 1

REF'S

HCB-108
H2007

Loading

DWT

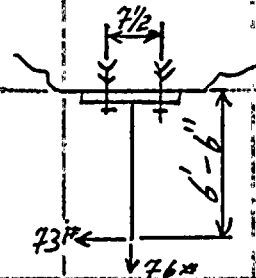
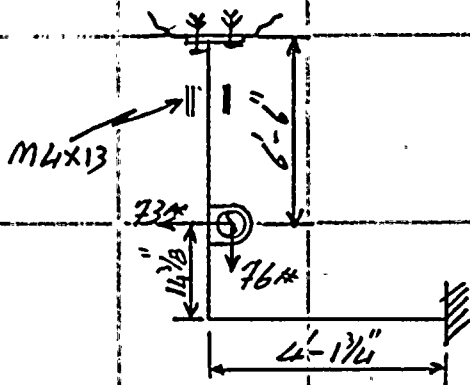
$$F_x = 15 \text{ K}$$

$$F_z = 13 \text{ K}$$

Design

$$F_x = 76 \text{ K}$$

$$F_z = 73 \text{ K}$$



PLAN

PLAN (analysis model)

1) check stress (m4x13)

$$\text{bending } \sigma_b = \frac{M}{S} = \frac{78 \times 73}{5.24} = 1087 \text{ PSI} < 18000 \text{ PSI} \text{ OK}$$

2) check deflection ($\leq 1/16$)

$$\delta = \frac{PL^3}{3EI} = \frac{73 \times 78^3}{3 \times 29 \times 10^6} = .04 < 1/16 \text{ OK}$$

3) check frequency (against .009" defl)

$$\delta_{FR} = \frac{13 \times 78^3}{3EI} = .0071 \text{ in} < .009 \text{ in} \text{ OK}$$



CALCULATION SHEET

Q

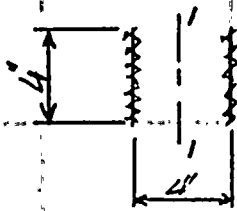
DATE 4-9-82

DESIGN BY AT. DATE 4-8-82 CHECKED BY ATM. SHEET NO. 31

PROJECT SSES Unit 1 JOB NO. 8856

SUBJECT HGR. CALCS CALCULATION NO. 5280 FILE NO. Rev 1

REF'S

H2007 (cont'd)4) check welding

$$A_w = 8 \text{ in}, S_{ww} = 16 \text{ in}^2$$

$$F_w = \frac{73+76}{8} + \frac{78 \times 73}{16} = 375 \text{ psi} < 18 \times 10^3 \times 0.707 \times \frac{1}{2} = 3182 \text{ psi} \quad \text{OK}$$

5) check ANCHORAGE

due to symmetry, conservative to assume as simple suppt

$$\text{— Tension/BOLT } T = \frac{76}{2} + \frac{78 \times 73}{7.5} = 797 \text{ psi/BOLT}$$

$$\text{— Shear/BOLT } S = \frac{73}{2} = 37 \text{ psi/BOLT}$$

— interaction (2) 5/8" Anchor Bolts used $T_n = S_n = 1.6$

$$T/T_n + S/S_n = 0.521 < 1 \quad \text{OK}$$

6) check BASE PL

$$\text{Bending } M = 797 \times 3.75 = 2989 \text{ in-lb}$$

$$S = \frac{6 \times 0.25^2}{6} = 0.391 \text{ in}^3$$

$$\sigma_b = \frac{2989}{0.391} = 7652 \text{ PSI} < 19100 \text{ PSI ALLOW} \quad \text{OK}$$

CONCLUSION SUPPORT O.K. AS PER SIMPLE STRUCTURAL CALC'S



CALCULATION SHEET

0510 (11-74)

DATE 4-9-82

DESIGN BY AT

DATE 4-9-82

CHECKED BY ATM

SHEET NO. 32

PROJECT SSES

JOB NO. 8856

SUBJECT SMALL STRUC. CALCS FOR SIM 5280'S SUP'S

CALCULATION NO. 5280

REV 1

FILE NO. 1

HCB-108
H2053

Loading

DW.T.

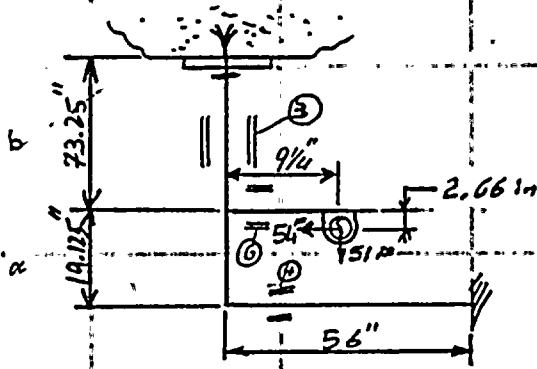
$$F_x = 11\#$$

$$F_z = 11\#$$

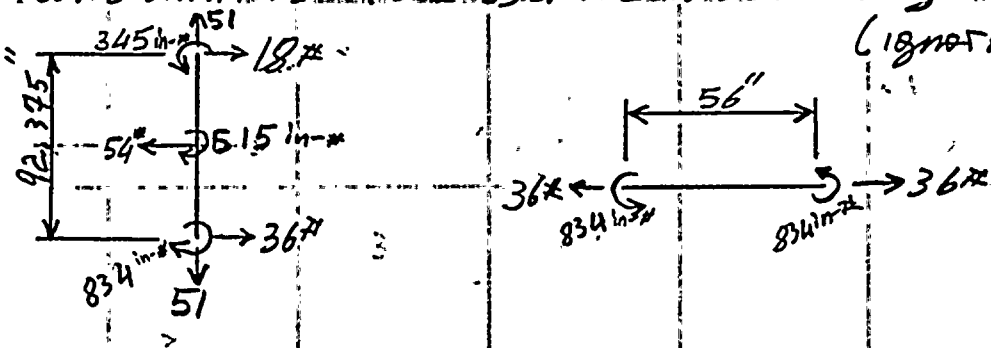
Design

$$F_x = 54\#$$

$$F_z = 51\#$$



CONSERVATIVE TO ASSUME FOLLOWING F.B.D.'S
(IGNORE SIGNS)



1) Check STRESS (memb ③ assume simply sup'd)

$$\text{Bending } M = \frac{54 \times 73.25 \times 19.125}{92.375} + 615 = 1434 \text{ in-}\#$$

$$\sigma_b = \frac{1434}{5.24} \approx 274 \text{ PSI} < 18 \text{ KSI } \checkmark, \text{ OK}$$



CALCULATION SHEET

0510 (11-74)

Q

DATE 4-9-82DESIGN BY A.T. DATE 4-9-82 CHECKED BY AM SHEET NO. 33PROJECT SSSS JOB NO. 08856SUBJECT SAMPLE STRUC. CALC'S FOR SKM 5280'S SUPS CALCULATION NO. 5280 REV 1 FILE NO.

REF'S

H2053 cont'd2) CHECK DEFLECTION & FREQUENCY (in SUPPORTING DIRECTION)

$$\text{DEFL: } \delta_{\max} \leq 1/16 \quad \text{FREQ: } f_{\max} \leq .009$$

DUE TO LOW Loading (SEE PREVIOUS PAGE) & SUP. CONFIGURATION
DEFLECTION & FREQ O.K. NO CORR. REQ'D

3) BOLTS & WELDING O.K. AS PER ABOVE REASONING.



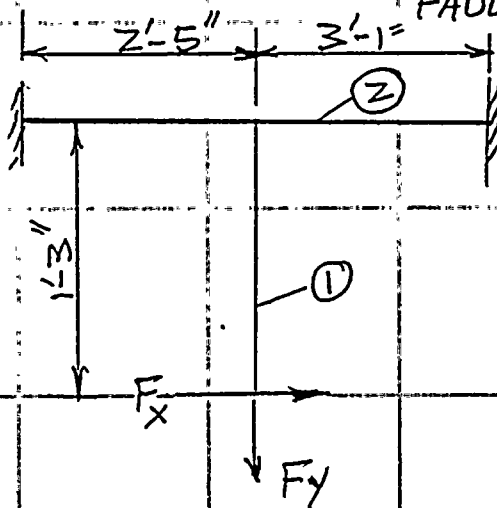
Q

DATE 4/12/82

DESIGN BY S.N. Reddy DATE 4/9/82 CHECKED BY H. Patel SHEET NO. 1

PROJECT SSES JOB NO. 34

SUBJECT SP-HCB-108-H2009 CALCULATION NO. 5280 Rev 1 FILE NO.

EFF. LOADS (W_{ep}) $\frac{F_x}{7\#}$ $\frac{F_y}{33\#}$ DESIGN LOADS: UPSET 5[#] 138[#]
EMERG. 21 165
FAULT. 21 165

MEM. ① L 3x3x3/8

$$M = 21 \times 15 = 315 \text{ ''\#}$$

$$\text{AXIAL LOAD} = 165 \text{ \#}$$

$$f_a = 165 / 2.11 = 78 \text{ psi}$$

$$f_b = 315 / 0.833 = 378 \text{ psi}$$

$$\text{MAX NORMAL} = 456 \text{ psi} < F_b = 19.1 \text{ ksi}$$

MEM. ② M4x13

$$M = \frac{165 \times 29 \times 37}{66} \text{ \#IN} \approx 3000 \text{ \#IN}$$

Q
DATE 4/12/82

DESIGN BY S.N. Reddy DATE 4-9-82 CHECKED BY H. PATEL SHEET NO. 35
 PROJECT SSES JOB NO. 8856
 SUBJECT SP-HCB-108-H2009 CALCULATION NO. 5280 Rev 1
 FILE NO.

$$AXIAL = 21 \#$$

$$f_a = \frac{21}{3.81} = 6 \text{ PSI}$$

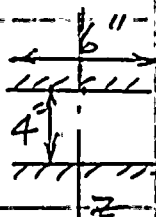
$$f_b = 3000 / 5.24 = 573 \text{ PSI}$$

$$579 \text{ PSI}$$

WELD BET. MEM ① & ②

$$A_w = 2 \times 6 = 12 \text{ IN.}$$

$$S_z = 6^2 / 3 = 12 \text{ IN}^2$$



MAX. STRESS IN THE WELD

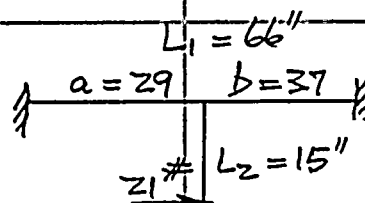
$$165/12 + 315/12 = 40 \#/\text{IN.}$$

$\frac{1}{4}$ " FILLET WELD D.K

OTHER WELDS D.K BY COMPARISON

CHECK DEFLECTION

X-DIR.



$$K_x = \frac{3EI, I_z L_1^3}{L_z^2 [3abI_z (L_1^2 - 3aL_1 + 3a^2) + I_z L_1^3 L_z]}$$

$$K_x = \frac{3 \times 27.4 \times 10^6 \times 10.5 \times 1.76 \times 66^3}{15^2 \left[\underbrace{3 \times 29 \times 37 \times 1.76}_{5665} \left(\underbrace{66^2 - 3 \times 29 \times 66 + 3 \times 29^2}_{1137} \right) + 10.5 \times 66^3 \times 15 \right]} = 4586620$$



Q

DATE 4/12/82DESIGN BY S.N. Reddy DATE 4-9-82 CHECKED BY H. PATEL SHEET NO. 36PROJECT SS ES JOB NO. 8856SUBJECT SP-HCB-108-H2009 CALCULATION NO. 5280 Rev 1
FILE NO.

$$K_x = 37,528 \text{ \#/IN.}$$

FREQUENCY

$$F_x = 3.13 \left(\frac{K}{W_e} \right)^{1/2}$$
$$= 3.13 \left(\frac{37,528}{7} \right)^{1/2} = 229 \text{ CPS}$$

Y-DIR.

$$\text{DEFLN. } \Delta_y = \frac{PL}{AE} + \frac{Pa^2b^2}{3EIL}$$
$$= \frac{33 \times 15}{2.11 \times 27.4 \times 10^6} + \frac{33 \times 29^2 \times 37^2}{3 \times 27.4 \times 10^6 \times 10.5 \times 66}$$
$$= 0.0007" < 0.009"$$

F_y 7 33 CPS

SUPPORT DESIGN IS O.K

REF

SFPSM

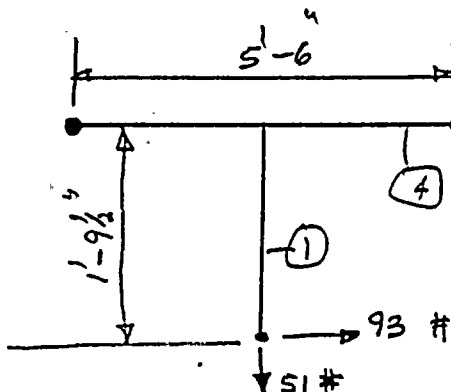


CALCULATION SHEET

Q

ORIGINATOR MADAN ARORA DATE 4-11-82 CALC. NO. 5280 REV. NO. 1
 PROJECT SSBS JOB NO. 8856 CHECKED MM DATE 4-12-82
 SUBJECT SP-HCB-108-1 SHEET NO. 37

H-2010 0/FB



ITEM # 4.

LOADS $F_x = 93 \#$
 $F_y = 51 \#$

ASSUME LOAD AT CENTRE OF ITEM # 4 (CONS.)

$$\text{MAX STM.} = \frac{51 \times 66}{4} + 93 \times 21.5 = 2841 \#$$

$$f_b = \frac{2841}{5.24} = 542 \text{ PSI} < 1910$$

$$\text{COMP. } f = \frac{93}{3.81} = 24.4 \text{ PSI}$$

$$\text{NORMAL STRESS} = 542 + 24.4 = 566.4 \text{ PSI} < 1910 \text{ OK.}$$

ITEM # 1

$$\text{MAX. MOMENT} = 93 \times 21.5 = 1920 \#$$

$$\text{NORMAL STRESS} = \frac{1920}{.833} + \frac{51}{2.11} = 2329 \text{ PSI} < 1910 \text{ PSI}$$

STIFFNESS

OK.

MAX DEFLECTION

DEAD WT.

$$F_x = 16 \#$$

$$F_y = 17 \#$$

$$\Delta_y = \frac{17 \times 66^3}{48 \times 27.4 \times 10^6 \times 10.5} + \frac{16 \times 66^2 \times 16 \times 21.5}{124.71 \times 27.4 \times 10^6 \times 10.5} + \frac{17 \times 21.5}{2.11 \times 27.4 \times 10^6}$$

$$= .0004 < .009 \text{ OK.}$$

$$\Delta_x = \frac{16 \times 21.5^3}{3 \times 27.4 \times 10^6 \times .984} = .002 < .009$$

$$\text{OK.}$$



CALCULATION SHEET

CALC. NO. 5280 REV. NO. 1ORIGINATOR MADAN ARORA DATE 4-11-82 CHECKED APM DATE 4-12-82PROJECT SSS JOB NO. 8856SUBJECT SP-HCB-108 SHEET NO. 38

H-2010.

FOR ITEM # 1 2 & 3

COMPARE SPA 617 LOADS

ALLOWABLE LOADS F_x & $F_y = 300 \text{ \#}$

WHICH ARE MORE THAN 51 & 93 \#

∴ O.K.

ITEM # 5 IS O.K. PER SFPM



CALCULATION SHEET

CALC. NO. 5280 REV. NO. 1

ORIGINATOR S.K. MODY DATE 4/9/82 CHECKED ATM DATE 4-9-82

PROJECT SSFS JOB NO. 8856

SUBJECT HCB-108-1 SHEET NO. 39

H2011

DESIGN LOADS

$$F_x = 191 \#$$

$$F_y = 33 \#$$

$$F_z \text{ (FRICTION)} : -3(22 + 17 + 116) \quad \text{CONSERVATIVE}$$

$$= 47 \#$$

ITEM # 1, 2, 3, 5 & 6 O.K. PER SPA - 623.

CALC. FOR ITEM # 4

M4X13

$$S_x = 5.24$$

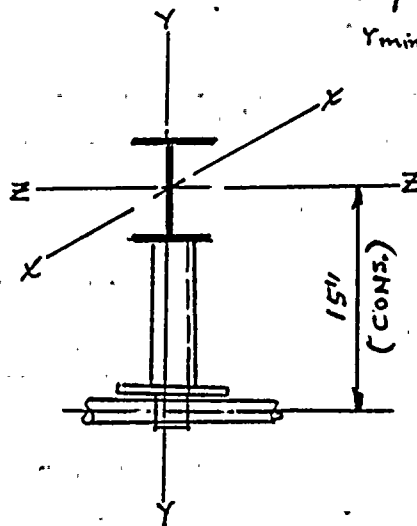
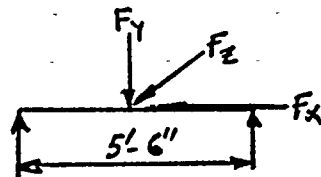
$$S_y = 1.71$$

$$A = 3.81$$

$$I_x = 10.5$$

$$I_y = 3.36$$

$$r_{min} = .939$$



$$F_x' = 191 \# \text{ SAY } .2K$$

$$F_y = 33 \# \text{ SAY } .04K$$

$$F_z = 47 \# \text{ SAY } .05K$$

$$M_x = .05 \times 15 = .75 K''$$

$$M_y = \frac{.05 \times 66}{4}$$

$$= .825 K''$$

$$M_z = \frac{.04 \times 66}{4} + .2 \times 15$$

$$= .96 K''$$

$$\frac{Kl}{r} = \frac{1 \times 66}{.939}$$

$$\approx 70$$

$$\therefore F_a = 14.76 \text{ KSI}$$



CALCULATION SHEET

Q

ORIGINATOR S. K. ModyDATE 4/9/82CALC. NO. 5280REV. NO. 1PROJECT SSESCHECKED ATMDATE 4-9-82SUBJECT HCB-108-1JOB NO. 8856SHEET NO. 40H 2011 (CONT.)

$$\frac{f_a}{F_a} = \frac{.04}{3.81}$$
$$= .01 \text{ ksi}$$

$$\frac{f_a}{F_a} = \frac{.01}{14.76}$$
$$= .0007 \text{ NEGLIGIBLE.}$$

$$f_{by} = \frac{.825}{1.71}$$
$$= .483 \text{ ksi}$$

$$f_{bz} = \frac{.96}{5.24}$$
$$= .183 \text{ ksi}$$

$$\frac{f_a}{F_a} + \frac{f_{by}}{F_{by}} + \frac{f_{bz}}{F_{bz}}$$
$$= .0007 + \frac{.483}{19.1} + \frac{.183}{19.1}$$
$$= .036 < 1.0 \therefore \text{O.K.}$$

TORSION

$$\text{SHEAR DUE TO TORSION} = \frac{Tt}{R}$$
$$= \frac{.75 \times .371}{.19}$$
$$= 1.46 \text{ ksi}$$

$$\text{TOTAL SHEAR} = 1.46 + \frac{.04 + .05}{.254 \times 4} \text{ (CONS.)}$$
$$= 1.55 \text{ ksi} < 12.80 \text{ ksi} \therefore \text{O.K.}$$

BLODGETT



CALCULATION SHEET

①

ORIGINATOR S.K. MODY DATE 4/9/82 CALC. NO. 5280 REV. NO. 1
 PROJECT SSES CHECKED AYH DATE 4-9-82
 SUBJECT HCB-108-1 JOB NO. 8856
 SHEET NO. 41

H2011 (CONT.)

WELD OF ITEM #4 TO EXIST. STEEL O.K. BY INSPECTION.

FREQUENCY

D.L. - $F_y = 17^{\#}$ SAY .02K
 $F_x = 22^{\#}$

$$\Delta_y = \frac{PL}{AE} + \frac{PL^3}{48EI} \quad \begin{matrix} L = 3 \times 3 \times \frac{3}{8} \\ I = 1.76 \\ A = 2.11 \end{matrix}$$

$$= \frac{.02 \times 15}{2.11 \times 27400} + \frac{.02 \times 66^3}{48 \times 27400 \times 10.5}$$

$$= \boxed{.0004'' < .009''} \quad \therefore \text{O.K.}$$

$$\Delta_x = \frac{PL^3}{3EI} + \frac{M_0 L^2}{124.71 EI} \quad (\text{CONSERVATIVE})$$

$$= \frac{.022 \times 15^3}{3 \times 27400 \times 1.76} + \frac{.96 \times 66^2}{124.71 \times 27400 \times 10.5}$$

$$= \boxed{.00063'' < .009''} \quad \therefore \text{O.K.}$$

BLODGETS



CALCULATION SHEET

CALC. NO. 5280 REV. NO. 1ORIGINATOR MADAN ARORA DATE 4-9-82 CHECKED AM DATE 4-9-82PROJECT SSES JOB NO. 8856SUBJECT SP-HCB-108- SHEET NO. 42

H-2012 Rev. 0/F2.

LOADS.

$$F_z = 172 \#$$

$$F_x = 30 \#$$

HGR IS IDENTICAL TO SPA 611.

ALLOWABLE LOADS. $F_x = F_y = 460 \# > 172 \#$

∴ O.K.



CALCULATION SHEET

Q

CALC. NO. 5280 REV. NO. 1

ORIGINATOR S.K. MODY DATE 4/9/82 CHECKED ATM DATE 4-9-82

PROJECT SSES JOB NO. 8856

SUBJECT HCB-108-1 SHEET NO. 43

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H 2013

DESIGN LOADS

$$F_y = 31^\#$$

$$F_z = 89^\#$$

SUPPORT IS O.K. PER SPA-621.



CALCULATION SHEET

Q

ORIGINATOR S.K. Moody

DATE 4/9/82

CALC. NO. 5280

REV. NO. 1

CHECKED ATM

DATE 4-9-82

PROJECT SSES

JOB NO. 8856

SUBJECT HCB-108-1

SHEET NO. 44

H2014

SUPPORT O.K. PER SPA 621 (REV. 4)
SPA 623 (REV. 3)

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- 36



CALCULATION SHEET

Q

CALC. NO. 5280 REV. NO. 1

ORIGINATOR S.K. MODY DATE 4/9/82 CHECKED ATM DATE 4-9-82

PROJECT SSES JOB NO. 8856

SUBJECT HCB-108-1 SHEET NO. 45

H 2015

DESIGN LOADS

$F_x = 372 \#$

$F_y = 26 \#$

SUPPORT IS O.K. BY COMPARISON WITH SPA-621
& BY ENGINEERING INSPECTION. (REV. 4)



CALCULATION SHEET

Q

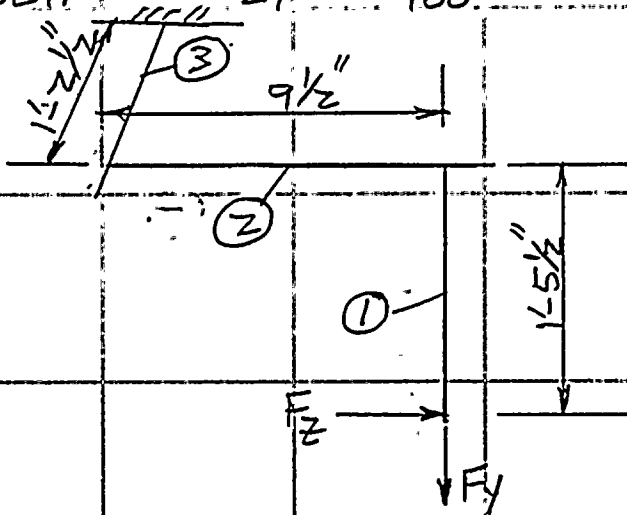
DATE 4-12-82

DESIGN BY S.N. Reddy DATE 4-9-82 CHECKED BY AMM SHEET NO. 46

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-108-H2016 CALCULATION NO. 5280 Rev. 1 FILE NO.

EFF. LOADS	$\frac{F_y}{9 \#}$	$\frac{F_z}{20 \#}$
DESIGN LOADS:		
UPSET	23	29
EMER.	27	100
FAULT.	27	100



ELEV.

MEM. ① TS 3x3x1/4

$$I = 3.16$$

$$AXIAL = 27 \#$$

$$11 \#$$

$$M = 100 \times 17.5 = 1750$$

$$f_a = \frac{27}{2.59} = 10 \text{ psi}$$

$$f_b = 1750 / 2.1 = 833 \text{ psi}$$

$$943 \text{ psi} < 19100 \text{ psi}$$

TS 3x3x1/4 O.K.

MEM. ② TS 4x4x3/8

$$A = 4.95$$

$$I = 10.2$$

$$S = 5.10$$



Q

DATE 4-12-82

DESIGN BY S.N.Reddy

DATE 4-9-82

CHECKED BY AYM

SHEET NO. 47

PROJECT SSES

JOB NO. 8856

SUBJECT SP-HCB-108-H2016

CALCULATION NO. 5280

Rev 1

FILE NO.

$$AXIAL = 100 \text{ \#}$$

$$M = 1750 + 27 \times 9.5 = 2007 \text{ \#}$$

$$f_a = 100/4.95 = 20 \text{ psi}$$

$$f_b = 2007/5.1 = 394 \text{ psi}$$

$$414 \text{ psi} < 19100$$

MEM. ③ TS 4x4x3/8

$$M_T = 2007 \text{ \#}$$

$$M_z = 27 \times 14.5 = 392 \text{ \#}$$

$$M_y = 100 \times 14.5 = 1450 \text{ \#}$$

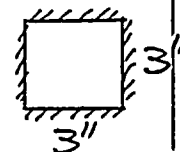
$$f_b = (1450 + 392)/5.1 = 362 \text{ psi} < 19100$$

WELD BET. MEM ① & ②

$$A_w = 3 \times 4 = 12 \text{ in.}$$

$$S = 3 \times 3 + 3^2/3 = 12 \text{ in}^2$$

MAX. STRESS IN THE WELD



$$\frac{27}{12} + \frac{1750}{12} = 148 \text{ \#/in.}$$

1/4" FILLET WELD O.K

OTHER WELDS O.K BY COMPARISON



CALCULATION SHEET

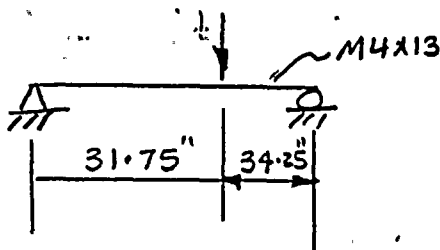
Q
CALC. NO. 5280 REV. NO. 1
ORIGINATOR H. PATEL DATE 4-12-82 CHECKED AYM DATE 4-14-82
PROJECT S.S.E.S. JOB NO. 8856
SUBJECT SP-HCB-108-H2054 SHEET NO. 49

DEAD WT. $\begin{cases} F_x = 11 \# \\ F_y = 6 \# \end{cases}$

DESIGN LOADS
 $F_x = 58 \#$
 $F_y = 50 \#$

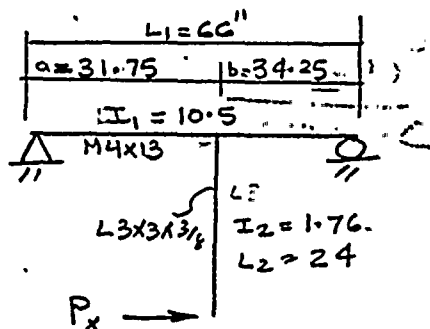
FREQUENCY CHECK. (33 CPS OR $\Delta \leq .009$).

Y-DIRECTION.



$$\Delta_y = \frac{.006(66)^3}{48(27400)(0.5)} = 0.00012 < .009 \therefore \text{OK}$$

X DIRECTION.



$$\Delta = \frac{P_x L_2^2 [3I_2 (\frac{L_1}{2} + \frac{a^2}{L_1} - a) + L_2 I_1]}{3EI_1 I_2}$$

$$= \frac{.011(24)^2 [3(1.76) \{ \frac{66}{2} + \frac{31.75^2}{66} - 31.75 \} + 24(10.5)]}{3(27400)(10.5)(1.76)}$$

$$= .001 < .009 \therefore \text{FREQUENCY IS OK.}$$

ITEM 3

L 3x3x3/8

$$A = 2.11 \text{ in}^2 \quad I = 1.76 \quad S = .833 \text{ in}^3$$

BENDING

$$\sigma_b = M / S_x = \frac{58(24)}{.833} = 1671 \text{ PSI}$$

$$< F_b = 19.1 \text{ ksi} \therefore \text{OK}$$



CALCULATION SHEET

0510 (11-74)

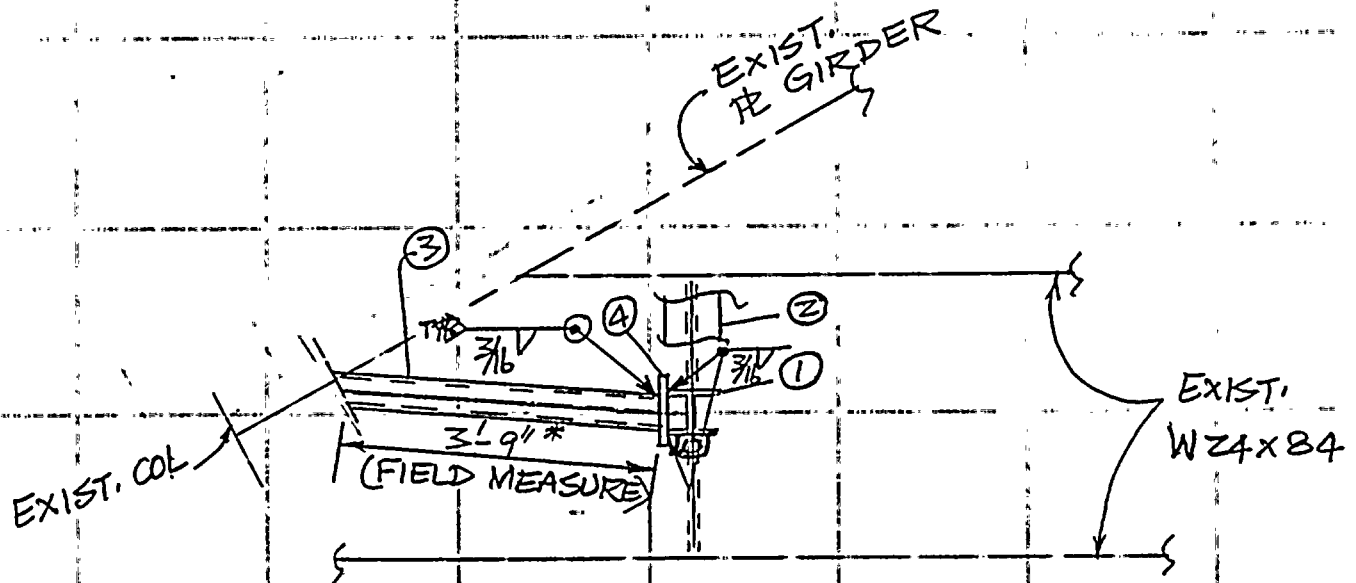
Q

DATE 4/12/82

DESIGN BY S.N. Reddy DATE 4-11-82 CHECKED BY AYM SHEET NO. 51

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-108-H2008 CALCULATION NO. 5280 Rev 1



N ←

PLAN

ITEM

DESCRIPTION

3

TS 3x3x1/4x4'-0" LG. (CUT TO SUIT)

SA-36

4

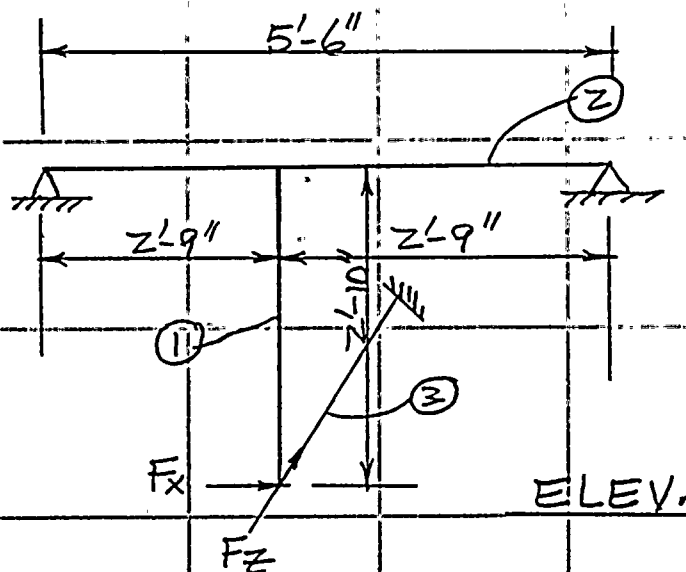
PL 5x5x1/2

SA-36

NOTE: MEM (2) FAILED IN STRESS (WARPING TORSION)
SUPPORT FAILED IN FREQUENCY CHECK

DATE 4-12-82DESIGN BY S.N. ReddyDATE 4-11-82 CHECKED BY ATMSHEET NO. 52PROJECT SSESJOB NO. 8856SUBJECT SP-HCB-108-H2008CALCULATION NO. 5280Rev 1
FILE NO.

EFF. LOADS	F_x 8 #	F_z 44 #
DESIGN LOADS:		
UPSET	6 #	205 #
EMERG.	40	381
FAULT	40	381



MEM. ① M4x13

$$I_x = 10.5$$

$$S_x = 5.24$$

$$I_y = 3.36$$

$$S_y = 1.71$$

ASSUME ALL THE LOAD APPLIED IN THE Z-DIR.
IS ENTIRELY RESISTED BY THE MEM. ③ (NEW
MEMBER ADDED). ALSO ASSUME MEM ① & 2
RESIST THE LOAD APPLIED IN X-DIRECTION ONLY

$$M_x = 40 \times 34 = 1360 \text{ " #}$$

$$f_b = 1360 / 5.24 = 260 \text{ psi} < 19100$$

O.K



CALCULATION SHEET

Q

DATE 4-12-82

DESIGN BY S. N. Reddy

DATE 4-11-82

CHECKED BY ATM

SHEET NO 53

PROJECT SSES

JOB NO 8856

SUBJECT SP-HCB-108-H2008

CALCULATION NO. 5280

Rev 1

FILE NO.

BY COMPARISON MEM (2) STRESSES WILL
BE VERY SMALL.

W6x15.5 O.K.

MEM (3) TS 3x3x1/4

$$\text{LOAD} = 381 \#$$

$$f_a = \frac{381}{2.59} = 136 \text{ psi}$$

$$\frac{Kl}{r} = \frac{2.1 \times 45}{1.1} = 86$$

$$F_a = 13280 \text{ psi} > 136$$

TS 3x3x1/4 O.K

WELD BET. MEM (1) & (2)

$$\text{FORCE IN THE WELD} = \left[\left(\frac{1360}{10.35} \right)^2 + \left(\frac{40}{20.79} \right)^2 \right]^{1/2}$$

$$= 132 \#/\text{IN} < 3180$$

1/4" FILLET WELD ALL AROUND O.K

OTHER WELDS & CONN. OK BY
COMPARISON



CALCULATION SHEET

CALC. NO. 5280 REV. NO. 1ORIGINATOR MADAN ARORA DATE 4-9-82 CHECKED ATA DATE 4-9-82PROJECT SSES JOB NO. 8856SUBJECT SP-HCB-108 - SHEET NO. 55H-18 Rev. 9/F₂

LOADS

MAX LOADS $F_x = 99 \#$ $F_z = 100 \#$

HGR IS IDENTICAL WITH SPA 623 IN ELEVATION.

ALLOWABLE LOADS $F_x = 440 \# > 99 \#$ $F_z = 440 \# > 100 \#$

∴ O.K.

NOTE ITEM # 2 (M 4x13) IS STRONGER
THAN SPA : MEM. L 4x4 1/2 ∴ O.K.



CALCULATION SHEET

DATE 4-12-82

DESIGN BY

S.N. Reddy

DATE

4-11-82

CHECKED BY

ATM

SHEET NO

54

PROJECT

SSES

JOB NO

8856

REV

1

SUBJECT

SP-HCB-108-H2008

CALCULATION NO.

5280

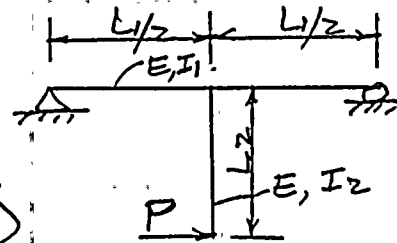
FILE NO.

FREQUENCY CHECKZ-DIR.

$$\Delta_z = \frac{PL}{AE} = \frac{381 \times 45}{2.59 \times 27.4 \times 10^6}$$

$$= 0.00024" < 0.009$$

O.K

X-DIR

$$K = \frac{12EI_1I_2}{L_2^2(L_1I_2 + 4L_2I_1)}$$

$$K = \frac{12 \times 27.4 \times 10^6 \times 10.5 \times 30.1}{34^2(66 \times 10.5 + 4 \times 34 \times 30.1)}$$

$$= 18,780 \text{ #/IN.}$$

$$F_{fz} = 3.13 \left(\frac{K}{W} \right)^{1/2}$$

$$= 3.13 \left(\frac{18780}{40} \right)^{1/2} = 68 \text{ cps} > 33$$

O.K



PROJECT SUSQUEHANNA STEAM ELECTRIC STATION UNIT-1 JOB NO. 8856 DISCIPLINE PLANT DESIGN
SUBJECT FOR SUPPRESSION POOL WATER LEVEL FILE NO. -
INSTRUMENTATION CALC. NO. ABS -5499
NO. OF SHEETS 1

RECORD OF ISSUES

NO.	DESCRIPTION	BY	DATE	CHKD	DATE	APPRO	DATE
0	FINAL AS BUILT RECONCILIATION	SL	4/29/82	Wm	4/29/82	Wm	4/29/82
1	CHANGED FINAL AS BUILT FAB. ISO. REV.	SL	6-4-82	Wm	6-9-82	Wm	6-9-82
2	CHANGED FAB. ISO. REVISION.	GM	7/7/82	TNC	7/7/82	Wm	7/9/82

1. SK-M- 5499

2. REF : CALC # : 5499

3. ATTACHMENTS :

N/A

100-100-100





CALCULATION SHEET

CALC. NO. ABS-5499 REV. NO. 1ORIGINATOR JML DATE 4-13-82 CHECKED M. CHAUDHRY DATE 4-15-82PROJECT SSES / UNIT 1 JOB NO. 8856SUBJECT FOR SUPPRESSION POOL WATER LEVEL SHEET NO. 1

INSTRUMENTATION

1. AS BUILT FAB. ISO. & REV.

ENG'G REV.

SP-HCB-133-3 REV. 83E1SP-HCB-133-2 REV. 82SD/ENC 1/7/824E17/7/82SP-HCB-133-1 REV. 169E1

2. CONCLUSION OF COMPARISON.

NO DIFFERENCE

MINOR DIFFERENCE*

MAJOR DIFFERENCE**



3. COMMENTS.

HCB-133-H4 IS RELOCATED 1/2" SOUTH

* BY ENGINEERING JUDGMENT NO REANALYSIS IS REQUIRED.

** SEE INSIDE FOR NEW COMMENTS AND CALCULATION.

CALCULATION COVER SHEET



①

PROJECT SUSQUEHANNA STEAM ELECTRIC STATION UNIT-1 JOB NO. 8856 DISCIPLINE PLANT DESIGN
 SUBJECT FOR SUPPRESSION POOL WATER LEVEL INST. FILE NO.
TO DRAINS. CALC. NO. 5499
 NO. OF SHEETS 39

RECORD OF ISSUES

NO.	DESCRIPTION	BY	DATE	CHKD	DATE	APPRD	DATE	PROCD QA-QC
2	LEGIBILITY AND PAGES SEQUENCING RENUMBERED PAGES 22 TO 38 INSTEAD OF 21 TO 37 SINCE PAG. 21 WAS NUMBERED TWICE. ADDED PAGES 38, 39 REVISED PAGES 1 TO 37. THIS COVER SHT SUPERSEDES REV 1. COVER SHT.							

1. STATEMENT OF PROBLEM:

- ☒ WEIGHT
- ☒ THERMAL
- ☒ SEISMIC ANALYSIS
- ☒ SAM
- ☒ PIPE SUPPORT ANALYSIS

2. SOURCES OF DATA

SP-HCB-133-1 REV 9
 SP-HCB-133-2 REV 4
 FAB ISO SP-HCB-133-3 REV 3
 SKM 5499 REV D

3. ATTACHMENTS

NONE

4. SOURCES OF FORMULAE AND REFERENCES

M-199 REV 34
 M-241 REV 3
 ASME SECTION III, 1971, WINTER '72
 POWER PIPING CODE B-31.1 1973 ED.
 AISC MANUAL OF STEEL CONSTRUCTION 7-TH ED.
 ITT GRINNELL CATALOG PH-74, 79, 81 EDS.
 SFPSM ACTIVE REVISION
 SPA ACTIVE REVISION

[illegible]



CALCULATION SHEET

2 REV. NO. 2 0510 (11-74)

DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BOM SHEET NO. 2

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. 2

CRITERIA		$\alpha = .0203"/ft$	$th = .133"$	$OD = 1.315"$
		$T = 250^\circ$	SA-376	Gr TP-304
		$P = 35$ psig	SA-312	Gr TP-304L
1" SCH 40S	NO INS.	✓	CONT.	REACTOR
GRAVITY SPACING			9'-0" ✓	9'-0" ✓
DEAD WT #/FT			2.053 ✓	2.053 ✓
SEISMIC SPAN			7'-0" ✓	8'-0" ✓
FREQ			16.507 ✓	12.638 ✓
MAX. LOAD			111 ✓	96 ✓
75% LOAD			80 ✓	33 ✓
G (VERT.)			4.6 ✓	4.0 ✓
G (HORIZ)			9.2 ✓	4.8 ✓
THERM		$\alpha = 2.03$ IN/100 FT.	✓	
		$F = (K = 29,681,040) \left(\frac{\Delta}{L^3} \right)$		
MOVEMENTS		THERM	OBE	SSE
CONT. BLDG		ΔX	.049*	0
		ΔY	.021	0
		ΔZ	.049*	0
REACTOR BLDG		ΔX	0	.023
		ΔY	0	.011
		ΔZ	0	.029
				.028 (NODE 44)
				.015 (NODE 31)
				.035 (NODE 26)
NOTE FOR ORIENTATION				
Z-AXIS HAS BEEN ROTATED 16° EAST				
FROM NORTH DIRECTION.				



Q

DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BOM SHEET NO. 3

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. 2

CONVERT BLDG MOVEMENTS TO NEW COORDINATION

CONT. BLDG

$$\Delta X (\text{THERM}) = 0$$

$$\Delta Z (\text{THERM}) = .049''$$

$$\Delta X (\text{SSE}) = \left[(.083)^2 + (.083)^2 \right]^{1/2} \cos 29^\circ \checkmark$$

$$= .1027''$$

$$\Delta Z (\text{SSE}) = .1027'' \checkmark$$

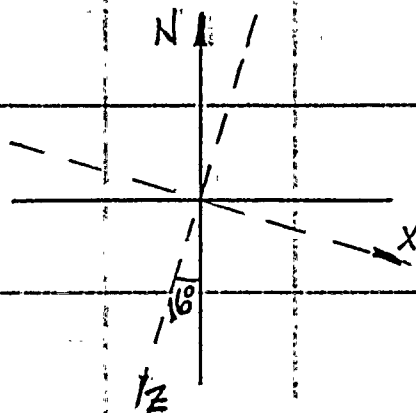
REACTOR BLDG

$$\Delta X (\text{OBE}) = .023 \cos 16^\circ + 0.028 \sin 16^\circ = .030''$$

$$\Delta Z (\text{OBE}) = .023 \sin 16^\circ + 0.028 \cos 16^\circ = .033''$$

$$\Delta X (\text{SSE}) = 0.028 \cos 16^\circ + 0.035 \sin 16^\circ = 0.037''$$

$$\Delta Z (\text{SSE}) = 0.028 \sin 16^\circ + .035 \cos 16^\circ = 0.041''$$





DESIGN BY SK DATE 6-5-81 CHECKED BY BCM SHEET NO. 4
 PROJECT SSES JOB NO. 8856
 SUBJECT SP - HCB - 133-1 CALCULATION NO. 5499 FILE NO. 2

SPAN & OFFSET CHECK

OK

H2000(X) TO X-219 B

SPAN = OK BY INSPECTION

$$\text{OFFSET} = \Delta_{\text{MAX}} = .0606 + .0096 = .0702$$

$$L_{\text{MIN}} = 2'$$

$$L_{\text{ACT}} = 16 + 9.25 + 11.5 = 21.75' \quad \text{OK}$$

H2(2) TO X-219 B

SPAN = OK BY INSPECTION

$$\text{OFFSET} = \Delta_{\text{MAX}} = .0497 + .0313 + (36.75')(2.03)/1200$$

$$= .144'$$

$$L_{\text{MIN}} = (3 \times 28.3 \text{ E6} \times 0.144 \times 1.315)^{1/2} = 29.8'$$

$$L_{\text{ACT}} = 27' \quad \text{ACCEPTABLE}$$

[MUCH OF Δ IS SAME WHERE EXISTING SPAN < MAX. ALLOW.]

H2001(X) TO H2(X)

SPAN = FIG. A-3.11

$$L_1 \pm L_2 = 31.75' \pm 36.875' = 1.0 : 1.0$$

$$F = .72$$

$$L_{\text{ALLOW}} = (.72)(12)(8.0) = (69.12) = 5.76'$$

$$L_{\text{ACT}} = 31.75 + 36.875 = 68.625' = 5.72' \quad \text{OK}$$

OFFSET OK

H2003(2) TO H2(2)

SPAN = FIG. A-3.15

$$h/c = 2'-7\frac{7}{8}"/8' = 0.33$$

$$F = .625 \quad \text{OK}$$

$$L_{\text{ALLOW}} = (.625)(12)(8) = 60.0' = 5.0'$$

$$L_{\text{ACT}} = 31.75 + 23.5 = 4.6' \quad \text{OK}$$



CALCULATION SHEET

0510 (11-74)
REV. NO. 2
DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BCM SHEET NO. 5
PROJECT SS E S JOB NO. 8856
SUBJECT SP - HCB - 133 - CALCULATION NO. 5499 FILE NO. 2

H2003(Z) TO H2(Z) CONT.

$$\text{OFFSET} = \Delta_{\text{MAX}} = (2'-7\frac{7}{8}")(2.03)/100 = 0.059"$$

$$L_{\text{MIN}} = 18.24" \times 1.12 = 20.44" \text{ (FIG A-3.2)}$$

$$L_{\text{ACT}} = 31.75 + 23.5 = 55" \text{ OK} \checkmark$$

H2003(Y) TO H1(Y)

SPAN = FIG. A = 3.11

$$L_1 \approx L_2 = 31.875 \div 23.5 = 1.36 \div 1 \quad F = .74 \checkmark$$

$$L_{\text{ALLOW}} = (.74)(12)(8) = 71.04 = 5.92'$$

$$L_{\text{ACT}} = 31.875 + 23.5 = 55.375 = 4.6' \text{ OK}$$

$$\text{OFFSET} = \Delta_{\text{MAX}} = (4'-10\frac{3}{4}")(2.03)/100 = 0.0994" \checkmark$$

$$L_{\text{MIN}} = 27.775 \times 1.12 = 27.75" \text{ (FIG A-3.1)}$$

$$L_{\text{ACT}} = 31.75 + 23.5 = 55" \text{ OK} \checkmark$$

H6(X) TO H2001(X)

SPAN = FIG A-3.20

$$\frac{w}{wL} = \frac{16}{(2.053)(8)} = 0.97 \quad \frac{a}{L} = \frac{7}{(12)(8)} = 0.07$$

$$F = .82$$

$$L_{\text{ALLOW}} = (.82)(12)(8) = 78.72 = 6.56'$$

$$L_{\text{ACT}} = 11 + 7 = 18"$$

$$\text{OFFSET} = \Delta_{\text{MAX}} = (11'-7.5")(2.03)/1200 = 0.01988"$$

$$L_{\text{MIN}} = 15"$$

$$L_{\text{ACT}} = 11 + 7 = 18" \text{ OK}$$



CALCULATION SHEET

2 REV. NO. 2 0310-11.1-741

DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BCM SHEET NO. 6

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. -2

H4(Y) TO H2003(Y)

SPAN & OFFSET OK BY INSPECTION

H2006(X,Y) TO H4(X,Y)

SPAN & OFFSET OK BY INSPECTION

H2006(X) TO H2013(X)

$$\text{SPAN} = \text{FIG} = A - 3.18$$

$$\frac{W}{WL} = \frac{34 + (4 \times 3) - \text{FLANGES}}{(2.053)(8)} = 2.8" \quad F = .213$$

$$L_{\text{ALLOW}} = (.263)(12)(8) = 20.5"$$

$$L_{\text{ACT}} = 6 + 8.75 - 3 = 11.75" \quad \text{OK} \quad \checkmark$$

H10(Z) TO H2003(Z)

$$\text{SPAN} = \text{FIG} = A - 3 = 20 \quad (\text{H2003 AXIAL RESTR. FOR 2-16" VALVES})$$

$$\frac{W}{WL} = \frac{34 + 2.18 + (4 \times 3) - \text{FLANGES}}{(2.053)(8)} = 2.9 \quad \frac{9}{L} = \frac{12}{12 \times 8} = 0.125$$

$$F = .18$$

$$L_{\text{ALLOW}} = (.18)(12)(8) = 17.3" \quad \checkmark$$

$$L_{\text{ACT}} = 6 + 12 = 18" \quad \text{ACCEPTABLE}$$

$$\text{OFFSET} = \Delta_{\text{MAX}} = \left[(7 + 23) - 13 \frac{15}{15} \right] (2.03) / 200 = 0.051"$$

$$L_{\text{MIN}} = 17.0"$$

$$L_{\text{ACT}} = 12 + 6 = 18" \quad \text{OK}$$

* 9" LENGTH OF LEVEL SET ASSUMED AS RIGID
 & NOT INCLUDED AS PART OF SPAN.



CALCULATION SHEET

2 REV. NO. 2

DATE 4/11/81

DESIGN BY SK

DATE 6-5-81

CHECKED BY BCM

SHEET NO. 7

PROJECT SSES

JOB NO. 8856

SUBJECT SP-HCB-133-1

CALCULATION NO. 5499

FILE NO. 2

H2011 (Y) TO H2006 (Y)

SPAN = FIG A-3.20 (H2006 AXIAL RESTR. FOR LEVEL SET)

$$\frac{w}{WL} = \frac{-16 + (29 + 7.75 + 7)(2.053)/12 + (2 \times 3)FLG}{(2.053)(8)} = 1.79$$

$$\frac{a}{L} = \frac{6}{(12)(8)} = 0.06 \quad F = .60$$

$$L_{ALLOW} = (.60)(12)(8) = 57.6" = 4.8' \quad \checkmark$$

$$L_{ACT} = 13.75 + 6 = 19.75" \quad \text{OK} = 1.65'$$

H2008 (X) TO H2005 (X)

SPAN = FIG A-3.20

$$\frac{w}{WL} = \frac{1.6}{(2.053)(8)} = 0.98 \quad \frac{a}{L} = \frac{6.875}{(12)(8)} = 0.0716$$

$$F = .82$$

$$L_{ALLOW} = (.82)(12)(8) = 78.72 = 6.56' \quad \checkmark$$

$$L_{ACT} = 10.25 + 6.875 = 17.125 = 1.43' \quad \text{OK}$$

H2009 (X) TO H2005 (X)

$$\text{OFFSET} = \Delta_{MAX} = (11.75)(2.03)/1200 = 0.01988$$

$$L_{MIN} = 11"$$

$$L_{ACT} = 17.125" \quad \text{OK} \quad \checkmark$$

H2002 (X) TO H2005 (X)SPAN = OK BY INSPECTION \checkmark

$$\text{OFFSET} = \Delta_{MAX} = (12.5 + 15)(2.03)/1200 = 0.0465$$

$$L_{MIN} = 17.2"$$

$$L_{ACT} = 20.5" \quad \checkmark \quad \text{OK}$$



CALCULATION SHEET

2 REV. NO. 2. 0510 11-741

DATE 6/11/81

DESIGN BY SK

DATE 6-5-81

CHECKED BY BOM

SHEET NO. 9

PROJECT SSES

JOB NO. 8856

SUBJECT SP-HCB-133-1

CALCULATION NO. 5499

FILE NO. 2

H2004 (Y) TO H11 (Y) CONT.

$$SPAN = L_{ALLOW} = (.53)(12)(8) = 51.51" = 4.3'$$

$$L_{ACT} = 11.875 + 30.625 = 42.5" = 3.54'$$

$$OFFSET = \Delta_{MAX} = (45)(2.03)/1200 = 0.076"$$

$$L_{MIN} = 21.7"$$

$$L_{ACT} = 6 + 11.75 + 12.5 + 12.25 = 42.5" \text{ OK}$$

H12 (X,Y) TO (H2002 (X,Y)

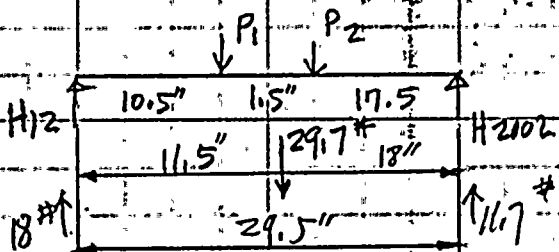
SPAN & OFFSETS JK

SPAN: FIG A-3.20

ASSUMPTION = VALVE (1-55-023)

SUPPORTED DIRECTLY BY H2002

SINCE SUPPORT WITHIN 3" FROM WELD POINT



$$P_1 = 10 \#$$

$$P_2 = 16 + \frac{(6+8+7.25)}{12} (2.053) = 19.7 \#$$

$$\frac{W}{WL} = \frac{29.7}{(2.053)(8)} = 1.8$$

$$\frac{a}{L} = \frac{11.5}{12 \times 8} = 0.1198$$

$$F = .29$$

$$L_{ALLOW} = (.29)(12)(8) = 27.84"$$

$$L_{ACT} = 29.5"$$

ACCEPTABLE, SINCE ALL LINE COMPOSED OF RIGID MEMBERS

H1 (X,Y) TO X-219 B

SPAN FIG A-3.20

$$\frac{W}{WL} = \frac{16}{(2.053)(7)} = 1.113$$

$$\frac{a}{L} = \frac{18}{12 \times 7} = .21$$

$$F = .38$$

$$L_{ALLOW} = (.38)(12)(7) = 31.92"$$

$$L_{ACT} = 16 + 4.25 + 3 + 9 + 4.5 + 4.25 = 41"$$

CHECK DEFLECTION & FREQ. (CONT.) RISER TAKEN ENTIRELY BY H1

✓



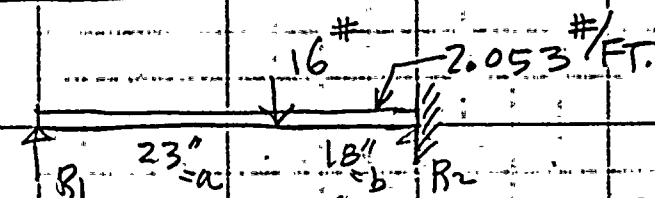
CALCULATION SHEET

 0510 (11-74)
 2 REV. NO. 2
 DATE 6/11/81

DESIGN BY SK DATE 6-6-81 CHECKED BY BCM SHEET NO. 10

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. 2

 H₁ (X,Y) TO X-219 B (CONT.)


$$\Delta_{MAX} = \frac{W L^4}{185 EI} + \frac{P a b^2}{6 EI} \sqrt{\frac{a}{2l + a}} \quad \left(\text{AKSCL BEAM FORMULA} \right)$$

$$= \frac{(2.053/12)(41)^4}{185(E)(0.0874)} + \frac{(16)(23)(18)^2}{6 E (0.0874)} \sqrt{\frac{23}{(2)(41) + 23}}$$

$\approx 28.3 \times 10^6$ ≈ 0.00106 ≈ 0.00376

$$= 0.004816$$

$$f = \frac{1}{2\pi} \sqrt{\frac{386.4}{0.004816}} = 45 > f = 16.507$$

CHECK STRESS

$$S_{DW} = \left(\frac{W L^2}{8} \right) / Z + \left(\frac{P a b}{2 L^2} (a + b) \right) / Z = 2.574 \text{ H.S.C. BEAM FORMULA}$$

$$ALL OTHER = \frac{(2.053/12)(41)^2}{(8)(0.1329)} + \frac{(16)(23)(18)(23+41)}{(2)(41)^2(0.1329)}$$

$$= 220 \text{ PSI}$$

$$S_{GISM} = f_e S_{DW} = (10.3)(220) = 2,266 \text{ PSI}$$

$$f_e = \left((g_{12})^2 + (g_{16})^2 \right)^{1/2} = \left((9.2)^2 + (4.6)^2 \right)^{1/2}$$

$$= 10.3 \quad (\text{USED PEAK ACC. VALUE})$$

$$\text{PRESSURE } S = \frac{P D_o}{4 t} = \frac{(35)(1.315)}{(4)(0.133)} = 87 \text{ PSI}$$

$$\text{PRIMARY STRESS} = 220 + 2,266 + 87 = 2,573 \text{ PSI}$$

$$S_{ALLOW} = 1.2 S_h = (1.2)(15,500) = 18,600 \text{ PSI}$$



CALCULATION SHEET

0310 (11-74)
2 REV. NO. 2
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DESIGN BY SK DATE 6-6-81 CHECKED BY BEM SHEET NO. 11

PROJECT S S E S JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. - 2

$$S_{ALLOW} = 18600 \text{ PSI} > S_{PRM} = 13,856$$

SPAN ACCEPTABLE.

OFFSET CHECK

$$\Delta_{MAX} = \{ (0.63)^2 + (0.021 + 0.011)^2 \}^{\frac{1}{2}} = 0.044$$

$$L_{MIN} = 47"$$

$$L_{ACT} = 41" \quad \text{OK}$$

ALL OTHER SPANS & OFFSETS OK BY ENGINEERING INSPECTION.



CALCULATION SHEET

2 REV. NO. 2
DATE 6/11/81

DESIGN BY SK DATE 6-6-81 CHECKED BY BCM SHEET NO. 12
PROJECT SS ES JOB NO. 8856
SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. -A

LOADS CALC

H1 (X, Y)

F_x

SEISMIC

$$\text{CONC} = (16)(4.8) + \frac{(16)(18)}{41} (9.2) = 7$$

$$\text{SAM} = K \frac{0.032}{(41)^3}$$

$$= 80$$

$$= 142$$

$$= 13$$

$$\underline{\underline{235}}$$

$$D_w = 16 + 7 + \left(\frac{27 + 29.5 + 16}{2 \times 12} \right) (2.053) = \underline{\underline{30}}$$

$$\Delta z > \frac{1}{16}''$$

F_y

SEISMIC

$$\text{CONC} = [16 + (4 - 10\frac{3}{4})(2.053)](4 + 1) + (7)(4.6 + 1) = 26.15$$

$$\text{SAM} = K \frac{0.032}{(41)^3} + K \frac{0.0994}{(55)^3}$$

$$= 80$$

$$= 170$$

$$= 32$$

$$\underline{\underline{282}}$$

$$D_w = 26 + 7 + \left(\frac{29.5 + 16 + 55}{2 \times 12} \right) (2.053) = \underline{\underline{42}}$$

H2 (X, Z)

F_x

SEISMIC

$$\text{THERM} = K \frac{(20.5)(2.03)/1200}{[(31.75 + 31.9)/1.12]^3}$$

$$= 96$$

$$= 6$$

$$D_w = [(2 - 7\frac{7}{8}) + (4 - 10\frac{3}{4})] (2.053) / 2 = \underline{\underline{8}}$$

$$\underline{\underline{102}}$$



CALCULATION SHEET

0510 (11-74)
 2 REV. NO. 2
 DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BCM SHEET NO. 13
 PROJECT SSES JOB NO. 8856
 SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. 2

H2(X, Z) CONT-

Fz SEISMIC
 CONC = $\left[(2-7\frac{7}{8})(2.053) \left(\frac{20.5}{20.5+31.75} \right) \right] (4.8) = 96$
 THERM = $K \frac{0.054}{(55)^3} + K \frac{0.144}{(27)^3} = 11$
 = 227
334

Dw = $2 + \left(\frac{20.5 + 58.75}{2 \times 12} \right) (2.053) = 9$

H2001(X)

Fx SEISMIC
 CONC = $\left[(3-2\frac{1}{4})(2.053) + \frac{(2)(16)(11)}{18} \right] (4.8) = 96$
 THERM = $6 + K \frac{(11.75)(2.03)/1200}{(18)^3} = 125$
 (From H2(X))
 = 107
328

Dw = $26.1 + \left(\frac{3NF + 31.9 + 18 + 18 + 45}{2 \times 12} \right) (2.053)$
 = 39

$\Delta < \frac{1}{16}''$

H2003(X, Z)

Fy SEISMIC
 CONC = $\left[\frac{(16)(11)}{18} \right] (4.0 + 1) = 96$
 THERM = $3 + 18 (ok)$
 From H1
 = 49
 = 31
176

Dw = $10 + \left[\frac{11.75 + 18 + 20.5 + 31.9}{2 \times 12} \right] (2.053) = 17$



CALCULATION SHEET

0510 (11-74)
2 REV. NO. 2

DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BCM SHEET NO. 14

PROJECT SSES JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. 12

H2003 (Y, Z) CONT.

Fz SEISMIC = 96
 CONC = $\left(\frac{(34)(12)}{27} + 16 + 16 + \frac{(2'-7\frac{7}{8})(2.053)(31.75)}{52.25} \right) + \left[\frac{7+23+8+11\frac{3}{8}}{12} \right] (2.053) [4.8] = 283$
 THERM = $K \frac{0.054}{(55)^3} + K \frac{0.051}{(18)^3} = 270$
649

DW = $58.9 + \left[\frac{11.75 + (20.5 + 31.75 + 6 + 12 + 6 + 5.8 + 44)}{2 \times 12} \right] (2.053)$
= 72

H2004 (Y, Z)

Fy SEISMIC = 96
 CONC = $\left(\frac{(16)(11)}{18} + \frac{(45+3)}{12} \right) (2.053) (4+1) = 142$
 THERM = $K \frac{(45)(2.03)/1200}{[(30.25+12.25)/1.12]^3} = 42$
280

DW = $28 + \left[\frac{11.75 + 18 + 6 + 11.75 + \frac{11.125 \times 2}{2 \times 12} + 12.5 + 12.25}{2 \times 12} \right] (2.053)$
= 36

Fz SEISMIC = 96
 CONC = $\left(\frac{(34)(12)}{27} + 16 + 16 + \frac{(7+23+8+11\frac{3}{8})}{12} \right) (2.053) = 267$
 THERM = $K \frac{0.029}{(18)^3} = 148$
511

DW = $56 + \left[\frac{11.75 + 18 + 6 + 45 + 6}{2 \times 12} \right] (2.053) = 64$



CALCULATION SHEET

REV. NO. 2
DATE 6/11/81

DESIGN BY SK DATE 6-8-81 CHECKED BY BCM SHEET NO. 15
PROJECT SSES JOB NO. 8856
SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. -23

H2005 (X)

Fx

SEISMIC

$$CONC = \left[(2' - 6\frac{1}{4}) (2.053) + \left(\frac{(16)(10.25)}{10.25 + 6\frac{7}{8}} \right) (2) \right] (4.8) = 117$$

$$THERM = K \frac{(117.5)(2.03)/1200}{(17.125)^3} \text{ OR } K \frac{(27.5)(2.03)/1200}{(20.5)^3} = 160$$

$$Dw = 24.3 + \left[\frac{(17.125)(2) + 20.5 + 45 + 117 + 24.3}{2 \times 12} \right] (2.053) = 36$$

H11 (Y)

Fy

SEISMIC

THERM = 42 (From H2004 (Y))

$$Dw = \left[\frac{30.25 + 20.5 + 15 + (17.125)(2) + 117 + 24.3}{2 \times 12} \right] (2.053) = 12$$

H4 (X,Y)

Fx

SEISMIC

$$CONC = \left[\frac{(16)(7)}{18} \right] (4.8) = 30$$

$$Dw = 6.2 + \left[\frac{23 + 7}{2 \times 12} \right] (2.053) = 9$$

Fy

SEISMIC

$$CONC = \left[\frac{(16)(7)}{18} \right] (4 + 1) = 31$$

$$Dw = 6.2 + \left[\frac{23 + 7}{2 \times 12} \right] (2.053) = 9$$



CALCULATION SHEET

0510 (11-74)
 2 REV. NO. 2
 DATE 6/11/81

DESIGN BY SK DATE 6-8-81 CHECKED BY BEM Q SHEET NO. 16
 PROJECT SSFS JOB NO. 8856
 SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. -23

H2006 (X, Y)

$$F_x \quad \text{SEISMIC} \quad = 281 \quad = 33$$

$$\text{CONC} = \left[\frac{(34)(7.75)}{22.75} + 16 \right] [4.8] = 133$$

$$D_w = 28 + \left[\frac{6.375 + 8 + 12 + 15 + 7.75}{2 \times 12} \right] (2.053) = 16.6$$

$$F_y \quad \text{SEISMIC} \quad = 57.5 \quad = 33$$

$$\text{CONC} = \left[34 + \left[16 + \frac{(29 + 7.75 + 7)(2.053)}{12} \right] \frac{6}{18.75} \right] + [6] [4 + 1] = 288$$

$$D_w = 57.5 + \left[\frac{6.375 + 8 + 12 + 12.75 + 6}{12 \times 2} \right] (2.053) = 321$$

$$= 62$$

H6 (X, Y)

$$F_x \quad \text{SEISMIC} \quad = 6.2 \quad = 33$$

$$\text{CONC} = \left[\frac{(16)(7)}{18} \right] [4.8] = 30$$

$$\text{THERM} = K \frac{(11.75)(2.03)/1200}{(18)^3} = 101$$

$$D_w = 6.2 + \left[\frac{23 + 7}{2 \times 12} \right] (2.053) = 9$$

$$= 164$$

$$F_y \quad \text{SEISMIC} \quad = 6.2 \quad = 33$$

$$\text{CONC} = \left[\frac{(16)(7)}{18} \right] [4 + 1] = 31$$

$$D_w = 6.2 + \left[\frac{23 + 7}{2 \times 12} \right] (2.053) = 9$$

$$= 64$$



DESIGN BY SK DATE 6-8-81 CHECKED BY RCM SHEET NO. 17
PROJECT SSE S JOB NO. 8856
SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. 2

H2007 (X, Y)

$$F_x \quad \text{SEISMIC} \quad = 33$$

$$\text{CONC} = \left[\frac{(34)(7.75)}{22.75} + 16 \right] [4.8] = 133$$

$$\text{THERM} =$$

$$D_w = 28 + \left[\frac{6.375 + 8 + 12 + 15 + 7.75}{2 \times 12} \right] (2.053) = 166$$

$$= 32$$

$$F_y \quad \text{SEISMIC} \quad = 33$$

$$\text{CONC} = \left\{ 34 + \left[16 + \frac{(29 + 7.75 + 7)}{12} (2.053) \right] \frac{6}{18.75} + 1.6 \right\} (4 + 1) = 288$$

$$\text{TO HBD HGR. — THERM} = K [12 \times 2.03 / 1200] / [(11.4 + 5) / 1.41]^3 = 360$$

$$D_w = 57.5 + \left[\frac{6.375 + 8 + 12 + 13.75 + 6}{2 \times 12} \right] (2.053) = 681$$

$$= 62$$

H2013 (X)

$$F_x \quad \text{SEISMIC} \quad = 33$$

$$\text{CONC} = \left[\frac{(34)(15)}{22.75} \right] [4.8] = 108$$

$$D_w = 22.5 + \left[\frac{15 + 12.75 + 12}{2 \times 12} \right] (2.053) = 26$$

$$141$$

H2014 (X)

$$F_x \quad \text{SEISMIC} \quad = 33$$

$$\text{CONC} \quad = 108$$

$$D_w = 26$$

$$141$$



CALCULATION SHEET

2 REV. NO. 2

DATE 6/11/81

DESIGN BY SK DATE 6-5-81 CHECKED BY BCM SHEET NO. 18

PROJECT S S E S JOB NO. 8856

SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. - 2

H10 (X, Z)

F_x SEISMIC = 33

$$D_w = \left[\frac{129.5 + 5}{2 \times 12} \right] (2.053) = \underline{3}$$

F_z SEISMIC = 33

$$\text{CONC} = \left[\left[34 + \frac{12.75}{12} \times 2.053 \right] \frac{15}{27} \right] (4.8) = 97$$

$$\text{THERM} = K \frac{0.029}{(18)^3} = 148$$

$$D_w = 20 + \left(\frac{15 + 29}{2 \times 12} \right) (2.053) = \underline{24}$$

H8 (X, Z)

F_x SEISMIC = 33

$$D_w = 3$$

F_z SEISMIC = 33

$$\text{CONC} = 97$$

$$\text{THERM} = 148$$

$$D_w = \underline{24}$$

H2008 (X, Z)

F_x SEISMIC = 33

$$\text{CONC} = \left[16 + \left(\frac{7.75 + 7}{12} \right) (2.053) + (16) \left(\frac{7}{17} \right) \right] (4.8) = 121$$

$$D_w = 25 + \left[\frac{17 + 17}{2 \times 12} \right] (2.053) = \underline{28}$$

$$\underline{154}$$



CALCULATION SHEET

0510 (11-74) **2** REV. NO. 2

DATE 7/3/81

DESIGN BY M PANESAR DATE 7.1.81 CHECKED BY Abdullah SHEET NO. 32

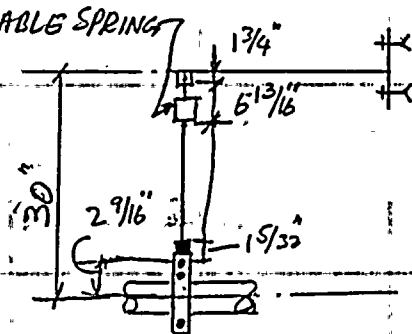
PROJECT SSS. JOB NO. 8856

SUBJECT SP-HCB-133-3 HANGER CALC. CALCULATION NO. 5499 FILE NO. 2

H2010

FX FY FZ ΔY

DESIGN LOAD 0 32 0 +0.075"



+0.075"

$$\text{LENGTH OF ROD} = 30 - (1\frac{3}{4} + 6\frac{13}{16} + 1\frac{5}{32} + 2\frac{9}{16})$$

$$= 17.719 + 3 + 3 = 24"$$

$$\text{WT OF ROD} = 2 \times 0.668 = 1.34 \#$$

$$\text{HARDWARE WEIGHT} = 0.76 + 0.063 + 1.34 + 0.009 \times 2$$

$$= 2.18 \# \approx 2 \#$$

$$\text{HL} = 32 + 2 = 34 \#$$

VARIABLE SPRING FIG 8268, SIZE 00, TYPE A. SPRING RATE = 15 #/in.

$$\text{CL} = 34 + 15 \times 0.075 = 35.125 \# \approx 35 \#$$

$$\text{VARIABILITY} = \frac{0.075 \times 15}{34} = 0.033 \approx 3.3\% \text{ O.K.}$$



CALCULATION SHEET

0330-111-741
2 REV. NO. 2
DATE 4/11/81

DESIGN BY SK DATE 6-8-81 CHECKED BY TCM SHEET NO. 19
PROJECT SSES JOB NO. 8856
SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. -A

H2008 (X, Z) CONT-

Fz SEISMIC = 33

$$CONC = \left[16 + \left(\frac{7.75 + 7}{12} \right) (2.053) + 16 \right]$$

$$+ \left(\frac{20.5}{12} \right) (2.053) \left(\frac{15}{27.5} \right) + \left(\frac{10\frac{1}{4} + 6\frac{7}{8}}{12} \right) (2.053)] (4.8) = 189$$

$$THERM = K \frac{.1212}{(27.5)^3} = 173$$

$$D_w = 39.4 + \left[\frac{17 + 11.75 + 27.5}{2 \times 12} \right] (2.053) = 44$$

$$\Delta y > \frac{1}{16}$$

H2009 (X, Z)

Fx SEISMIC = 25 = 33

$$CONC = \left[16 + \left(\frac{7.75 + 7}{12} \right) (2.053) + (16) \left(\frac{7}{17} \right) \right] (4.8) = 121$$

$$THERM = K \frac{(11.75)(2.03)(1200)}{(17.125)^3} = 117$$

$$D_w = 25 + \left[\frac{17 + 17}{2 \times 12} \right] (2.053) = 28$$

Fz SEISMIC = 33

$$CONC = \left[16 + \left(\frac{7.75 + 7}{12} \right) (2.053) + 16 \right]$$

$$+ \left(\frac{10\frac{1}{4} + 6\frac{7}{8}}{12} \right) (2.053)] (4.8) = 180$$

$$THERM = K \frac{(17.125)(2.03)(1200)}{(51)^3} = 7$$

$$D_w = 37.5 + \left[\frac{17 + 17 + 45}{2 \times 12} \right] (2.053) = 44$$

$$\Delta y > \frac{1}{16}$$



CALCULATION SHEET

Q 2 REV. NO. 2 0510 (11-74)
DATE 6/11/81

DESIGN BY SK DATE 6-8-81 CHECKED BY RAM SHEET NO. 20
PROJECT SSFS JOB NO. 8856
SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. -2

H2011 (Y) & H2012 (Y) SNURB

$$F_y \text{ SEISMIC } = 32$$

$$\text{CONC} = \left[16 + \left[\frac{(29 + 7.75 + 7)}{12} (2.053) \right] \frac{12.75}{18.75} + (16) \right] [4 + 1] = 160$$

$$D_w = 32 + \left[\frac{13.75 + 10 \frac{1}{4} + 6 \frac{7}{8}}{2 \times 12} \right] (2.053) = 35$$

$$\Delta_y = (15 + 29.5)(2.03) / 200 = 0.0752''$$

H2010 (Y) & H2015 (Y) SPRING

$$F_y = 16 + \left[\frac{29 + 7.75 + 7}{12} \right] (2.053) + (16) \left[\frac{6.875}{14.125} \right] = 32$$

$$\Delta_y = (+) .0752''$$

H2002 (X, Y)

$$F_x \text{ SEISMIC } = 30.3$$

$$\text{CONC} = [11.7 (4P \div 8) + 16 + \left(\frac{15}{12} \right) (2.053)] (9.2) = 278$$

$$\text{THERM} = 16000 + K \left[\frac{103}{(43.6)^3} \right] = 175$$

$$D_w = 30.3 + \left[\frac{5 \frac{1}{2} + 10 + 9 + 22 + 6.5 + 9 + 3 + 4 \frac{9}{16} + 3 \frac{1}{2} + 20 \frac{1}{2}}{2 \times 12} \right] (2.053) = 39$$



CALCULATION SHEET

0810 (11-74)
2 REV. NO. 2
DATE 6/11/81

DESIGN BY SK DATE 6-8-81 CHECKED BY BAM SHEET NO. 21
PROJECT SSES JOB NO. 8856
SUBJECT SP-HCB-133-1 CALCULATION NO. 5499 FILE NO. - 2

H2002 (X, Y) CONT-

FY SEISMIC = 80
CONC = $(11.7 + 16)(4.6 + 1) = 155$
SAM = $K \frac{.031}{(43.6)^3} = 115$
246

$$D_w = 27.7 + \left[\frac{5.5 + 10 + 9 + 22 + 6.5 + 9 + 3 + 4\frac{9}{16} + 3.5 + 8.25 + 15}{2 \times 12} \right] (2.053) = 35$$

$$\Delta z = 0.049 + (3.5 + 4\frac{9}{16} + 3 + 9 + 6.5 + 17)(2.03)/200 = 0.1226''$$

H12 (X, Y)

FX SEISMIC = 33
CONC = $\left[18 + 16 + \left(\frac{17.25 + 5.5}{12} \right) (2.053) \right] (4.8) = 174$
207

$$D_w = 36 + \left[\frac{10.875 + 10 + 9 + 5}{2 \times 12} \right] (2.053) = 39$$

Fy SEISMIC = 33
CONC = $\left[18 + 16 + \left(\frac{7.25 + 5.5}{12} \right) (2.053) \right] (4 + 1) = 181$
214

$$D_w = 36 + \left[\frac{10.875 + 10 + 9 + 5}{2 \times 12} \right] (2.053) = 39$$

$$\Delta z = 0.049 + \left[5.5 + 10 + 9 + 22 + 6.5 + 9 + 3 + 4\frac{9}{16} + 3.5 \right] (2.03)/200 = 0.1725''$$



CALCULATION SHEET

0510 (11-74)
2 REV. NO. 2

DATE 4/3/81

DESIGN BY ASHUTHERMAN

DATE 06-29-81

CHECKED BY Ashah

SHEET NO.

PROJECT SSES

JOB NO. 8856

SUBJECT HGR'S CALC. FOR SP-HCB-133-3

CALCULATION NO. 5499

FILE NO.

H1
(EXISTS)

$$F_x = 235\# \quad F_y = 282\#$$

$$F_{\text{FRICTION}} = (235 + 282) \times 0.3 = 155\#$$

(CONSERV)

REF. TO SPA-603

USE $L 4 \times 4 \times 1/2$

$$L_1 = 1'-0"$$

$$L_2 = 1'-6"$$

$$F_x \& F_y = 350\#$$

ACTUALY

M4x13

$$L_1 = 0'-9"$$

$$L_2 = 2'-4 1/2"$$

$$M_z = 350 \times 12 + 350 \times 18 = 10500\#$$

SPA

$$F_{\text{FRICTION}} = (350 + 350) \times 0.3 = 210\#$$

SPA

$$M_z = 235 \times 28.5 + 282 \times 9 = 9236\# < 10500\#$$

ACT

$$S_{M4x13} = 5.24\text{IN}^3 \quad S_{L4} = 1.97\text{IN}^3 \quad \therefore \text{OK}$$

CHECK FREQUENCYREF TO SPA-603 USE $L 4 \times 4 \times 1/2$

D.W.

$$F_x = 30\# \quad F_y = 42\#$$

$$WEP = 340\# > 42\# \quad \therefore \text{OK}$$

H2
(EXISTS)

$$F_x = 102\# \quad F_z = 334\#$$

$$F_y = (102 + 334) \times 0.3 = 131\#$$

$$D.W. F_x = 8\# \quad F_z = 9\#$$

FORMED R IS OK PER SPA-641

CHECK STRESS τ - shear stress σ - tensile stress

$$\tau_{\text{res}} = \sqrt{\tau_1^2 + \tau_2^2}$$

1,2 - signify direction

$$\tau_1 = \frac{334}{3.75} = 89\text{psi} \quad \tau_2 = \frac{131}{3.75} = 35\text{psi} \quad \tau_{\text{res}} = 96\text{psi} < 12600\text{psi}$$

$$\sigma = \frac{M_1}{S_1} + \frac{M_2}{S_2} + \frac{F_{ax}}{A} = \frac{334 \times 9}{1.97} + \frac{131}{1.97} + \frac{102}{3.75} = 1620\text{psi} < 12600\text{psi}$$

CHECK BOLTS

$$R_1 = \frac{334}{2} = 167\#$$

$$R_2 = \frac{167}{0.49} = 341\text{psi}$$

$$f_{sx} = \frac{102}{0.49} = 208\text{psi}$$

$$f_{\text{RES}} = 442\text{psi} < 12600\text{psi}$$

$$\frac{WEP}{4} = 0.49\text{IN}^2$$

$$\Delta = \frac{P L^3}{48 E I} = \frac{334 \times 18^3}{48 \times 27.9 \times 10^6 \times 5.56} = 0.000254\text{IN} < 0.009\text{IN}$$

$$f_{sy} = \frac{131}{2} = 66 \quad f_{sx} = \frac{102}{2} = 51$$

$$f_{\text{res}} = \sqrt{66^2 + 51^2} = 83\# < 1200\#$$

H4

(EXISTS)

$$F_x = 63\#$$

$$F_y = 64\#$$

$$D.W. F_x = 9\# \quad F_y = 9\#$$

REF. TO SPA-632

USE $L 3 \times 3 \times 3/8$

$$L_1 = 1'-6"$$

$$F_x \& F_y = 200\#$$

$$F_{\text{ACT}} = 64\# < 200\# \quad \therefore \text{OK}$$

$$WEP = 180\# > F_x = 9\# \quad \therefore \text{FREQUENCY IS OK}$$



CALCULATION SHEET

REV. NO. 2

DATE 7/3/81

DESIGN BY

A. Musterman

DATE

06-29-81

CHECKED BY

A. Shah

SHEET NO.

23

PROJECT

SSES

JOB NO.

8856

SUBJECT

HGR'S CALC. FOR SP-HCB-133-3

CALCULATION NO.

5499

FILE NO.

-2

H6
(EXISTS)

$F_x = 164 \#$

$F_y = 64 \#$

D.W. $F_x = F_y = 9 \#$

REF. TO SPA-632 USE $L 3 \times 3 \times 3/8$ $L_1 = 1'-6"$ $F_x \& F_y = 200 \#$
MAX

$F_{ACT} = 164 \# < 200 \#$

$W_{EP} = 180 \# > F_x \& F_y = 9 \#$
D.W.

∴ OK.

H8 & H10
(EXISTS)

$F_x = 33 \#$

$F_z = 278 \#$

D.W. $F_x = 3 \#$ $F_z = 24 \#$

REF TO SPA-621 USE $L 4 \times 4 \times 1/2$ $L_1 = 1'-6"$ $F_x \& F_y = 350 \#$
MAX MAXACTUALLY USE $L 4 \times 4 \times 1/2$ $L_1 = 1'-9 1/2"$ $F_x = 33 \# < 350 \#$
 $F_y = 278 \# < 350 \#$

$M_{ACT} = 278 \times 21.5 = 5977 \text{''}\#$

$M_{SPA} = 350 \times 18 = 6300 \text{''}\# > M_{ACT} = 5977 \text{''}\#$ ∴ OK.

$W_{EP} = 350 \# > 24 \#$ ∴ FREQUENCY IS OK. ∴ DEAD LOAD MAX IS MUCH
GREATER THAN W_{EP} .

H11
(EXISTS)

$F_y = 138 \#$

$F_{FR} = 138 \times 0.3 = 41 \#$

$< F_{FR-SPA} = 350 \times 0.3 = 105 \# < L_{SPA} > L_{ACT}$

CHANGE FORMED PLATE TO SPA-691

REF TO SPA-691 FOR 1" PIPE $F_{YMAX} = 250 \# > F_{ACT} = 138 \#$ REF TO SPA-671 USE $L 4 \times 4 \times 1/2$ $F_y = 350 \#$ $L = 1'-6"$
MAXACTUALLY USE $L 4 \times 4 \times 1/2$ $F_y = 138 \# < 350 \#$ $L = 1'-5 1/2"$ ∴ OK

$W_{EP} = 350 \#$ D.W. $F_y = 12 \# < 350 \#$ ∴ FREQUENCY IS OK.



CALCULATION SHEET

0310 (11-74)

2 REV. NO. 2

DATE 7/3/81

DESIGN BY

ASHUBERMAN

DATE

06-29-81

CHECKED BY

ASHAH

SHEET NO.

2.4

PROJECT

SSES

JOB NO.

8856

SUBJECT

HGR'S CALC. FOR SP-HCB-133-1
SP-HCB-133-2

CALCULATION NO.

5499

FILE NO.

2

H12
(EXISTS)

$$F_x = 207\#$$

$$F_y = 214\#$$

$$F_{FR} = (207 + 214) \times 0.3 = 126\#$$

REF TO SPA-635

USE $L 4 \times 4 \times \frac{1}{2}$

$$L_1 = 3'-1"$$

$$F_x \& F_y = 360\#$$

USING SPA WITH PIPE LOCATED AT SIDE

ACTUALLY

USE $L 4 \times 4 \times \frac{1}{2}$

$$L_1 = 4'-6\frac{3}{4}"$$

$$F_x = 207\#$$

$$F_y = 214\#$$

$$M_{x \text{ ACT}} = 126 \times 54.75 = 6899\# \text{ IN} < M_{SPA} = 360 \times 37 = 13320\# \text{ IN}$$

$$M_{y \text{ ACT}} = 126 \times 5 = 630\# \text{ IN} < M_{SPA} = 360 \times 2.5 = 900\# \text{ IN}$$

$$M_{SPA} = 360 \times 37 + 360 \times 2.5 = 14220\# \text{ IN}$$

$$M_{ACT} = 207 \times 54.75 + 214 \times 5 = 12403\# \text{ IN} < 14220\# \text{ IN} = M_{SPA} \therefore \text{OK}$$

D.W.

$$F_x = 39\#$$

$$F_y = 39\#$$

REF TO SPA-645

$$WEP = 1880\#$$

USE $L 4 \times 4 \times \frac{1}{2}$ ASSUME WEP FOR SPA-635 = $1880 : 2 = 940\#$

$$F_x = F_y = 39\# < WEP : 2 = 940\# \therefore \text{FREQ. IS OK}$$

H2001
(NEW)

$$F_x = 328\#$$

$$D.W. F_x = 39\#$$

REF TO SPA-587

USE $L 3 \times 3 \times \frac{3}{8}$

$$L = 1'-6"$$

$$F_x = 200\#$$

ACTUALLY

USE $L 3 \times 3 \times \frac{3}{8}$

$$L = 0'-7"$$

$$F_x = 328\#$$

$$M_{SPA} = 200\# \times 18" = 3600\# \text{ IN}$$

$$M_{ACT} = 328\# \times 7" = 2296\# \text{ IN} < 3600 \therefore \text{OK}$$

FORMED PLATE

FOR 1" PIPE

$$F_x = 250\#$$

$$F_x = 328\#$$

NOT OK

CHANGE PLATE SIZE

FROM $\frac{1}{4} \times 2$ TO $\frac{3}{8} \times 2$

$$F_x = 575\# > 328\# \therefore \text{OK}$$

$$WEP = 130\#$$

$$39\# = F_x$$

 $\therefore \text{OK}$ $F_y = 200\#$ - FOR NEW DESIGN TO QUALIFY STRUCTURE ONLY.

$$\frac{K L}{r} = \frac{2.1 \times 9.5}{0.587} = 34 < 93$$

$$f = \frac{200}{2.1} = 95 \text{ psi}$$

$$< 12600 \text{ psi} \therefore \text{OK}$$



CALCULATION SHEET

2 REV. NO. 2

DATE 7/4/81

SIGN BY AlmstermanDATE 06-30-81CHECKED BY At ShahSHEET NO. 2.6OBJECT SSESJOB NO. 8856SUBJECT HGR'S CALC FOR SP-HCB-133-2CALCULATION NO. 5499FILE NO. -2

$$H_A = H_C = \frac{3 \times 2288}{2 \times 50 \times 1.317} = 52 \#$$

$$V_A = V_C = \frac{3 \times 2288}{38.3 \times 2} = 90 \#$$

KLEINLOGEL CASE 3/6 - HORIZONTAL CONCENTRATED LOAD
AT JOINT B
THERE ARE NO BENDING MOMENTS

$$V_C = -V_A = \frac{Ph}{L} = \frac{529 \times 50}{38.3} = 691 \#$$

$$H_A = -P = 529 \#$$

FORCE $F_y = 246 \#$ TRANSFERRED TO BASE OF COLUMN POINT CR.E.S. DUE TO TORSION $M_y = 1165$, ASSUME FULL TORSION FOR WORST LOAD CASE

$$V_A = 90 - 691 = -601 \#$$

$$M_A = 275 \#$$

$$V_C = +90 + 691 + 246 = 1027 \#$$

$$M_C = 869 \#$$

$$M_y = 1165 \#$$

$$H_A = 52 + 529 = 581 \#$$

$$H_C = 52 \#$$

$$F_{2 \text{ MAX}} = \frac{233}{1.5} = 155 \# \quad \left(\text{USING } \frac{F_1}{F_2} = \frac{b_1^3}{b_2^3} \right)$$

$$M_x = 155 \times 50 = 7767 \#$$



DESIGN BY AS/MASTERMAN

DATE 07-03-81

CHECKED BY AbShah

SHEET NO. 27

PROJECT SSS

JOB NO. 8856

SUBJECT HGR'S CALC. FOR SP-HCB-133-2

CALCULATION NO. 5499

FILE NO. -2

WORST CASE ENVELOPE (MAX LOADS, SMALLEST MEMBER)

$$M_z = M_c = 869 \text{ #ft}$$

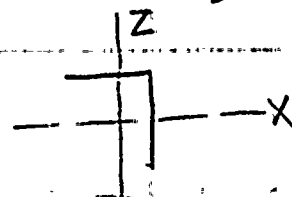
$$M_y = 1165 \text{ #ft}$$

$$M_x = 7767 \text{ #ft}$$

$$F_x = H_A = 581 \text{ #}$$

$$F_y = V_c = 1027 \text{ #}$$

$$F_z = 155$$



PROPERTIES OF MEMBER

$$\frac{KL}{r} = \frac{1.2 \times 63}{0.584} = 129.4$$

$$\therefore F_a = 8350$$

$$\frac{F_y}{A F_a} = \frac{581}{0.584 \times 8350} = 0.12 < 0.15 \therefore \text{OK}$$

INTERACTION

$$\frac{F_y}{A \times F_a} + \frac{M_z}{S_z \times F_b} = 0.12 + \frac{869 + 7767}{1.07 \times 12600} = 0.76 < 1.0 \therefore \text{OK}$$

DUE TO SHEAR

$$\tau_{RES} = \frac{F_x}{(2.75)(.5)} + \frac{F_z}{(2.75)(.5)} + \frac{T \times t}{R} =$$

$$= \frac{581 + 155}{(2.75)(.5)} + \frac{1165 \times 0.25}{0.09} = 377 \text{ psi}$$

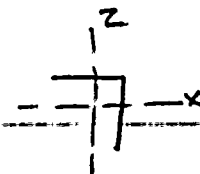
$$\frac{\tau_R}{\tau_a} = \frac{377}{12600} = 0.3 < 1.0 \therefore \text{OK}$$

WELD CHECK

$$W = \sqrt{\left(\frac{1027}{8} + \frac{7767}{4.44} + \frac{869}{4.44}\right)^2 + \left(\frac{581}{4} + \frac{1165 \times 3}{26.67}\right)^2 + \left(\frac{1027}{4} + \frac{1165 \times 3}{26.67}\right)^2} = 9450$$

$$= 0.23 < 0.25 \therefore \text{OK}$$

$$\begin{aligned} A_w &= 8.0 \\ S_x &= 4.44 \\ S_z &= 4.44 \\ J_w &= 26.67 \end{aligned}$$



SINCE VALUE CLOSE ALL AROUND WELD SUGGESTED.

DESIGN BY AB/MASTERMANDATE 07-03-81CHECKED BY AK/AlahSHEET NO. 28PROJECT SSESJOB NO. 8256SUBJECT HGR'S CALC. FOR SP-HCB-133-2CALCULATION NO. 5499FILE NO. -2CHECK R & BOLTSA. FORCES ON BASE PLATE R 16"16"1/2" 5/8" HKB

$$F_x = 581^\# \quad F_y = 1027^\# \quad F_1 F_2 = 155^\# \quad M_x = 7767^\# \quad M_y = M_z = 1165^\# \quad M_z = 869^\#$$

$$V_n = 4 \left[\left(\frac{581}{4} + \frac{707 \times 1165}{4 \times 8.48} \right)^2 + \left(\frac{1027}{4} + \frac{707 \times 1165}{4 \times 8.48} \right)^2 \right]^{1/2} = 1313^\#$$

B. BASE R CAPACITY

$$F_{ny} = 8.3 \text{ kips} \quad V_{ny} = 8.3 \text{ kips} \quad M_{ox} = 38.8 (\text{k-in}) \quad M_{oy} = 38.8 (\text{k-in})$$

$$\text{CHECK, } V_n = 1313 < 0.2 \times 8300 = 1660$$

C. CALCULATE

$$M'_{ox} = \left(1 - \frac{1027 \times 1.33}{8300} \right) \times 38800 = 32415^\#$$

$$M'_{oy} = \left(1 - \frac{1027 \times 1.33}{8600} \right) \times 38800 = 32415^\#$$

D. INTERACTION

$$\left(\frac{1.33 \times 7767}{32415} \right)^{1.61} + \left(\frac{1.33 \times 1165}{32415} \right)^{1.61} = 0.166 < 1.0 \therefore \text{O.K.}$$

CHECK ANCHOR BOLTS INTERACTION

$$V_n \times 1.33 = 1313 \times 1.33 = 1746 < 1860 = 0.2 \times 8300 \therefore \text{OK.}$$



CALCULATION SHEET

0810 (11-74)
2 REV. NO. 2

DATE 7/3/81

DESIGN BY ASHUTOSH MAN

DATE 06-30-81

CHECKED BY Abshah

SHEET NO. 2.9

PROJECT SSES

JOB NO. 8856

SUBJECT HGR'S CALC FOR SP-HBC-133-1

CALCULATION NO. 5499

FILE NO. -2

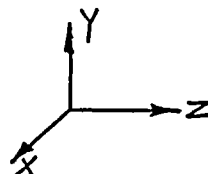
H2003 & H2004 - NEW

$$F_y = 176\#$$

$$F_y = 280\#$$

$$F_z = 649\#$$

$$F_z = 511\#$$



SPA-621 $L_1 = 1'-6"$ $F_x \& F_y = 390\#$
MAX

USE $M4 \times 13 \times 0'-7\frac{1}{4}" \angle G$

FORMED PLATE FOR PIPE 1" - $F_y \& F_z = 624\# < 649\#$. \therefore SHOULD BE
MAX

FORMED PLATE SIZE $A=2"$ $T=\frac{3}{8}"$ $W=2"$ $F_x \& F_y = 968\# > 649\#$
MAX \therefore OK.

$$M_x = 649 \times 2.5 + 280 \times 4.25 = 2813\# - \text{WORST CASE ENVELOPE}$$

ACT

$$M_{SPA} = 390 \times 18 + 390 \times 2.5 = 7995\# > M_{ACT} \therefore \text{HGR IS OK}$$

ALSO ALLOWABLE LENGTH MUCH LARGER THAN ACTUAL \therefore OK

CHECK FREQUENCY D.W. $F_{y3} = 17\#$ $F_{z3} = 72\#$
 $F_{y4} = 36\#$ $F_{z4} = 64\#$

$$W_{EP} = 470\# > 72\# \therefore \text{OK}$$

H2005 F_x actually 373 BUT QUALIFIED FOR $F_x = 383$
(NEW) $F_x = 383\#$ D.W. $F_x = 36\#$

REF TO SPA-571 USE $\angle 4 \times 4 \times \frac{1}{2}$ $L_{MAX} = 3'-8"$ $F_x = 460\#$
MAX

ACTUALLY USE $\angle 4 \times 4 \times \frac{1}{2}$ $L = 0'-8"$ $F_x = 383\# < 460\#$. \therefore OK
ACT

FREQUENCY $W_{EP} = 75\# > 36\# \therefore$ OK

$F_y = 200\#$ - FOR NEW DESIGN

$$\Delta = \frac{PL^3}{3EI} = \frac{200 \times 7.5^3}{3 \times 27.9 \times 10^6 \times 5.56} = 0.00018" < 0.009" \therefore \text{OK}$$

FOR STRESS CHECK REFER SPA-621

$$M_{ALLOW} = 18 \times 350 = 6300$$

$$M_{ACTUAL} = 5 \times 200 = 1000$$

\therefore OK

$$F_x = 350\# < F_x = 383\#$$

BUT IS OK PER ENG. JUDG.



DATE 7/3/81

DESIGN BY ASHUTHERMANDATE 07-01-81 CHECKED BY At ShahSHEET NO. 30PROJECT SSESJOB NO. 8856SUBJECT HGR'S CALC. FOR SP-HBC-133-3 CALCULATION NO. 5499FILE NO. -4H2006 & H2007 - NEW

$$F_x = 166\# \quad F_x = 166\#$$

$$F_y = 321\# \quad F_y = 681\#$$

$$D.W. \quad F_x = 32\# \quad F_x = 32\#$$

$$F_y = 62\# \quad F_y = 62\#$$

PIPE IS LOCATED AT THE SIDE OF ITEM:
 REF TO SPA-633 USE M4x13 L=1'-6" $F_x = F_y = 390\#$
 MAX MAX

$$\text{ACTUALLY USE M4x13 L=7" } F_x = 166\# < 390\#$$

$$F_y = 681\# > 390\#$$

$$M_{SPA} = 390 \times 18 + 390 \times 2.5 = 7995\text{"}\#$$

$$M_{ACT} = 681 \times 2.5 + 166 \times 7 = 2865\text{"}\# < M_{SPA} = 7995\text{"}\# \therefore \text{OK}$$

FORMED PLATE DIMENSION A=2" T=3/8" W=2"

IS OK FOR $F_x \& F_y = 968\# > 681\#$ (IF 1" PPPE FORM,
 PL. IS NOT OK)

$W_{EP} = 470\# > 62\# \therefore$ FREQ. IS OK SINCE LG. ALLOW. MUCH LARGER THAN L_{ACT}

H2008 & H2009 - NEW

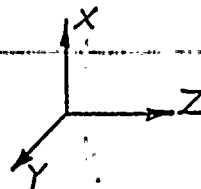
$$F_x = 154\# \quad F_x = 271\#$$

$$F_z = 395\# \quad F_z = 220\#$$

$$D.W. \quad F_x = 28\# \quad F_x = 28\#$$

$$F_z = 44\# \quad F_z = 44\#$$

$$F_{FR} = 165\# \quad F_{FR} = 147\#$$



CHECK FREQUENCY

$$K_{PL} = \frac{27400 \times 0.5^3}{21.5^2 \times 0.17} = 43.58$$

$$K_{CANT} = 1101 \text{ (CHART 1C)}$$

$$K = 43480 \quad \Delta = 44/43480 = 0.001\%$$

REF SPA-621 USE M4x13 L_{MAX}=1'-6" $F_x \& F_y = 390\#$ $F_{FR} = 234\#$ OK
 MAX

$$M_{SPA} = 390 \times 2.5 + 390 \times 18 = 7995\text{"}\#$$

$$M_{T, SPA} = 234 \times 2.5 = 585$$

$$M_{ACT} = 154 \times 22 + 395 \times 2.5 = 4375\text{"}\# < 7995\text{"}\#$$

$$M_{ACT} = 165 \times 2.5 = 413$$

$$M_{9, ACT} = 271 \times 22 + 395 \times 2.5 = 6512\text{"}\# < 7995\text{"}\# \therefore \text{OK}$$



CALCULATION SHEET

Q510 (11-74) **2 REV. NO. 2**

DATE 7/3/81

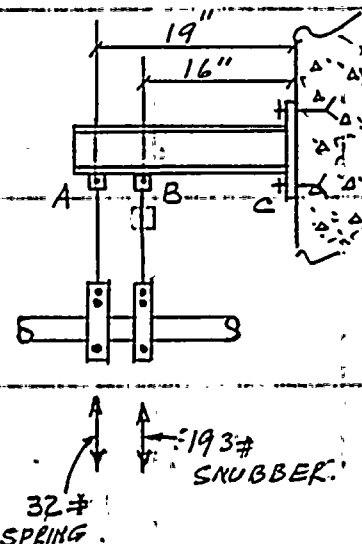
DESIGN BY M PANESAR DATE 7.1.81 CHECKED BY AbShah SHEET NO. 311

PROJECT SSES. JOB NO. 8856

SUBJECT SP.- HCB-133-3 HANGER CALC. CALCULATION NO. 5499 FILE NO. 1/2

H 2010 }
H 2012 } STRUCTURE COMMON.

REF:- SPA-805



	FX	FY	FZ	Mx	My	Mz	L
H 2010 DESIGN LOAD:-	0	32	0	0	0	0	19"
NODE C:-	0	32	0	0	0	608	0
H 2012 DESIGN LOAD:-	0	193	0	0	0	0	16"
NODE C	0	193	0	0	0	3088	0
TOTAL	0	225	0	0	0	3696	0
SPA-805	0	590	0	0	0	10620	18"

DESIGN LOAD & MOMENTS L SPA-805 LOAD & MOMENTS.
SNUBBER IS CLOSER TO THE WALL L=16" & Q OF FORCE L=17.5" < 18" = L SPA
* SUPPORT IS O.K. FOR FREQ. ALSO



CALCULATION SHEET

Q

2 REV. NO. 2

DATE 7/3/81

DESIGN BY M PANESAR

DATE 7.1.81

CHECKED BY A. Shah

SHEET NO. 33

PROJECT SSES

JOB NO. 8856

SUBJECT SP-HCB-133-3 HANGER CALC. CALCULATION NO. 5499

FILE NO. 2

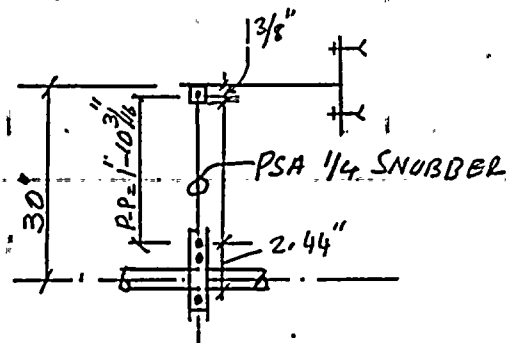
FOR STRUCTURE DESIGN SEE PAGE #30

	FX	FY	FZ	ΔY
DESIGN LOAD	0	193	0	+0.075"

H 2012

SNUBBER PSA 1/4 FIG 307 RATED LOAD = 350.#

4" STROKE.



$$P-P = 30 - (1.375 + 2.44)$$

$$= 26.185"$$

$$= 2' - 2 \frac{3}{16}"$$

$$C.S. = \frac{4 + 0.075}{2} = 2.037"$$

$$X = 9 + 2.037"$$

$$= 11.037"$$

$$H.S. = 2.037 - 0.075$$

$$= 1.962"$$

$$W = 26.185 - [5.12 + 11.037]$$

$$= 10.028"$$

$$\approx 10"$$

4" STROKE, 1.375" Ø LOAD = 193 #

$$C.S. = 2 \frac{1}{16}"$$

$$H.S. = 1 \frac{5}{16}"$$

$$M.V.T. = 1/8"$$

$$P-P = 2' - 2 \frac{3}{16}"$$

$$W = 10"$$



CALCULATION SHEET

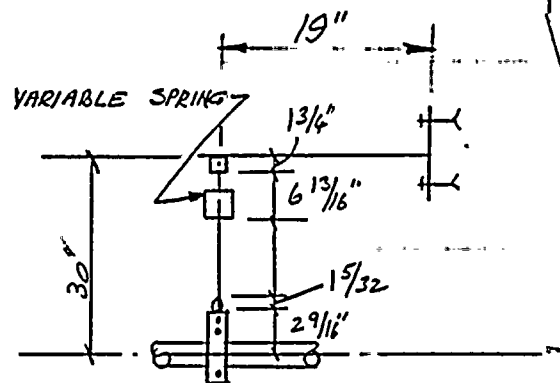
Q310 (11-74)
 2 REV. NO. 2
 DATE 7/3/81

DESIGN BY M PANESAR DATE 7.1.81 CHECKED BY Aswath SHEET NO. 3.4
 PROJECT SSES JOB NO. 8856
 SUBJECT SP-14CB-133-3 HANGER Calc CALCULATION NO. 5499 FILE NO. -2

H 2011 }
 H 2015 } STRUCTURE COMMON

THE STRUCTURE IS SIMILAR TO THAT OF H 2010 & H 2012
 FOR CALCULATIONS SEE PAGE #30

H 2015



	F_x	F_y	F_z	Δy
DESIGN LOADS	0	32	0	+0.075"

$\Delta y = +0.075"$

$$\text{LENGTH OF ROD} = 30 - (1\frac{3}{4} + 6\frac{13}{16} + 1\frac{5}{32} + 2\frac{9}{16})$$

$$= 17.719 \approx 18 + 3 + 3 = 11 \text{ " } \approx 24"$$

$$\text{WT OF ROD} = 2 \times 0.668 = 1.34 \#$$

$$\text{HARDWARE WEIGHT} = 0.76 + 0.063 + 0.668 + 0.009 \times 2$$

$$= 2.18 \approx 2 \#$$



CALCULATION SHEET

0510 (11-74)
2 REV. NO. 2

DATE 7/3/81

DESIGN BY M PANESAR DATE 7.1.81 CHECKED BY Abdullah SHEET NO. 35
PROJECT SSES. JOB NO. 8856.
SUBJECT SP-HCB-133-3 HANGER CALC CALCULATION NO. 5499 FILE NO. -2

$$HL = 32 + 2 = 34 \#$$

$$CL = 34 + 15 \times 0.075 = 35.125 \approx 35 \#$$

VARIABLE SPRING FIG 268, SIZE 00, TYPE A SPRING RATE 15#/in.

$$\text{VARIABILITY} = \frac{15 \times 0.075}{34} = 0.033 = 3.3\% \quad \text{o.k.}$$

FX FY FZ ΔY.

H 2011

DESIGN LOAD: 0 193 0 +0.075"

SNUBBER PSA 1/4 FIG 307 RATED LOAD = 350#

4" STROKE

$$P-P = 30 - (1.375 + 2.44)$$

$$= 26.185" = 2' - 2\frac{3}{16}"$$

$$C.S. = \frac{4 + 0.075}{2} = 2.037"$$

$$X = 9 + 2.037$$

$$= 11.037"$$



CALCULATION SHEET

0510 (11-74)

2 REV. NO. 2

DATE 7/3/81

DESIGN BY M PANESAR DATE 7.1.81 CHECKED BY Abshah SHEET NO. 36PROJECT SSES JOB NO. 8856SUBJECT SP-HCB-133-3 HANGER CALC CALCULATION NO. 5499 FILE NO. 2

$$HS = 2.037 - 0.075$$

$$= 1.962''$$

$$W = 26.185 - (5.12 + 11.037)$$

$$= 10.028''$$

$$\approx 10''$$

$$4'' \text{ STROKE, } 1.375'' \text{ DIA LOAD} = 193 \#$$

$$CS \ 2\frac{1}{16}'', HS = 1\frac{15}{16}'' \text{ MVT} = \frac{1}{8}''$$

$$P-P = 2 - 2\frac{3}{16}''$$

$$W = 10''$$



CALCULATION SHEET

0510 (11-74)

2 REV. NO. 2

DATE 7/3/81

DESIGN BY ASPHUTERMAN

DATE 07-01-81

CHECKED BY Abshah

SHEET NO. 37

PROJECT SSES

JOB NO. 8856

SUBJECT HGR'S CALC. FOR SP-HBC-133-3

CALCULATION NO. 5499

FILE NO. -2

H2013-H2014
(NEW)

$F_x = 141\#$

D.W. $F_x = 26\#$

REF to SPA-571 USE $L 3 \times 3 \times 3/8$ $L_{MAX} = 2'-9"$ $F_x = 340\#$

ACTUALLY USE $L 3 \times 3 \times 3/8$ $L = 2'-3" < 2'-9"$

$F_{x, ACT} = 141\# < 340\# \therefore OK$

$WEP = 80\# > 26\# \therefore$ FREQUENCY IS OK

$F_y = 200\#$ (NEW DESIGN)

$$\Delta = \frac{200 \times 26.5^3}{3 \times 27.9 \times 10^6 \times 1.76} = 0.025" < 0.125" \therefore OK$$

$$f_M = \frac{200 \times 26.5}{0.833} = 6363 \text{ psi} \quad f_F = \frac{200}{2.11} = 95 \text{ psi}$$

$$f_{TENS} = 6363 + 95 = 6458 \text{ psi}$$

$$f_{F_x} = \frac{141}{2.11} = 67 \text{ psi} \quad f_{RES} = \sqrt{6458^2 + 67^2} = 6458 \text{ psi} < 12600 \text{ psi} \therefore OK$$

STRESS DUE TO F_x IS SMALL

REV. NO. 2

Q

CHECK

7) Pipe Wall Thickness (in)

8PC.20896
G1001774-02

REV. NO. 2

Q. SHEET: 39 OF

27

CODE: SECT III cl2 SEISMIC CATEGORY: I

K.T.O.

a. Piping Classification

b. Material

c. Temperature

d. Pressure

c. Pipe Size Nominal

f. Pipe Schedule

g. Contents Water or Steam

h. Insulation Type/Thickness

HCB-133	HCB-133								
SA-312	SA-312	✓							✓
TP-304L	TP-304L								✓
250	250	✓							✓
35	35	✓							✓
1"	3"	✓							✓
40S	10S	✓							✓
WTR	WTR	✓							✓
—	—	✓							✓

3. MIN. OFFSET CHECK

a. Location/Direction

b. Max. Disp. (in)

c. Mini Single Offset Road. (11) IN

d. Geometry Adj. Factor

e. Min. Offset Req. (#) IN

f. Actual Offset (#) | N'

H2 TO: X-219 B(Z)	H2003 (Z) TO H2 (Z)	H2003 (Y) TO H1 (Y)	H10 (Z) TO H2003(Z)	H2008 (Z) X-219A (Z)	H2002 (X) H2005 (X)	Ref. (1) <u>M 241</u>	/
.144	.054"	.0994"	.051"	.1212"	.0465"	Table _____	/
29.8°	18.24"	24.8"	17"	27.4"	17"		/
1.0	$\frac{1.12}{A-3.2}$	$\frac{1.12}{A-3.1}$	1.0	1.0	1.0	Fig. <u>A-3.1, -3.2</u>	/
29.8°	20.44"	21.8	17"	27.4"	17"	"	/
27" *	55"	55	18"	27.5"	20.5"		/

*MINIMUM OFFSET ACCEPTABLE? - Yes ☒ No ☐ * PART OF MVMT, IS SAM WHERE $L < L_{MAX}$ - OK.

4: MAXIMUM SPAN CHECK

a. Pipe Classification

b. Location/Component

c. Max. Allow. St. Span (ft-in)

d. Actual Max. St. Span (ft-in)

e. Geometry Adj. Factor.

f. Max.Allow.Non St.Span (ft-in)

g. Actual Non-St. Span (ft-in)

HCB-133	HCB-133	HCB-133	GRAVITY	Ref. ⁽¹⁾ m 241
H2001 (X) To H3 (X)	H2003 (Z) To H2 (Z)	H2003 (Y) To H1 (Y)	SPAN	Table A-2.1
8.0'	8.0'	8.0'	2'-0"	
—	—	—		
$\frac{.72}{A-3.11}$	$\frac{.627}{A-3.15}$	$\frac{.74}{A-3.11}$		Fig. A-3.11-3.15
5.76'	5.02'	5.92'		
5.3'	4.6'	4.6'		

MAXIMUM SPANS ACCEPTABLE? Yes ☒ No ☐

5. SUPPORT CHECK FOR VALVE OPERATOR N/A

Valve Identification

Valve Opr. Support & Results

VALVE OPERATOR SUPPORT ACCEPTABLE? Yes ☐ No ☐

REMARKS: (ADDITIONAL NOTES, REFERENCES AND COMMENTS)

(1) SPECIFICATION m-24 REV 3

ACTION	NAME	REV	DATE	NAME	REV	DATE
CALCULATION BY	SEHYUN KIM	2	6-5-81			
CHECKED BY	BRUCE MYATT	2	6-11-81			
APPROVED BY	J. Grace	2	6-19-81			



CALCULATION COVER SHEET

Q

PROJECT SUSQUEHANNA STEAM ELECTRIC STATION UNIT-1 JOB NO. 8856 DISCIPLINE PLANT DESIGN
SUBJECT HYDROGEN & OXYGEN ANALYZER SYS-1C226A RETURN FILE NO. -
LINE TO SUPPRS. CHAMBER LINE HCB-126 CALC. NO. ABS-5371
NO. OF SHEETS 1

RECORD OF ISSUES

NO.	DESCRIPTION	BY	DATE	CHKD	DATE	APPRD	DATE
0	FINAL AS BUILT RECONCILIATION	<i>Sm</i>	5-15-82	<i>EY</i>	5-15-82	<i>7/8</i>	5-15-82
1	DELETED NOTE, ADDED NOTE; CHANGED AS-BUILT FAB ISO. REV.	<i>Sm</i>	6-8-82	<i>7/8</i>	6-9-82	<i>7/8</i>	6-9-82

1. SK-M- 5371

2. REF : CALC # : 5371/5505

3. ATTACHMENTS :

N/A

1953

1953





CALCULATION SHEET

CALC. NO. ABS-5371 REV. NO. 1

ORIGINATOR [Signature] DATE 4-7-82 CHECKED [Signature] DATE 4-15-82

PROJECT SSES / UNIT 1 JOB NO. 8856

SUBJECT HYDROGEN & OXYGEN ANALYZER SYS-1C226B RETURN SHEET NO. 1

LINE TO SUPRES. CHAMBER LINE HCB-126

1. AS BUILT FAB. ISO. & REV.

ENG'G REV.

SP-HCB-126-4 REV. 16

REV. 11E1

SP-HCB-126-1 REV. 11

REV. 8E1

SP-HBD-195-1 REV. 6

REV. 5E1

2. CONCLUSION OF COMPARISON.

NO DIFFERENCE

MINOR DIFFERENCE*

MAJOR DIFFERENCE**



3. COMMENTS.

ON SP-HCB-126-4, H45, H46, H47, H48 & H49 ARE ALL SHIFTED

UP THE RISER FROM THE LOWER ELBOW 2 1/2" MORE THAN ON

ENGINEERING REV. ;

SNUBBER H2018 HAS BEEN MOVED TO
THE 73 1/4" RISER. NO STRESS IMPACT.

* BY ENGINEERING JUDGMENT NO REANALYSIS IS REQUIRED.

** SEE INSIDE FOR NEW COMMENTS AND CALCULATION.



CALCULATION COVER SHEET

Q

PROJECT SUSQUEHANNA STEAM ELECTRIC STATION UNIT-1 JOB NO. 8856 DISCIPLINE PLANT DESIGN

SUBJECT HYDROGEN & OXYGEN ANALYSER SYS. - K226B, RETURN FILE NO. ---

LINE TO SUPPRESSION CHAMBER LINE HCB-126 CALC. NO. 5371

NO. OF SHEETS 67

RECORD OF ISSUES								
NO.	DESCRIPTION	BY	DATE	CHKD	DATE	APPRD	DATE	PROCD
4	THIS REV 4 COVER SHT, SUPERSEDES REV 3 COVER SHT., REVISED AND REPLACED SHTS 52 TO 59, ADDED SHT 67.	CHN	3-3-82	KP	3/4/82	ACA	3/0/82	QA/QC 5/4/82

1. STATEMENT OF PROBLEM:

- ☐ WEIGHT
- ☐ THERMAL
- ☐ SEISMIC ANALYSIS
- ☐ SAM
- ☐ PIPE SUPPORT ANALYSIS

2. SOURCES OF DATA

SP-HCB-126-4-REV 11E1
FAB ISO-HBD-125-1-REV 5E1
SKN 5371 REV E

3. ATTACHMENTS

1 15 PAGES
2 11 PAGES
3 18 PAGES
4 11 PAGES

4. SOURCES OF FORMULAE AND REFERENCES

M-199 REV 35
M-241 REV
ASME SECTION III, 1971, WINTER '72
POWER PIPING CODE B-31.1 1973 ED.
AISC MANUAL OF STEEL CONSTRUCTION 7-TH ED.
ITT GRINNELL CATALOG PH- 74, 79, 81 EDS.
SFP SM ACTIVE REVISION
SPA ACTIVE REVISION



CALCULATION SHEET

0510-111741
Q (REV. NO. 3) 3
DATE 8/7/81DESIGN BY A.F. Rahim DATE 8-4-81 CHECKED BY J.M. Dwyer SHEET NO. 1PROJECT SSES JOB NO. 8856SUBJECT H-238B TO ANCHORS H-2 & H-47 CALCULATION NO. 5371 FILE NO. 3SPECIFICATION

	1-HCB-126	1-HBD-195	M-241
ASME CLASS	2	ANSI B 31.1	
SEISMIC CLASS	I	II	
PRESSURE	30	95	
TEMPERATURE	200°F	90°F	
INSULATION	NONE	NONE	
PIPE SIZE	1" 40S	1" SCH. 80	
MATERIAL	SA-376 TP 304	ASTM A-106 Gr B	M-199
α COEFF. THERMAL	1.46"/100 FT	0.152"/100 FT	
WEIGHT	2.05 lbs/FT	2.48 #/FT	
MAX SPAN	8'-0"	8'-0"	
FREQUENCY	12.64	12.64	
α_H HORIZ. ACCELS	4.0 g	4.0 g	
α_V VERT. ACCELS	4.0 + 1 = 5 g	4.0 + 1 = 5 g	
100% SPAN LOAD/MOMENT	96 #/424 FT-LBS	117 #/607 FT-LBS	
75% SPAN LOAD/MOMENT	33 #/214 FT-LBS	41 #/260 FT-LBS	
E	28.3 x 10 ⁶ psi	27.9 x 10 ⁶ psi	
SA	23550 psi	22500 psi	
I	0.0873 IN ⁴	0.1056 IN ⁴	
Z	0.1328	0.1606	



CALCULATION SHEET

REV. NO. 3

0310 (11-74)

DATE 8-17-81

DESIGN BY A.F. Rahim

DATE 8-4-81

CHECKED BY M.H.

SHEET NO. 2

PROJECT SSES

JOB NO. 8856

SUBJECT X-238B TO ANCHORS H-2 & H-47

CALCULATION NO. 5371

FILE NO.

THERMAL SPANS CHECK

PER INSPECTION ALL SUPPORTS ARE ATTACHED TO REACT. BLDG. EXCEPT H-2021 WHICH IS ATTACHED TO CONT. WALL

CONT. BLDG. MOV'T. @ X-238B PENETRATION

Pg-B-12
FSAR
FIG 3.7b

	THERM	OBE	SSE
Δx	0.123	0	0.083 (RADIAL OUT)
Δy	0.256 (0.021")	0	0 (UP)
Δz	0.123	0	0.083 (TANGENTIAL WEST)

EXACT PER MEMO #16

REACT. BLDG. MOV'T. @ EL 670'-0" N.P. 11 & 1

Δx	0	0.0004	0.0005
Δy	0	0.0001	0.0001
Δz	0	0.0002	0.0002

USE CONT BLDG. MOV'T. FOR DIFF. MOV'T.

X-238B TO H-22 (X-DIR)

$$\Delta x = (0.123 + 0.083) \sin 37.5^\circ = 0.125"$$

MIN. OFFSET FOR $\Delta = 0.2"$, $L = 1.3$ IS 2'-8"

$$E = (12\frac{3}{4} + 5\frac{1}{4} + 7\frac{3}{4} + 7\frac{1}{4} + 11\frac{3}{8} + 7\frac{1}{4}) \cos 37.5^\circ = 41' = 3'-5"$$

OK

TABLE
A-1.2

X-238B TO H-2017 (X-DIR)

$$\Delta x = 0.125 + \frac{(10.75 + 13.75 + 9.875) \cdot 0.46}{12 \times 100} = 0.17"$$

COMPARING WITH ABOVE CALC. SPAN IS OK

H-42 TO H-45 (X DIR)

$$\Delta x = \frac{9.7 \times 1.46}{12 \times 100} = 0.118" \therefore L_{MIN} = 2'-4"$$





CALCULATION SHEET

REV. NO. 3

0510 (11-74)

DATE 8-17-81

DESIGN BY A.F. Rahim

DATE 8-4-81

CHECKED BY M.H.

SHEET NO. 3

PROJECT

JOB NO. 8856

SUBJECT X-238B TO ANCHORS H-2 & H-47

CALCULATION NO.

5371

FILE NO.

APPROX TO Fig-A-3-8

H-45

L₁

$L_1 = 27''$

$L_2 = 12.75''$

$L_3 = 18.75''$

M-241

L₂

$\frac{L_3}{L_1} = 0.7$

$\frac{L_2}{L_1} = 0.5$

$\therefore F = 1.15$

Pg.

A-16a

M-241

L₃

$OR L_{MIN} = 1.15(28) = 32''$

H-42

$L_{ACT} = 6'' + 12\frac{3}{4}'' + 12\frac{3}{4}'' + 27'' = 58''$

OK

X-238B TO H-38 (Y-DIR)

$\Delta y = 0.256$

MIN OFFSET FOR $\Delta = 0.3$, $L = 1.3$ is $3'-0''$

TABLE A-12

$ACTUAL OFFSET = 12\frac{3}{4}'' + 5\frac{1}{4}'' + 7\frac{3}{4}'' + 7\frac{1}{4}'' + 11\frac{3}{8}'' + 7\frac{1}{4}'' = 51''$

OK

X-238B TO H-2017 (Y-DIR)

$\Delta y = 0.256 + \left(\frac{22}{12} \times \frac{1.46}{100}\right) = 0.28''$

$\therefore L_{MIN} \text{ OFFSET} = 3'-0''$

L₁

APPROX TO Fig-A-3-8

M-241

Fig. A 3.8

L₂

$L_1 = 25.75$

$L_2 = 24.5$

$L_3 = 12$

L₃

$\frac{L_3}{L_1} = 0.5$

$\frac{L_2}{L_1} = 2$

$\therefore F = 1$

Pg.

A-16a

$L_{MIN} = 3'-0''$

$L_{ACTUAL} = 24.5 + 12 = 36\frac{1}{2}'' \therefore OK$

X-238B TO H-2021 (Y-DIR)

NO DIFF. Δy SINCE H-2021 IS ATTACHED TO CONT. WALL



CALCULATION SHEET

REV. NO. 3

0510 (11-74)

DATE 8-17-81

DESIGN BY A.F. Rahim DATE 8-4-81 CHECKED BY H.M. SHEET NO. 4

PROJECT SSES JOB NO. 8856

SUBJECT X-23813 TO ANCHORS H-2 TO H-47 CALCULATION NO. 5371 FILE NO. 3

H-38 TO H-39 (Y-DIR)

$$\Delta y = \frac{23.25}{12} \times \frac{1.46}{100} = 0.03''$$

(5'-3" + 5 1/2") OFFSET IS
ADEQUATE.TABLE
A-1.2

H-43 TO H-47 (Y-DIR)

$$\Delta y = (80.5 + 84 + 27) / 12 \times \frac{1.46}{100} = 0.24''$$

MIN OFFSET FOR $\Delta = 0.3$ $i = 1.3$ IS 3'-0"
ACTUAL OFFSET = 4'-6"
∴ OKTABLE
A-1.2





CALCULATION SHEET

REV. 10.3

0510 (11-74)

3

DATE 8-17-81

DESIGN BY A.F. Rahim DATE 8-4-81 CHECKED BY H.M SHEET NO. 5PROJECT SSES JOB NO. 8856SUBJECT X-238B TO ANCHORS H-2 & H-44 CALCULATION NO. 5371 FILE NO. 3X-238B TO H-2 (Z-DIR)

$$\Delta z = \left\{ \frac{336 \cos 37.5^\circ}{12} + \frac{9.875 \times 2.5}{12} \right\} \frac{1.46}{100} + \left(\frac{56.5}{12} \right) \left(\frac{0.152}{100} \right) = 0.06$$

$$\Delta z \pm (0.123 + 0.083) \cos 37.5^\circ = 0.16 \text{ TOTAL } \Delta z = 0.22''$$

APPROX TO FIG. A-3.2 TABLE A-1.2 F=1.12

OFFSET = 3'-0" FOR $\Delta = 0.3$, $L = 1.3$

$$\therefore L_{\min} \approx 4'-0''$$

$$L_{\text{ACT}} = 13\frac{3}{4} + 10\frac{3}{4} + 22 + 9\frac{7}{8} = 56''$$

∴ OK

TABLE
A-1.2X-238B TO H-44 (Z-DIR)

$$\Delta z = \left\{ \frac{57.13 \cos 37.5^\circ}{12} + \frac{321.63}{12} \right\} \frac{1.46}{100} = 0.45''$$

$$\Delta z \pm (0.123 + 0.083) \cos 37.5^\circ = 0.16'' \therefore \text{TOTAL} = 0.61''$$

APPROX TO FIG. A-3.6 With max $\frac{L_z}{L}$ ∴ F=1.23FOR $\Delta = 0.6$, $L = 1.3$ OFFSET = 4'-8"

$$\text{OR } L_{\min} = 56 \times 1.23 = 69''$$

$$L_{\text{ACT}} = 23.25 + (8'-1'' - 1'-5\frac{1}{2}'')$$

$$= 103'' \therefore \text{OK}$$

TABLE
A-1.2
M-241





DATE 8-17-81

DESIGN BY A.F. Rahin DATE 8-4-81 CHECKED BY H.H. SHEET NO. 6

PROJECT SSES

JOB NO. 8856

SUBJECT X-238B TO ANCHORS H-2 & H-47 CALCULATION NO. 5371 FILE NO. 3

SEISMIC & DEAD-WT SPAN CHECK

SINCE THE BRANCH W/2 VALVE IS SUPPORTED BY A
SUPPORT IN-BETWEEN VALVES, ELIMINATE FROM ANALYSIS

X-238B TO H-2017 (Y-DIR)

VALVE WEIGHTS ARE 16# FOR GLOBE VALVES

32# FOR SRV 15737 & 15738

41# FOR SRV 15736 A

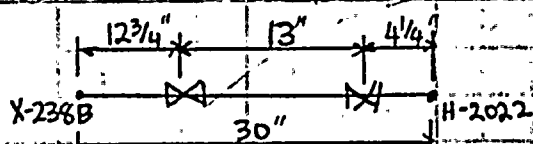
8856-J70

-26(2)-3

BY ENGINEERING JUDGEMENT SPAN IS TOO FLEXIBLE

∴ ADD H-2022 3" SOUTH OF TEE

BEING SO CLOSE TO SRV 15736A MASS DISTRIBUTION



$$W = \frac{16 \times 12.75}{15} + \frac{41 \times 4.25}{15} = 25.2\#$$

$$\frac{a}{L} = \frac{15}{96} = 0.16 \therefore F = 0.3$$

Fig. A-3-20

$$L_{MAX} = 0.3 \times 96 = 29\#$$

$$L_{ACT} = 30\# \quad \text{ACCEPTED}$$

N-B THERMAL SPAN CHECK X-238B TO H-2022 (Y-DIR)

$$\Delta y = 0.021\# \quad \text{MIN. OFFSET} = 17\#$$

$$\text{ACTUAL OFFSET} = 30\# \quad \text{OK}$$

TABLE
A-1-2 $\Delta y = 0.021$
PER MEMO
16.

$$\text{@ EL. 1670'-0"} \quad \Delta y \cong 0.021\# \text{ INSTEAD OF } \Delta y = 0.0256\#$$

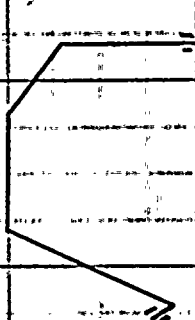
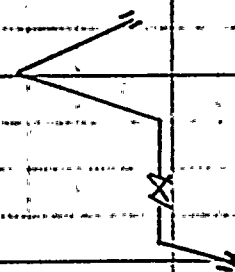
H-2022 TO H-2017 (Y-DIR)SIMPLIFIED TO
FIG. A-3-18

FIG. A-3-16



DATE 8-17-81

DESIGN BY A.F. Rahim DATE 8-4-81 CHECKED BY M.M. SHEET NO. 7

PROJECT SSES JOB NO. 8856

SUBJECT X-238B TO ANCHORS H-2 & H-47 CALCULATION NO. 5371 FILE NO. 3

$$\frac{W}{WL} = \frac{33 + \frac{22}{12}(2.05)}{(2.05)(8)} = 2.24 \quad F = 0.2$$

$$L_{max} = 0.2 \times 96 = 19.2 \quad L_{ACTUAL} = 2\frac{1}{4} + 9\frac{7}{8} + 9\frac{7}{8} + 10\frac{3}{4} + 13\frac{3}{4} = 46'' \quad N.G.$$

ADD H-2023 5" EAST OF ELBOW

H-2022 TO H-2023 (Y-DIR) }
H-2023 TO H-2017 (Y-DIR) } OK BY ENGINEER OBSERVATION

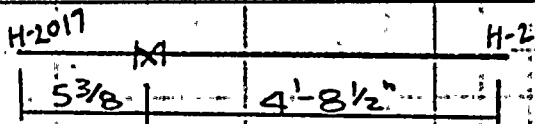
NB THERMAL SPAN CHECK X-238B TO H-2023 (Y-DIR)

$$\Delta y = 0.256'' \quad \therefore \text{OFFSET} = 3.0''$$

TABLE A-1.2

$$\text{ACTUAL OFFSET} = 12\frac{3}{4} + 5\frac{1}{4} + 7\frac{3}{4} + 7\frac{1}{4} + 13\frac{3}{4} + 5\frac{3}{4} = 52'' \quad \therefore \text{OK}$$

H-2017 TO H-2 (Y-DIR)



$$\frac{W}{WL} = \frac{33}{2.05 \times 8} = 2.01$$

$$\frac{a}{L} = \frac{5.375}{96} = 0.05$$

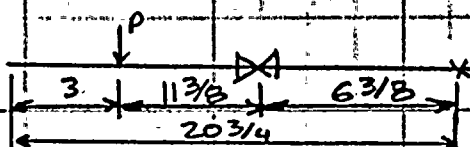
Fig A-3.20

$$\therefore F = 0.6$$

$$L_{min} = 0.6 \times 96 = 57.6''$$

$$L_{ACT} = 5.375 + 56.5 = 61.875'' \quad \text{ACCEPTED BY ENG. JUDGEMENT.}$$

H-2022 TO H-38 (V-DIR)



$$P = \frac{2}{3} \times 33 = 22 \#$$

$$\frac{W}{WL} = \frac{22 + 33}{2.05 \times 8} = 3.3$$

$$\frac{a}{L} = \frac{6.375}{96} = 0.07 \quad F = 0.2$$

Fig A-3.20

$$L_{min} = 0.2 \times 96 = 19.2'' \quad L_{ACT} = 20\frac{3}{4}'' \quad \text{ACCEPTED BY ENG. JUDGEMENT.}$$



CALCULATION SHEET

REV. NO. 3/3

0510 (11-74)

DATE 8-17-81

DESIGN BY

A.F. Rahimi

DATE

8-4-81

CHECKED BY

M.M.

SHEET NO.

6

PROJECT

SSES

JOB NO.

8856

SUBJECT

X-238B TO ANCHOR H-2 & H-47

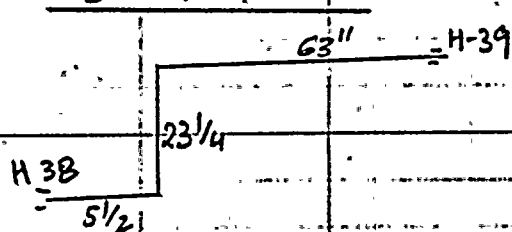
CALCULATION NO.

5371

FILE NO.

3

H-38 TO H-39 (Y-DIR)



$$\frac{a}{L} = \frac{5.5}{96} = 0.06$$

$$\frac{W}{WL} = \frac{23.25}{96} = 0.24$$

$$F = 1$$

$$L_{MIN} = 96$$

$$L_{ACT} = 63 + 5.5 = 68.5 \therefore OK$$

Fig
A-3-20

H-39 TO H-40 (Y-DIR)

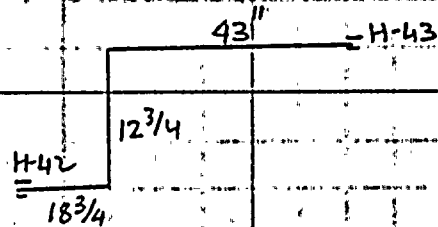
H-40 TO H-2020 (Y-DIR)

H-2020 TO H-41 (Y-DIR)

H-41 TO H-42 (Y-DIR)

OK BY ENGINEERING
JUDGEMENT.

H-42 TO H-43 (Y-DIR)



$$\frac{W}{WL} = \frac{12.75}{96} = 0.13$$

$$\frac{a}{L} = \frac{18.75}{96} = 0.20$$

$$F = 0.8$$

$$L_{max} = 0.8 \times 96 = 77$$

$$L_{ACTUAL} = 43 + 18.75 = 61.75 \therefore OK$$

Fig
A-3-20

H-43 TO H-47 (Y-DIR)

OK BY ENGINEERING
JUDGEMENT.

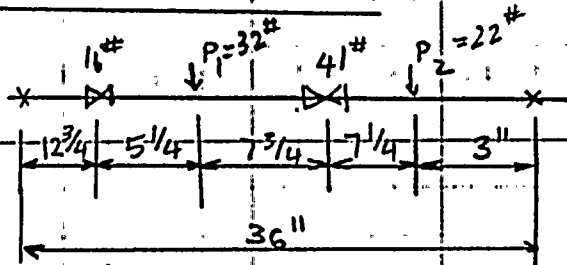


DATE 8-17-81

DESIGN BY A.F. Rahman DATE 8-4-81 CHECKED BY M.M. SHEET NO. 9PROJECT SSES JOB NO. 8856SUBJECT X-238B TO ANCHORS H-2 & H-47 CALCULATION NO. 5371 FILE NO. 3

FOR (X-DIRECT.) CONSIDERATION USE ANALOGY OF (Y-DIR) ANALYSIS. DUE TO CONCENTRATED LOADS OF VALVES ADD H-2024 3" NORTH OF TEE. X-SNUBBER SKEW

X-238B TO H-2024 (X-DIR)



USING MASS DISTRIBUTION TO CENTRE OF SPAN

$$W = \frac{16 \times 12.75}{18} + \frac{32 \times 18}{18} + \frac{41 \times 10.25}{18} + \frac{22 \times 3}{18}$$

$$= 70.3 \quad \text{For any } \frac{y}{L}$$

$$\frac{W}{WL} = \frac{70.3}{2.05 \times 8} = 4.2 \quad \therefore F = 0.2$$

$$\therefore L_{\max} = 0.2 \times 96 = 19.2" \quad L_{\text{ACTUAL}} = 36" \quad \therefore \text{NG.}$$

ADD H-2025 3" NORTH OF BRANCH

X-238B TO H-2025 (X-DIR)_{SKW}
X-2025 TO H-2024 (X-DIR)_{SKW} } OK BY ENGINEERING JUDGEMENT

N-B THERMAL SPAN CHECK X-238B TO H-2025 (X-DIR)_{SKW}
 DUE TO Δx_{SKW} CONT. BLDG MOVEMENT ATTACH
 H2025 TO CONT. WALL.

N-B THERMAL SPAN CHECK H-2025 TO H-38 (X-DIR)_{SKW}

$$\Delta x_{\text{SKW}} = 0.125" \quad \text{MIN. OFFSET} = 2'-8"; \quad L_{\text{ACT}} = 4\frac{3}{4} + 7\frac{1}{4} + 11\frac{3}{8} + 7\frac{1}{4} = 30.625"$$

Pg. 2 OF
CALCS.

$$\text{EXACT } L_{\min} = \sqrt{\frac{6 \times 28.3 \times 10^6 \times 0.0873 \times 1.3 \times 0.125}{0.1328 \times 23550}} = 27"$$

$$L_{\min} < L_{\text{ACTUAL}} \therefore \text{OK}$$

N-B THERMAL SPAN CHECK H-2025 TO H-2017 (X-DIR)

$$\Delta x = 0.17 \quad L_{\min} = \sqrt{\frac{6 \times 28.3 \times 10^6 \times 0.0873 \times 1.3 \times 0.17}{0.1328 \times 23550}} = 32.4"$$

$$L_{\text{ACT}} = 4\frac{3}{4} + 7\frac{1}{4} + 22 + 9\frac{7}{8} + 2\frac{1}{2} = 46" \quad \therefore \text{OK}$$

Pg. 2 OF
CALCS.



CALCULATION SHEET

REV. NO. 3

0510 (11-74)

DATE 8-17-81

DESIGN BY

A.F. Rahim

DATE

8-4-81

CHECKED BY

M.M.

SHEET NO.

10

PROJECT

SSES

JOB NO.

8856

SUBJECT

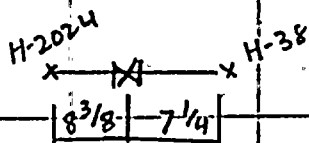
X-238B To ANCHORS H-2 & H-47

CALCULATION NO.

5371

FILE NO.

H-2024 To H-38 (X-DIR)



OK BY ENG. JUDGEMENT.

H-38 To H-2019 (X-DIR)

H-2019 To H-39 (X-DIR)

H-39 To H-40 (X-DIR)

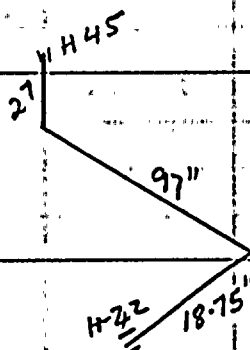
H-40 To H-2020 (X-DIR)

H-2020 To H-41 (X-DIR)

H-41 To H-42 (X-DIR)

OK BY ENGINEER OBSERVATION

H-42 To H-45 (X-DIR)



$$W = wh = (84'') (2.05) = 199$$

$$\frac{h}{L} = \frac{97}{96} = 1.01 \quad F = 0.33$$

$$L_{MAX} = 96 \times 0.33 = 32''$$

$$L_{ACT} = 18.75 + 27 = 45.75'' \therefore NG$$

RELOCATE HAS DOWN BY 13 3/4"

$$L_{ACT} = 18.75 + 13 3/4'' = 32'' \therefore OK$$

Fig
A-3.20

N-B THERMAL SPAN CHECK H-42 TO H-45 (X-DIR)

$$\Delta = 0.118'' \quad L_1 = 13 3/4'', \quad L_2 = 12.75, \quad L_3 = 18.75$$

$$\frac{L_3}{L_1} = 1.4, \quad \frac{L_2}{L_1} = 0.96 \quad F = 1.09$$

$$L_{MAX} = 1.09 \times 28 = 30.5'' \quad L_{ACT} = 32'' \therefore OK$$

$$H-45 TO H-46 (X-DIR) \quad SPAN = 7'-0'' + 1'-13 3/4'' = 8'-13 3/4'' > 8'-0''$$

ACCEPTED

H-46 TO H-47 (X-DIR) OK BY INSPECTION

Pg. 3 of
Calcs
Pg. 16a
M-241



DESIGN BY

AFRahim

DATE

8-4-81

CHECKED BY

M.M.

SHEET NO.

11

PROJECT

SSE3

JOB NO.

8856

SUBJECT

H-238B TO ANCHORS H-2 & H-47

CALCULATION NO.

5371

FILE NO.

FOR Z-DIRECTION CONSIDERATION: SINCE H-2018 CANNOT BE CONSIDERED AN AXIAL SUPPORT BEING 5 1/2" (> 3.0D) FROM ELBOW, INSTALL A SNUBBER @ 45° BEND AT NORTHERN END OF PIPE. SNUBBER WILL LIE IN Y-Z PLANE. SINCE H-2018 IS NOT INSTALLED, FOR DOCUMENTATION PURPOSES THIS CHANGE WILL BE REFERRED TO AS RELOCATION OF H-2018

H-2018 RELOCATED POSITION TO H-44 (Z-DIR.)

H-44 TO H-45 (Z-DIR.)

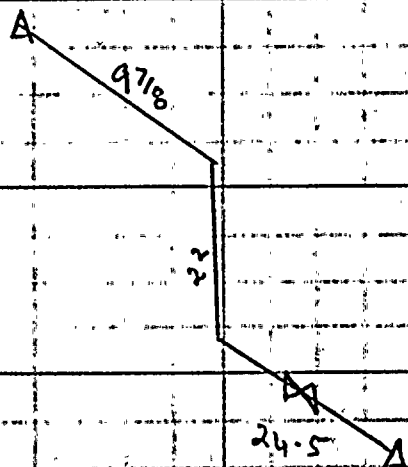
H-45 TO H-46 (Z-DIR.)

H-46 TO H-47 (Z-DIR.)

OK BY

OBSERVATION

X-238B TO H-2 (Z-DIR.)



$$\frac{W}{WL} = \frac{(33 \times \frac{13.75}{24.5})}{2.05 \times 8} = 1.1$$

Fig A-3.18

$$F = 0.2$$

$$L_{max} = 0.2 \times 96 = 19.2"$$

$$L_{ACT} = 9.875 + 24.5 + 22 = 56"$$

N.G.

MAKE H-2023 A GUIDE (IN Z-SKEW DIR.)

X-238H1 TO H-2023 (Z-DIR.)

H-2023 TO H-2 (Z-DIR.)

OK BY ENGINEERING JUDGEMENT

N.B. THERMAL SPAN CHECK X-238H1 TO H-2023 (Z-DIR. SKEW)

$$\Delta Z_{SKEW} = \left\{ \frac{33}{12} + \frac{9.875 + 25}{12} + \frac{146}{100} + (0.123) \right\} = 0.18"$$

$$L_{min} = \sqrt{\frac{6 \times 28.3 \times 10^6 \times 0.0873 \times 1.3 \times 0.18}{0.1328 \times 23.550}} = 33"$$



CALCULATION SHEET

REV. NO. 3

0510 (11-74)

DATE 8-17-81

DESIGN BY AFRahem

DATE 8-4-81

CHECKED BY M. M.

SHEET NO. 12

PROJECT SES

JOB NO. 8856

SUBJECT H-238B TO ANCHORS H-2 & H-47

CALCULATION NO. 5371

FILE NO. 3

$$L_{ACT} = 13\frac{3}{4} + 5\frac{3}{4} = 19.5''$$

ATTACH H-2023 TO CON'T WALL * N.G.

$$\Delta z = \left\{ \frac{33}{12} + \frac{9875 + 2.5}{12} \right\} \frac{1.46}{100} = 0.05''$$

$$L_{min} = \sqrt{\frac{6 \times 28.3 \times 10^6 \times 0.0873 \times 1.3 \times 0.05}{0.1328 \times 23550}} = 17.5''$$

$$L_{ACT} = 19.5'' \quad \therefore OK$$

NB THERMAL SPAN CHECK H-2023 TO H-2 (Z-DIR)

$$\Delta z = \left(\frac{56.5}{12} \right) \left(\frac{0.152}{100} \right) = 0.007''$$

$$L_{MIN} = \sqrt{\frac{6 \times 27.9 \times 10^6 \times 0.1056 \times 0.007}{0.1606 \times 22500}} = 6''$$

$$L_{ACTUAL} = 9.88 + 22 + 5 = 36.88'' \quad \therefore OK$$

* NB THERMAL SPAN CHECK H-2022 - H-2023, (Y-DIR)

$$\Delta y = 0.021'' \quad MIN. OFFSET = 17''$$

$$ACTUAL OFFSET = 3 + 13\frac{3}{4} + 5\frac{3}{4} = 22\frac{1}{2}''$$

OK

* NB THERMAL SPAN CHECK H-2023 - 2017 (Y-DIR)

$$\Delta y = 0.021 + \left(\frac{22}{12} \times \frac{1.46}{100} \right) = 0.05''$$

$$MIN-OFFSET = 17.5'' \quad (SEE AT TOP OF THIS PAGE)$$

$$L_{ACT} = 5 + \sqrt{9.875^2 + 9.875^2} + 2\frac{1}{2} = 21\frac{1}{2}''$$

OK



DATE 8-17-81

DESIGN BY A. Rahim

DATE 8-7-81

CHECKED BY M. M.

SHEET NO. 12

PROJECT SSES

JOB NO. 8856

SUBJECT X-238 TO ANCHORS H-2 & H-47

CALCULATION NO.

5371

FILE NO.

LOAD CALCULATION

WGT. OF 40S SPAN 18', 80 SCH 22# USE 22#.

H-2021 (EXIST)

$$F_{YDW} = \frac{22 \times 16}{8} + 2 \times 16 = 36\#$$

$$F_{YSEIS} = 33 + 2 \times 16 \times (1+4) = 193\#$$

$$F_{YTHERM} = 0$$

$$\text{DESIGN } F_y = 193\#$$

H-2022 (NEW)

$$F_{YDW} = \frac{22 \times 4}{8} + 41 = 55\#$$

$$F_{YSEIS} = 33 + \frac{(16+41)(4+1)}{2} = 176$$

$$F_{YTHERM} = N/A$$

$$\text{DESIGN } F_y = 176\#$$

H-2023 (NEW)

X-Y GUIDE

$$F_{YDW} = \frac{(22 \times 2.05)}{12} + 33 + \frac{(22 \times 2)}{8} = 42\#$$

$$F_{YSEIS} = 33 + 33 \times (4+1) = 198\#$$

$$F_{YTHERM} = 0$$

$$\text{DESIGN } F_y = 198\#$$

$$F_{ZDW} = \frac{(22 \times 2.05)}{12} + \frac{33}{2} + \frac{(22 \times 2)}{8} = 26\#$$

$$F_{ZSEIS} = 33 + \frac{(33 \times 4)}{2} = 99\#$$

$$F_{ZTHERM} = \frac{12 \times 283 \times 10^6 \times 0.0873 \times 0.05}{19.53} = 200\#$$

$$\text{DESIGN } F_z = 299\#$$





CALCULATION SHEET

REV. NO. 3

0510 (11-74)

DATE 8-17-81

DESIGN BY A F Rehman DATE 8-7-81 CHECKED BY M.M. SHEET NO. 14PROJECT SSES JOB NO. 8856SUBJECT X-238 TO ANCHORS H-2 & H-47 CALCULATION NO. 5371 FILE NO. 3

H-2024 (NEW)

X-DIR. SNUGGER SKEW

$$F_{x DW} = 22 + \frac{31}{2} = 39\#$$

$$F_{x SEIS} = 33 + \frac{33}{2} (4) = 99\#$$

$$A_x = 0.125\#$$

$$F_{x THERM} = N/A$$

$$\text{DESIGN } F_x = 99\#$$

H-2025 (NEW)

X-DIR SKEW

$$F_{x DW} = \frac{22 \times 2}{8} + \frac{3 \times 16}{2} = 30\#$$

$$F_{x SEIS} = 33 + \left(\frac{3 \times 16}{2} \right) (4) = 129\#$$

$$F_{x THERM} = 0$$

$$\text{DESIGN } F_x = 129\#$$

H-38 (EXIST)

X-SKEW

Y-DIR

$$F_{x DW} = 22 + \frac{33}{2} = 39\#$$

$$F_{x SEIS} = 33 + \frac{33}{2} (4) = 99\#$$

$$F_{x THERM} = 12 \times 28.3 \times 10^6 \times 0.0873 \times 0.125 = 133\#$$

$$30.625\#$$

$$\text{DESIGN } F_x = 232\#$$

$$F_{y DW} = 22 + 33 + \left(\frac{23.25}{12} \times 2.05 \right) = 58\#$$

$$F_{y SEIS} = 96 + \left\{ 33 + \left(\frac{23.25}{12} \times 2.05 \right) \right\} (4) = 281\#$$

$$F_{y THERM} = 12 \times 28.3 \times 10^6 \times 0.0873 \times 0.256 = 57\#$$

$$513\#$$

$$\text{DESIGN } F_y = 338\#$$



CALCULATION SHEET

REV. NO. 3 3

0310 (11-74)

DATE 8-17-81

DESIGN BY AFRahim

DATE 8/7/81

CHECKED BY M M

SHEET NO. 15

PROJECT SSES

JOB NO. 8856

SUBJECT X-238H TO ANCHORS H-2 & H-47

CALCULATION NO.

5371

FILE NO.

3

H-2019 (EXIST)

X

$$F_{x DW} = 22^{\#}$$

$$F_{x SEIS} = 96$$

$$F_{x THERM} = 0$$

$$\underline{\text{DESIGN } F_x = 96^{\#}}$$

H-39 (EXIST)

X-Y

$$F_{x DW} = 22^{\#}$$

$$F_{x SEIS} = 96^{\#}$$

$$F_{x THERM} = 0$$

$$\underline{\text{DESIGN } F_x = 96^{\#}}$$

$$F_{y DW} = 22 + \frac{23.25 \times 2.05}{2 \times 12} = 24^{\#}$$

$$F_{y SEIS} = 96 + \frac{(23.25 \times 2.05)}{2 \times 12} (4+1) = 106^{\#}$$

$$F_{y THERM} = \text{NEGLIGIBLE}$$

$$\underline{\text{DESIGN } F_y = 106^{\#}}$$



CALCULATION SHEET

0510 (11-74)

REV. NO. 3

DATE 8.7.81

DESIGN BY A F Rahim DATE 8-7-81 CHECKED BY M.M. SHEET NO. 16

PROJECT SSES JOB NO. 8856

SUBJECT H-238H TO ANCHORS H-47, H 2 CALCULATION NO. 5371 FILE NO. 3

H-40, H-2020, H-41 (EXIST)

BY INSPECTION

DESIGN $F_x = 96^{\#}$

DESIGN $F_y = 96^{\#}$

H-42 (EXIST)

$$F_{x DWT} = \frac{22}{8} \times \frac{(18\frac{3}{4} + 12\frac{3}{4} + 13\frac{1}{4})}{12} + \frac{97}{12} \times \frac{2.05}{2} = 19^{\#}$$

$$F_{x SEIS} = 33 + \frac{(18\frac{3}{4} + 12\frac{3}{4} + 13\frac{1}{4})}{12} \times \frac{4 \times 2.05}{2} = 41^{\#}$$

$$F_{x THERM} = \frac{12 \times 28.3 \times 10^6 \times 0.0873 \times 0.118}{32^3} = 106^{\#}$$

DESIGN $F_x = 147^{\#}$

$$F_{y DWT} = \frac{22}{8} \times \left(\frac{3'7''}{12} + \frac{12\frac{3}{4}''}{12} + \frac{6''}{12} \right) + 2.05 \times \frac{12.75}{12} = 14^{\#}$$

$$F_{y SEIS} = 33 + \text{NEGLECTIBLE MASS} = 33^{\#}$$

$$F_{y THERM} = \text{NEGLECTIBLE}$$

DESIGN $F_y = 33^{\#}$

H-2018 (RELOCATED)

$$F_{y DWT} = 127^{\#}$$

$$F_{y SEISMIC} = 33 + \frac{12\frac{3}{4}}{12} \times \frac{2.05}{2} (4+1) = 37^{\#}$$

$$F_{y THERM} = \text{N/A}$$

$$F_{z DWT} = 30^{\#}$$

$$F_{z SEISM} = 96 + (4) \times \frac{2.05}{2} \left\{ 25 + \frac{8.875}{12} + (5\frac{1}{4} + 12\frac{3}{4} + 7\frac{3}{4} + 7\frac{1}{4} + 11\frac{3}{8} + 12\frac{3}{4}) \frac{\cos 37.5^\circ}{12} \right\} + \frac{4 \times 16}{2} \times 4 = 342^{\#}$$

$$F_{z THERM} = \text{N/A}$$

$$\therefore \text{DESIGN LOAD } F_{z \text{ SKEW}} = (37 + 342) \cos 45^\circ = 268^{\#}$$

$$\text{TRFZ DEAD W.T.} = (22 + 30) \cos 45^\circ = 37^{\#}$$

SEE

Pg 11



CALCULATION SHEET

0510 (11-74)

3

DATE

8.7.81

DESIGN BY

A.F. Rahim

DATE

8-7-81

CHECKED BY

M.M.

SHEET NO.

17

PROJECT

SSES

JOB NO.

8856

SUBJECT

H-238H TO ANCHORS H-47, H-2

CALCULATION NO.

5371

FILE NO.

3

THERM. MOV'T : $\Delta y = 0$

$$\Delta z = \frac{1.46}{100} \times \left\{ 25 + \frac{8.875}{12} + \left(5\frac{1}{4} + 12\frac{3}{4} + 7\frac{3}{4} + 7\frac{1}{4} + 11\frac{3}{8} + 12\frac{3}{4} \right) \frac{\cos 37.5^\circ}{12} \right\}$$

$$= 0.43'' \text{ (EXTENDS)}$$

$$\therefore \Delta z_{\text{SKEW}} = 0.43 \cos 45^\circ = 0.30'' \text{ (OUT)}$$

$$F_{Z \text{ SKEW}} = 2.68 \#$$

H-43 (EXIST.)

CON

$$F_{Y \text{ D.WT}} = 22 \#$$

$$F_{Y \text{ SEIS}} = 33 \#$$

$$F_{Y \text{ TERM}} = \text{NEG-LIG-IBLE}$$

$$\therefore \text{DESIGN } F_Y = 33 \#$$

H-44 (EXIST.)

$$F_{Z \text{ DW}} = 22 \#$$

$$F_{Z \text{ SEIS}} = 96 \#$$

$$F_{Z \text{ THERM}} = \frac{12 \times 28.3 \times 10^6 \times 0.0873 \times 0.45}{7.9 \cdot 5^3} = 25 \#$$

$$\therefore \text{DESIGN } F_Z = 121 \#$$

$$H-45 \text{ (EXIST.) } F_{X \text{ D.WT}} = \frac{22}{8} \times \frac{(13\frac{1}{4} + 6 + 12\frac{3}{4} + 12\frac{3}{4}) 2.05}{12} = 2 \cdot 10 \#$$

$$F_{X \text{ SEIS}} = 33 + \frac{97}{12} \times 2.05 \times \frac{4}{2} = 66 \#$$

$$F_{X \text{ THERM}} = \frac{12 \times 28.3 \times 10^6 \times 0.087 \times 0.118}{32^3} = 106 \#$$

$$\therefore \text{DESIGN } F_X = 172 \#$$

$$F_{Z \text{ DW}} = \frac{22}{8} \times \frac{(17\frac{1}{2} + 13\frac{1}{4}) 2.05}{12} = 2 \cdot 10 \#$$

$$F_{Z \text{ SEIS}} = 33 \#$$

$$F_{Z \text{ THERM}} = 0$$

$$\therefore \text{DESIGN } F_Z = 33 \#$$



CALCULATION SHEET

REV. NO. 3

DATE 8.7.81

DESIGN BY A.F. Reichum

DATE 8-7-81

CHECKED BY

M. M.

SHEET NO. 18

PROJECT SSES

JOB NO. 8856

SUBJECT H-238H To ANCHORS H-47, H-2

CALCULATION NO.

5371

FILE NO.

H-46 (EXIST.)

BY INSPECTION

DESIGN $F_x = 96^{\#}$

DESIGN $F_z = 96^{\#}$

H-47 (LOADS FOR ONE SIDE ONLY)
(EXIST) BY INSPECTION
(ANCHOR)

DESIGN $F_x = 96^{\#}$

$$F_{y D.W} = \frac{2.2}{2} + (6.7' + 7' + 2.25') 2.05 = 44^{\#}$$

$$F_{y SEISM} = \frac{96}{2} + (6.7' + 7' + 2.25') 2.05 \times (4+1) = 139^{\#}$$

$$F_{y THERM} = \frac{12 \times 28.3 \times 10^6 \times 0.0873 \times 0.24}{54^3} = 45^{\#}$$

DESIGN $F_y = 184^{\#}$

BY INSPECTION

DESIGN $F_z = 96^{\#}$

BY ENGINEERING JUDGEMENT

DESIGN $M_x = M_y = M_z = 212 \text{ FT-IBS.}$

$$\left(\frac{424}{2} = 212 \right)$$

H-2017 (EXIST)

$$F_{x DW} = \frac{22}{8} \times \frac{22}{12} + \frac{33}{2} = 29^{\#}$$

$$F_{x SEISM} = 33 + \left\{ (10\frac{3}{4} + 13\frac{3}{4}) \frac{2.05}{12 \times 2} + \frac{33}{2} \right\} (4) = 105^{\#}$$

$$F_{x THERM} = \frac{12 \times 10^6 \times 28.3 \times 0.0873 \times 0.04}{34.38^3} = 30^{\#}$$

DESIGN $F_x = 133^{\#}$

$$F_{y DW} = \frac{22}{8} \times \frac{12\frac{3}{8} + 3}{12} + \frac{33}{2} = 27^{\#}$$

$$F_{y SEISM} = \frac{33}{2} + \left(\frac{22}{12} \times 2.05 + \frac{33}{2} \right) (4+1) = 117^{\#}$$

$$F_{y THERM} = \frac{12 \times 10^6 \times 28.3 \times 0.0873 \times 0.03}{15.38^3} = 244^{\#}$$

DESIGN $F_y = 321^{\#}$

Pg. 10

Pg. 7



CALCULATION SHEET

REV. NO. 3

DATE

8.7.81

0510 (11-74)

DESIGN BY A.F. Rahim

DATE 8-7-81

CHECKED BY M. M.

SHEET NO. 19

PROJECT SSES

JOB NO. 8856

SUBJECT H-238H TO ANCHORS H-2, H-47

CALCULATION NO. 5371

FILE NO. 3

H-2 (EXIST) LOA
(ANCHOR)

$$F_{X DWT} = \frac{22}{2} + \frac{16}{2} = 19^{\#}$$

$$F_{X SEIS} = \frac{96}{2} + \frac{16}{2} \times 4 = 80^{\#}$$

$$F_{X THERM} = 0$$

$$\therefore \text{DESIGN } F_x = 80^{\#}$$

$$F_{Y DWT} = 19^{\#}$$

$$F_{Y SEIS} = \frac{96}{2} + \frac{16}{2} \times (4+1) = 88^{\#}$$

$$F_{Y THERM} = 0$$

$$\therefore \text{DESIGN } F_y = 88^{\#}$$

$$F_{Z DWT} = \frac{22}{8} \times \left(\frac{97.8 + 103.4 + 133.4}{12} \right) + \frac{2 \times 16}{2} = 24^{\#}$$

$$F_{Z SEIS} = \frac{33}{2} + \frac{16}{2} \times 4 = 49^{\#}$$

$$(CONSERVATIVE) F_{Z THERM} = \frac{12 \times 10^6 \times 28.3 \times 0.1056 \times 0.16}{563} = 33^{\#}$$

$$\therefore \text{DESIGN } F_z = 82^{\#}$$

$$\text{DESIGN } M_x = \frac{424}{2} + \frac{16}{2} \times 4 \times (9'-5" - 4'-8") = 362 \text{ FT-LBS}$$

$$M_y = \frac{424}{2} + \frac{16}{2} \times (4+1) \times (9'-5" - 4'-8") = 400 \text{ FT-LBS}$$

$$M_z = \frac{424}{2} = 212 \text{ FT-LBS}$$

$$\text{DESIGN } M_x = 362 \text{ FT-LBS}$$

$$\text{DESIGN } M_y = 400 \text{ FT-LBS}$$

$$\text{DESIGN } M_z = 212 \text{ FT-LBS}$$



CALCULATION SHEET

REV. No. 3

DATE 10.21.81

DESIGN BY E. DRACOPOL

DATE 10/21/81

CHECKED BY *Thy*

SHEET NO. 20

PROJECT SSES# 1

JOB NO. 8856

SUBJECT ANCHOR H-2, NON-SEISMIC SIDE

CALCULATION NO. 5371

FILE NO.

TWO NEW GUID. RESTRAINTS (H-2001 & H-2002)
HAVE BEEN PROVIDED ON NON-SEISMIC SIDE OF
ANC H-2 to be designed per G.P.D. procedure
PA.7 for collapse loads.

CHECK FLEXIBILITY FROM ANC. #2 TO H-2002

TEMP 90, $\Delta = .152$ in/100'

SB = 22500 / 1.3 = 17308 PSI

E = 27.9 x 10⁶ (A-106 GR B)

$$EXP = 4.854 \times .152 \times \frac{1}{100} = .0074''$$

$$MIN OFFSET = \sqrt{\frac{3 \times 27.9 \times 10^6 \times 1.315 \times .0074}{17308}}$$

$$= 6.86'' < 10'' \text{ EXIST OK}$$



CALCULATION SHEET

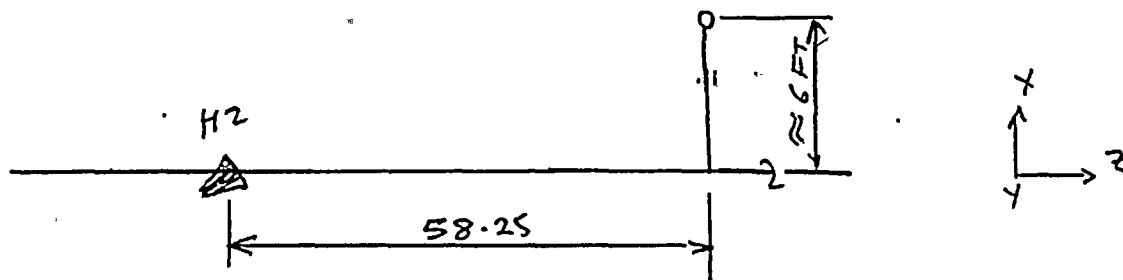
CALC. NO. 5371 REV. NO. 3

ORIGINATOR A.F. Rahim DATE 8-31-81 CHECKED JHRe DATE 8-31-81

PROJECT SSES JOB NO. 8856

SUBJECT X-238H TO ANCHORS H, 47 & H-2 SHEET NO. 21

EVALUATION OF 'PLASTIC' LOADS FROM NON-SEISMIC
SIDE OF IN-LINE ANCHOR H-2



MOMENTS

$$M_p = \sigma_y \times \text{SECT. MODULUS}(S_p)$$

$$= 35000 \times 0.233 = 8155$$

$$\therefore M_x = M_y = M_z = \frac{M_p}{\sqrt{2}} = 5766 \text{ IN-lbs}$$

or 481 FT-lbs

$$F_x = \frac{M_z}{72} = \frac{5766}{72} = 80 \text{ lbs}$$

$$F_y = \frac{M_y}{58.25} = 99 \text{ \#}$$

$$F_z = \frac{M_x}{58.25} = 99 \text{ \#}$$

$$F_y = 35000 \text{ psi}$$

$$S_p = \frac{1}{6} (D_o^3 - D_i^3) \text{ 1" } \phi \text{ SCH 80 PIPE}$$

$$= \frac{1}{6} (1.315^3 - 0.957^3)$$

$$= 0.233$$



CALCULATION SHEET

Q REV. No. 3
DATE 9/2/81DESIGN BY M. ZALIZNYAK DATE 8.28.81 CHECKED BY F. DUNN SHEET NO. 22
PROJECT SSES JOB NO. 8856
SUBJECT HANGERS CALC. HCB-126-4 CALCULATION NO. 5371 FILE NO.

H 43

 $F_y = 33 \text{ \#}$

REF: SPA-671

REF:

INSTALLED

FRICTION = $22 \times 0.3 = 6.6$ (NEGLIGIBLE)

SPA-671

ACT. $F_y = 33 \text{ \#} < \text{MAX } F_y = 200 \text{ \#}$ ACT. $L = 4" < \text{MAX } L = 18"$

ITEM 1 O.K.

 $W_F = 22 < W_{EP} = 130 \text{ \#}$ WELD, PLATE AND BOLTS O.K. BY ENGINEERING
OBSERVATION PER SPA-671.

HANGER O.K. PER SPA-671.

H 44

 $F_2 = 121 \text{ \#}$

REF: SPA-571

SPA-571.

INSTALLED.

 $L 3 \times 3 \times \frac{3}{8}$ ACT. $F_2 = 121 \text{ \#} < \text{MAX } F_2 = 340 \text{ \#}$
ACT. $L = 4" < \text{MAX } L = 24.9"$

ITEM 1 O.K.

 $W_F = 22 < W_{EP} = 80$

O.K.

WELD, PLATE AND BOLT O.K. BY ENGINEERING
OBSERVATION PER SPA-571

HANGER O.K. PER SPA-571





CALCULATION SHEET

Q

REV. NO. 3

DATE 9/2/81

DESIGN BY M. ZALIZNYAK

DATE 8.28.81

CHECKED BY F. DUNN

SHEET NO. 23

PROJECT SES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-125-4

CALCULATION NO. 5371

FILE NO.

REF:

H 45

$$F_x = 172 \# \quad F_z = 33 \#$$

$$\text{FRICT. FORCES} = (20 + 25) \times 0.3 = 1.4 \#$$

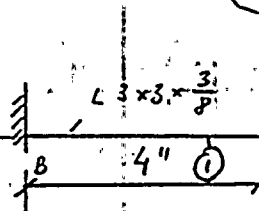
FRICTION FORCES NEGLIGIBLE.

CONSERVATIVE

33#

REF SPA 521 (SIM)

SPA-521



CHECK TWO BOLT CLAMP

$$\text{ACT. LOAD } F_x = 172 \#, F_z = 33 \#$$

$$L_{\text{MAX}} 150 = 300 \# \text{ (TWO CLAMPS)}$$

ITEMS 4, 5, 6, O.K. BY ENGINEERING JUDGEMENT

CHECK ITEM ①

$$\text{ACT. } M = 33 \times 4 + 172 \times 5 = 992 \text{ IN LBS (CONSERVATIVE). } <$$

$$\text{MAX. } M_B = 150 \times 18 = 2700 \text{ IN LBS. } > M_{\text{ACT.}}$$

ITEM 1, BASE PL. AND BOLTS O.K.

$$10 + 5 = 15 \# < 95 \#$$

DEFLECTION O.K. BY ENGINEERING JUDGEMENT

HANGER O.K.

REF: SPA-521

SPA-521

H 45

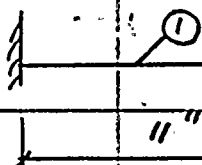
INSTALLED

$$F_x = 96 \# \quad F_z = 96 \#$$

$$F_z = 96 \#$$

$$F_x = 96 \#$$

ITEM 1 L 3 x 3 x 3/8



$$\text{ACT. LOAD } F_x = 96 \#, F_z = 96 \#$$

$$\text{MAX. LOAD } F_x = 150 \#, F_z = 150 \#$$

$$\text{ACT. } L_1 = 11 \# < \text{MAX. } L_1 = 18 \#$$

HANGER O.K. PER SPA-521.

$$\text{WEP} = 22 + 7 = 29 \# < 95 \#$$

O.K.



CALCULATION SHEET

0310 (11-74)
REV. No. 3
DATE 9/2/81

DESIGN BY M. ZALIZNYAK

DATE 1.28.81

CHECKED BY F. DUNN

SHEET NO. 24

PROJECT SSES

JOB NO. PPJ6

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO.

REF:

H-40
INSTALLED

$$F_x = 96 \quad F_y = 96$$

$$\text{FRICTION FORCES } 0.3(22+22)=13$$

REF: SPA 512

SPA 512

$$\text{ACT. } L_2 = 8\frac{1}{2}'' < \text{MAX } L_2 = 9''$$

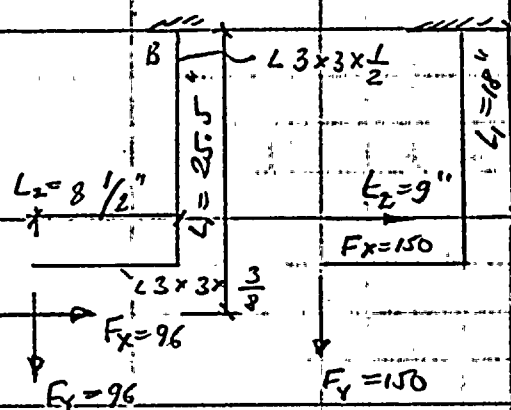
$$\text{ACT. } L_1 = 25\frac{1}{2}'' < \text{MAX } L_2 = 18''$$

$$\text{ACT. } M_B = 96 \times 25.5 + 96 \times 8.5 = 3264 <$$

$$< \text{MAX } M_B = 150 \times 9 + 150 \times 18 = 4050$$

FRICTION FORCES 13# NEGLIGIBLE

ITEMS 1, 2 O.K.



SPA-512

WELD: ITEM 1 TO ITEM 2
AND ITEM 2 TO EXISTING STEEL
O.K.

CHECK DEFLECTION

$$\Delta_y = \frac{96 \times 8.5^3}{3 \times 27.9 \times 10^6 \times 1.76} + \frac{96 \times 8.5 \times 25.5 \times 8.5}{27.9 \times 10^6 \times 2.22} + \frac{96 \times 25.5^2 \times 8.5}{2 \times 27.9 \times 10^6 \times 2.22}$$

$$= 0.007$$

$$\Delta_x = \frac{96 \times 25.5^3}{3 \times 27.9 \times 10^6 \times 2.22} + \frac{96 \times 8.5 \times 25.5^2}{2 \times 27.9 \times 10^6 \times 2.22} = 0.0129$$

CHECK FREQUENCY

$$W_E = W_{EP} + W_{ES} = 22 + 28 = 50$$

$$\Delta_x = \frac{0.0129 \times 96}{50} = 0.007 < 0.009$$

∴ O.K.

HANGER O.K.



CALCULATION SHEET

REV NO. 3
DATE 9/2/81

DESIGN BY M. ZALIZNYAN

DATE 8.28.81

CHECKED BY F. DUMAS

SHEET NO. 25

PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-125-4

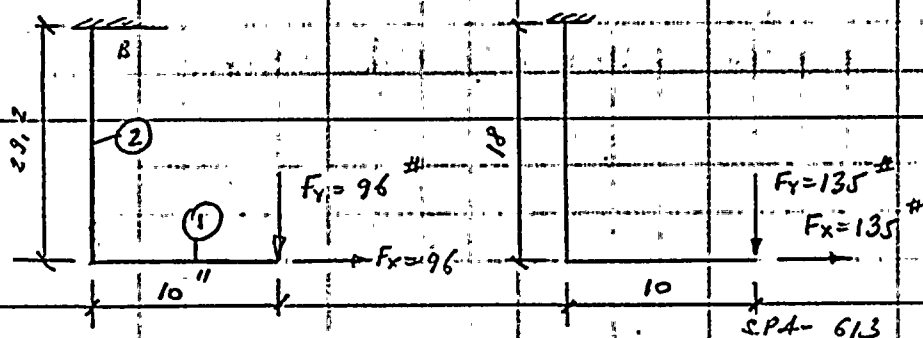
CALCULATION NO. 5371

FILE NO. —

H-41
INSTALLED
FRICTION FORCES
 $F_x = 96 \#$ $F_y = 96 \#$
 $F_z = 0.3(22+22) = 13 \#$
NEGLIGIBLE

REF: SPA-613

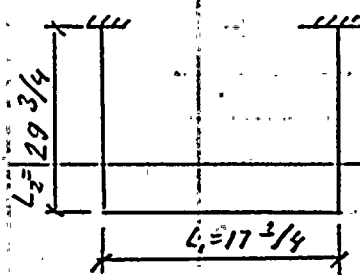
REF:
SPA-613



H-41 (CONSERVATIVE)
FOR H-41
 $M_B = 96 \times 29.2 + 96 \times 10 = 3763 \text{ IN.LBS.}$
ACT.

$M_B = 135 \times 10 + 135 \times 18 = 3780 \text{ IN.LBS.}$
ACT.

ITEMS 1, 2 WELD ITEM 1 TO ITEM 2, ITEM 2
TO ITEM 3 O.K. PER SPA-613



CHECK FREQUENCY.

REF: SPA-614

ACT $L_1 = 17 \frac{3}{4} < \text{MAX } L_1 = 24 \text{ "}$

ACT $L_2 = 29 \frac{3}{4} > \text{MAX } 24 \text{ "}$

BY ENGINEERING JUDGEMENT STRUCTURE O.K.

$W_e = 22 < W_{EP} = 410$

PLATE ITEM 3, ITEM 5 AND WELD ITEM 3 TO 5,
ITEM 5 TO EXISTING STEEL O.K. BY ENGINEERING
JUDGEMENT.

FORMED PLATE O.K. PER SPA-641

SPA-641

WELD FORMED PLATE $\frac{3}{16}$ O.K. ACT LOAD $F_x \& F_y = 96 < \text{MAX } F_x \& F_y = 629$
HANGER O.K. $96 = 0.15\% \text{ MAX LOAD} = 629 \#$



CALCULATION SHEET

0510 (11-74)

REV. NO. 3

DATE 9/2/81

DESIGN BY M. ZALIZNYAK

DATE 8.28.81

CHECKED BY F. DUNN

SHEET NO. 26

PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC

HCB-126-1

CALCULATION NO. 5371

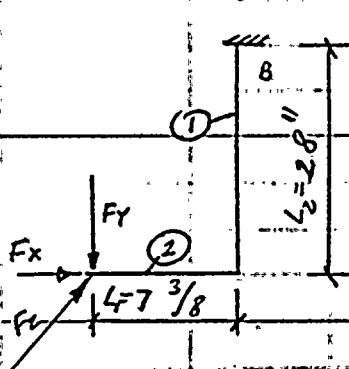
FILE NO.

H-2017

$F_x = 133$ $F_y = 361$

INSTALLED

FRICTION FORCES $= 0.3 (29 + 27 + 30 + 244) = 99$



SPA-613

CHECK ITEM 1

$$ACT. M_B = 99 \times 28 = 2.772 \text{ INLBS}$$

$$ACT. M_B^x = 99 \times 7 \frac{3}{8} = 730 \text{ INLBS}$$

$$ACT. M_B^y = 361 \times 7 \frac{3}{8} + 133 \times 28 = 6386 \text{ INLBS}$$

$$F_y = 361 \quad F_x = 133 \quad F_z = 99$$

BENDING AND COMPRESSION

$$\frac{K \cdot L}{Z} = \frac{2.1 \times 28}{0.939} = 63$$

$$f = \frac{361}{3.81 \times 15360} + \frac{2.772}{1.71 \times 19100} + \frac{6386}{5.24 \times 19100} = 0.15 < 1.0$$

O.K.



DESIGN BY M. ZALIZNYAN

DATE 8.28.81

CHECKED BY F. Buma

SHEET NO. 27

PROJECT SSES

JOB NO. 8856

SUBJECT HANG. CALC. HCB-126-1

CALCULATION NO. 5371

FILE NO.

42017 (CONT.)

$$\text{SHEAR} \quad \frac{F_x}{A} + \frac{F_y}{A} + M_{BY} \times f_s =$$

$$\frac{133}{2.92} + \frac{99}{2.92} + 730 \times 3.06 = 2401 < 12800 \text{ psi.}$$

O.K.

CHECK WELD ITEM 1 TO EXIST. STEEL

$$f = \left[\left(\frac{F_x}{A_w} + \frac{M_{Bx}}{S_{w1}} + \frac{M_{Bz}}{S_{w2}} \right)^2 + \left(\frac{F_y}{A_w} + \frac{M_{By} \times C}{J_w} \right)^2 + \left(\frac{F_z}{A} + \frac{M_{Bz} \times D}{J_w} \right)^2 \right]^{\frac{1}{2}} = \left[\left(\frac{361}{8} + \frac{2772}{5.33} + \frac{6386}{16} \right)^2 + \left(\frac{133}{8} + \frac{730 \times 2}{42.66} \right)^2 + \left(\frac{99}{8} + \frac{730 \times 2}{42.66} \right)^2 \right]^{\frac{1}{2}} =$$

$$A_w = 8 \quad S_{w1} = \frac{4}{3} = 5.33 \quad S_{w2} = 4 \times 4 = 16 \quad J_w = \frac{4^3 + 3 \times 4 \times 4^2}{6} = 42.66$$

$$w = \frac{593}{9.707 \times 18000} = 0.05 < 0.25$$

O.K.

CHECK ITEM 2

REF! SPA 613

SPA-613

$$\text{ACT. } L_1 = 7 \frac{7}{8} < \text{MAX } L_1 = 12$$

$$\text{ACT. } F_x = 133 \#, F_y = 361 \#, F_z = 99 \#$$

$$< \text{MAX } F_x \& F_y = 700 \# \quad F_z = 0.3(700 + 700) = 420 \#$$

ITEM 2 O.K.

FORMED PLATE AND WELD FORMED PLATE

TO ITEM 2 O.K.

CHECK DEFLECTION

$$\Delta x = \frac{133 \times 28^3}{3 \times 27.4 \times 10^6 \times 10.5} + \frac{361 \times 7.575 \times 28 \times 7.375}{2 \times 27.4 \times 10^6 \times 10.5} = 0.0044 < \frac{1}{8}$$

O.K.



CALCULATION SHEET

REV. NO. 3

DATE 9/2/81

DESIGN BY H. ZILIZNYAK

DATE 8.28.81

CHECKED BY F. Dumer

SHEET NO. 28

PROJECT SSES

JOB NO. 8856

SUBJECT HANG. CALC. HCB-126-1

CALCULATION NO. 5371

FILE NO.

$$\Delta_y = \frac{361 \times 7,375^3}{3 \times 27.4 \times 10^6 \times 1.76} + \frac{361 \times 7,375 \times 28 \times 7,375}{27.4 \times 10^6 \times 10.5} + \frac{133 \times 7,375 \times 28^2}{2 \times 27.4 \times 10^6 \times 10.5} =$$

$$= 0.004 < \frac{1}{8}$$

$$\Delta_z = \frac{99 \times 7,375^3}{3 \times 27.4 \times 10^6 \times 1.76} + \frac{99 \times 28^3}{3 \times 27.4 \times 10^6 \times 3.36} + \frac{99 \times 7,375 \times 28 \times 7,375}{10.54 \times 10^6 \times 0.154} =$$

$$= 0.098 < \frac{1}{8} \therefore O.K.$$

CHECK FREQUENCY

$$\Delta_x < 0.009$$

$$\Delta_y < 0.009$$

FREQUENCY O.K.

HANGER O.K.



DESIGN BY M. ZALIZNYAN DATE 8.28.81 CHECKED BY F. Durney SHEET NO. 29
 PROJECT SSES JOB NO. 8856
 SUBJECT HANGERS CALC. HCB-126-4 CALCULATION NO. 5371 FILE NO. ---

REF:

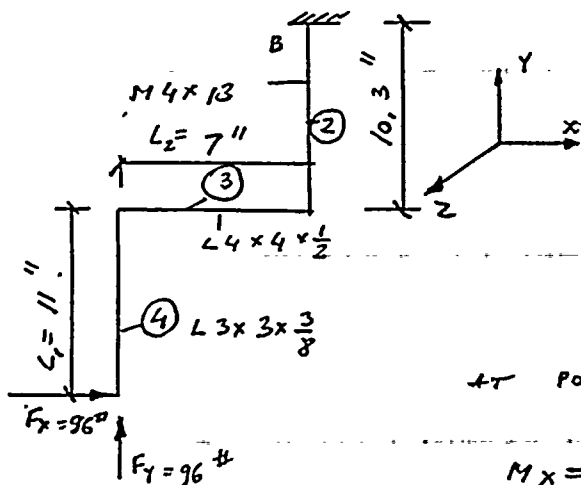
SPA-552

H-2020

$$F_x = 96^{\#} \quad F_y = 96^{\#}$$

$$\text{FRICTION FORCES } F_z = 0.3(22 + 22) = 13^{\#} \text{ - NEGLIGIBLE.}$$

INSTALLED



CHECK ITEM 4 AND 3

REF: SPA-613

$$\text{ACT. } L_1 = 11" < \text{MAX } L_1 = 12"$$

$$\text{ACT. } L_2 = 7" < \text{MAX } L_2 = 18"$$

$$\text{ACT. } F_x = 96^{\#} \quad F_y = 96^{\#} < \text{MAX } F_x \text{ \& F_y } = 370^{\#}$$

ITEM 4 AND 3 O.K.

AT POINT B

$$F_x = 96^{\#} \quad F_y = 96^{\#}$$

$$M_x = 0 \quad M_y = 0 \quad M_z = 96 \times 7 + 96 \times 21.3 = 2717$$

SPA-613



CALCULATION SHEET

Q REV. No. 3

DATE 9/2/81

DESIGN BY M. ZALIZNY AW

DATE 8.28.81

CHECKED BY F. DUMAS

SHEET NO. 30

PROJECT SSES

JOB NO. 2858

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO. —

CHECK ITEM 2

$$\frac{K_L}{2} = \frac{2.1 \times 10.3}{0.939} = 23$$

$$F_{ax} = 18130$$

COMPRESSION AND BENDING

$$\frac{F_y}{A_x F_{ax}} + \frac{M_z}{S_x F_b} = \frac{96}{3.81 \times 18130} + \frac{2717}{5.24 \times 19100} = 0.03 < 1.0$$

∴ O.K.

SHEAR STRESS O.K. BY ENGINEERING JUDGEMENT.

CHECK WELD ITEM 2 TO ITEM 1

$$f = \left[\left(\frac{F_y}{A_w} + \frac{M_z}{S_w} \right)^2 + \left(\frac{F_x}{A_w} \right)^2 \right]^{\frac{1}{2}} =$$

$$= \left[\left(\frac{96}{8} + \frac{2717}{16} \right)^2 + \left(\frac{96}{8} \right)^2 \right]^{\frac{1}{2}} = 182$$

$$w = \frac{f}{0.707 \times 18000} = \frac{182}{0.707 \times 18000} = 0.014 < 0.25$$

∴ O.K.

FORMED PLATE O.K.

$$\Delta_y = \frac{96 \times 7^3}{3 \times 27.4 \times 10^6 \times 5.58} + \frac{96 \times 7 \times 10.3 \times 7}{27.4 \times 10^6 \times 10.5} + \frac{96 \times 11^2 \times 7}{2 \times 27.4 \times 10^6 \times 1.76} + \frac{96 \times 10.3^2 \times 7}{2 \times 27.9 \times 10^6 \times 10.5} + \frac{96 \times 11 \times 10.3 \times 7}{27.4 \times 10^6 \times 10.5} = 0.0015 < \frac{1}{8}$$

∴ O.K.



DESIGN BY M. ZALIZNYAK

DATE 8.28.81

CHECKED BY F. DUNN

SHEET NO. 31

PROJECT SJS

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO. —

$$\Delta_x = \frac{96 \times 11^3}{3 \times 27.4 \times 10^6 \times 1.76} + \frac{96 \times 21.3^3}{3 \times 27.4 \times 10^6 \times 10.5} + \frac{96 \times 7 \times 10.3 \times 7}{27.4 \times 10^6 \times 10.5}$$

CONSERVATIVE

$$+ \frac{96 \times 11 \times 7^2}{2 \times 27.4 \times 10^6 \times 5.56} = 0.002 < \frac{1}{P}$$

∴ O.K.

$$\Delta_x < 0.009$$

FREQUENCY O.K.

$$\Delta_y < 0.009$$

HANGER O.K.

H 2019
INSTALLED.

$$F_x = 96 \text{ \#}$$

FRICTION FORCES: $0.3 \times 22 = 7 \text{ \#}$ - NEGLIGIBLE

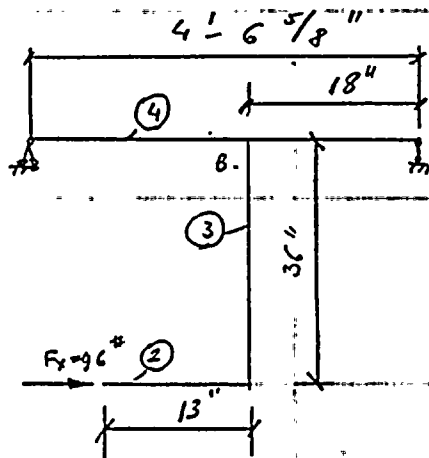
REF: SPA 562

SPA 562

CHECK ITEM 3 AND 2

ITEM 3 M 4x13

ITEM 2 L 3x3x1/2



$$\text{ACT. } L_2 = 13 \text{ \#} < \text{MAX } L_2 = 2' 6 \text{ \#}$$

$$\text{ACT. } L_1 = 36 \text{ \#} = \text{MAX } L_1 = 36 \text{ \#}$$

$$\text{ACT. } L_{\text{LOAD}} = 96 \text{ \#} < \text{MAX } L_{\text{LOAD}} = 570 \text{ \#}$$

ITEM 2 AND ITEM 3 O.K.

CHECK ITEM 4 M 4x13

AT POINT B

$$F_x = 96 \text{ \#} \quad M_2 = 96 \times 36 = 3456 \text{ IN LBS.}$$

$$\frac{F_x}{A \times F_u} + \frac{M_2}{S \times F_b} = \frac{96}{3.81 \times 15770} + \frac{3456}{5.24 \times 19100} = 0.03 < 1.0$$

∴ O.K.

$$\frac{u \ell}{2} = \frac{1 \times 54.625}{0.939} = 58$$

ITEM 5 O.K. BY ENGINEERING OBSERVATION





CALCULATION SHEET

Q REV. No. 3

DATE 9/2/81

DESIGN BY M. ZALIZNYAN

DATE 8.28.81

CHECKED BY F. DUMAS

SHEET NO. 32

PROJECT SES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO.

$$\Delta x' = \frac{96 \times 36^3}{3 \times 27.4 \times 10^6 \times 10.5} + \frac{3456 (18 \times 36.25 \times 3 - 54.625^2) \times 36}{3 \times 27.4 \times 10^6 \times 10.5 \times 54.625}$$

REF:

$$\theta_B = \frac{M}{3EI} (3ab - b^2)$$

$$= 0.008 < 0.125$$

! o.k.

$$\begin{matrix} 0.005 \\ 0.0027 \end{matrix}$$

FREQUENCY o.k.

$$\Delta < 0.009$$

HANGER o.k.



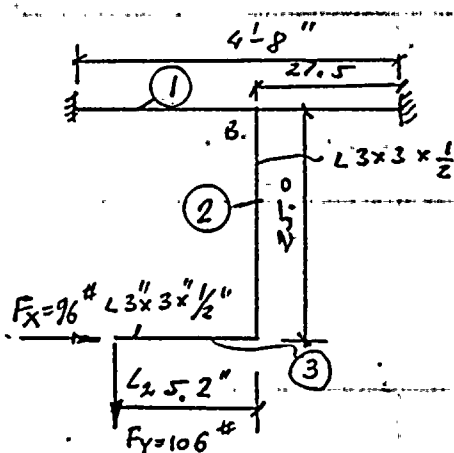
DESIGN BY M. ZALIZNYAK DATE 8.28.81 CHECKED BY F. Durner SHEET NO. 33
PROJECT SSES JOB NO. 8856
SUBJECT HANGERS CALC. HCB-125-4 CALCULATION NO. 5371 FILE NO. —

REF: SPH-512

H-39
INSTALLED

$$F_x = 96 \# \quad F_y = 106 \#$$

$$\text{FRICTION FORCES } F_2 = 0.3(22 + 23) = 14 \# - \text{NEGLIGIBLE.}$$



CHECK ITEM 2 AND ITEM 3

REF: SPA-512

ITEMS 6, 5, 4 - O.K.

CHECK ITEM 3 $L3 \times 3 \times \frac{1}{2}$

$$\text{ACT. } L_2 = 5.2" < \text{MAX } L_2 = 9"$$

ITEM 3 AND WELD ITEM 3 TO

ITEM 2 O.K.

CHECK ITEM 2 $L3 \times 3 \times \frac{1}{2}$

AT POINT B

$$F_x = 96 \# \quad F_y = 106 \# \quad \text{ACT } M_B = 96 \times 2.5 + 106 \times 5.2 = 2951 \text{ INLBS.}$$

PER SPA-512 MAX $F_x = 150 \#$, MAX $F_y = 150 \#$

$$\text{MAX } M_B = 150 \times 9 + 150 \times 18 = 4050 \text{ INLBS.}$$

ITEM 2 O.K., WELD ITEM 2 TO ITEM 1 O.K.

REF: SPA-514

$$\text{ACT. } M4 \times 13 \quad L_1 = 4'-8" \quad \text{SPA-514 } M4 \times 13 \quad L_1 = 7'-10"$$

$$\text{ACT. } M_B = 2951 \text{ INLBS.}$$

$$\text{MAX } M_B = 3150 \text{ INLBS.}$$

$$F_x = 96 \#$$

$$\text{MAX } F_x = 150 \#$$

$$F_y = 106 \#$$

$$\text{MAX } F_y = 150 \#$$

ITEM 1 AND WELD ITEM 1 TO EXISTING STEEL O.K.



CALCULATION SHEET

Q REV. NO. 3
DATE 9/2/81

DESIGN BY M. ZALZNYAK DATE 8.28.81 CHECKED BY F. DUMES SHEET NO. 34
PROJECT SSES JOB NO. 8856
SUBJECT HANGERS CALC. HCB-126-4 CALCULATION NO. 5371 FILE NO.

REF: SPA-573

CHECK DEFLECTION

$$\Delta_x = \frac{96 \times 25^3}{3 \times 27.4 \times 10^6 \times 2.22} + \frac{106 \times 5.2 \times 25^2}{2 \times 27.4 \times 10^6 \times 2.22} = 0.011 < 0.125$$

$$\Delta_y = \frac{106 \times 5.2^3}{3 \times 27.4 \times 10^6 \times 2.22} + \frac{106 \times 5.2 \times 5.2 \times 25}{27.4 \times 10^6 \times 2.22} + \frac{96 \times 25^2 \times 5.2}{2 \times 27.4 \times 10^6 \times 2.22} + \frac{106 \times 56^3}{48 \times 27.4 \times 10^6 \times 10.5} = 0.005 < 0.125$$

CHECK FREQUENCY

$$W_E = W_{E(P)} + W_{E(S)} = 23 + 25 = 48 \text{ \#}$$

$$\Delta_x = \frac{0.011 \times 48}{96} = 0.006 < 0.009$$

∴ O.K.

$$\Delta_y < 0.009 \quad \therefore \text{O.K.}$$

HANGER O.K.





CALCULATION SHEET

Q REV. NO. 3

DATE 3/2/81

DESIGN BY M. Z. L. L. N. Y. K.

DATE 8.28.81

CHECKED BY F. D. W. M. S.

SHEET NO. 35

PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126-1

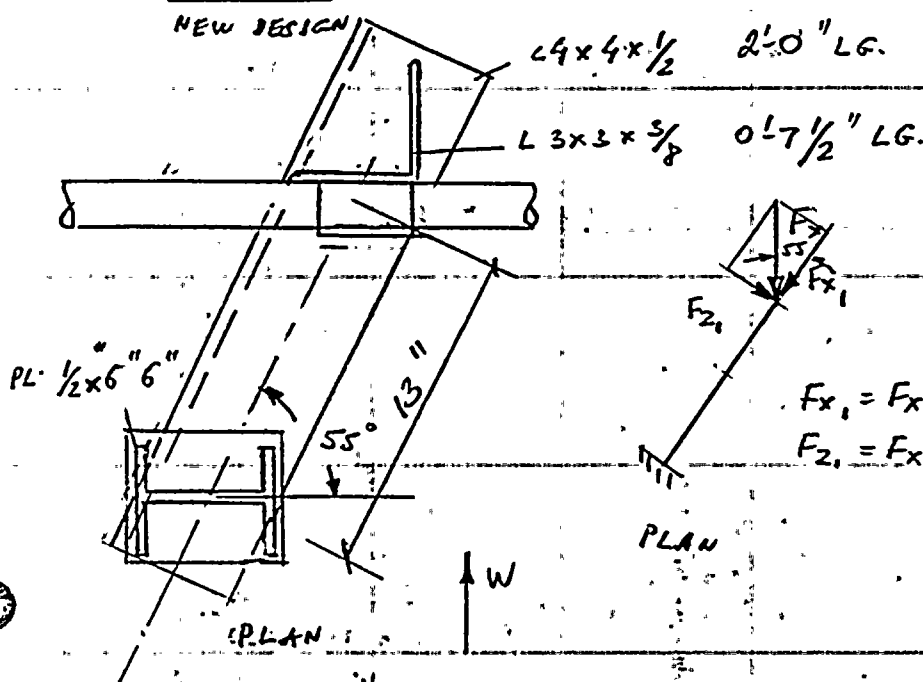
CALCULATION NO. 5371

FILE NO. —

REF:

H-2025 $F_x = 129$ * FRICTION FORCES $0.3 \times 30 = 9$ * - NEGLIGIBLE.

NEW DESIGN

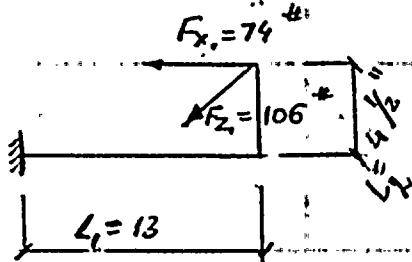


$$F_{x1} = F_x \times \cos 55 = 129 \times 0.573 = 74$$

$$F_{z1} = F_x \times \sin 55 = 129 \times 0.819 = 106$$

REF: SPA-664

SPA-664



$$ACT. L_2 = 4 \frac{1}{2} < MAX L_2 = 12$$

$$ACT. L_1 = 13 < MAX L_1 = 18$$

$$ACT. LOAD F_{x1} = 74 < MAX F_x = 600$$

$$ACT. F_{z1} = 106 < MAX FR. FORCES 0.3 \times 600 = 180$$

$$W_F = 30 < W_{EP} = 250$$

HANGER O.K.



DATE 9-2-81

DESIGN BY M. ZALIZNYAU

DATE 8.28.81

CHECKED BY J. H. HARTMAN

SHEET NO. 36

PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126 & 1

CALCULATION NO. 5371

FILE NO.

REF:

H-2021

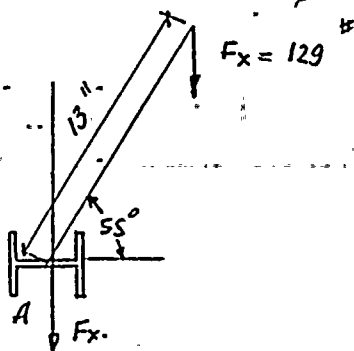
 $F_y = 193 \#$

INSTALLED

LOAD FROM H-2025

 $F_x = 129 \#$

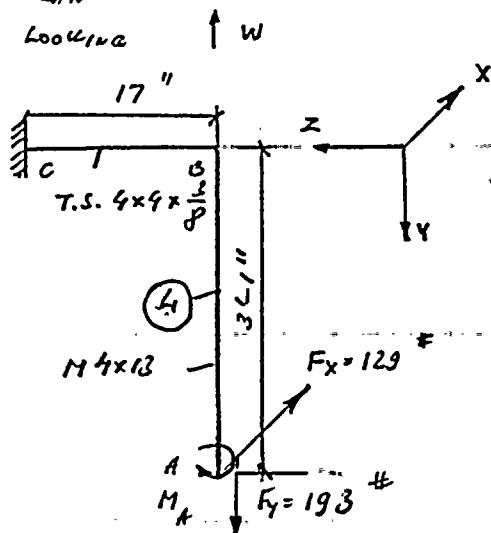
AT POINT A

 $F_x = 129 \#$

$$M_y = 129 \times 13 \times \cos 55 = 129 \times 13 \times 0.573 = 969 \text{ IN LBS.}$$

PLAN

LOOKING



AT POINT B

CHECK ITEM 4 M 4x13

 $F_x = 129 \#$ $F_y = 193 \#$ $M_y = 969 \text{ IN LBS.}$ $M_z = 129 \times 37 = 4773 \text{ IN LBS.}$ $M_x = 0.$

$$\frac{M_z}{Z} = \frac{2.1 \times 37}{0.939} = 83$$

 $F_a = 13.570 \text{ psi}$

COMPRESSION END BENDING:

$$\frac{F_y}{A \times F_a} + \frac{M_z}{S \times F_b} = \frac{193}{1 \times 13570} + \frac{4773}{1.71 \times 19100} = 0.15 < 1.0$$

$$\text{SHEAR } \frac{F_x}{A} + M_y \times \frac{1}{S} = \frac{129}{2.92} + 969 \times 3.06 = 2982 \text{ psi} < 12800$$

WELD ITEM 4 TO ITEM 2 O.K. BY ENGINEERING JUDGEMENT.



CALCULATION SHEET

Q REV. No. 3

DATE 9-2-81

DESIGN BY M. ZAWYNYAN

DATE 8.22.81

CHECKED BY A. Shusterman

SHEET NO. 37

PROJECT SSES

JOB NO. 8856

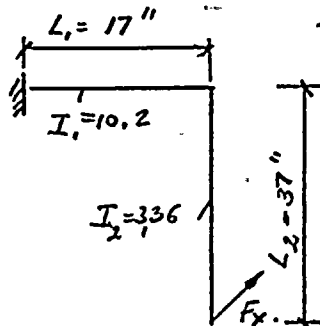
SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO. —

REF:

CHECK FREQUENCY.



$$K_x = \left[\frac{L_2^3}{3EI_2} + \frac{L_1^3}{3EI_1} + \frac{L_1 L_2^2}{GJ_1} \right]^{-1}$$

$$= \left[\frac{37^3}{3 \times 27400 \times 3.36} + \frac{17^3}{3 \times 27400 \times 10.2} + \frac{17 \times 37^2}{10540 \times 17.86} \right]^{-1} = 3.22$$

$$K_{PL} = \frac{E t^3}{C_0 L^2} = \frac{27,400 \times 0.5^3}{0.06 \times 17^2} = 197 \text{ kip/in}$$

$$b = \frac{4}{0.707} = 5.66$$

$$D = \frac{8}{0.707} = 11.32$$

$$K = \left(\frac{1}{3.22} + \frac{1}{197} \right)^{-1} = 3.17$$

$$a = 0.8 D = 0.8 \times 11.32 = 9.$$

$$\frac{b}{a} = \frac{5.66}{9} = 0.62$$

$$C_0 = 0.06$$

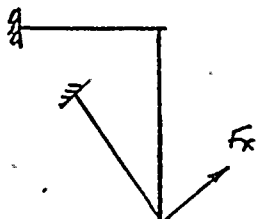
$$W_E = W_E(P) + W_E(D) = 36 + 66 = 102 \text{ #}$$

$$\Delta_x = \frac{W_E}{K} = \frac{0.102}{3.17} = 0.032 > 0.009$$

NOT GOOD.

PUT ON BRACE IN X-DIRECTION

FREQUENCY O.K.





CALCULATION SHEET

Q REV. NO. 3 0510 (11-74)

DATE 9-2-81

DESIGN BY M. ZALIZNYAK

DATE 8.28.81

CHECKED BY A. H. KISTERNAN

SHEET NO. 38

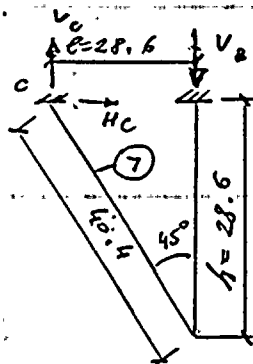
PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO. 1



$$V_C = V_B = \frac{F_x h}{l} = \frac{129 \times 28.6}{28.6} = 129 \text{ \#}$$

$$H_C = 129 \text{ \#}$$

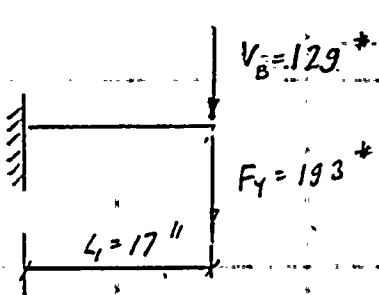
$$N = [V_C + H_C]^{\frac{1}{2}} = [129^2 + 129^2]^{\frac{1}{2}} = 182$$

CHECK ITEM 7 M 4 x 13

$$\frac{V_C}{2} = \frac{1.65 \times 40.4}{0.939} = 48$$

COMPRESSION

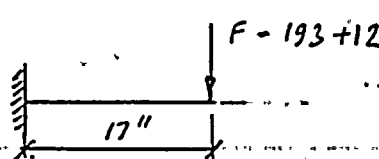
$$\frac{N}{A} = \frac{182}{3.81} = 54 \text{ PSI} < 19100 \text{ PSI}$$



CHECK ITEM 2 AND BASE PLATE AND BOLTS.

REF: SPA-671 (SIM)

SPA-671

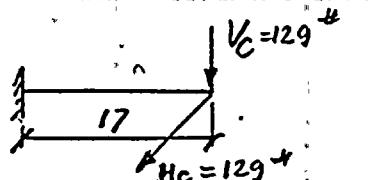


ACT. L = 17" < MAX L = 1'-6"
ACT. Fy = 355# < MAX Fy = 440#
ACT. T.S. 4x4x3/8 SPA-671 M 4x13

ITEM 2 AND BASE PLATE AND BOLTS O.K.

CHECK ITEM 9 AND BASE PLATE AND BOLTS

REF: SPA-601



ACT. Vc = 129 & Hc = 129 < MAX Fx & Fy = 390#
ACT. L = 17" < MAX L = 18"

ITEM 9 AND BASE PLATE AND BOLTS O.K.





CALCULATION SHEET

Q REV. NO 3

DATE 9-2-81

DESIGN BY M. ZALIZNYAN

DATE 8.28.81

CHECKED BY

A. H. HARTMAN

SHEET NO. 39

PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC: HCB-126-4

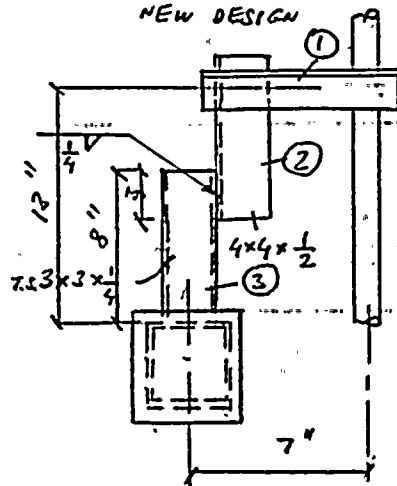
CALCULATION NO. 5371

FILE NO.

H 2018

 $F_2 = 268^{\#}$
SKEW

NEW DESIGN

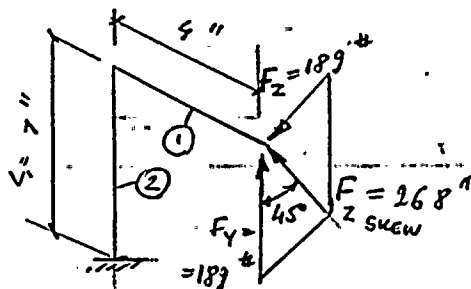
ELEVATION
LOOKING N

$$F_Y = 268 \times \cos 45^\circ = 189^{\#}$$

$$F_Z = 268 \times \cos 45^\circ = 189^{\#}$$

REF:

REF: SPA-644



$$ACT. F_Y = 189^{\#} < MAX F_Y = 370^{\#}$$

$$ACT. F_Z = 189^{\#} < MAX F_Z = 370^{\#}$$

$$0.3(370 + 370) = 222^{\#}$$

$$ACT. L_1 = 7^{\#} < MAX L_1 = 1'6^{\#}$$

$$ACT. L_2 = 4^{\#} < MAX L_2 = 1'0^{\#}$$

ITEM 1 L 3x3 x 3/8

ITEM 2 L 4x4 x 1/2

∴ O.K.

CHECK FREQUENCY

$$W_E = 38^{\#} < W_{EF} = 675^{\#} \therefore O.K.$$

WELD ITEM 2 TO ITEM 3 O.K. BY ENGINEERING

OBSERVATION

ITEM 3 O.K. AND WELD ITEM 3 TO H-42 ∴ O.K.

BY ENGINEERING JUDGEMENT

(SNUGGER CALC SEE SH. 33).

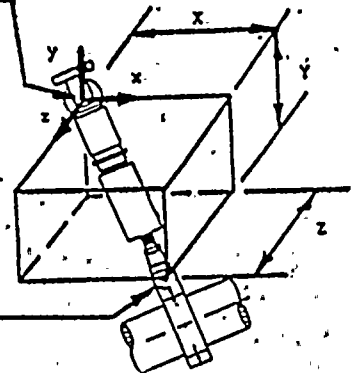


CALCULATION SHEET

CALC. NO. 5371 REV. NO. 3
 ORIGINATOR H-24612NYM DATE 9-1-81 CHECKED A.S. DATE 9-2-81
 PROJECT SSES JOB NO. 8856
 SUBJECT HANGERS CALC HCB-125-9 SHEET NO. 40

Name of MFG. _____
 Catalog No. _____
 Fig/Part No. 306
 Size 1/4 Stroke 4
 Design Load 268 #
 Dimension (Fully retracted) "D" 0
 (See Note A.2)

Pin at Structure



Pin at Clamp

Cold Snubber Coordinates and Thermal Movements

Cold Coord. *X _____ Y _____ Z -12.375
 Therm. Movmts. * Δx _____ Δy _____ Δz 0.30
 Algebraic total A _____ B _____ C -12.075

* the appropriate sign (+/-) must be included

Pin to Pin Hot

Pin to Pin Cold

$$l_h = \sqrt{A^2 + B^2 + C^2} = \boxed{12.075}$$

$$l_c = \sqrt{x^2 + y^2 + z^2} = \boxed{12.375}$$

Shaft Movement (mvmt.)

$$l_h - l_c = \boxed{+ MVMT.} = \boxed{-0.30} \begin{cases} + \text{Extend} \quad \square \\ - \text{Retract} \quad \square \end{cases} \text{ (Check one)}$$

Cold Piston Setting (Optimum)

CPS = "D" + $\frac{\text{Stroke} - (+ MVMT.)}{2}$

$$\text{CPS} = \underline{0} + \frac{4 - (-0.30)}{2} = \boxed{2.15} \quad 2 \frac{3}{16}$$

Hot Piston Setting (Optimum)

HPS = CPS + (+ MVMT.)

$$\text{HPS} = \underline{2.15} + (-0.30) = \boxed{1.85} \quad 1 \frac{7}{8}$$

Field Tolerance (FTS) on "Optimum" Cold and Hot Piston Settings (CPS) & (HPS)

$$\text{Tolerance } (+/- \text{ on CPS \& HPS}) = \frac{\text{Stroke} - 1" - |MVMT.|}{2} = \frac{4 - 1" - |0.30|}{2}$$

$$\text{Tolerance} = \boxed{+/- 1.35} \quad \text{Round down to nearest } 1/8" \quad \boxed{1 \frac{3}{8}}$$



CALCULATION SHEET

Q REV. NO 3

DATE 9-2-81

DESIGN BY M. ZILIZNYAU

DATE 8.28.81

CHECKED BY

SHEET NO. 41

PROJECT SES

JOB NO. 8856

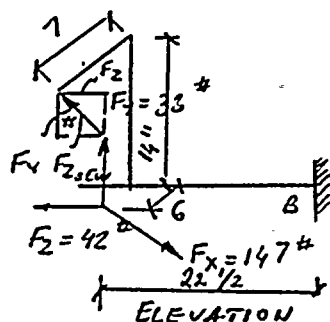
SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO.

REF:

H-42
INSTALLED



$$F_x = 147^{\#} \quad F_y = 33^{\#}$$

$$\text{FRICTION FORCES } F_2 = 0.3(13 + 14 + 106) = 42^{\#}$$

$$\text{LOAD FROM H-2018 } F_2 = 268^{\#} \text{ SKEW}$$

$$F_z = F_2 \text{ SKEW} \times \cos 45^\circ = 268 \times 0.707 = 189^{\#}$$

$$F_y = F_2 \text{ SKEW} \times \sin 45^\circ = 268 \times 0.707 = 189^{\#}$$



REF: SPA-541

CHECK ITEM 1

$$\text{ACT. LOAD } F_x = 147^{\#} < F_x = 150^{\#}$$

$$F_y = 33^{\#} < F_y = 150^{\#}$$

∴ O.K.

WELD ITEM 1 TO ITEM 9, ITEM 4 TO ITEM 7

O.K.

ITEM 7 O.K. BY INSPECTION, WELD ITEM 7 TO ITEM 5 BY ENGINEERING JUDGEMENT.

CHECK ITEM 5

AT POINT B

$$F_x = 147^{\#} \quad F_y = 189 + 33 = 222^{\#} \quad F_z = 189^{\#}$$

$$M_x = 189 \times 22.5 + 33 \times 22.5 + 189 \times 14 = 7641 \text{ IN LBS.}$$

$$M_y = 147 \times 22.5 + 42 \times 6 = 3560 \text{ IN LBS.}$$

$$M_z = 33 \times 6 + 189 \times 7 = 1521 \text{ IN LBS.}$$



DATE 9-2-81

DESIGN BY M. ZALIZNYAN

DATE 8.28.81

CHECKED BY

J. H. HARTMAN

SHEET NO. 42

PROJECT SSES

JOB NO. 8858

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO.

BENDING AND COMPRESSION.

$$\frac{F_z}{A \times F_o} + \frac{M_y + M_x}{S \times F_o} = \frac{189}{5.08 \times 1750} + \frac{3580 + 7641}{5.35 \times 19100} = 0.1 < 1.0$$

$$\frac{uL}{2} = \frac{2.1 \times 22.5}{1.95} = 33$$

$$F_o = 17530$$

O.K.

SHEAR O.K. BY ENGINEERING JUDGEMENT

CHECK WELD ITEM 5 TO ITEM 8.

$$f = \left[\left(\frac{F_z}{A_w} + \frac{M_y + M_x}{S_w} \right)^2 + \left(\frac{F_x}{A_w} + \frac{M_z \times C}{J_w} \right)^2 + \left(\frac{F_y}{A_w} + \frac{M_z \times D}{J_w} \right)^2 \right]^{\frac{1}{2}} =$$

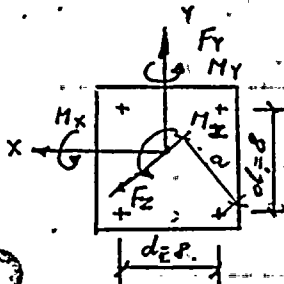
$$= \left[\left(\frac{189}{16} + \frac{3580 + 7641}{21.33} \right)^2 + \left(\frac{147}{16} + \frac{1521 \times 2}{85.33} \right)^2 + \left(\frac{222}{16} + \frac{1521 \times 2}{85.33} \right)^2 \right]^{\frac{1}{2}} =$$

$$= 541$$

$$S_w = 4 \times 4 + \frac{4^2}{3} = 21.33$$

$$w = \frac{541}{0.707 \times 18000} = 0.04$$

CHECK BOLTS AND PLATE.



$$T = \frac{F_z}{N} + \frac{M_x}{2 \times 6} + \frac{M_y}{2 \times 6} =$$

$$= \frac{189}{4} + \frac{7641}{2 \times 6} + \frac{3580}{2 \times 6} = 980 \text{ #}$$

$$S = \left[\left(\frac{F_y}{N} + \frac{M_z}{N \times a} \right)^2 + \left(\frac{F_x}{N} + \frac{M_z}{N \times a} \right)^2 \right]^{\frac{1}{2}} =$$

$$= \left[\left(\frac{222}{4} + \frac{1521}{4 \times 5.66} \right)^2 + \left(\frac{147}{4} + \frac{1521}{4 \times 5.66} \right)^2 \right]^{\frac{1}{2}} = 161$$



DATE 9-2-81

DESIGN BY H. ZALIZNYAN

DATE 8.28.81

CHECKED BY

Shusterman

SHEET NO. 43

PROJECT SSES

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO.

REF:

$$\left(\frac{T}{T_{ALLOW}}\right)^2 + \left(\frac{S}{S_{ALLOW}}\right)^2 = \left(\frac{980}{1600}\right)^2 + \left(\frac{161}{1600}\right)^2 = 0.38 < 1.0$$

O.K.

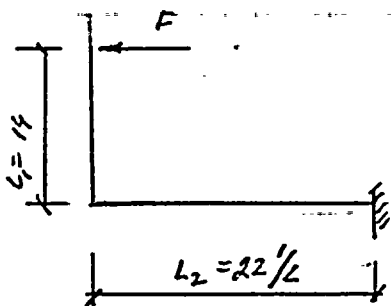
$$f_{B1} = \frac{6Td1}{b_2 t^2} = \frac{6 \times 980 \times 8}{11 \times 0.625^2} = 10947 < 19100 \text{ psi.}$$

O.K.

0.10

0.37

CHECK FREQUENCY.

ASSUME ITEM 1 H-2018 L3x3x $\frac{3}{8}$ RIGID ELEM.

$$k_1 = \frac{3EI_1 I_2}{L_1^2 (L_1 I_2 + 3L_2 I_1)} =$$

$$= \frac{3 \times 27400 \times 5.56 \times 11.4}{14^2 (14 \times 11.4 + 3 \times 22.5 \times 5.56)} = 50$$

$$k_{PL} = \frac{E t^3}{C_0 L^2} = \frac{27400 \times 0.625^3}{0.6 \times 22.5^2} = 495$$

$$D = \frac{8}{0.707} = 11.3$$

$$a = 0.8D = 0.8 \times 11.3 = 9$$

$$b = \frac{4}{0.707} = 5.66$$

$$\frac{b}{a} = \frac{5.66}{9} = 0.63$$

$$C_0 = 0.6$$

$$k = \frac{1}{\left(\frac{1}{k_1} + \frac{1}{k_{PL}}\right)} =$$

$$= \frac{1}{\left(\frac{1}{50} + \frac{1}{495}\right)} = 45$$

$$W_E = W_{E(P)} + W_{E(S)} = 19 + 61 = 97 \text{ #}$$

$$\Delta = \frac{W_E}{k} = \frac{0.097}{45} = 0.003 < 0.009$$

O.K.

HANGER O.K.



DESIGN BY M. ZALIZNYAU

DATE 8.28.81

CHECKED BY

J. H. KRYSTERMAN

SHEET NO. 44

PROJECT SSES

JOB NO. 8858

SUBJECT HANGERS CALC. HCB-126-4

CALCULATION NO. 5371

FILE NO.

REF!

H 47

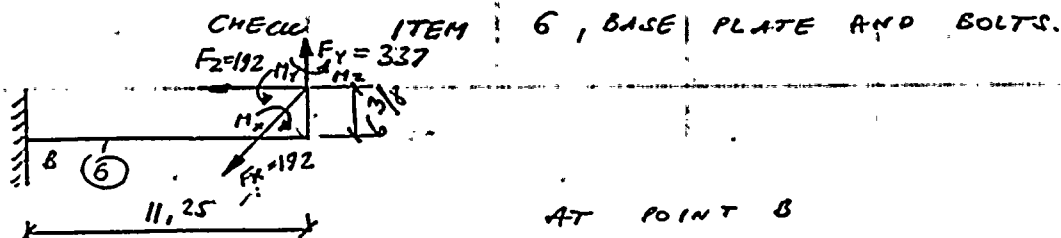
INSTALLED

$$F_x = 192 \text{ #} \quad F_y = 337 \text{ #} \quad F_z = 192 \text{ #}$$

$$M_x = 424 \times 12 = 5088 \text{ INLBS}$$

$$M_y = 5088 \text{ INLBS}$$

$$M_z = 5088 \text{ INLBS}$$



EXISTS.

$$F_x = 192 \text{ #}, \quad F_y = 337 \text{ #}, \quad F_z = 192 \text{ #}$$

$$M_x = 5088 + 337 \times 11.25 + 192 \times 6.375 = 10103$$

$$M_y = 5088 + 192 \times 11.25 = 7248$$

$$M_z = 5088 + 192 \times 6.375 = 6312$$

BENDING AND COMPRESSION

$$\frac{F_z}{A \times F_w} + \frac{M_x + M_y}{S \times F_b} = \frac{192}{4.95 \times 18440} + \frac{10103 + 7248}{5.10 \times 19100} = 0.9 < 1.0$$

$$\frac{K L}{2} = \frac{2.1 \times 11.25}{1.36} = 17$$

$$F_w = 18440 \text{ psi.}$$

$$\text{SHEAR } \frac{F_x}{A} + \frac{F_z}{A} + M_z \times \frac{1}{S} = \frac{192}{3} + \frac{192}{3} + 6312 \times 0.142 = 1024 < 12800 \text{ psi}$$

CHECK WELD ITEM 5 TO ITEM 8

$$f = \left[\left(\frac{F_z}{A_w} + \frac{M_y + M_z}{S_w} \right)^2 + \left(\frac{F_x}{A_w} + \frac{M_z \times c}{S_w} \right)^2 + \left(\frac{F_y}{A_w} + \frac{M_z \times d}{S_w} \right)^2 \right]^{\frac{1}{2}} =$$

$$= \left[\left(\frac{192}{16} + \frac{10103 + 6312}{21.23} \right)^2 + \left(\frac{192}{16} + \frac{6312 \times 2}{85.33} \right)^2 + \left(\frac{337}{16} + \frac{6312 \times 2}{85.33} \right)^2 \right]^{\frac{1}{2}} =$$

$$= 8.15 \quad \text{MIN WELD} = \frac{f}{0.707 \times 18000} = 0.06$$



CALCULATION SHEET

Q

REV. No. 3

DATE 9-2-81

DESIGN BY M. ZALIZNYAN

DATE 8.28.81

CHECKED BY J. Mustepan

SHEET NO. 45

PROJECT SSES

JOB NO. 8858

SUBJECT HANGERS CALC.

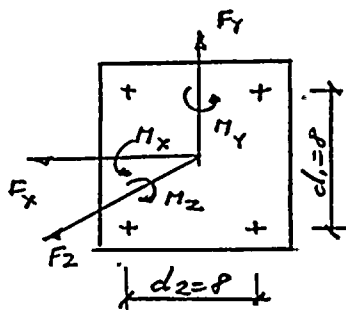
HCB-126-4

CALCULATION NO. 5371

FILE NO.

REF:

CHECK BOLTS AND PLATE



$$T = \frac{F_z}{N} + \frac{M_x}{2d_1} + \frac{M_y}{2d_2} =$$

$$= \frac{192}{4} + \frac{10103}{2 \times 6} + \frac{7248}{2 \times 6} = 1494 \text{ #}$$

$$S = \left[\left(\frac{F_y}{N} + \frac{M_z}{N \times a} \right)^2 + \left(\frac{F_x}{N} + \frac{M_z}{N \times a} \right)^2 \right]^{\frac{1}{2}} =$$

$$= \left[\left(\frac{337}{4} + \frac{6312}{4 \times 5.66} \right)^2 + \left(\frac{192}{4} + \frac{6312}{4 \times 5.66} \right)^2 \right]^{\frac{1}{2}} = 488$$

$$\left(\frac{T}{T_{allow}} \right)^2 + \left(\frac{S}{S_{allow}} \right)^2 = \left(\frac{1494}{1600} \right)^2 + \left(\frac{488}{1600} \right)^2 = 0.95 < 1.0$$

∴ O.K.

$$f_{B_1} = \frac{6Td_1}{b_s t^2} = \frac{6 \times 1494 \times 8}{11 \times 0.625^2} = 16689 < 19100 \text{ psi.}$$

∴ O.K.

FREQUENCY O.K. PER SPA-721

$$WEP = 530 > 44 \text{ #}$$

HANGER O.K.

SPA-721.



CALCULATION SHEET

Q

REV. NO. 3

DATE 9-2-81

DESIGN BY M. 2 ALIZNYAK

DATE 8.28.81

CHECKED BY ASHURTERMAN

SHEET NO. 46

PROJECT SCE

JOB NO. 8856

SUBJECT HANGERS CALC. HCB-126-1

CALCULATION NO. 5371

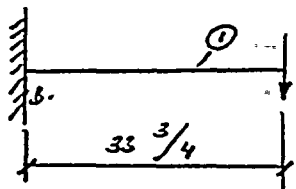
FILE NO.

H-2023

$F_y = 198 \#$ $F_z = 299 \#$

NEW DESIGN

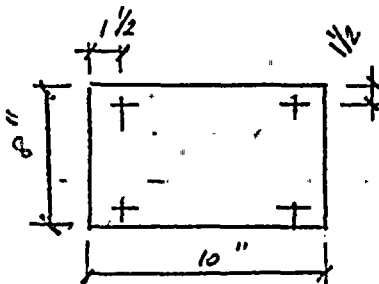
REF:



ITEM 1
T.S. 4 x 4 x 1/2

CHECK FREQUENCY.

$$K_1 = \frac{3EI}{L^3} = \frac{3 \times 27400 \times 10.2}{33.75^3} = 21.8$$



$$K_{PL} = \frac{Et^3}{C_0 L^2} = \frac{27400 \times 0.5^3}{0.004 \times 33.75^2} = 7.52$$

$$b = \frac{4}{0.707} = 5.66$$

$$D = [5.24 + 7.2]^{1/2} = 8.60$$

$$\alpha = 0.8 D = 0.8 \times 8.60 = 6.88$$

$$\frac{b}{\alpha} = \frac{5.66}{6.88} = 0.82$$

$$C_0 = 0.004$$

$$K = \frac{1}{\left(\frac{1}{K_1} + \frac{1}{K_P}\right)} = \frac{1}{\left(\frac{1}{21.8} + \frac{1}{7.52}\right)} = 21.2$$

$$W_E = W(P) + W(E) = 42 + 60 = 102$$

$$\frac{0.10 \#}{21.2} = 0.005 < 0.009$$

CHECK ITEM 1

$$M_B = 198 \times 33.75 = 6683 \text{ INLBS.}$$

$$\frac{K_L}{Z} = \frac{2.1 \times 33.75}{1.36} = 52$$

$$F_a = 16230$$

$$\frac{F_z}{A \times F_a} + \frac{M_B}{S \times F_b} = \frac{299}{6.14 \times 16230} + \frac{6683}{5.70 \times 19100} = 0.063 < 1.0$$

0.4



CALCULATION SHEET

Q REV. NO. 3

0510 (11-74)

DATE 9-2-81

DESIGN BY M. ZALIZNYAKU

DATE 8.28.71

CHECKED BY J. Shusterman

SHEET NO. 4.7

PROJECT SSES

JOB NO. 8858

SUBJECT HANGERS CALC. HCB-126-1

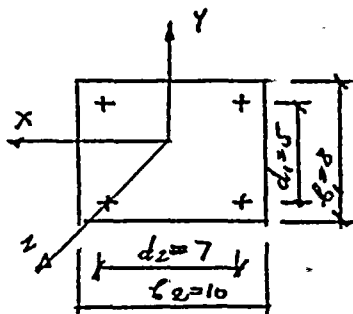
CALCULATION NO. 5371

FILE NO. —

SHEAR STRESS ITEM 1, WELD ITEM 1 TO
BASE PLATE O.K. BY ENGINEERING JUDGEMENT.

DEFLECTION O.K. BY ENGINEERING JUDGEMENT.

CHECK BOLTS AND BASE PLATE.



$$T = \frac{F_2}{4} + \frac{M_x}{2d_1} = \frac{299}{4} + \frac{6683}{2 \times 4.5} = 817. \#$$

$$S = \frac{F_y}{4} = \frac{198}{4} = 50 \#$$

$$\left(\frac{T}{T_{allow}} \right)^2 + \left(\frac{S}{S_{allow}} \right)^2 = \left(\frac{817}{1600} \right)^2 + \left(\frac{50}{1600} \right)^2 = 0.26 < 1.0$$

BOLT $\phi \frac{5}{8}$ \therefore O.K.

$$f_{B1} = \frac{6T d_1}{b_2 t^2} = \frac{6 \times 817 \times 5}{10 \times 0.625^2} = 6274 \text{ psi} < 19100 \text{ psi} \therefore \text{O.K.}$$

$$f_{B2} = \frac{6T d_2}{b_1 t^2} = \frac{6 \times 817 \times 7}{8 \times 0.625^2} = 10980 \text{ psi} < 19100 \text{ psi} \therefore \text{O.K.}$$

PLATE $\frac{5}{8} \times 8 \times 10$ \therefore O.K.

REF:

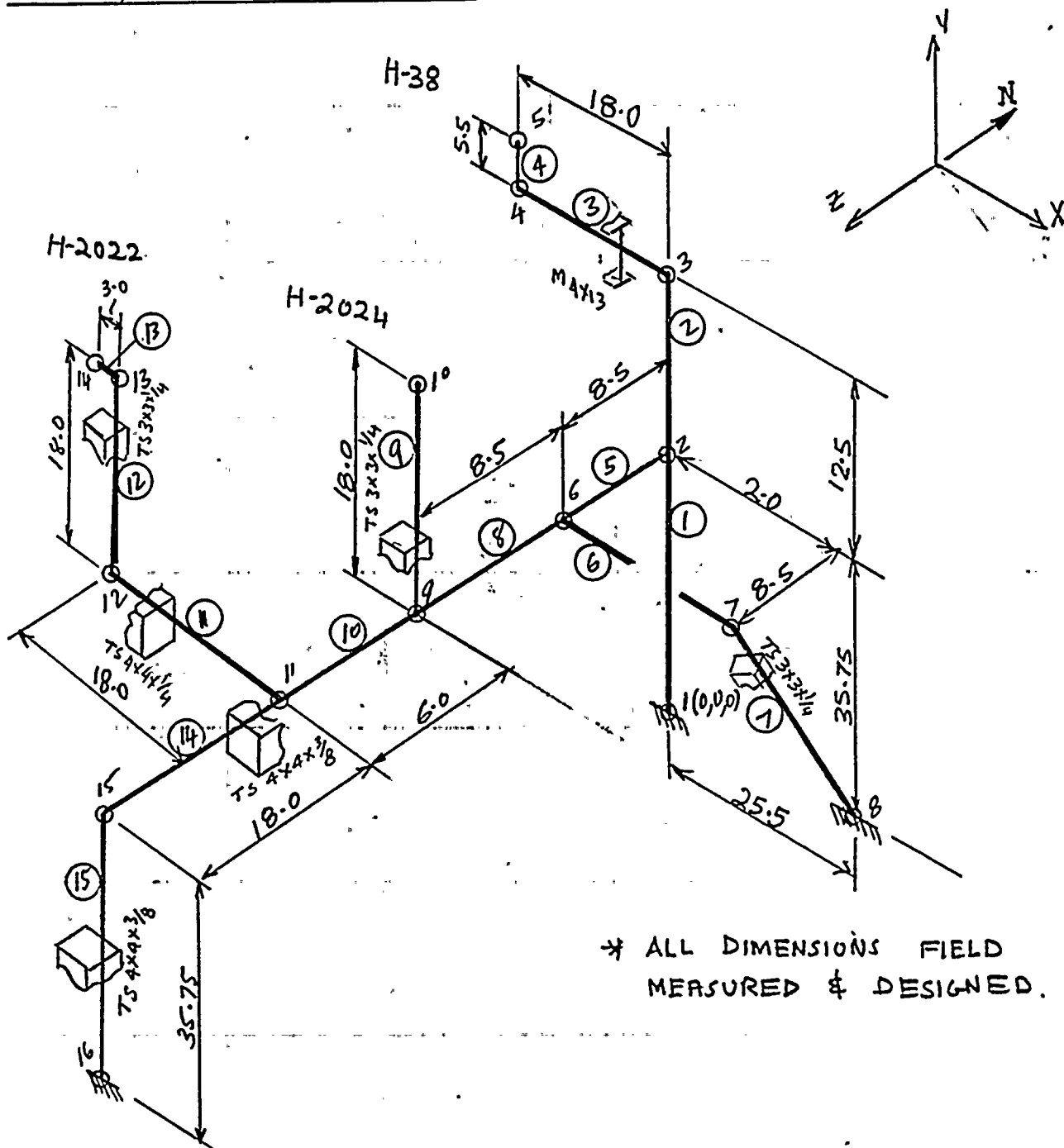


DESIGN BY A.F. Rahim DATE 9-1-81 CHECKED BY MSD SHEET NO. 48

PROJECT SSES JOB NO. 8856

SUBJECT SUPPORTS FOR SP-HCB-128 CALCULATION NO. 5371 FILE NO. —

H-38 , H-2022 & H-2024



* ALL DIMENSIONS FIELD
MEASURED & DESIGNED.

STRUDL '8856' 'S.S.E.S.'

\$ TITLE SP-HCB-128-H38, 2022 & 2024 SEIK. CL. I SKM-5371

\$ INPUT BY: A F RAHIM DATE: 9/2/81 CHK. BY. MUKUND DATE: 9.2.81

TYPE SPACE FRAME

UNITS . INCH . KIP . DEG



DESIGN BY A.F. Rahim DATE 9.3.81 CHECKED BY MSD SHEET NO. 49PROJECT SSES JOB NO. 8856SUBJECT SUPPORTS FOR SP-HCB-126-1 CALCULATION NO. 5371 FILE NO. —

H-38. ITEM (12)

$$F_{xsk} = 232^{\#} \quad F_y = 338^{\#}$$

FORMED Φ QUALIFIED PER SPA-641

$$F_x = F_y \text{ (ALLOW)} = 624^{\#} \quad F_{x \text{ ACT}} = 232^{\#}, \quad F_{y \text{ ACT}} = 338^{\#}$$

WELD $3/16"$ IS OK BY ENGINEERING JUDGEMENT

H-2022 ITEM (13)

$$F_y = 176^{\#}$$

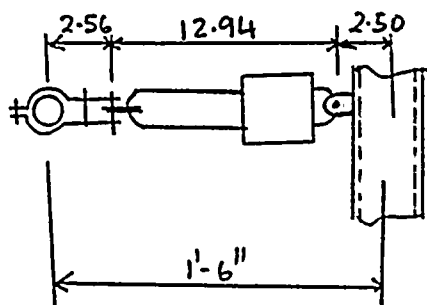
FORMED Φ QUALIFIED PER SPA-591

$$F_{y \text{ ALL}} = 440^{\#} \quad F_{y \text{ ACT}} = 176^{\#}$$

WELD $3/16"$ IS OK BY ENGINEERING JUDGEMENT.

H-2024 ITEM (6)

$$F_{xsk} = 99^{\#}$$

 $1/4$ SNUBBER

$$\Delta x = 0.125"$$

$$\Delta y = 0.123"$$

WELDING $3/16"$ IS
ADEQUATE BY
ENG. JUDGEMENT.

$$\therefore \text{TOTAL RETRACTION} = \sqrt{0.125^2 + 0.123^2} = 0.175"$$

$$\therefore CS = \frac{4 + 0.175}{2} = 2.088"$$

$$\therefore HS = 2.088 - 0.175 = 1.913"$$

$$\begin{aligned} \text{PIN-PIN}_{\text{CALC}} &= C_{\text{MIN}} + B + CS \\ &= 9 + 1.19 + 2.088 = 12.278" \end{aligned}$$

SINCE AVAILABLE PIN-PIN
= 12.94

ADJUST CS TO 2.75"

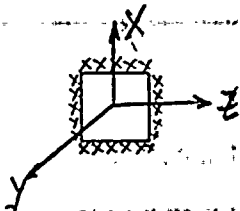
$$\therefore HS = 2.75 - 0.175 = 2.575"$$

$$\begin{aligned} \text{USE } CS &= 2\frac{3}{4}" \\ HS &= 2\frac{9}{16}" \end{aligned}$$

DESIGN BY A. F. Rahim DATE 9-3-81 CHECKED BY MAO SHEET NO. 50PROJECT SS ES JOB NO. 8856SUBJECT SUPPORTS FOR HCB-126-1 CALCULATION NO. 5371 FILE NO. ---WELD SIZING CONT.

ITEM ① TO ⑪ (ITEM ② TO ⑪)

ENVELOPE LOADS @ dt. 1 & 16



$$F_x = .167 \text{ lbs}$$

$$M_x = 1630 \text{ IN-lbs}$$

$$F_y = 839 \text{ lbs}$$

$$M_y = 1012 \text{ IN-lbs}$$

$$F_z = 103 \text{ lbs}$$

$$M_z = 842 \text{ IN-lbs}$$

$$A_w = 16$$

$$S_{x,y} = 21.3$$

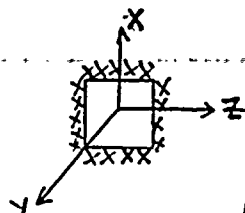
$$J_w = 85.3$$

$$C = 2$$

$$f = \sqrt{\left(\frac{839}{16} + \frac{1630}{21.3} + \frac{842}{21.3}\right)^2 + \left(\frac{.167}{8} + \frac{1012 \times 2}{85.3}\right)^2 + \left(\frac{103}{8} + \frac{1012 \times 2}{85.3}\right)^2}$$
$$= 180 \text{ lbs/IN}$$

$$\text{or } W_{\text{reqd}} = \frac{180}{18000 \times 0.707} = 0.02 < \frac{1}{4} \therefore \text{OK}$$

ITEM ⑩ TO ⑪ (QUALIFIES ITEM ⑩ TO ③) & ITEM ⑤ TO ③)



$$F_x = 520 \text{ lbs}$$

$$M_x = 797 \text{ IN-lbs}$$

$$F_y = 827 \text{ lbs}$$

$$M_y = 268 \text{ IN-lb}$$

$$F_z = 145 \text{ lbs}$$

$$M_z = 4 \text{ IN-lb (NEG)}$$

$$A_w = 12$$

$$S_{x,z} = 12$$

$$J_w = 136$$

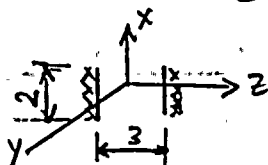
$$C = 1.5$$

$$f = \sqrt{\left(\frac{827}{12} + \frac{797}{12}\right)^2 + \left(\frac{520}{6} + \frac{268 \times 1.5}{36}\right)^2 + \left(\frac{145}{6} + \frac{268 \times 1.5}{36}\right)^2}$$
$$= 194 \text{ lbs/IN}$$

$$W_{\text{reqd}} = \frac{194}{18000 \times 0.707} = 0.02 < \frac{3}{16} \therefore \text{OK}$$

ITEM ⑤ TO ①

LOADS @ dt. 9



$$F_x = 99$$

$$F_y = 132$$

$$M_z = 1782$$

$$f = \sqrt{\left(\frac{132}{2} + \frac{1782}{1.33}\right)^2 + \left(\frac{99}{4}\right)^2} = 1375 \text{ lbs/IN}$$

EFFECTIVE 2" LENGTH (CONSERVATIVE)

$$W_{\text{reqd}} = \frac{1375}{18000 \times 0.707} = 0.1$$

$$A_w = 4, S_x = 6, S_z = 1.33, J_w = 10.3$$

 $\therefore \frac{3}{16} \text{ OK}$

DESIGN BY A F Rahim DATE 9-3-81 CHECKED BY MSD SHEET NO. 51PROJECT SSES JOB NO. 8856SUBJECT SUPPORTS FOR SP-HCB-126-1 CALCULATION NO. 5371 FILE NO. ---H-38 (INSTALLED)

$$F_{XK} = 232^{\#}, F_Y = 338^{\#}$$

DUE TO ADDITION OF OTHER SUPPORTS AND EXIST. 2-BOLT CLAMP & TEE ARE RATED FOR 150[#] H-38 IS RECOMMENDED TO BE DISMANTLED ENTIRELY AND A STRUCTURE TO GANG HANG H-38, H-2022 & H-2024 IS TO BE INSTALLED.

∴ PER DET. SKETCH & STRUDL RUN OUTPUT.

MAX NORMAL STRESSES IS 2038 PSI @ BEGINNING OF MEM. 2

SHEAR FORCES ARE SMALL ∴ SHEAR STRESSES ARE NEGLIGIBLE.

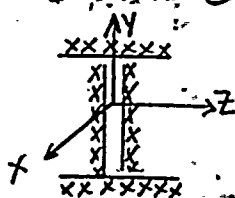
DEFLECTION @ Jt 5	$\Delta x = 0.017"$	} $< 1/8" \therefore OK$
	$\Delta y = 0.017"$	
@ Jt 10	$\Delta x = 0.004"$	
@ Jt 14	$\Delta y = 0.004"$	

FREQUENCY CHECK @ Jt. 5	$\Delta x = 0.003"$	} $< 0.009"$
	$\Delta y = 0.002"$	
@ Jt 10	$\Delta x = 0.004"$	
@ Jt. 14	$\Delta y = 0.003"$	

∴ OK at Jt. 5, 10 & 14

WELD SIZING

ITEM ④ TO ② - LOADS @ Jt. 3 MEM ③:



$F_x = 232 \text{ lbs}$	$M_x = 0$
$F_y = 319 \text{ lbs}$	$M_y = 0$
$F_z = 0$	$M_z = 7185 \text{ IN-LBS}$

$$A_w = 16, 8 \quad f = \sqrt{\left(\frac{232}{16} + \frac{7185}{22}\right)^2 + \left(\frac{319}{8}\right)^2} = 343 \frac{\text{lbs}}{\text{IN}}$$

$$S_z = 22$$

$$S_y = 5$$

$$J_w = 58$$

$$w_{reqd} = \frac{343}{18000 \times 0.707} = 0.03" < 3/16"$$



CALCULATION SHEET



Q

CALC. NO. 5371 REV. NO. 4
CHECKED KP DATE 2/19/92
JOB NO. 8856
SHEET NO. 52

ORIGINATOR C.H. Nihon DATE 2/16/92
PROJECT S.S.E.S. UNIT 1
SUBJECT SP-HRD-195-1

REFERENCE

H2002 REV 1

$$\text{PLASTIC MOMENT} = 1.1 (Z_p)(\sigma_y)$$

$$Z_p = \frac{1}{6} (D^3 - d^3)$$

$$= \frac{1}{6} (1.315^3 - 0.957^3) = 0.233 \text{ in}^3$$

$$M = 1.1 (0.233 \text{ in}^3)(35 \text{ KSI})$$

$$= 8.971 \text{ in-K}$$

$$\text{JET FORCE} = K P A$$

$$= 2.0 (0.095 \text{ KSI})(0.719 \text{ in}^2)$$

$$= 0.137 \text{ K}$$

NOTE: SINCE ONLY ONE CONDITION CAN OCCUR AT ANY ONE PARTICULAR TIME, THE FOLLOWING CALCS. ARE BASED ON A COMBINATION OF THE WORST FORCES FROM THE SUM OF LOADS 1 AND 2, OR 3 AND 4, OR 5 AND 6, OR 7 AND 8 @ THE RESPECTIVE JOINTS AND MEMBERS. (CONSERVATIVE)

DEFLECTION CHECK

1. @ JOINT 1

$$\Delta X = 0.0061''$$

$$\Delta Y = 0.0016''$$

$$\Delta Z = 0.0031''$$

2. @ JOINT 2

$$\Delta X = 0.0104''$$

$$\Delta Y = 0.004''$$

$$\Delta Z = 0.0039''$$

CAUSED BY LOADS:

7 AND 8

5 AND 6

15 AND 6

7 AND 8

5 AND 6

5 AND 6

STRUDL
OUTPUT
ATTACH-
MENT



CALCULATION SHEET

Q

ORIGINATOR G. H. Nihew DATE 2/16/82 CALC. NO. 5371 REV. NO. 4
PROJECT S.S.E.S. UNIT 1 CHECKED KP DATE 2/19/82
SUBJECT SP-HRD-195-1 JOB NO. 8856
SHEET NO. 53

REFERENCE

H2002 REV 1

DEFLECTION CHECK (CONT.)

NOTE: WITH THE EXCEPTION OF ΔX @ JOI 2,
ALL DEFLECTIONS ARE $< 0.009" <$
 $0.125"$ \therefore FREQUENCY AND DEFLEC-
TIONS ARE O.K.
- ΔX @ JOI 2 $< 0.125 \therefore$ O.K., FRE-
QUENCY O.K. BY ENGR. JUDGEMENT

MEMBER CHECK

- CHECK ON MEMB. 4 TO 6 (T4x4x8)

LOCAL FORCES:

$$F_x = 0.4741^k \quad M_x = 8.971 \text{ IN-K}$$

$$F_y = 0.1370^k \quad M_y = 8.971 \text{ IN-K}$$

$$F_z = 0.0678^k \quad M_z = 1.7629 \text{ IN-K}$$

- BENDING AND AXIAL STRESS

$$\frac{KL}{r} = \frac{2.1 (70.831")}{1.36"} = 109.37 \therefore F_A = 10.75 \text{ KSI}$$

SFPM 3.10.1

$$F_A = \frac{0.4741^k}{6.14 \text{ IN}^2} = 0.077 \text{ KSI} < 10.75 \therefore \text{O.K.}$$

$$F_A / F_A = 0.077 / 10.75 = 0.007 < 0.15 \therefore \text{O.K.}$$

$$F_{bz} < F_{by} = \frac{8.971 \text{ IN-K}}{5.70}$$

$$= 1.574 \text{ KSI} < 19.1 \text{ KSI} \therefore \text{O.K.}$$

INTERACTION O.K. BY INSPECTION



CALCULATION SHEET

Q

CALC. NO. 5371 REV. NO. 4

ORIGINATOR G.H. Nihon DATE 2/16/82 CHECKED KP DATE 2/19/82

PROJECT S.S.E.S. UNIT 1 JOB NO. 8856

SUBJECT SP - HBD - 195 - 1 SHEET NO. 54

REFERENCE

H2002 REV 1

MEMBER CHECK (CONT.)

- CHECK ON MEMB. 4 TO 6 (CONT.)
- SHEAR STRESS

$$\tau = \frac{8.971 \text{ IN-K}}{2 (12.25 \text{ IN}^2) (0.5'')} = 0.732 \text{ KSI}$$

$$f_{VY} = \frac{0.137 \text{ K}}{4 \text{ IN}^2} + 0.732 \text{ KSI} = 0.766 \text{ KSI}$$

$$f_{VZ} = \frac{0.0678 \text{ K}}{4 \text{ IN}^2} + 0.732 \text{ KSI} = 0.749 \text{ KSI}$$

$$f_{VI} = \sqrt{(0.766)^2 + (0.749)^2} = 1.071 \text{ KSI} < 12.8 \therefore \text{O.K.}$$

- CHECK ON MEMB. 7 TO 10 (76 x 6 x 8)
- LOCAL FORCES:

$$F_x = 0.4295 \text{ K} \quad M_x = 11.0260 \text{ IN-K}$$

$$F_y = 0.1516 \text{ K} \quad M_y = 11.0260 \text{ IN-K}$$

$$F_z = 0.1846 \text{ K} \quad M_z = 11.0260 \text{ IN-K}$$

- BENDING AND AXIAL STRESS

$$\frac{KL}{r} = \frac{2.1 (61.0 \text{ IN})}{2.19 \text{ IN}}$$

$$= 58.5 \therefore F_A = 15.69 \text{ KSI}$$

$$f_A = \frac{0.4295 \text{ K}}{10.1 \text{ IN}^2} = 0.043 \text{ KSI} < 15.69 \therefore \text{O.K.}$$

$$f_A / F_A < 0.15 \text{ BY INSPECTION}$$

$$f_{By} = f_{Bz} = \frac{11.0260 \text{ IN-K}}{16.2 \text{ IN}^3}$$

$$= 0.681 \text{ KSI} < 19.1 \therefore \text{O.K.}$$

INTERACTION O.K. BY INSPECTION

SFPSM 3.10.1





CALCULATION SHEET

CALC. NO. 5371 REV. NO. 4
 ORIGINATOR G.H. Niben DATE 2/16/82 CHECKED KP DATE 2/19/82
 PROJECT S.S.F.S. UNIT 1 JOB NO. 8856
 SUBJECT SP-HBD-195-1 SHEET NO. 55

REFERENCE

H2002 REV 1

MEMBER CHECK (CONT.)

- CHECK ON MEMB. 7 TO 10 (CONT.)
- SHEAR STRESS

$$\tau = \frac{11.0260 \text{ IN-K}}{2(30.25 \text{ IN}^2)(0.5 \text{ IN})} = 0.364 \text{ KSI}$$

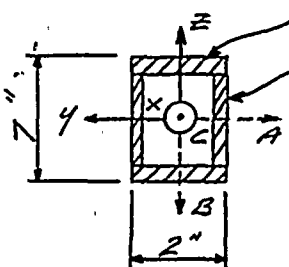
$$F_{VY} = \frac{0.1516 \text{ K}}{6 \text{ IN}^2} + 0.364 \text{ KSI} = 0.389 \text{ KSI}$$

$$F_{VZ} = \frac{0.1846 \text{ K}}{6 \text{ IN}^2} + 0.364 \text{ KSI} = 0.395 \text{ KSI}$$

$$F_{VR} = \sqrt{(0.389)^2 + (0.395)^2} = 0.554 \text{ KSI} < 12.8 \therefore \text{O.K.}$$

WELD CHECK

- @ JOINT 3 (5/8" R TO TS 4"x4"x 1/2")



FILLET WELD (2 PLACES)

FLARE-BEVEL WELD (2 PLACES)

LOCAL FORCES:

$$\begin{aligned} F_x &= 0.137 \text{ K} & M_x &= 8.971 \text{ IN-K} \\ F_y &= 0.0 & M_y &= 0.7706 \text{ IN-K} \\ F_z &= 0.137 \text{ K} & M_z &= 8.971 \text{ IN-K} \end{aligned}$$

MIN. WELD SIZE REQ'D. DUE TO ϕ OF MATERIAL = 1/4"

$$SMA = (2)(7.0) \cdot \frac{(7.0)^2}{3}$$

$$= 30.33 \text{ IN}^2$$

$$SMB = (7.0)(2) + \frac{(2)^2}{3}$$

$$= 15.33 \text{ IN}^2$$

$$PMI = \frac{(2+7)^3}{6}$$

$$= 121.5 \text{ IN}^3$$

BLODGETT
p. 7.4-7



CALCULATION SHEET

 CALC. NO. 5371

 REV. NO. 4

 ORIGINATOR C.H. Niles

 DATE 2/16/82

 CHECKED KP

 DATE 2/19/82

 PROJECT S.S.E.S. UNIT 1

 JOB NO. 8866

 SUBJECT SP-HBD-195-1

 SHEET NO. 56

REFERENCE

H2002 REV 1
WELD CHECK (CONT.)

- @ JOINT 3 (CONT.)

$$f_A = \frac{8.971 \text{ IN-K} (3.5 \text{ IN})}{121.5 \text{ IN}^3} = 0.258 \text{ K/IN}$$

$$f_B = \frac{0.137 \text{ K}}{14.0 \text{ IN}} + \frac{8.971 \text{ IN-K} (1 \text{ IN})}{121.5 \text{ IN}^3} = 0.084 \text{ K/IN}$$

$$f_C = \frac{0.137 \text{ K}}{18.0 \text{ IN}} + \frac{0.7706 \text{ IN-K}}{30.33 \text{ IN}^2} + \frac{8.971 \text{ IN-K}}{15.33 \text{ IN}^2} = 0.618 \text{ K/IN}$$

$$f_r = \sqrt{(0.258)^2 + (0.084)^2 + (0.618)^2} = 0.675 \text{ K/IN}$$

$$\text{MIN. LEG SIZE REQ'D.} = \frac{0.675 \text{ K/IN}}{0.707 (18 \text{ KSI})}$$

$$= 0.053' \therefore \frac{1}{4}''$$

$$= 0.053' \therefore \frac{1}{4}''$$

FILLET WELD

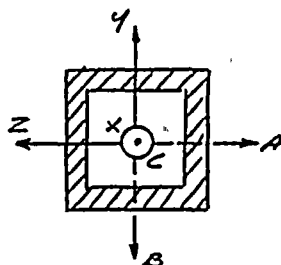
ALONG WITH FLARE-

BEVEL GROOVE WELD

IS SUFFICIENT.

 NOTE: WELD @ JOINT 7 IS THE SAME AS
@ JOINT 3

- @ JOINT 4 (TS 4x4x 1/2 TO R)

 NOTE: QUALIFY THIS WELD \therefore WELD @
R TO TS 6x6x 1/2 WILL BE O.K.


LOCAL FORCES:

$$F_x = 0.137 \text{ K}$$

$$M_x = 8.971 \text{ IN-K}$$

$$F_y = 0.137 \text{ K}$$

$$M_y = 8.971 \text{ IN-K}$$

$$F_z = 0.0$$

$$M_z = 1.233 \text{ IN-K}$$

MIN. WELD SIZE REQ'D DUE

 TO $\frac{1}{2}$ OF MATERIAL = $\frac{3}{16}''$



CALCULATION SHEET



Q

CALC. NO. 5371 REV. NO. 4
 ORIGINATOR G.H. Nihens DATE 2/16/82 CHECKED KP DATE 2/19/82
 PROJECT S.S.E.S. UNIT 1 JOB NO. 8856
 SUBJECT SP-HBD-195-1 SHEET NO. 57

REFERENCE

42002 REV 1

WELD CHECK (CONT.)

- @ JOINT 4 (CONT.)

$$F_A = \frac{8.971 \text{ IN-K} (2.0 \text{ IN})}{85.33 \text{ IN}^3} = 0.21 \text{ K/IN}$$

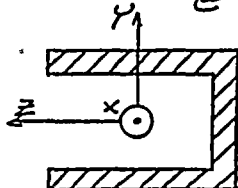
$$F_B = \frac{0.137 \text{ K} + 8.971 \text{ IN-K} (2.0 \text{ IN})}{8.0 \text{ IN} \quad 85.33 \text{ IN}^3} = 0.227 \text{ K/IN}$$

$$F_C = \frac{0.137 \text{ K}}{16.0 \text{ IN}} + \frac{1.233 \text{ IN-K}}{21.33 \text{ IN}^2} + \frac{8.971 \text{ IN-K}}{21.33 \text{ IN}^2} = 0.487 \text{ K/IN}$$

$$F_T = \sqrt{(0.21)^2 + (0.227)^2 + (0.487)^2} = 0.577 \text{ K/IN}$$

$$\text{REQ'D. SIZE} = \frac{0.577 \text{ K/IN}}{0.707 (19 \text{ KSI})} = 0.045" < \frac{3}{16}" \therefore \text{USE } \frac{3}{16}" \text{ WELD}$$

- @ JOINT 6 (TS 6x6x 1/2 TO TS 6x6x 1/2)



LOCAL FORCES

$$\begin{aligned} F_x &= 0.137 \text{ K} & M_x &= 11.026 \text{ IN-K} \\ F_y &= 0.137 \text{ K} & M_y &= 11.026 \text{ IN-K} \\ F_z &= 0.0 & M_z &= 0.9076 \text{ IN-K} \end{aligned}$$

FLARE-BEVEL GROOVE WELD IS
O.K. BY ENGR. JUDGEMENT

- @ JOINT 8

NOTE: FORCES ARE A COMBINATION
OF THE WORST FORCES
FROM MEMBERS 5 AND 6.

LOCAL FORCES:

$$\begin{aligned} F_x &= 0.4741 \text{ K} & M_x &= 1.1987 \text{ IN-K} \\ F_y &= 0.036 \text{ K} & M_y &= 3.2421 \text{ IN-K} \\ F_z &= 0.0678 \text{ K} & M_z &= 1.7629 \text{ IN-K} \end{aligned}$$





CALCULATION SHEET

Q

CALC. NO. 5371 REV. NO. 4

ORIGINATOR E.H. Nicks DATE 2/14/82 CHECKED KP DATE 2/19/82

PROJECT S.S.E.S. UNIT 1 JOB NO. 8856

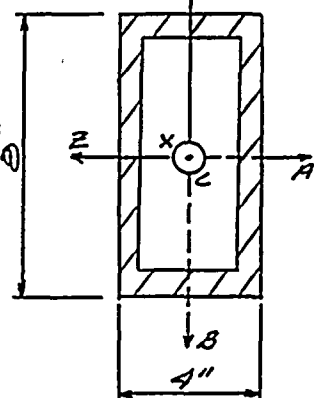
SUBJECT SP - HBD - 195 - 1 SHEET NO. 58

REFERENCE

H2002 REV 1

WELD CHECK (CONT.)

Y - @ JOINT B (CONT.)



TRANSFER LOCAL FORCES TO GLOBAL
OF WELD PATTERN SHOWN HERE.

$$F_x = 0.4791 \sin 30^\circ + 0.036 \cos 30^\circ$$

$$= 0.268 \text{ K}$$

$$F_y = 0.4791 \cos 30^\circ + 0.036 \sin 30^\circ$$

$$= 0.429 \text{ K}$$

$$F_z = 0.268 \text{ K}$$

$$M_x = 1.1987 \sin 30^\circ + 3.2921 \cos 30^\circ$$

$$= 3.407 \text{ IN-K}$$

$$M_y = 1.1987 \cos 30^\circ + 3.2921 \sin 30^\circ$$

$$= 2.659 \text{ IN-K}$$

$$M_z = 3.407 \text{ IN-K}$$

$$SMA = (4)(8) + \frac{(8)^2}{3} = 53.333 \text{ IN}^2$$

$$SMB = (8)(4) + \frac{(4)^2}{3} = 37.333 \text{ IN}^2$$

$$PMI = (4+8)^3 / 6 = 288 \text{ IN}^3$$

$$f_A = \frac{0.268 \text{ K}}{8 \text{ IN}} + \frac{3.407 \text{ IN-K}(4.0 \text{ IN})}{288 \text{ IN}^3} = 0.081 \text{ K/IN}$$

$$f_B = \frac{0.429 \text{ K}}{16 \text{ IN}} + \frac{3.407 \text{ IN-K}(2.0 \text{ IN})}{288 \text{ IN}^3} = 0.056 \text{ K/IN}$$

$$f_C = \frac{0.268 \text{ K}}{24 \text{ IN}} + \frac{2.659 \text{ IN-K}}{53.333 \text{ IN}^2} + \frac{3.407 \text{ IN-K}}{37.333 \text{ IN}^2} = 0.152 \text{ K/IN}$$

$$f_r = \sqrt{(0.081)^2 + (0.056)^2 + (0.152)^2} = 0.179 \text{ K/IN}$$

BLODGETT
7.4-7



CALCULATION SHEET

Q

CALC. NO. 5371 REV. NO. 4

ORIGINATOR G.H. Nihew DATE 2/16/82 CHECKED KP DATE 2/19/82

PROJECT S.S.E.S. UNIT 1 JOB NO. 8856

SUBJECT SP-48D-195-1 SHEET NO. 59

REFERENCE

42002 REV 1

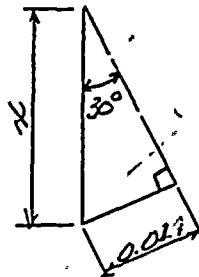
WELD CHECK (CONT.)

- @ JOINT B (CONT.)

$$\text{THROAT SIZE REQ'D} = \frac{0.179 \text{ K/IN}}{18 \text{ KSI}} = 0.010"$$

18 KSI

LEG SIZE REQ'D:



$$\tan 30^\circ = \frac{0.01}{N}$$

$$N = 0.01 / \tan 30^\circ = 0.017" \therefore 3/16" \text{ WELD IS O.K.}$$

- @ SUPPORT JOINTS (COMB. OF WORST FORCES)

GLOBAL FORCES:

$$F_x = 0.1872 \text{ K} \quad M_x = 3.2127 \text{ IN-K}$$

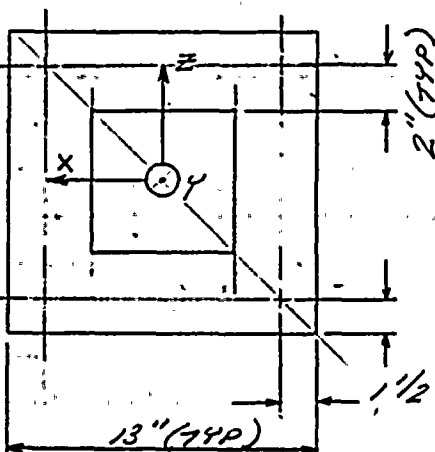
$$F_y = 0.4295 \text{ K} \quad M_y = 5.8476 \text{ IN-K}$$

$$F_z = 0.23 \text{ K} \quad M_z = 2.6792 \text{ IN-K}$$

3/16" WELD IS O.K. BY ENGR. JUDGEMENT

BOLTS AND BASE PLATES

- @ JOINT 9



ASSUME t OF $P_2 = 1/2"$ \therefore
AXIS OF BENDING IS $2t$
AWAY FROM THE ATTACHMENT.

GLOBAL FORCES

$$F_x = 0.1516 \text{ K} \quad M_x = 3.2127 \text{ IN-K}$$

$$F_y = 0.4295 \text{ K} \quad M_y = 5.8476 \text{ IN-K}$$

$$F_z = 0.1846 \text{ K} \quad M_z = 2.6792 \text{ IN-K}$$

CONTINUED ON PAGE 67



CALCULATION SHEET

DESIGNED BY 00000DATE 11-20-81CHECKED BY W. J. DayDATE 11-20-81SHEET NO. 60SUBJECT S S E SJOB NO. 8856SUBJECT HBD-195-1-H2CALCULATION NO. 5371FILE NO. ---

SEE ATTACHMENT #3

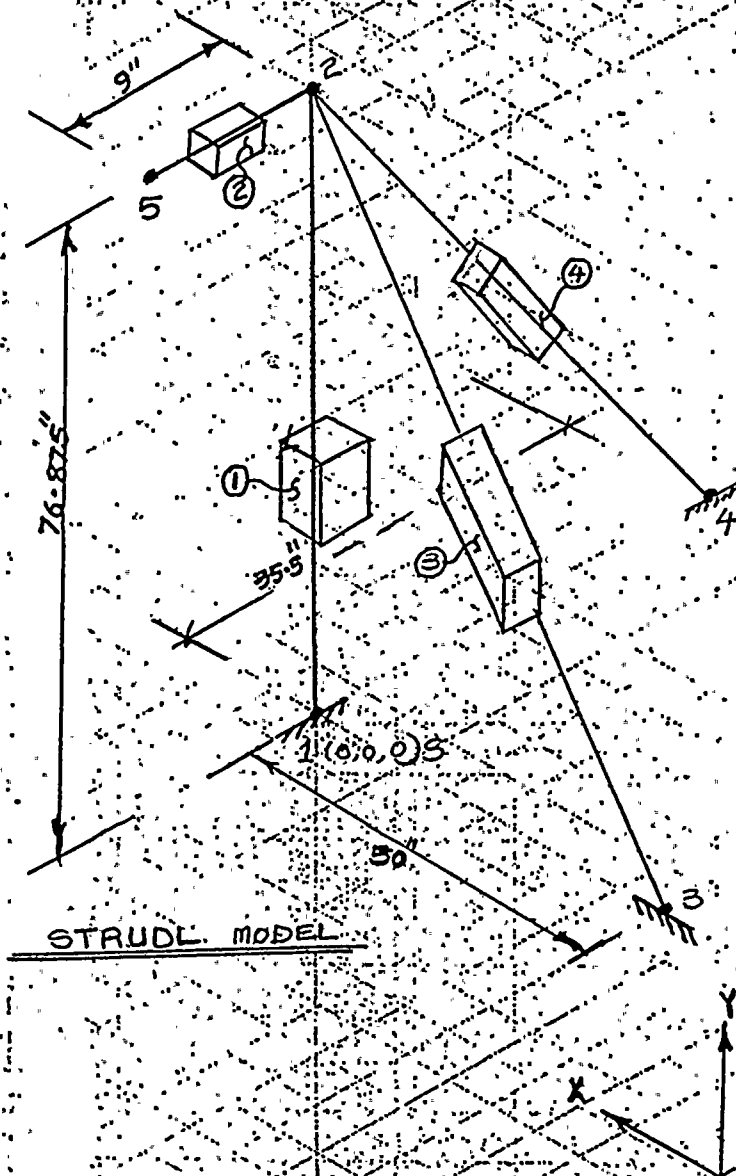
MEMBERS:

TS 4x4x1/2 : ①, ②

TS 3x3x1/4 : ③, ④

LOAD-POINT

J.O.I-5 - H2 (ANCHOR)





CALCULATION SHEET

DESIGN BY

000802

DATE 11-23-81

CHECKED BY

DATE

11-23-81

SHEET NO.

61

PROJECT

S S E S

JOB NO.

8856

SUBJECT

HBD - 195-1-H2

CALCULATION NO.

5371

FILE NO.

H2-ANCHOR

SEE ATT. #.3

REFERENCE

COMP. OUTPUT

FREQUENCY CHECK:

'X' DIRECTION = $0.0002" < 0.009"$ (JOIS LOA 43)
O.K.

'Y' DIRECTION = $0.0002" < 0.009"$ (JOIS LOA 44)
O.K.

'Z' DIRECTION = $0.0008" < 0.009"$ (JOIS LOA 45)
O.K.

DEFLECTION CHECK:

'X' DIRECTION = $0.011" < 0.125"$ O.K. (JOIS LOA 26)

'Y' DIRECTION = $0.0039" < 0.125"$ O.K. (JOIS LOA 26)

'Z' DIRECTION = $0.0018" < 0.125"$ (JOIS LOA 26)
O.K.

MEMBER STRESSES:

ALL MEMBER (STRUCTURAL TUBES) PASSED AISC CODE CHECK.

MAX. NORMAL STRESS = 1.9 KSI VERY LOW

SHEAR & TORSION O.K. BY ENGR. JUDGEMENT.

ATTACHMENT #1 DETAIL 600 FOR 1" ϕ PIPEALLOW LOADS:
 $F_x = .75^K$ $F_y = .75^K$ $F_z = .75^K$ $M_x = 9.0^{K \cdot ft}$ $M_y = 9.0^{K \cdot ft}$ $M_z = 9.0^{K \cdot ft}$

ACTUAL LOAD: $F_x = .08^K$ $F_y = .088^K$ $F_z = .082^K$ $M_x = 4.344^{K \cdot ft}$ $M_y = 4.8^{K \cdot ft}$ $M_z = 2.544^{K \cdot ft}$

O.K. ATT. ① O.K.



CALCULATION SHEET

Q

DATE 11-23-81

DESIGN BY o o o b a l

DATE 11-23-81

CHECKED BY

SHEET NO. 62

PROJECT S . S E S

JOB NO. 8856

SUBJECT HBD-195-1-HZ

CALCULATION NO. 5371

FILE NO. ---CHECK WELD:

CHECK WELD @ JOINT 1 (ENVELOP. LOAD LOA 25 & LOA 28)

$$F_{xL} = 0.71^K$$

$$M_{xL} = 3.17^{K \cdot 11}$$

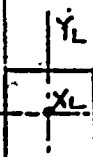
$$F_{yL} = 0.06^K$$

$$M_{yL} = 1.98^{K \cdot 11}$$

$$F_{zL} = 0.085^K$$

$$M_{zL} = 2.18^{K \cdot 11} \text{ (ACTUAL VALUE 1.536)}$$

D.K. CONS.



$$A_w = 16$$

$$S_w \times o r y = 21.33$$

$$J_w = 85.33$$

$$f_{xt} = \frac{.71}{16} + \frac{1.98}{21.33} + \frac{2.18}{21.33}$$

$$= 0.24^{K \cdot 11}$$

$$f_{ys} = \frac{0.06}{16} + \frac{3.17}{85.33} \times 2$$

$$= 0.08^{K \cdot 11}$$

$$f_{zs} = \frac{0.085}{16} + \frac{3.17}{85.33} \times 2$$

$$= 0.08^{K \cdot 11}$$

$$f_R = (.24^2 + .08^2 + .08^2)^{1/2}$$

$$= 0.27$$

$$W = \frac{.27}{.707 \times 18} = 0.021 \approx 1/16$$

PROVIDE 1/4" weld AS PER AISC MIN
WELD THK REQMT.



CALCULATION SHEET

DESIGN BY

D. J. O. S.

DATE 11-23-81

CHECKED BY

M. J. P. P.

DATE

11-23-81

SHEET NO.

63

PROJECT

S S E S

JOB NO.

8856

SUBJECT

HBD-195-1-H2

CALCULATION NO.

5371

FILE NO.

CHECK WELD CONT'D:JOINT 3 OR JOINT 4

(ENVELOPE LOADS)

$$F_{XL} = 0.45^K$$

$$M_{XL} = 0.7^{K\cdot 11}$$

$$F_{YL} = 0.033^{K\cdot 11}$$

$$M_{YL} = 2.3^{K\cdot 11}$$

$$F_{ZL} = 0.038^{K\cdot 11}$$

$$M_{ZL} = 1.35^{K\cdot 11}$$

FORCES & MOMENTS ARE VERY LOW. $\frac{1}{4}$ " WELD ALL AROUND.

JOINT 2 MEM 2

$$F_{XL} = 0.082^K$$

$$M_{XL} = 2.54^{K\cdot 11}$$

$$F_{YL} = 0.104^K$$

$$M_{YL} = 5.5^{K\cdot 11}$$

$$F_{ZL} = 0.08^K$$

$$M_{ZL} = 5.2^{K\cdot 11}$$

COMPARING WITH WELD @ JOINT 1,

$\frac{3}{16}$ " ALL AROUND WELD IN ACCORDANCE WITH AISC MIN WELD THICK. REQUIREMENT.

JOINT 2 MEM 3 & JOINT 2 MEM 4.

FORCES & MOMENTS ARE VERY LOW, SEE COMP. OUTPUT.

$\frac{3}{16}$ " WELD ALL AROUND O.K. AS PER WELD CODE

Ⓐ JOINT 1.

REF: COMP.
OUTPUT.

SHEET NO. 64

DESIGN BY o.o.o.l

DATE 11-23-81

CHECKED BY

SHEET NO. 64

PROJECT S S E S

JOB NO. 8856

SUBJECT HBD-195-1-H2

CALCULATION NO. 5371

FILE NO.

JOINT-1, JOINT 3 & JOINT 4:-

(ENVELOPE LOADS)

5/8" x 11" x 11"

$$F_{x_1} = 0.71 \text{ k}$$

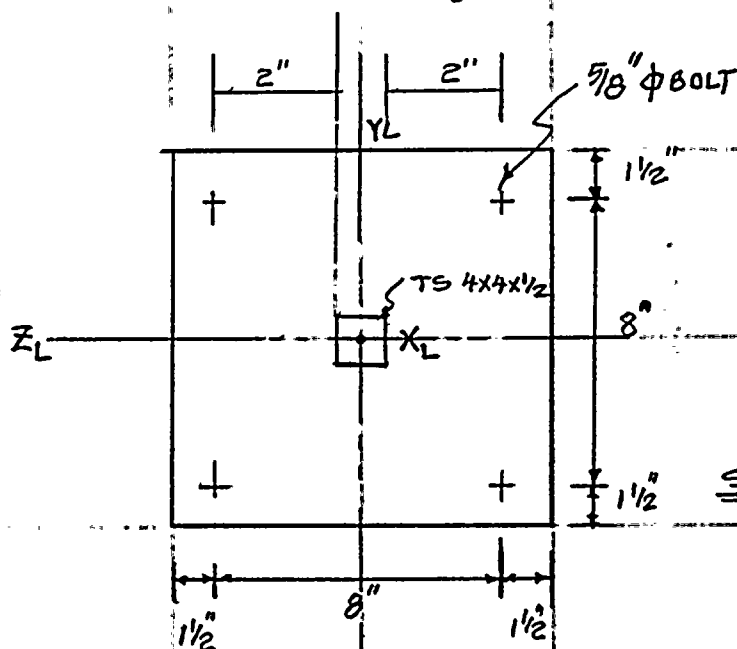
$$M_{x_1} = 3.17^{K-II}$$

$$F_{Y_1} = 0.06^K$$

$$M_Y = 2.3^{K-11}$$

$$F_{ZL} = 0.085^k$$

$$M_z = 2.18^{K_{eff}}$$



Tension on Bolt:

$$T = \frac{-71}{4} + \frac{2 \cdot 3}{2 \times 6} + \frac{2 \cdot 18}{2 \times 6}$$

$$= 0.55^\circ \text{K} < 1.6^\circ \text{K}.$$

$$0.^\circ \text{K}.$$

SHEAR ON BOLT:

SHEAR ON BOLT:

$$S = \left\{ \left(\frac{0.06}{4} + \frac{2.3 \times 4}{128} \right)^2 + \left(\frac{1.085}{4} + \frac{2.18 \times 4}{128} \right)^2 \right\}^{1/2}$$

$$= [0.008 + 0.09]^{1/2}$$

$$= 0.312 \text{ K.} < 1.6 \text{ K.}$$

$$J = I_x + I_y$$

$$= 4 \times 4^2 + 4 \times 4^2$$

$$= 128$$

BOLT INTERACTION $\sqrt{T^2 + S^2} = (.55^2 + .312^2)^{1/2}$
 $= 0.632^K$
 $0.632 / 1.6 = 0.4 < 1 \quad \text{O.K.}$

STRESSES:

$$m = .55 \times 6 \times 2$$

$$b_d^2/6 = \frac{11 \times 0.625^2}{6} = 0.72$$

$$f_b = 9.2 \text{ ksi} < 23.92 \text{ ksi}$$

SHEET 65 OF 70

SYSTEM: HYDROGEN & OXYGEN ANALYSER. IC-226B RETURN TO SUPPRESSION CHAMBER

1. THERMAL EXPANSION ANALYSIS DATA: SP-HCB-126-1 REV. 8, SP-HCB-126-4 REV. 11
SP-HBD-195-1 REV. 5

2. Thermal Condition Analysed MAX. SERVICE COND

7) Pipe Wall Thickness (in)

HCB-126	HBD-195				
SA-376 TP304	ASTM A-106 Gr B				
28.3	27.9				
200	90				
1.46	0.152				
1.315	1.315				
.133	.179				

[illegible]

EAST

$$S_A = f(1.25S_c + 0.25S_h)$$

HCB-126	HBD-195				
19115	17308				
23550	22500				

• Includes the effects of thermal expansion, seismic and thermal anchor movements.

$$\lambda' = 1.3$$

c. OBE Anchor Movement Identification. M-241 REV 3 Pg. B-12

ACTION	NAME	SIGNATURE	DATE
CALCULATED BY	ABDULAZIZ F RAHIM	f Rahim	8-7-81
CHECKED BY	M. Mohdwan	M. Mohdwan	8-7-81
APPROVED BY	J. G. H. ADEY ATAI	[Signature]	8-7-81



SHEET 66 OF —

С
Н
К

HCB-126	HBD-195								✓
SA-376 TP316	ASTMA166 Gr B								✓
200	90								✓
30	75								✓
1"	1"								✓
.40S	80								✓
WATER	WATER								✓
NONE	NONE								✓

X	Y	Z					
H9L-H45	X-2380-H202	X-2380-H2					
.118	.256	.16					
2.33	3.0	2.67					
1.15	1.0	1.12					
2.67	3.0	3.0					
3.81	3.25	4.67					

Ref. (1)	241	
Table	A-1.2	✓
Fig.	A-3.8	✓
	A-3.20	✓
	A-3.2	✓

Ref. (1) 241

Table A-1.2

Fig. A-3.8

A-3.20

A-3.2

X	Y	Z	DWT. SPAN				
HCB	HCB	HBD		MAX. DWT		Ref. ⁽¹⁾ M-241	✓
H42-H45	H42-H43	H205-H2		SPAN = 9'-0"		Table B-1.8	✓
8'-0"	8'-0"	8'-0"		SEE Y-SEIS.			✓
N/A	N/A	N/A		SPAN			✓
0.33	0.65	0.8				Fig. A-3.15	✓
2'-8"	5'-2 1/2"	6'-4 7/8"				A-3.18	✓
2'-8"	5'-1 3/4"	4'-8"					✓

CRITERIA M-241 REV 3

2. ~~Trans~~ 1/31 LM



CALCULATION SHEET

CALC. NO. 5371 REV. NO. 4
 CHECKED KP DATE 2/19/82
 JOB NO. 8856
 SHEET NO. 67

ORIGINATOR C.H. Nihew DATE 2/10/82
 PROJECT S.S.E.S. UNIT 1
 SUBJECT SP-HBD-195-1

REFERENCE

H2002 REV 1

BOLTS AND BASE PLATE (CONT.)

- @ JOINT 9. (CONT.)

$$P_T = \frac{0.4295^K}{4} + \frac{2.6792 \text{ IN-K}(9 \text{ IN})}{2(9 \text{ IN})^2} + \frac{3.2127 \text{ IN-K}(9 \text{ IN})}{2(9 \text{ IN})^2}$$

$$= 0.435$$

$$F_x = \frac{0.1516^K}{4} + \frac{5.8976 \text{ IN-K}(5 \text{ IN})}{[4(5 \text{ IN})^2 + 4(5 \text{ IN})^2]} = 0.184$$

$$F_z = \frac{0.1846^K}{4} + \frac{5.8976 \text{ IN-K}(5 \text{ IN})}{[4(5 \text{ IN})^2 + 4(5 \text{ IN})^2]} = 0.192$$

$$F_R = \sqrt{(0.184)^2 + (0.192)^2} = 0.266$$

INTERACTION:

$$\sqrt{(0.435)^2 + (0.266)^2} = 0.51 \therefore \text{USE } 5/8" \phi$$

< 1.6 BOLTS

$$N = \sqrt{\frac{6(0.435)(2)(2)}{19.1(2^2 + 2^2)}} = 0.26 \therefore \text{USE } 1/2" \text{ PL}$$

- @ JOINTS 10 AND 11

FORCES AND MOMENTS ARE
 SMALLER THAN @ JOINT 9 \therefore $5/8" \phi$
 BOLTS W/ $1/2" \text{ PL}$ ARE O.K. BY ENGR.
 JUDGEMENT.

H2001 REV 1

REFER TO CALCS FOR H2002 REV 1 (HBD-195-1)

ME101

INPUT CARD IMAGES

INPUT CARD SEQ	1	11	21	31	41	51	61	71	80	LOAD CASE(S)
	+	+	+	+	+	+	+	+	+	
1	RUN					LDCASE=WT01,				
2	RUN					LDCASE=THRM01,				
3	RUN					LDCASE=SAMO1(A),				
4	RUN					LDCASE=SAMO2(B),				
5	RUN					LDCASE=SEISO1,				
6	RUN					LDCASE=SEISO2,				
7	RUN					LDCASE=SEISO3,				
8	RUN					LDCASE=SEISO4,				
9	HED					TIT=SP-HCB-108 LINE,				
10						PROJNO=8856,PROBNO=5280,				
11						EIGEN=3,				
12						MODES=35,PER=0.01,				
13						UNITS=2,USER=J.ABISAMRA,				
14	ANC	5	-.0451	.021	.0192	PHASE=CNT,				
15						DX=.007,DY=.0003,DZ=.007,	*A			SAMO1
16						DX=.008,DY=.0006,DZ=.008,	*B			SAMO2
17						OD=1.315,THI=.133,				
18						TEMP=200,LBS/FT=2.75,				
19						CODE=SC374,CLASS=2,				
20						PPRESS=30,DPRESS=30,				
21						MAT=SA376-TP304,E=28.3E6,				
22						SC=18800,SH=17800,				
23		10	-0-4.49		0-1.91	SIF=1.3,				
24		15	-1-1.58		0-5.76	SIF=1.3,ADDWT=20,				
25		20	-0-9.67		0-4.1	SIF=1.3,				
26		25		-0-4.375						
27	RAD	25	.391		.921	PHASE=CNT,				
28						DX=.007,DZ=.007,	*A			SAMO1
29						DX=.008,DZ=.008,	*B			SAMO2
30		30		-0-4.375		SIF=1.3,ADDWT=20,				
31		35		-0-7.25		SIF=1.3,ADDWT=20,				
32		40		-0-7.75		ADDWT=2,				
33		20 45		1-6.5	50					
34		50			0-7.25					
35	RAD	50		1		PHASE=CNT,DISP=.021,				
36						DY=.0003,	*A			SAMO1
37						DY=.0006,	*B			SAMO2
38		55			1-.75	SIF=1.3,				
39		60	-1-.75		1-.75	SIF=1.3,				
40		65			0-3					
41	RAD	65	1			PHASE=RB,				
42						DX=.032,	*A			SAMO1
43						DX=.039,	*B			SAMO2
44	RAD	65		1		PHASE=RB,				
45						DY=.002,	*A			SAMO1
46						DY=.0024,	*B			SAMO2
47		70			0-9-7/8	SIF=1.3,ADDWT=50,				
48		75			1-.125	SIF=1.3,ADDWT=50,				
49		80			0-9.125					
50		85		0-8						
51	RAD	85	1			PHASE=RB,				
52						DX=.032,	*A			SAMO1
53						DX=.039,	*B			SAMO2
54	RAD	85		1		PHASE=RB,				

55	.					DZ=.056,	*A	SAM01
56	.					DZ=.068,	*B	SAM02
57	.	90	2.5			SIF=1.3,	.	
58	.	95		1-7			.	
59	.	RAD 95	1			PHASE=RB,	.	
60	.					DY=.002,	*A	SAM01
61	.					DY=.0024,	*B	SAM02
62	.	100		0-11	50		.	
63	.	105	1-.75				.	
64	.	RAD 1051.0				PHASE=RB,	.	
65	.					DX=.032,	*A	SAM01
66	.					DX=.039,	*B	SAM02
67	.	110	0-5.125			SIF=1.3,	.	
68	.	115-0-6.125					.	
69	.	RAD 115	1			PHASE=RB,	.	
70	.					DY=.002,	*A	SAM01
71	.					DY=.0024,	*B	SAM02
72	.	RAD 115		1		PHASE=RB,	.	
73	.					DZ=.056,	*A	SAM01
74	.					DZ=.068,	*B	SAM02
75	.	120-2-2-7/8			50		.	
76	.	125		2.0		SIF=1.3,	.	
77	.	130	0-4.75				.	
78	.	RAD 1301.0				PHASE=RB,	.	
79	.					DX=.032,	*A	SAM01
80	.					DX=.039,	*B	SAM02
81	.	RAD 130		1		PHASE=RB,	.	
82	.					DZ=.056,	*A	SAM01
83	.					DZ=.068,	*B	SAM02
84	.	135	3-2			SEG=2,	.	
85	.	RAD 1351.0				PHASE=RB,	.	
86	.					DX=.084,	*A	SAM01
87	.					DX=.102,	*B	SAM02
88	.	RAD 135		1		PHASE=RB,	.	
89	.					DZ=.064,	*A	SAM01
90	.					DZ=.077,	*B	SAM02
91	.	137	3-2			SEG=2,	.	
92	.	138		0-11		SIF=1.3,ADDWT=20,	.	
93	.	137140	1-4				.	
94	.	RAD 1401.0				PHASE=RB,	.	
95	.					DX=.084,	*A	SAM01
96	.					DX=.102,	*B	SAM02
97	.	RAD 140		1.0		PHASE=RB,	.	
98	.					DZ=.064,	*A	SAM01
99	.					DZ=.077,	*B	SAM02
100	.	145	4.0			SEG=2,	.	
101	.	ANC 145				PHASE=RB,	.	
102	.					DX=.084,DY=.004,DZ=.064,	*A	SAM01
103	.					DX=.102,DY=.005,DZ=.077,	*B	SAM02
104	.	145150	6-1.5			SEG=2,	.	
105	.	RAD 1501.0				PHASE=RB,	.	
106	.					DX=.084,	*A	SAM01
107	.					DX=.102,	*B	SAM02
108	.	RAD 150		1.0		PHASE=RB,	.	
109	.					DZ=.064,	*A	SAM01
110	.					DZ=.077,	*B	SAM02
111	.	155	0-5			SIF=1.3,	.	
112	.	1602-5					.	
113	.	RAD 160		1.0		PHASE=RB,	.	
114	.					DZ=.064,	*A	SAM01

115	.					DZ=.077,	*B	SAM02
116	.	1652-11.25					.	
117	.	SPD 165	1				.	
118	.	1700-2.75					.	
119	.	RAD 170		1.0		PHASE=RB,	.	
120	.					DZ=.064,	*A	SAM01
121	.					DZ=.077,	*B	SAM02
122	.	1750-3.25				SIF=1.3,	.	
123	.	180	0-9.9	0-9.9	5D		.	
124	.	185	4-2.5				.	
125	.	RAD 1851.0				PHASE=RB,	.	
126	.					DX=.084,	*A	SAM01
127	.					DX=.102,	*B	SAM02
128	.	RAD 185		1.0		PHASE=RB,	.	
129	.					DZ=.064,	*A	SAM01
130	.					DZ=.077,	*B	SAM02
131	.	190	3-10			SEG=2,	.	
132	.	RAD 1901.0				PHASE=RB,	.	
133	.					DX=.084,	*A	SAM01
134	.					DX=.102,	*B	SAM02
135	.	RAD 190		1.0		PHASE=RB,	.	
136	.					DZ=.064,	*A	SAM01
137	.					DZ=.077,	*B	SAM02
138	.	195	4-2.25			SEG=2,	.	
139	.	RAD 1951.0				PHASE=RB,	.	
140	.					DX=.084,	*A	SAM01
141	.					DX=.102,	*B	SAM02
142	.	RAD 195		1.0		PHASE=RB,	.	
143	.					DZ=.064,	*A	SAM01
144	.					DZ=.077,	*B	SAM02
145	.	200	0-10			SIF=1.3,	.	
146	.	205		0-9			.	
147	.	RAD 2051.0				PHASE=RB,	.	
148	.					DX=.084,	*A	SAM01
149	.					DX=.102,	*B	SAM02
150	.	RAD 205		1.0		PHASE=RB,	.	
151	.					DY=.004,	*A	SAM01
152	.					DY=.005,	*B	SAM02
153	.	210	3-3-5/8			SEG=2,	.	
154	.	RAD 2101.0				PHASE=RB,	.	
155	.					DX=.084,	*A	SAM01
156	.					DX=.102,	*B	SAM02
157	.	RAD 210		1.0		PHASE=RB,	.	
158	.					DY=.004,	*A	SAM01
159	.					DY=.005,	*B	SAM02
160	.	215	4-7-5/8			SEG=2,	.	
161	.	RAD 2151.0				PHASE=RB,	.	
162	.					DX=.084,	*A	SAM01
163	.					DX=.102,	*B	SAM02
164	.	RAD 215		1.0		PHASE=RB,	.	
165	.					DY=.004,	*A	SAM01
166	.					DY=.005,	*B	SAM02
167	.	220	6-6			SEG=2,	.	
168	.	RAD 2201.0				PHASE=RB,	.	
169	.					DX=.084,	*A	SAM01
170	.					DX=.102,	*B	SAM02
171	.	RAD 220		1.0		PHASE=RB,	.	
172	.					DY=.004,	*A	SAM01
173	.					DY=.005,	*B	SAM02
174	.	225	2-5.75	5D			.	

LINE NO.	UNIT	DESCRIPTION	PHASE	PERIOD	AMPLITUDE	REMARKS
175		2303.0				
176	RAD	230	1.0			PHASE=RB,
177						DY=.015,
178						DY=.018,
179	RAD	230	1.0			PHASE=RB,
180						DZ=.064,
181						DZ=.077,
182		2355-11-5/8				SEG=2,
183	RAD	235	1.0			PHASE=RB,
184						DY=.015,
185						DY=.018,
186	RAD	235	1.0			PHASE=RB,
187						DZ=.064,
188						DZ=.077,
189		2406-.25				SEG=2,
190	RAD	240	1.0			PHASE=RB,
191						DY=.015,
192						DY=.018,
193	RAD	240	1.0			PHASE=RB,
194						DZ=.064,
195						DZ=.077,
196		2453.0				SIF=1.3,
197		250		0-6-3/8		
198	RAD	2501.0				PHASE=RB,
199						DX=.084,
200						DX=.102,
201	RAD	250	1.0			PHASE=RB,
202						DY=.015,
203						DY=.018,
204		255		1-6-5/8	50	
205		2600-9				
206	RAD	260	1.0			PHASE=RB,
207						DY=.015,
208						DY=.018,
209	RAD	260	1.0			PHASE=RB,
210						DZ=.064,
211						DZ=.077,
212		2654-3.25			50	
213		2700-11.756		0-11.756		SIF=1.3,
214		275	1-7.25			
215	RAD	2751.0				PHASE=RB,
216						DX=.084,
217						DX=.102,
218	RAD	275	1.0			PHASE=RB,
219						DZ=.064,
220						DZ=.077,
221		280	4-10.75			SIF=1.3,
222		285		-0-7		SIF=1.3,
223		290	0-2.75			
224	RAD	2901.0				PHASE=RB,
225						DX=.138,
226						DX=.166,
227	RAD	290	1.0			PHASE=RB,
228						DZ=.071,
229						DZ=.086,
230		295	4-10.5			SEG=2,
231	RAD	2951.0				PHASE=RB,
232						DX=.138,
233						DX=.166,
234	RAD	295	1.0			PHASE=RB,

235					DZ=.071,	*A	SAM01
236					DZ=.086,	*B	SAM02
237		300	0-9.25		SIF=1.3,		
238		305		-0-5.25			
239	RAD	305	1.0		PHASE=RB,		
240					DY=.02,	*A	SAM01
241					DY=.024,	*B	SAM02
242		310		-0-6			
243		315-1-3			SIF=1.3,		
244		320	0-10.5				
245		500-0-9.9		0-9.9			
246	ANC	500			PHASE=RB,		
247					DX=.138,DY=.02,DZ=.071,	*A	SAM01
248					DX=.166,DY=.024,DZ=.086,	*B	SAM02
249	ACE				LDNAME=SEISO1,		
250	ACE				TITLE=ENVELOPE OF OBERBC719		
251	ACE						
252	ACE				TYP=3,POI=37,		
253	ACE				DIR=X		
254		.1000,	.0000,	.9200,	.4495,	1.7000,	.9728,
255		2.2500,	1.2251,	2.3000,	1.6304,	2.3500,	2.3450,
256		2.5000,	2.3450,	2.8000,	5.3600,	4.2000,	5.3600,
257		4.3000,	4.9813,	5.5000,	1.6089,	5.7000,	1.6649,
258		6.3000,	2.5635,	7.3000,	4.8500,	12.0000,	4.8500,
259		13.2000,	2.7602,	14.0000,	2.0700,	15.0000,	2.0700,
260		20.0000,	1.1751,	24.0000,	1.0200,	25.0000,	.8691,
261		26.0000,	.7800,	27.2000,	.7800,	28.0000,	.6608,
262		28.9000,	.6097,	33.9500,	.4045,	35.0000,	.3730,
263		100.0000,	.3730,	100.0010,	.3716,	100.0020,	.3741,
264		100.0030,	.3733,	100.0040,	.3716,	100.0050,	.3716,
265		100.0060,	.3716,	100.0070,	.3716,	100.0080,	.3716,
266		100.0090,	.3716,				
267	ACE				DIR=Y		
268		.1000,	.0150,	.1150,	.0178,	.4000,	.1716,
269		3.5000,	.4400,	3.8000,	.7889,	4.3000,	1.5045,
270		5.1000,	2.9600,	5.8000,	2.9600,	6.8000,	3.2581,
271		6.9000,	3.3200,	10.5000,	3.3200,	12.0000,	3.3307,
272		12.5000,	3.9600,	19.8000,	3.9600,	20.8300,	2.7177,
273		23.0000,	1.1479,	25.0000,	1.0600,	28.0000,	1.0600,
274		30.0000,	.5568,	31.0000,	.4212,	32.0000,	.3300,
275		33.0000,	.3300,	34.0000,	.2900,	100.0000,	.2900,
276		100.0010,	.2894,	100.0020,	.2897,	100.0030,	.2894,
277		100.0040,	.2911,	100.0050,	.2894,	100.0060,	.2897,
278		100.0070,	.2911,	100.0080,	.2894,	100.0090,	.2897,
279		100.0100,	.2911,	100.0110,	.2894,	100.0120,	.2894,
280		100.0130,	.2914,				
281	ACE				DIR=Z		
282		.1000,	.0000,	.8000,	.3064,	1.2900,	.4189,
283		2.1660,	.8645,	2.2500,	1.2045,	2.3000,	1.6304,
284		2.3500,	2.3450,	2.7000,	2.3450,	3.2000,	3.5600,
285		4.8000,	3.5600,	5.0000,	2.9819,	5.7000,	1.6770,
286		5.8500,	1.7057,	6.7500,	1.9300,	10.0000,	1.9300,
287		11.0000,	1.2140,	11.5000,	1.1028,	12.2000,	1.4000,
288		18.0000,	1.4000,	19.2000,	.9295,	30.0000,	.5800,
289		35.0000,	.2786,	37.0000,	.2500,	100.0000,	.2500,
290		100.0010,	.2500,	100.0020,	.2500,	100.0030,	.2500,
291		100.0040,	.2500,	100.0050,	.2500,	100.0060,	.2500,
292		100.0070,	.2500,	100.0080,	.2500,	100.0090,	.2500,
293		100.0100,	.2500,	100.0110,	.2500,	100.0120,	.2500,
294		100.0130,	.2500,				



295 . EOA
296 . ACE
297 . ACE
298 . ACE
299 . ACE
300 . ACE

LDNAME=SEISO2,
TITLE=ENVELOPE OF SSERBC719

TYP=3,POI=33,
DIR=X

.1000.	.0300.	.1200.	.0478.	1.2000.	.6512.
1.6700.	.8755.	1.7000.	.9000.	2.0000.	.9900.
2.5000.	2.1700.	2.9000.	2.7900.	4.3000.	2.7900.
5.0000.	1.5615.	5.3000.	1.6010.	6.0000.	1.9209.
7.2000.	3.4800.	7.4000.	3.6400.	12.0000.	3.6400.
14.0000.	1.8571.	14.5000.	1.6600.	17.2000.	1.1738.
22.0000.	.8600.	25.0000.	.8600.	28.0000.	.5763.
31.2500.	.4730.	43.0000.	.4730.	43.0010.	.4735.
43.0020.	.4727.	43.0030.	.4727.	43.0040.	.4735.
43.0050.	.4727.	43.0060.	.4735.	43.0070.	.4727.
43.0080.	.4734.	43.0090.	.4727.	100.0010.	.4730.

DIR=Y

.1000.	.0240.	.1200.	.0452.	.4000.	.2115.
1.2900.	.3902.	2.2000.	.4731.	2.7000.	.7361.
3.3000.	1.0458.	3.5000.	1.1600.	5.1000.	2.1900.
6.7000.	2.1900.	7.2000.	2.2500.	12.0000.	2.2500.
12.5000.	1.8682.	13.0000.	1.9400.	19.2000.	1.9400.
21.0000.	1.7000.	23.0000.	.8232.	24.0000.	.7497.
25.0000.	.7000.	26.6600.	.5700.	28.0000.	.5700.
29.5000.	.4671.	32.5000.	.4130.	100.0000.	.4130.
100.0010.	.4127.	100.0020.	.4121.	100.0030.	.4127.
100.0040.	.4130.	100.0050.	.4130.	100.0060.	.4130.
100.0070.	.4130.	100.0080.	.4130.	100.0090.	.4130.

DIR=Z

.1000.	.0300.	.1200.	.0432.	.2330.	.1265.
.5660.	.2593.	.7500.	.3037.	.9500.	.3727.
.9800.	.3833.	1.2000.	.4713.	1.4500.	.6940.
1.6700.	.8755.	1.7000.	.9000.	2.0000.	.9900.
2.5000.	2.1700.	2.8000.	2.1700.	3.3000.	2.3100.
4.8000.	2.3100.	5.0000.	1.8682.	5.3000.	1.6010.
6.0000.	1.6850.	8.8000.	1.6850.	12.5000.	.9130.
14.0000.	.8600.	14.8000.	.7800.	18.0000.	.7800.
20.5000.	.6100.	23.3300.	.6100.	30.0000.	.3646.
31.2500.	.3322.	32.0000.	.3230.	100.0000.	.3230.
100.0010.	.3230.	100.0020.	.3230.	100.0030.	.3230.

336 . EOA
337 . ACE
338 . ACE
339 . ACE
340 . ACE
341 . ACE

LDNAME=SEISO3,
TITLE=ENVELOPE OF SRVRBC719

TYP=3,COEF=CS4,POI=54,
DIR=X

.1000.	.0080.	1.7000.	.0080.	2.6087.	.0151.
2.7000.	.0251.	3.2000.	.0750.	3.8000.	.0800.
4.4000.	.2750.	5.6000.	.2750.	6.2000.	.2340.
6.5000.	.2340.	7.0000.	.4060.	9.2000.	.4060.
10.7000.	.2500.	11.5000.	.2082.	12.1739.	.2340.
12.5000.	.2500.	15.5000.	.5780.	19.9800.	.5940.
23.0000.	.6408.	24.3478.	.6671.	26.0000.	.7500.
32.0000.	1.5940.	42.5000.	1.5940.	48.0000.	1.0000.
54.5000.	.8750.	57.0000.	.8750.	64.0000.	.6720.
70.0000.	.6720.	74.9000.	.4060.	80.5000.	.3408.
86.0000.	.3280.	92.0010.	.3280.	100.0010.	.2730.
100.0540.	.2730.	100.0550.	.2730.	100.0560.	.2730.
100.0570.	.2730.	100.0580.	.2730.	100.0590.	.2730.

355	100.0600,	.2730,	100.0610,	.2730,	100.0620,	.2730,	
356	100.0630,	.2730,	100.0640,	.2730,	100.0650,	.2730,	
357	100.0660,	.2730,	100.0670,	.2730,	100.0680,	.2730,	
358	100.0690,	.2730,	100.0700,	.2730,	100.0710,	.2730,	
359	100.0720,	.2730,	100.0730,	.2730,	100.0740,	.2730,	
360	ACE			DIR=Y			
361	.1000,	.0160,	1.7000,	.0160,	2.3000,	.0200,	
362	3.0000,	.0310,	3.2500,	.0310,	3.5000,	.0350,	
363	4.0500,	.1060,	4.4000,	.1060,	4.7826,	.1380,	
364	5.4050,	.1380,	5.6522,	.1510,	5.7565,	.1700,	
365	6.0870,	.1740,	6.5217,	.1740,	6.9000,	.2741,	
366	6.9565,	.2890,	7.3044,	.4750,	7.3913,	.5050,	
367	9.7750,	.5050,	10.3500,	.4700,	10.4075,	.4510,	
368	10.4348,	.4431,	11.3043,	.6330,	11.5000,	.6707,	
369	11.7381,	.7200,	11.7500,	.7212,	12.1739,	.9010,	
370	12.8696,	1.5700,	13.0435,	1.6900,	17.2500,	1.6900,	
371	17.9130,	1.4207,	17.9400,	1.4100,	18.4000,	1.1500,	
372	19.3913,	.7856,	20.0000,	.6817,	20.7000,	.6230,	
373	22.7700,	.6230,	23.0000,	.6130,	23.6900,	.5660,	
374	24.1500,	.5050,	25.1850,	.4078,	25.2500,	.4060,	
375	28.5000,	.3590,	34.0000,	.3440,	42.0000,	.2340,	
376	45.9000,	.2270,	57.0000,	.2190,	68.0000,	.2190,	
377	72.6800,	.1789,	74.5000,	.1664,	80.0000,	.1640,	
378	85.0000,	.1640,	100.0070,	.1410,	100.0480,	.1410,	
379	ACE			DIR=Z			
380	.1000,	.0160,	1.7000,	.0160,	3.2200,	.0184,	
381	3.4500,	.0187,	3.4783,	.0190,	3.7950,	.0190,	
382	4.0000,	.0192,	5.0000,	.0284,	7.0000,	.0470,	
383	10.0000,	.0780,	13.0435,	.1597,	16.0000,	.2500,	
384	19.0000,	.4530,	20.7000,	.4702,	21.7391,	.5240,	
385	26.0000,	.7500,	32.0000,	1.5940,	42.5000,	1.5940,	
386	48.0000,	1.0000,	54.5000,	.8750,	57.0000,	.8750,	
387	64.0000,	.6720,	70.0000,	.6720,	74.9000,	.4060,	
388	86.0000,	.2810,	100.0040,	.2500,	100.0540,	.2500,	
389	100.0550,	.2500,	100.0560,	.2500,	100.0570,	.2500,	
390	100.0580,	.2500,	100.0590,	.2500,	100.0600,	.2500,	
391	100.0610,	.2500,	100.0620,	.2500,	100.0630,	.2500,	
392	100.0640,	.2500,	100.0650,	.2500,	100.0660,	.2500,	
393	100.0670,	.2500,	100.0680,	.2500,	100.0690,	.2500,	
394	100.0700,	.2500,	100.0710,	.2500,	100.0720,	.2500,	
395	100.0730,	.2500,	100.0740,	.2500,	100.0750,	.2500,	
396	100.0760,	.2500,	100.0770,	.2500,	100.0780,	.2500,	
397	100.0790,	.2500,	100.0800,	.2500,	100.0810,	.2500,	
398	EOA						
399	ACE			LDNAME=SEIS04,			
400	ACE			TITLE=ENVELOPE OF CHGCORBC719			
401	ACE						
402	ACE			TYP=3,COEF=CS4,POI=84,			
403	ACE			DIR=X			
404		1.7391,	.0048,	1.9130,	.0059,	2.0870,	.0070,
405		2.2609,	.0083,	2.3000,	.0086,	2.4348,	.0098,
406		2.6087,	.0124,	2.8696,	.0131,	2.9900,	.0167,
407		3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
408		3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
409		4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
410		6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
411		6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
412		10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
413		12.1739,	.2549,	13.0435,	.3056,	13.2250,	.3173,
414		13.8000,	.3651,	13.9130,	.3763,	15.6522,	.6131,

415	17.3913,	.9609,	18.6957,	1.4179,	19.1304,	1.6008,
416	19.2174,	1.6480,	20.4348,	2.3677,	21.7391,	3.1225,
417	24.3478,	5.6300,	26.0870,	6.9096,	34.5000,	6.9096,
418	34.7826,	6.8850,	36.9565,	6.7020,	37.9500,	6.6219,
419	40.2500,	5.7278,	43.1250,	4.0577,	43.1304,	4.0564,
420	43.4783,	3.9746,	44.9650,	3.8705,	46.0000,	3.8483,
421	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
422	56.5217,	4.2237,	60.3750,	4.8168,	60.8696,	4.8902,
423	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
424	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
425	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
426	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
427	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
428	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
429	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
430	100.0170,	4.3486,	100.0210,	4.3486,	100.0220,	4.3486,
431	100.0230,	4.3486,	100.0240,	4.3486,	100.0250,	4.3486,
432	ACE			DIR=Y		
433	1.7391,	.0071,	2.0870,	.0093,	2.3000,	.0103,
434	2.4000,	.0107,	2.5300,	.0111,	2.7600,	.0132,
435	2.9900,	.0159,	3.1510,	.0174,	3.4783,	.0194,
436	3.7950,	.0277,	3.8261,	.0286,	4.1400,	.0442,
437	4.6000,	.1353,	4.8522,	.1920,	5.2174,	.1920,
438	5.6522,	.1970,	5.7565,	.2390,	6.5217,	.2390,
439	6.9000,	.3445,	7.3044,	.6400,	7.4750,	.6450,
440	9.6600,	.6450,	10.0000,	.6084,	10.3500,	.5381,
441	10.4075,	.5591,	11.3043,	.9330,	11.7391,	1.5200,
442	12.1739,	1.5200,	12.6500,	2.1441,	12.8696,	2.4600,
443	17.0200,	2.4600,	17.2500,	2.2600,	17.9130,	2.2600,
444	18.2609,	2.0219,	19.0435,	1.5645,	19.3913,	1.3774,
445	20.7000,	1.0800,	21.3900,	1.0800,	21.7350,	1.0100,
446	22.1950,	1.0000,	22.7700,	1.0000,	23.0000,	.9820,
447	24.1500,	.7551,	25.3000,	.6801,	26.0870,	.6522,
448	28.4348,	.5826,	33.4650,	.5826,	34.5000,	.6067,
449	34.7826,	.6138,	36.9565,	.6706,	39.1304,	.6972,
450	43.4783,	.6972,	45.6522,	.7696,	47.8261,	.8408,
451	57.5000,	.8409,	60.3750,	.8484,	60.8696,	.8542,
452	80.5000,	.8542,	86.2500,	.8406,	92.0000,	.7244,
453	100.0030,	.7006,	100.0180,	.7006,	100.0190,	.7006,
454	100.0200,	.7006,	100.0210,	.7006,	100.0220,	.7006,
455	100.0230,	.7006,	100.0240,	.7006,	100.0250,	.7006,
456	100.0260,	.7006,	100.0270,	.7006,	100.0280,	.7006,
457	100.0290,	.7006,	100.0300,	.7006,	100.0310,	.7006,
458	100.0320,	.7006,	100.0330,	.7006,	100.0340,	.7006,
459	100.0350,	.7006,	100.0360,	.7006,	100.0370,	.7006,
460	100.0380,	.7006,	100.0390,	.7006,	100.0400,	.7006,
461	ACE			DIR=Z		
462	.1000,	.0048,	1.7391,	.0048,	1.9130,	.0059,
463	2.0870,	.0070,	2.2609,	.0083,	2.3000,	.0086,
464	2.4348,	.0098,	2.6087,	.0124,	2.8696,	.0131,
465	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
466	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
467	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
468	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
469	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
470	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
471	12.1739,	.2549,	13.0435,	.3056,	13.8000,	.3651,
472	13.9130,	.3763,	15.6522,	.6131,	17.3913,	.9609,
473	19.1304,	1.6008,	21.7391,	3.1225,	24.3478,	5.6300,
474	26.0870,	6.9096,	34.5000,	6.9096,	34.7826,	6.8850,

475	36.9565,	6.7020,	37.9500,	6.6219,	40.2500,	5.7278,	.
476	43.1250,	4.0577,	43.4783,	3.9746,	46.0000,	3.8483,	.
477	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,	.
478	52.5550,	3.9049,	56.5217,	4.2237,	60.3750,	4.8168,	.
479	60.5217,	4.8386,	60.8696,	4.8902,	61.0650,	4.8901,	.
480	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,	.
481	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,	.
482	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,	.
483	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,	.
484	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,	.
485	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,	.
486	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,	.
487	100.0170,	4.3288,	100.0180,	4.3562,	100.0190,	4.3562,	.
488	100.0200,	4.3310,	100.0210,	4.3562,	100.0220,	4.3562,	.
489	100.0230,	4.3586,	100.0240,	4.3486,	100.0680,	4.3486,	.
490	EOA						.
491	CMB			SEISUP=SEISO1\$SEISO3,			.
492	CMB			SEISO5=SEISO1 SEISO2,			.
493	CMB			SEISEM=(SEISO3\$SEISO4\$SEISO5),			.
494	SLA						.
495	TEA			INCLUD=WT01+THRM01+SAM01,			.
496	OLA			LEVEL=B, INCLUD=WT01+SEISUP,			.
497	OLA			LEVEL=C, INCLUD=WT01+SEISEM,			.
498	RLS			LIST=WT01+THRM01+SEISUP			.
499				+SEISEM+SAM01+SAM02,			.
500	END						.
	+	+	+	+	+	+	+

500 CARDS IN INPUT DECK
 392 CARDS IN LOAD CASE WT01
 392 CARDS IN LOAD CASE THRM01
 446 CARDS IN LOAD CASE SAM01
 446 CARDS IN LOAD CASE SAM02
 392 CARDS IN LOAD CASE SEISO1
 392 CARDS IN LOAD CASE SEISO2
 392 CARDS IN LOAD CASE SEISO3
 392 CARDS IN LOAD CASE SEISO4

O WARNINGS
 O ERRORS
 O FATAL ERRORS

@FREE WORKER.

FAC WARNING 100000000000
 FILE SPECIFIED BY THE @ASG OR @CAT CONTROL STATEMENTS IS
 ASSIGNED, FREED FOR THE @FREE CONTROL STATEMENT SPECIFIED,
 OR NOT ASSIGNED FOR THE @MODE CONTROL STATEMENT SPECIFIED.
 FOR THE @CAT AND @MODE CONTROL STATEMENTS THIS SETTING
 RESULTS IN A FACILITY REJECTED MESSAGE.

@FREE SCRACH.

FAC WARNING 100000000000
 FILE SPECIFIED BY THE @ASG OR @CAT CONTROL STATEMENTS IS
 ASSIGNED, FREED FOR THE @FREE CONTROL STATEMENT SPECIFIED,
 OR NOT ASSIGNED FOR THE @MODE CONTROL STATEMENT SPECIFIED.
 FOR THE @CAT AND @MODE CONTROL STATEMENTS THIS SETTING
 RESULTS IN A FACILITY REJECTED MESSAGE.

@XQT,KM *ME101.ME101I . WTO1

ME101I ME101I/FEB05

*** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***

*** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***

*** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***

INPUT DATA SCAN

ME101/I2

DATE 040182

PAGE 11

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES :

	COL 1	COL 4	COL 7	COL 10	COL 21	COL 32	COL 43	COL 51	COL 61	COL 71	COL 80
	+	+	+	+	+	+	+	+	+	+	+
1: HED								TIT=SP-HCB-108 LINE,			
2:								PROJNO=8856,PROBNO=5280,			
3:								EIGEN=3,			
4:								MODES=35,PER=0.01,			
5:								UNITS=2,USER=J.ABISAMRA,			
6: ANC	5				.0451	.021	.0192	PHASE=CNT,			
7:								OD=1.315,THI=.133,			
8:								TEMP=200,LBS/FT=2.75,			
9:								CODE=SC374,CLASS=2,			
10:								PPRESS=30,DPRESS=30,			
11:								MAT=SA376-TP304,E=28.3E6,			
12:								SC=18800,SH=17800,			
13:		10			-0-4.49		0-1.91	SIF=1.3,			
14:		15			-1-1.58		0-5.76	SIF=1.3,ADDWT=20,			
15:		20			-0-9.67		0-4.1	SIF=1.3,			
16:		25				-0-4.375					
17: RAD		25			.391		.921	PHASE=CNT,			
18:		30				-0-4.375		SIF=1.3,ADDWT=20,			
19:		35				-0-7.25		SIF=1.3,ADDWT=20,			
20:		40				-0-7.75		ADDWT=2,			
21:	20	45				1-6.5	5D				
22:		50					0-7.25				
23: RAD		50			1			PHASE=CNT,DISP=.021,			
24:		55					1-.75	SIF=1.3,			
25:		60			-1-.75		1-.75	SIF=1.3,			
26:		65					0-3				
27: RAD		65	1					PHASE=RB,			
28: RAD		65			1			PHASE=RB,			
29:		70					0-9-7/8	SIF=1.3,ADDWT=50,			
30:		75					1-.125	SIF=1.3,ADDWT=50,			
31:		80					0-9.125				
32:		85			0-8						
33: RAD		85	1					PHASE=RB,			
34: RAD		85					1	PHASE=RB,			
35:		90			2.5			SIF=1.3,			
36:		95					1-7				
37: RAD		95			1			PHASE=RB,			
38:		100					0-11				
39:		105			1-.75						
40: RAD		1051.0						PHASE=RB,			
41:		110			0-5.125			SIF=1.3,			
42:		115-0-6.125									
43: RAD		115			1			PHASE=RB,			
44: RAD		115				1		PHASE=RB,			
45:		120-2-2-7/8					5D				
46:		125				2.0		SIF=1.3,			

47:	130	0-4.75			
48:	RAD 1301.0				PHASE=RB,
49:	RAD 130		1		PHASE=RB,
50:	135	3-2			SEG=2,
51:	RAD 1351.0				PHASE=RB,
52:	RAD 135		1		PHASE=RB,
53:	137	3-2			SEG=2,
54:	138		0-11		SIF=1.3, ADDWT=20,
55:	137 140	1-4			
56:	RAD 1401.0				PHASE=RB,
57:	RAD 140		1.0		PHASE=RB,
58:	145	4.0			SEG=2,
59:	ANC 145				PHASE=RB,,
60:	145 150	6-1.5			SEG=2,
61:	RAD 1501.0				PHASE=RB,
62:	RAD 150		1.0		PHASE=RB,
63:	155	0-5			SIF=1.3,
64:	1602-5				
65:	RAD 160		1.0		PHASE=RB,
66:	1652-11.25				
67:	SPD 165	1			
68:	1700-2.75				
69:	RAD 170		1.0		PHASE=RB,
70:	1750-3.25				SIF=1.3,
71:	180	0-9.9	0-9.9	5D	
72:	185	4-2.5			
73:	RAD 1851.0				PHASE=RB,
74:	RAD 185		1.0		PHASE=RB,
75:	190	3-10			SEG=2,
76:	RAD 1901.0				PHASE=RB,
77:	RAD 190		1.0		PHASE=RB,
78:	195	4-2.25			SEG=2,
79:	RAD 1951.0				PHASE=RB,
80:	RAD 195		1.0		PHASE=RB,
81:	200	0-10			SIF=1.3,
82:	205		0-9		
83:	RAD 2051.0				PHASE=RB,
84:	RAD 205	1.0			PHASE=RB,
85:	210		3-3-5/8		SEG=2,
86:	RAD 2101.0				PHASE=RB,
87:	RAD 210	1.0			PHASE=RB,
88:	215		4-7-5/8		SEG=2,
89:	RAD 2151.0				PHASE=RB,
90:	RAD 215	1.0			PHASE=RB,
91:	220		6-6		SEG=2,
92:	RAD 2201.0				PHASE=RB,
93:	RAD 220	1.0			PHASE=RB,
94:	225		2-5.75	5D	
95:	2303.0				
96:	RAD 230	1.0			PHASE=RB,
97:	RAD 230		1.0		PHASE=RB,
98:	2355-11-5/8				SEG=2,
99:	RAD 235	1.0			PHASE=RB,
100:	RAD 235		1.0		PHASE=RB,
101:	2406-.25				SEG=2,
102:	RAD 240	1.0			PHASE=RB,
103:	RAD 240		1.0		PHASE=RB,
104:	2453.0				SIF=1.3,
105:	250		0-6-3/8		
106:	RAD 2501.0				PHASE=RB,

107: RAD	250	1.0			PHASE=RB,	
108:	255		1-6-5/8	5D		
109:	2600-9					
110: RAD	260	1.0			PHASE=RB,	
111: RAD	260		1.0		PHASE=RB,	
112:	2654-3.25			5D		
113:	2700-11.756		0-11.756		SIF=1.3,	
114:	275	1-7.25				
115: RAD	2751.0				PHASE=RB,	
116: RAD	275		1.0		PHASE=RB,	
117:	280	4-10.75			SIF=1.3,	
118:	285		-0-7		SIF=1.3,	
119:	290	0-2.75				
120: RAD	2901.0				PHASE=RB,	
121: RAD	290		1.0		PHASE=RB,	
122:	295	4-10.5			SEG=2,	
123: RAD	2951.0				PHASE=RB,	
124: RAD	295		1.0		PHASE=RB,	
125:	300	0-9.25			SIF=1.3,	
126:	305		-0-5.25			
127: RAD	305	1.0			PHASE=RB,	
128:	310		-0-6	5D		
129:	315-1-3				SIF=1.3,	
130:	320	0-10.5		5D		
131:	500-0-9.9		0-9.9			
132: ANC	500				PHASE=RB,	
133: ACE					LDNAME=SEISO1,	
134: ACE					TITLE=ENVELOPE OF OBERBC719	
135: ACE						
136: ACE					TYP=3,POI=37,	
137: ACE					DIR=X	
138:	.1000,	.0000,	.9200,	.4495,	1.7000,	.9728,
139:	2.2500,	1.2251,	2.3000,	1.6304,	2.3500,	2.3450,
140:	2.5000,	2.3450,	2.8000,	5.3600,	4.2000,	5.3600,
141:	4.3000,	4.9813,	5.5000,	1.6089,	5.7000,	1.6649,
142:	6.3000,	2.5635,	7.3000,	4.8500,	12.0000,	4.8500,
143:	13.2000,	2.7602,	14.0000,	2.0700,	15.0000,	2.0700,
144:	20.0000,	1.1751,	24.0000,	1.0200,	25.0000,	.8691,
145:	26.0000,	.7800,	27.2000,	.7800,	28.0000,	.6608,
146:	28.9000,	.6097,	33.9500,	.4045,	35.0000,	.3730,
147:	100.0000,	.3730,	100.0010,	.3716,	100.0020,	.3741,
148:	100.0030,	.3733,	100.0040,	.3716,	100.0050,	.3716,
149:	100.0060,	.3716,	100.0070,	.3716,	100.0080,	.3716,
150:	100.0090,	.3716,				
151: ACE				DIR=Y		
152:	.1000,	.0150,	.1150,	.0178,	.4000,	.1716,
153:	3.5000,	.4400,	3.8000,	.7889,	4.3000,	1.5045,
154:	5.1000,	2.9600,	5.8000,	2.9600,	6.8000,	3.2581,
155:	6.9000,	3.3200,	10.5000,	3.3200,	12.0000,	3.3307,
156:	12.5000,	3.9600,	19.8000,	3.9600,	20.8300,	2.7177,
157:	23.0000,	1.1479,	25.0000,	1.0600,	28.0000,	1.0600,
158:	30.0000,	.5568,	31.0000,	.4212,	32.0000,	.3300,
159:	33.0000,	.3300,	34.0000,	.2900,	100.0000,	.2900,
160:	100.0010,	.2894,	100.0020,	.2897,	100.0030,	.2894,
161:	100.0040,	.2911,	100.0050,	.2894,	100.0060,	.2897,
162:	100.0070,	.2911,	100.0080,	.2894,	100.0090,	.2897,
163:	100.0100,	.2911,	100.0110,	.2894,	100.0120,	.2894,
164:	100.0130,	.2914,				
165: ACE				DIR=Z		
166:	.1000,	.0000,	.8000,	.3064,	1.2900,	.4189,

167:	2.1660,	.8645,	2.2500,	1.2045,	2.3000,	1.6304,
168:	2.3500,	2.3450,	2.7000,	2.3450,	3.2000,	3.5600,
169:	4.8000,	3.5600,	5.0000,	2.9819,	5.7000,	1.6770,
170:	5.8500,	1.7057,	6.7500,	1.9300,	10.0000,	1.9300,
171:	11.0000,	1.2140,	11.5000,	1.1028,	12.2000,	1.4000,
172:	18.0000,	1.4000,	19.2000,	.9295,	30.0000,	.5800,
173:	35.0000,	.2786,	37.0000,	.2500,	100.0000,	.2500,
174:	100.0010,	.2500,	100.0020,	.2500,	100.0030,	.2500,
175:	100.0040,	.2500,	100.0050,	.2500,	100.0060,	.2500,
176:	100.0070,	.2500,	100.0080,	.2500,	100.0090,	.2500,
177:	100.0100,	.2500,	100.0110,	.2500,	100.0120,	.2500,
178:	100.0130,	.2500,				

179: EOA
180: ACE
181: ACE
182: ACE
183: ACE
184: ACE

LDNAME=SEISO2,
TITLE=ENVELOPE OF SSERBC719

TYP=3,POI=33,
DIR=X

185:	.1000,	.0300,	.1200,	.0478,	1.2000,	.6512,
186:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
187:	2.5000,	2.1700,	2.9000,	2.7900,	4.3000,	2.7900,
188:	5.0000,	1.5615,	5.3000,	1.6010,	6.0000,	1.9209,
189:	7.2000,	3.4800,	7.4000,	3.6400,	12.0000,	3.6400,
190:	14.0000,	1.8571,	14.5000,	1.6600,	17.2000,	1.1738,
191:	22.0000,	.8600,	25.0000,	.8600,	28.0000,	.5763,
192:	31.2500,	.4730,	43.0000,	.4730,	43.0010,	.4735,
193:	43.0020,	.4727,	43.0030,	.4727,	43.0040,	.4735,
194:	43.0050,	.4727,	43.0060,	.4735,	43.0070,	.4727,
195:	43.0080,	.4734,	43.0090,	.4727,	100.0010,	.4730,

DIR=Y

196: ACE	.1000,	.0240,	.1200,	.0452,	.4000,	.2115,
197:	1.2900,	.3902,	2.2000,	.4731,	2.7000,	.7361,
198:	3.3000,	1.0458,	3.5000,	1.1600,	5.1000,	2.1900,
199:	6.7000,	2.1900,	7.2000,	2.2500,	12.0000,	2.2500,
200:	12.5000,	1.8682,	13.0000,	1.9400,	19.2000,	1.9400,
201:	21.0000,	1.7000,	23.0000,	.8232,	24.0000,	.7497,
202:	25.0000,	.7000,	26.6600,	.5700,	28.0000,	.5700,
203:	29.5000,	.4671,	32.5000,	.4130,	100.0000,	.4130,
204:	100.0010,	.4127,	100.0020,	.4121,	100.0030,	.4127,
205:	100.0040,	.4130,	100.0050,	.4130,	100.0060,	.4130,
206:	100.0070,	.4130,	100.0080,	.4130,	100.0090,	.4130,

DIR=Z

207: ACE	.1000,	.0300,	.1200,	.0432,	.2330,	.1265,
208:	.5660,	.2593,	.7500,	.3037,	.9500,	.3727,
209:	.9800,	.3833,	1.2000,	.4713,	1.4500,	.6940,
210:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
211:	2.5000,	2.1700,	2.8000,	2.1700,	3.3000,	2.3100,
212:	4.8000,	2.3100,	5.0000,	1.8682,	5.3000,	1.6010,
213:	6.0000,	1.6850,	8.8000,	1.6850,	12.5000,	.9130,
214:	14.0000,	.8600,	14.8000,	.7800,	18.0000,	.7800,
215:	20.5000,	.6100,	23.3300,	.6100,	30.0000,	.3646,
216:	31.2500,	.3322,	32.0000,	.3230,	100.0000,	.3230,
217:	100.0010,	.3230,	100.0020,	.3230,	100.0030,	.3230,

LDNAME=SEISO3,
TITLE=ENVELOPE OF SRVRBC719

TYP=3,COEF=CS4,POI=54,
DIR=X

220: EOA	.1000,	.0080,	1.7000,	.0080,	2.6087,	.0151,
221: ACE						
222: ACE						
223: ACE						
224: ACE						
225: ACE						
226:						

227:	2.7000.	.0251,	3.2000.	.0750,	3.8000.	.0800.
228:	4.4000.	.2750,	5.6000.	.2750,	6.2000.	.2340.
229:	6.5000.	.2340,	7.0000.	.4060,	9.2000.	.4060.
230:	10.7000.	.2500,	11.5000.	.2082,	12.1739.	.2340.
231:	12.5000.	.2500,	15.5000.	.5780,	19.9800.	.5940.
232:	23.0000.	.6408,	24.3478.	.6671,	26.0000.	.7500.
233:	32.0000.	1.5940,	42.5000.	1.5940,	48.0000.	1.0000.
234:	54.5000.	.8750,	57.0000.	.8750,	64.0000.	.6720.
235:	70.0000.	.6720,	74.9000.	.4060,	80.5000.	.3408.
236:	86.0000.	.3280,	92.0010.	.3280,	100.0010.	.2730.
237:	100.0540.	.2730,	100.0550.	.2730,	100.0560.	.2730.
238:	100.0570.	.2730,	100.0580.	.2730,	100.0590.	.2730.
239:	100.0600.	.2730,	100.0610.	.2730,	100.0620.	.2730.
240:	100.0630.	.2730,	100.0640.	.2730,	100.0650.	.2730.
241:	100.0660.	.2730,	100.0670.	.2730,	100.0680.	.2730.
242:	100.0690.	.2730,	100.0700.	.2730,	100.0710.	.2730.
243:	100.0720.	.2730,	100.0730.	.2730,	100.0740.	.2730.

244: ACE

DIR=Y

245:	.1000.	.0160,	1.7000.	.0160,	2.3000.	.0200.
246:	3.0000.	.0310,	3.2500.	.0310,	3.5000.	.0350.
247:	4.0500.	.1060,	4.4000.	.1060,	4.7826.	.1380.
248:	5.4050.	.1380,	5.6522.	.1510,	5.7565.	.1700.
249:	6.0870.	.1740,	6.5217.	.1740,	6.9000.	.2741.
250:	6.9565.	.2890,	7.3044.	.4750,	7.3913.	.5050.
251:	9.7750.	.5050,	10.3500.	.4700,	10.4075.	.4510.
252:	10.4348.	.4431,	11.3043.	.6330,	11.5000.	.6707.
253:	11.7381.	.7200,	11.7500.	.7212,	12.1739.	.9010.
254:	12.8696.	1.5700,	13.0435.	1.6900,	17.2500.	1.6900.
255:	17.9130.	1.4207,	17.9400.	1.4100,	18.4000.	1.1500.
256:	19.3913.	.7856,	20.0000.	.6817,	20.7000.	.6230.
257:	22.7700.	.6230,	23.0000.	.6130,	23.6900.	.5660.
258:	24.1500.	.5050,	25.1850.	.4078,	25.2500.	.4060.
259:	28.5000.	.3590,	34.0000.	.3440,	42.0000.	.2340.
260:	45.9000.	.2270,	57.0000.	.2190,	68.0000.	.2190.
261:	72.6800.	.1789,	74.5000.	.1664,	80.0000.	.1640.
262:	85.0000.	.1640,	100.0070.	.1410,	100.0480.	.1410.

263: ACE

DIR=Z

264:	.1000.	.0160,	1.7000.	.0160,	3.2200.	.0184.
265:	3.4500.	.0187,	3.4783.	.0190,	3.7950.	.0190.
266:	4.0000.	.0192,	5.0000.	.0284,	7.0000.	.0470.
267:	10.0000.	.0780,	13.0435.	.1597,	16.0000.	.2500.
268:	19.0000.	.4530,	20.7000.	.4702,	21.7391.	.5240.
269:	26.0000.	.7500,	32.0000.	1.5940,	42.5000.	1.5940.
270:	48.0000.	1.0000,	54.5000.	.8750,	57.0000.	.8750.
271:	64.0000.	.6720,	70.0000.	.6720,	74.9000.	.4060.
272:	86.0000.	.2810,	100.0040.	.2500,	100.0540.	.2500.
273:	100.0550.	.2500,	100.0560.	.2500,	100.0570.	.2500.
274:	100.0580.	.2500,	100.0590.	.2500,	100.0600.	.2500.
275:	100.0610.	.2500,	100.0620.	.2500,	100.0630.	.2500.
276:	100.0640.	.2500,	100.0650.	.2500,	100.0660.	.2500.
277:	100.0670.	.2500,	100.0680.	.2500,	100.0690.	.2500.
278:	100.0700.	.2500,	100.0710.	.2500,	100.0720.	.2500.
279:	100.0730.	.2500,	100.0740.	.2500,	100.0750.	.2500.
280:	100.0760.	.2500,	100.0770.	.2500,	100.0780.	.2500.
281:	100.0790.	.2500,	100.0800.	.2500,	100.0810.	.2500.

282: EOA

283: ACE

284: ACE

285: ACE

286: ACE

LDNAME=SEIS04,
TITLE=ENVELOPE OF CHGCORBC719

TYP=3,COEF=CS4,POI=84,

287: ACE

DIR=X

288:	1.7391,	.0048,	1.9130,	.0059,	2.0870,	.0070,
289:	2.2609,	.0083,	2.3000,	.0086,	2.4348,	.0098,
290:	2.6087,	.0124,	2.8696,	.0131,	2.9900,	.0167,
291:	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
292:	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
293:	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
294:	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
295:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
296:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
297:	12.1739,	.2549,	13.0435,	.3056,	13.2250,	.3173,
298:	13.8000,	.3651,	13.9130,	.3763,	15.6522,	.6131,
299:	17.3913,	.9609,	18.6957,	1.4179,	19.1304,	1.6008,
300:	19.2174,	1.6480,	20.4348,	2.3677,	21.7391,	3.1225,
301:	24.3478,	5.6300,	26.0870,	6.9096,	34.5000,	6.9096,
302:	34.7826,	6.8850,	36.9565,	6.7020,	37.9500,	6.6219,
303:	40.2500,	5.7278,	43.1250,	4.0577,	43.1304,	4.0564,
304:	43.4783,	3.9746,	44.9650,	3.8705,	46.0000,	3.8483,
305:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
306:	56.5217,	4.2237,	60.3750,	4.8168,	60.8696,	4.8902,
307:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
308:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
309:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
310:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
311:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
312:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
313:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
314:	100.0170,	4.3486,	100.0210,	4.3486,	100.0220,	4.3486,
315:	100.0230,	4.3486,	100.0240,	4.3486,	100.0250,	4.3486,

316: ACE

DIR=Y

317:	1.7391,	.0071,	2.0870,	.0093,	2.3000,	.0103,
318:	2.4000,	.0107,	2.5300,	.0111,	2.7600,	.0132,
319:	2.9900,	.0159,	3.1510,	.0174,	3.4783,	.0194,
320:	3.7950,	.0277,	3.8261,	.0286,	4.1400,	.0442,
321:	4.6000,	.1353,	4.8522,	.1920,	5.2174,	.1920,
322:	5.6522,	.1970,	5.7565,	.2390,	6.5217,	.2390,
323:	6.9000,	.3445,	7.3044,	.6400,	7.4750,	.6450,
324:	9.6600,	.6450,	10.0000,	.6084,	10.3500,	.5381,
325:	10.4075,	.5591,	11.3043,	.9330,	11.7391,	1.5200,
326:	12.1739,	1.5200,	12.6500,	2.1441,	12.8696,	2.4600,
327:	17.0200,	2.4600,	17.2500,	2.2600,	17.9130,	2.2600,
328:	18.2609,	2.0219,	19.0435,	1.5645,	19.3913,	1.3774,
329:	20.7000,	1.0800,	21.3900,	1.0800,	21.7350,	1.0100,
330:	22.1950,	1.0000,	22.7700,	1.0000,	23.0000,	.9820,
331:	24.1500,	.7551,	25.3000,	.6801,	26.0870,	.6522,
332:	28.4348,	.5826,	33.4650,	.5826,	34.5000,	.6067,
333:	34.7826,	.6138,	36.9565,	.6706,	39.1304,	.6972,
334:	43.4783,	.6972,	45.6522,	.7696,	47.8261,	.8408,
335:	57.5000,	.8409,	60.3750,	.8484,	60.8696,	.8542,
336:	80.5000,	.8542,	86.2500,	.8406,	92.0000,	.7244,
337:	100.0030,	.7006,	100.0180,	.7006,	100.0190,	.7006,
338:	100.0200,	.7006,	100.0210,	.7006,	100.0220,	.7006,
339:	100.0230,	.7006,	100.0240,	.7006,	100.0250,	.7006,
340:	100.0260,	.7006,	100.0270,	.7006,	100.0280,	.7006,
341:	100.0290,	.7006,	100.0300,	.7006,	100.0310,	.7006,
342:	100.0320,	.7006,	100.0330,	.7006,	100.0340,	.7006,
343:	100.0350,	.7006,	100.0360,	.7006,	100.0370,	.7006,
344:	100.0380,	.7006,	100.0390,	.7006,	100.0400,	.7006,

345: ACE

DIR=Z

346:	.1000,	.0048,	1.7391,	.0048,	1.9130,	.0059,
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347:	2.0870,	.0070,	2.2609,	.0083,	2.3000,	.0086,
348:	2.4348,	.0098,	2.6087,	.0124,	2.8696,	.0131,
349:	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
350:	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
351:	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
352:	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
353:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
354:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
355:	12.1739,	.2549,	13.0435,	.3056,	13.8000,	.3651,
356:	13.9130,	.3763,	15.6522,	.6131,	17.3913,	.9609,
357:	19.1304,	1.6008,	21.7391,	3.1225,	24.3478,	5.6300,
358:	26.0870,	6.9096,	34.5000,	6.9096,	34.7826,	6.8850,
359:	36.9565,	6.7020,	37.9500,	6.6219,	40.2500,	5.7278,
360:	43.1250,	4.0577,	43.4783,	3.9746,	46.0000,	3.8483,
361:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
362:	52.5550,	3.9049,	56.5217,	4.2237,	60.3750,	4.8168,
363:	60.5217,	4.8386,	60.8696,	4.8902,	61.0650,	4.8901,
364:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
365:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
366:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
367:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
368:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
369:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
370:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
371:	100.0170,	4.3288,	100.0180,	4.3562,	100.0190,	4.3562,
372:	100.0200,	4.3310,	100.0210,	4.3562,	100.0220,	4.3562,
373:	100.0230,	4.3586,	100.0240,	4.3486,	100.0680,	4.3486,

374: EOA

375: END

	+	+	+	+	+	+	+	+	+	+	+
	1	4	7	10	21	32	43	51	61	71	80
	COL	COL		COL	COL	COL	COL	COL	COL	COL	COL
*** CORE CHANGED FROM	79253	TO	48797	DECIMAL WORDS	***						
*** CORE CHANGED FROM	48797	TO	48600	DECIMAL WORDS	***						
*** CORE CHANGED FROM	48600	TO	51327	DECIMAL WORDS	***						
*** CORE CHANGED FROM	51327	TO	55358	DECIMAL WORDS	***						

NODE DATA

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : W01

NUMBER OF NODE POINTS : 89
DYNAMIC DEGREES OF FREEDOM : 267
PUNCHED CARD OUTPUT :
PLOT REQUESTED : NOPLT FOR PLOTTER : NOPLTR

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
5	ANCH		.000	.000	.000	.00	
10			-.374	.000	.159	.00	SIF = .1300+01
15			-1.506	.000	.639	20.00	SIF = .1300+01
20			-2.312	.000	.981	.00	SIF = .1300+01
25			-2.312	-.365	.981	.00	
30			-2.312	-.729	.981	20.00	SIF = .1300+01
35			-2.312	-1.333	.981	20.00	SIF = .1300+01
40			-2.312	-1.979	.981	2.00	
45 B			-2.312	1.125	.981	.00	
45	TINP		-2.312	1.542	.981	.00	
45 E			-2.312	1.542	1.397	.00	
50			-2.312	1.542	1.585	.00	
55			-2.312	1.542	2.647	.00	SIF = .1300+01
60			-3.374	1.542	3.710	.00	SIF = .1300+01
65			-3.374	1.542	3.960	.00	
70			-3.374	1.542	4.783	50.00	SIF = .1300+01
75			-3.374	1.542	5.793	50.00	SIF = .1300+01
80 B			-3.374	1.542	6.137	.00	
80	TINP		-3.374	1.542	6.554	.00	
80 E			-3.374	1.958	6.554	.00	
85			-3.374	2.208	6.554	.00	
90			-3.374	4.708	6.554	.00	SIF = .1300+01
95			-3.374	4.708	8.137	.00	
100 B			-3.374	4.708	8.637	.00	
100	TINP		-3.374	4.708	9.054	.00	
100 E			-3.374	5.125	9.054	.00	
105			-3.374	5.771	9.054	.00	
110			-3.374	6.198	9.054	.00	SIF = .1300+01
115			-3.885	6.198	9.054	.00	
120 B			-5.707	6.198	9.054	.00	
120	TINP		-6.124	6.198	9.054	.00	
120 E			-6.124	6.198	9.470	.00	
125			-6.124	6.198	11.054	.00	SIF = .1300+01

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
130			-6.124	6.594	11.054	.00	
130A			-6.124	8.177	11.054	.00	
135			-6.124	9.760	11.054	.00	
135A			-6.124	11.344	11.054	.00	
137			-6.124	12.927	11.054	.00	
138			-6.124	12.927	11.970	20.00	SIF = .1300+01
140			-6.124	14.260	11.054	.00	
140A			-6.124	16.260	11.054	.00	
145	ANCH		-6.124	18.260	11.054	.00	
145A			-6.124	21.323	11.054	.00	
150			-6.124	24.385	11.054	.00	
155			-6.124	24.802	11.054	.00	SIF = .1300+01
160			-3.707	24.802	11.054	.00	
165			-.770	24.802	11.054	.00	
170			-.541	24.802	11.054	.00	
175			-.270	24.802	11.054	.00	SIF = .1300+01
180 B			-.270	25.505	11.757	.00	
180	TINP		-.270	25.627	11.879	.00	
180 E			-.270	25.800	11.879	.00	
185			-.270	29.835	11.879	.00	
185A			-.270	31.752	11.879	.00	
190			-.270	33.669	11.879	.00	
190A			-.270	35.762	11.879	.00	
195			-.270	37.856	11.879	.00	
200			-.270	38.690	11.879	.00	SIF = .1300+01
205			-.270	38.690	12.629	.00	
205A			-.270	38.690	14.280	.00	
210			-.270	38.690	15.931	.00	
210A			-.270	38.690	18.249	.00	
215			-.270	38.690	20.566	.00	
215A			-.270	38.690	23.816	.00	
220			-.270	38.690	27.066	.00	
225 B			-.270	38.690	29.129	.00	
225	TINP		-.270	38.690	29.545	.00	
225 E			.147	38.690	29.545	.00	
230			2.730	38.690	29.545	.00	
230A			5.714	38.690	29.545	.00	
235			8.699	38.690	29.545	.00	
235A			11.709	38.690	29.545	.00	
240			14.720	38.690	29.545	.00	
245			17.720	38.690	29.545	.00	SIF = .1300+01
250			17.720	38.690	30.077	.00	
255 B			17.720	38.690	31.212	.00	

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
255	TINP		17.720	38.690	31.629	.00	
255 E			18.136	38.690	31.629	.00	
260			18.470	38.690	31.629	.00	
265 B			22.568	38.690	31.629	.00	
265	TINP		22.740	38.690	31.629	.00	
265 E			22.862	38.690	31.751	.00	
270			23.720	38.690	32.608	.00	SIF = .1300+01
275			23.720	40.294	32.608	.00	
280			23.720	45.190	32.608	.00	SIF = .1300+01
285			23.720	45.190	32.025	.00	SIF = .1300+01
290			23.720	45.419	32.025	.00	
290A			23.720	47.856	32.025	.00	
295			23.720	50.294	32.025	.00	
300			23.720	51.065	32.025	.00	SIF = .1300+01
305			23.720	51.065	31.588	.00	
310 B			23.720	51.065	31.504	.00	
310	TINP		23.720	51.065	31.088	.00	
310 E			23.303	51.065	31.088	.00	
315			22.470	51.065	31.088	.00	SIF = .1300+01
320 B			22.470	51.523	31.088	.00	
320	TINP		22.470	51.940	31.088	.00	
320 E			22.175	51.940	31.382	.00	
500	ANCH		21.645	51.940	31.913	.00	

ELEMENT DATA

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : WTO1

ELEMENT FROM	TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
5	10	TNGT	SA376-TP304	.41	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
10	15	TNGT	SA376-TP304	1.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
15	20	TNGT	SA376-TP304	.88	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20	25	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
25	30	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
30	35	TNGT	SA376-TP304	.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
35	40	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20	45 B	TNGT	SA376-TP304	1.12	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
45 B	45 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
45 E	50	TNGT	SA376-TP304	.19	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
50	55	TNGT	SA376-TP304	1.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
55	60	TNGT	SA376-TP304	1.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
60	65	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
65	70	TNGT	SA376-TP304	.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
70	75	TNGT	SA376-TP304	1.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
75	80 B	TNGT	SA376-TP304	.34	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
80 B	80 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
80 E	85	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
85	90	TNGT	SA376-TP304	2.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
90	95	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
95	100 B	TNGT	SA376-TP304	.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
100 B	100 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
100 E	105	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
105	110	TNGT	SA376-TP304	.43	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
110	115	TNGT	SA376-TP304	.51	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
115	120 B	TNGT	SA376-TP304	1.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
120 B	120 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
120 E	125	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
125	130	TNGT	SA376-TP304	.40	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130	130A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130A	135	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135	135A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135A	137	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137	138	TNGT	SA376-TP304	.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137	140	TNGT	SA376-TP304	1.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140	140A	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140A	145	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145	145A	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145A	150	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

ELEMENT DATA

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ELEMENT FROM	ELEMENT TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
150	155	TNGT	SA376-TP304	.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
155	160	TNGT	SA376-TP304	2.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
160	165	TNGT	SA376-TP304	2.94	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
165	170	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
170	175	TNGT	SA376-TP304	.27	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
175	180 B	TNGT	SA376-TP304	.99	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
180 B	180 E	BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
180 E	185	TNGT	SA376-TP304	4.04	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185	185A	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185A	190	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190	190A	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190A	195	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
195	200	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
200	205	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205	205A	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205A	210	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210	210A	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210A	215	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215	215A	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215A	220	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
220	225 B	TNGT	SA376-TP304	2.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
225 B	225 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
225 E	230	TNGT	SA376-TP304	2.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230	230A	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230A	235	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235	235A	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235A	240	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
240	245	TNGT	SA376-TP304	3.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
245	250	TNGT	SA376-TP304	.53	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
250	255 B	TNGT	SA376-TP304	1.14	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
255 B	255 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
255 E	260	TNGT	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
260	265 B	TNGT	SA376-TP304	4.10	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
265 B	265 E	BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
265 E	270	TNGT	SA376-TP304	1.21	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
270	275	TNGT	SA376-TP304	1.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
275	280	TNGT	SA376-TP304	4.90	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
280	285	TNGT	SA376-TP304	.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
285	290	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290	290A	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290A	295	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
295	300	TNGT	SA376-TP304	.77	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
300	305	TNGT	SA376-TP304	.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
305	310 B	TNGT	SA376-TP304	.08	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
310 B	310 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
310 E	315	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
315	320 B	TNGT	SA376-TP304	.46	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
320 B	320 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
320 E	500	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

RESTRAINT DESCRIPTION

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : WTO1

POINT	TYPE	TITLE	AXIS	DIRECTION X	COSINES OF Y	RESTRAINT Z	TRANSLATIONAL FLEXIBILITY (IN/LB)	TORSIONAL FLEXIBILITY (RAD/LB-IN)
5	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
5	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
5	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
25	RAD			.3908	.0000	.9205	.000000000000	
50	RAD			.0000	1.0000	.0000	.000000000000	
65	RAD			1.0000	.0000	.0000	.000000000000	
65	RAD			.0000	1.0000	.0000	.000000000000	
85	RAD			1.0000	.0000	.0000	.000000000000	
85	RAD			.0000	.0000	1.0000	.000000000000	
95	RAD			.0000	1.0000	.0000	.000000000000	
105	RAD			1.0000	.0000	.0000	.000000000000	
115	RAD			.0000	1.0000	.0000	.000000000000	
115	RAD			.0000	.0000	1.0000	.000000000000	
130	RAD			1.0000	.0000	.0000	.000000000000	
130	RAD			.0000	.0000	1.0000	.000000000000	
135	RAD			1.0000	.0000	.0000	.000000000000	
135	RAD			.0000	.0000	1.0000	.000000000000	
140	RAD			1.0000	.0000	.0000	.000000000000	
140	RAD			.0000	.0000	1.0000	.000000000000	
145	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
145	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
145	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
150	RAD			1.0000	.0000	.0000	.000000000000	
150	RAD			.0000	.0000	1.0000	.000000000000	
160	RAD			.0000	.0000	1.0000	.000000000000	
165	SPD			.0000	1.0000	.0000	.000000000000	
170	RAD			.0000	.0000	1.0000	.000000000000	
185	RAD			1.0000	.0000	.0000	.000000000000	
185	RAD			.0000	.0000	1.0000	.000000000000	
190	RAD			1.0000	.0000	.0000	.000000000000	
190	RAD			.0000	.0000	1.0000	.000000000000	

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195	RAD		1.0000	.0000	.0000	.000000000000
195	RAD		.0000	.0000	1.0000	.000000000000
205	RAD		1.0000	.0000	.0000	.000000000000
205	RAD		.0000	1.0000	.0000	.000000000000
210	RAD		1.0000	.0000	.0000	.000000000000
210	RAD		.0000	1.0000	.0000	.000000000000
215	RAD		1.0000	.0000	.0000	.000000000000
215	RAD		.0000	1.0000	.0000	.000000000000
220	RAD		1.0000	.0000	.0000	.000000000000
220	RAD		.0000	1.0000	.0000	.000000000000
230	RAD		.0000	1.0000	.0000	.000000000000
230	RAD		.0000	.0000	1.0000	.000000000000
235	RAD		.0000	1.0000	.0000	.000000000000
235	RAD		.0000	.0000	1.0000	.000000000000
240	RAD		.0000	1.0000	.0000	.000000000000
240	RAD		.0000	.0000	1.0000	.000000000000
250	RAD		1.0000	.0000	.0000	.000000000000
250	RAD		.0000	1.0000	.0000	.000000000000
260	RAD		.0000	1.0000	.0000	.000000000000
260	RAD		.0000	.0000	1.0000	.000000000000
275	RAD		1.0000	.0000	.0000	.000000000000
275	RAD		.0000	.0000	1.0000	.000000000000
290	RAD		1.0000	.0000	.0000	.000000000000
290	RAD		.0000	.0000	1.0000	.000000000000
295	RAD		1.0000	.0000	.0000	.000000000000
295	RAD		.0000	.0000	1.0000	.000000000000
305	RAD		.0000	1.0000	.0000	.000000000000
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000

DESCRIPTION OF LOAD WTO1

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : WTO1

THIS IS A WEIGHT ANALYSIS.

DIAGNOSTIC MESSAGE ANALYSIS

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : *ALL*

LEVEL	TAG TO	DIAGNOSTIC MESSAGE
-------	--------	--------------------

LOAD CASE(S) : WTO1

+WRN+

145

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .057 SEC.

+WRN+

DIAGNOSTIC MESSAGE ANALYSIS

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#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.139	14.287	.000	.174	.037	.029	.104	.032	.377	2.125	.025	23.329

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***
 CHECKPOINT

@XQT,K *ME101.ME101I . THRM01

ME101I ME101I/FEB05

*** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***
 *** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***
 *** CORE CHANGED FROM 79253 TO 48797 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48797 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 51327 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51327 TO 55358 DECIMAL WORDS ***

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : THRM01

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT	TRANSLATIONAL FLEXIBILITY	TORSIONAL FLEXIBILITY
				X Y Z	(IN/LB)	(RAD/LB-IN)
5	ANCH		-A-	1.0000 .0000 .0000	.000000000000	.000000000000
5	ANCH		-B-	.0000 1.0000 .0000	.000000000000	.000000000000
5	ANCH		-C-	.0000 .0000 1.0000	.000000000000	.000000000000
25	RAD			.3908 .0000 .9205	.000000000000	
50	RAD			.0000 1.0000 .0000	.000000000000	
65	RAD			1.0000 .0000 .0000	.000000000000	
65	RAD			.0000 1.0000 .0000	.000000000000	
85	RAD			1.0000 .0000 .0000	.000000000000	
85	RAD			.0000 .0000 1.0000	.000000000000	
95	RAD			.0000 1.0000 .0000	.000000000000	
105	RAD			1.0000 .0000 .0000	.000000000000	
115	RAD			.0000 1.0000 .0000	.000000000000	
115	RAD			.0000 .0000 1.0000	.000000000000	
130	RAD			1.0000 .0000 .0000	.000000000000	
130	RAD			.0000 .0000 1.0000	.000000000000	
135	RAD			1.0000 .0000 .0000	.000000000000	
135	RAD			.0000 .0000 1.0000	.000000000000	
140	RAD			1.0000 .0000 .0000	.000000000000	
140	RAD			.0000 .0000 1.0000	.000000000000	
145	ANCH		-A-	1.0000 .0000 .0000	.000000000000	.000000000000
145	ANCH		-B-	.0000 1.0000 .0000	.000000000000	.000000000000
145	ANCH		-C-	.0000 .0000 1.0000	.000000000000	.000000000000
150	RAD			1.0000 .0000 .0000	.000000000000	
150	RAD			.0000 .0000 1.0000	.000000000000	
160	RAD			.0000 .0000 1.0000	.000000000000	
170	RAD			.0000 .0000 1.0000	.000000000000	
185	RAD			1.0000 .0000 .0000	.000000000000	
185	RAD			.0000 .0000 1.0000	.000000000000	
190	RAD			1.0000 .0000 .0000	.000000000000	
190	RAD			.0000 .0000 1.0000	.000000000000	
195	RAD			1.0000 .0000 .0000	.000000000000	

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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : THRM01

THERMAL STRAINS APPLIED TO ELEMENTS:

ELEMENT FROM	TO	TYPE/TITLE	MATERIAL	THERMAL STRAIN		TEMP	AMBIENT TEMP
				(IN/IN)	(IN/100FT)	(DEG-F)	(DEG-F)
5	10	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
10	15	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
15	20	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
20	25	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
25	30	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
30	35	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
35	40	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
20	45 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
45 B	45 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
45 E	50	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
50	55	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
55	60	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
60	65	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
65	70	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
70	75	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
75	80 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
80 B	80 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
80 E	85	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
85	90	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
90	95	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
95	100 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
100 B	100 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
100 E	105	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
105	110	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
110	115	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
115	120 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
120 B	120 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
120 E	125	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
125	130	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
130	130A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
130A	135	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
135	135A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
135A	137	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
137	138	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
137	140	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00

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140	140A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
140A	145	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
145	145A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
145A	150	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
150	155	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
155	160	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
160	165	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
165	170	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
170	175	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
175	180 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
180 B	180 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
180 E	185	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
185	185A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
185A	190	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
190	190A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
190A	195	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
195	200	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
200	205	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
205	205A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
205A	210	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
210	210A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
210A	215	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
215	215A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
215A	220	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
220	225 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
225 B	225 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
225 E	230	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
230	230A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
230A	235	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
235	235A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
235A	240	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
240	245	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
245	250	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
250	255 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
255 B	255 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
255 E	260	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
260	265 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
265 B	265 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
265 E	270	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
270	275	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
275	280	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
280	285	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
285	290	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
290	290A	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
290A	295	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
295	300	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
300	305	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
305	310 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
310 B	310 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
310 E	315	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00

DESCRIPTION OF LOAD

THRM01

ME101/I2

DATE 040182

PAGE 32

315	320 B	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00
320 B	320 E	BEND	SA376-TP304	.00109	1.31000	200.00	70.00
320 E	500	TNGT	SA376-TP304	.00109	1.31000	200.00	70.00

BOUNDARY DISPLACEMENTS AND BOUNDARY LOADS:

POINT	TYPE	TITLE	AXIS	DIRECTION	COSINES OF	RESTRAINT	FORCE	MOMENT	DISPLACEMENT	ROTATION
				X	Y	Z	(LB)	(LB-IN)	(IN)	(RAD)
5	ANCH		-A-	1.0000	.0000	.0000	.0	.0	-.045	.000000
5	ANCH		-B-	.0000	1.0000	.0000	.0	.0	.021	.000000
5	ANCH		-C-	.0000	.0000	1.0000	.0	.0	.019	.000000
50	RAD			.0000	1.0000	.0000	.0	.0	.021	.000000

DIAGNOSTIC MESSAGE ANALYSIS

ME101/I2

DATE 040182

PAGE 33

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : *ALL*

LEVEL TAG TO DIAGNOSTIC MESSAGE

LOAD CASE(S) : THRM01

+WRN+
 +WRN+ .

145

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
 BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .056 SEC.

DIAGNOSTIC MESSAGE ANALYSIS

ME101/I2

DATE 040182

PAGE 34

#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.134	11.256	.000	.174	.037	.026	.104	.031	.372	1.078	.025	19.238

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***

CHECKPOINT

@XQT,KM *ME101.ME101I . SAM01

ME101I ME101I/FEB05

*** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***

*** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***

*** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***

INPUT DATA SCAN

ME101/I2

DATE 040182

PAGE 35

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES :

	COL 1	COL 4	COL 7	COL 10	COL 21	COL 32	COL 43	COL 51	COL 61	COL 71	COL 80
1:	+	+	+	+	+	+	+	+	+	+	+
2:											
3:											
4:											
5:											
6:	ANC	5		-.0451	.021	.0192					
7:											
8:											
9:											
10:											
11:											
12:											
13:											
14:		10		-0-4.49		0-1.91					
15:		15		-1-1.58		0-5.76					
16:		20		-0-9.67		0-4.1					
17:		25			-0-4.375						
18:	RAD	25		.391		.921					
19:											
20:		30			-0-4.375						
21:		35			-0-7.25						
22:		40			-0-7.75						
23:	20	45			1-6.5		5D				
24:		50				0-7.25					
25:	RAD	50			1						
26:											
27:		55				1-.75					
28:		60		-1-.75		1-.75					
29:		65				0-3					
30:	RAD	65	1								
31:											
32:	RAD	65			1						
33:											
34:		70				0-9-7/8					
35:		75				1-.125					
36:		80				0-9.125	5D				
37:		85			0-8						
38:	RAD	85	1								
39:											
40:	RAD	85				1					
41:											
42:		90			2.5						
43:		95				1-7					
44:	RAD	95			1						
45:											
46:		100				0-11	5D				

TIT=SP-HCB-108 LINE,
 PROJNO=8856,PROBNO=5280,
 EIGEN=3,
 MODES=35,PER=0.01,
 UNITS=2,USER=J.ABISAMRA,
 PHASE=CNT,
 DX=.007,DY=.0003,DZ=.007,
 OD=1.315,THI=.133,
 TEMP=200,LBS/FT=2.75,
 CODE=SC374,CLASS=2,
 PPRESS=30,DPRESS=30,
 MAT=SA376-TP304,E=28.3E6,
 SC=18800,SH=17800,
 SIF=1.3,
 SIF=1.3,ADDWT=20,
 SIF=1.3,

PHASE=CNT,
 DX=.007,DZ=.007,
 SIF=1.3,ADDWT=20,
 SIF=1.3,ADDWT=20,
 ADDWT=2,

PHASE=CNT,DISP=.021,
 DY=.0003,
 SIF=1.3,
 SIF=1.3,

PHASE=RB,
 DX=.032,
 PHASE=RB,
 DY=.002,
 SIF=1.3,ADDWT=50,
 SIF=1.3,ADDWT=50,

PHASE=RB,
 DX=.032,
 PHASE=RB,
 DZ=.056,
 SIF=1.3,

PHASE=RB,
 DY=.002,

47:	105	1-.75				PHASE=RB,
48: RAD	1051.0					DX=.032,
49:						SIF=1.3,
50:	110	0-5.125				
51:	115-0-6.125					
52: RAD	115	1				PHASE=RB,
53:						DY=.002,
54: RAD	115		1			PHASE=RB,
55:						DZ=.056,
56:	120-2-2-7/8			5D		
57:	125		2.0			SIF=1.3,
58:	130	0-4.75				
59: RAD	1301.0					PHASE=RB,
60:						DX=.032,
61: RAD	130		1			PHASE=RB,
62:						DZ=.056,
63:	135	3-2				SEG=2,
64: RAD	1351.0					PHASE=RB,
65:						DX=.084,
66: RAD	135		1			PHASE=RB,
67:						DZ=.064,
68:	137	3-2				SEG=2,
69:	138		0-11			SIF=1.3,ADDWT=20,
70:	137140	1-4				
71: RAD	1401.0					PHASE=RB,
72:						DX=.084,
73: RAD	140		1.0			PHASE=RB,
74:						DZ=.064,
75:	145	4.0				SEG=2,
76: ANC	145					PHASE=RB,
77:						DX=.084,DY=.004,DZ=.064,
78:	145150	6-1.5				SEG=2,
79: RAD	1501.0					PHASE=RB,
80:						DX=.084,
81: RAD	150		1.0			PHASE=RB,
82:						DZ=.064,
83:	155	0-5				SIF=1.3,
84:	1602-5					
85: RAD	160		1.0			PHASE=RB,
86:						DZ=.064,
87:	1652-11.25					
88: SPD	165	1				
89:	1700-2.75					
90: RAD	170		1.0			PHASE=RB,
91:						DZ=.064,
92:	1750-3.25					SIF=1.3,
93:	180	0-9.9	0-9.9	5D		
94:	185	4-2.5				
95: RAD	1851.0					PHASE=RB,
96:						DX=.084,
97: RAD	185		1.0			PHASE=RB,
98:						DZ=.064,
99:	190	3-10				SEG=2,
100: RAD	1901.0					PHASE=RB,
101:						DX=.084,
102: RAD	190		1.0			PHASE=RB,
103:						DZ=.064,
104:	195	4-2.25				SEG=2,
105: RAD	1951.0					PHASE=RB,
106:						DX=.084,

107: RAD	195		1.0	PHASE=RB,
108:				DZ=.064,
109:	200	0-10		SIF=1.3,
110:	205		0-9	
111: RAD	2051.0			PHASE=RB,
112:				DX=.084,
113: RAD	205	1.0		PHASE=RB,
114:				DY=.004,
115:	210		3-3-5/8	SEG=2,
116: RAD	2101.0			PHASE=RB,
117:				DX=.084,
118: RAD	210	1.0		PHASE=RB,
119:				DY=.004,
120:	215		4-7-5/8	SEG=2,
121: RAD	2151.0			PHASE=RB,
122:				DX=.084,
123: RAD	215	1.0		PHASE=RB,
124:				DY=.004,
125:	220		6-6	SEG=2,
126: RAD	2201.0			PHASE=RB,
127:				DX=.084,
128: RAD	220	1.0		PHASE=RB,
129:				DY=.004,
130:	225		2-5.75	5D
131:	2303.0			
132: RAD	230	1.0		PHASE=RB,
133:				DY=.015,
134: RAD	230		1.0	PHASE=RB,
135:				DZ=.064,
136:	2355-11-5/8			SEG=2,
137: RAD	235	1.0		PHASE=RB,
138:				DY=.015,
139: RAD	235		1.0	PHASE=RB,
140:				DZ=.064,
141:	2406-.25			SEG=2,
142: RAD	240	1.0		PHASE=RB,
143:				DY=.015,
144: RAD	240		1.0	PHASE=RB,
145:				DZ=.064,
146:	2453.0			SIF=1.3,
147:	250		0-6-3/8	
148: RAD	2501.0			PHASE=RB,
149:				DX=.084,
150: RAD	250	1.0		PHASE=RB,
151:				DY=.015,
152:	255		1-6-5/8	5D
153:	2600-9			
154: RAD	260	1.0		PHASE=RB,
155:				DY=.015,
156: RAD	260		1.0	PHASE=RB,
157:				DZ=.064,
158:	2654-3.25			5D
159:	2700-11.756		0-11.756	SIF=1.3,
160:	275	1-7.25		
161: RAD	2751.0			PHASE=RB,
162:				DX=.084,
163: RAD	275		1.0	PHASE=RB,
164:				DZ=.064,
165:	280	4-10.75		SIF=1.3,
166:	285		-0-7	SIF=1.3,

167:	290	0-2.75				
168:	RAD 2901.0				PHASE=RB,	
169:					DX=.138,	
170:	RAD 290		1.0		PHASE=RB,	
171:					DZ=.071,	
172:	295	4-10.5			SEG=2,	
173:	RAD 2951.0				PHASE=RB,	
174:					DX=.138,	
175:	RAD 295		1.0		PHASE=RB,	
176:					DZ=.071,	
177:	300	0-9.25			SIF=1.3,	
178:	305		-0-5.25			
179:	RAD 305		1.0		PHASE=RB,	
180:					DY=.02,	
181:	310		-0-6	5D		
182:	315-1-3				SIF=1.3,	
183:	320	0-10.5		5D		
184:	500-0-9.9		0-9.9			
185:	ANC 500				PHASE=RB,	
186:					DX=.138,DY=.02,DZ=.071,	
187:	ACE				LDNAME=SEISO1,	
188:	ACE				TITLE=ENVELOPE OF OBERBC719	
189:	ACE					
190:	ACE				TYP=3,POI=37,	
191:	ACE				DIR=X	
192:		.1000,	.0000,	.9200,	.4495,	1.7000, .9728,
193:		2.2500,	1.2251,	2.3000,	1.6304,	2.3500, 2.3450,
194:		2.5000,	2.3450,	2.8000,	5.3600,	4.2000, 5.3600,
195:		4.3000,	4.9813,	5.5000,	1.6089,	5.7000, 1.6649,
196:		6.3000,	2.5635,	7.3000,	4.8500,	12.0000, 4.8500,
197:		13.2000,	2.7602,	14.0000,	2.0700,	15.0000, 2.0700,
198:		20.0000,	1.1751,	24.0000,	1.0200,	25.0000, .8691,
199:		26.0000,	.7800,	27.2000,	.7800,	28.0000, .6608,
200:		28.9000,	.6097,	33.9500,	.4045,	35.0000, .3730,
201:		100.0000,	.3730,	100.0010,	.3716,	100.0020, .3741,
202:		100.0030,	.3733,	100.0040,	.3716,	100.0050, .3716,
203:		100.0060,	.3716,	100.0070,	.3716,	100.0080, .3716,
204:		100.0090,	.3716,			
205:	ACE				DIR=Y	
206:		.1000,	.0150,	.1150,	.0178,	.4000, .1716,
207:		3.5000,	.4400,	3.8000,	.7889,	4.3000, 1.5045,
208:		5.1000,	2.9600,	5.8000,	2.9600,	6.8000, 3.2581,
209:		6.9000,	3.3200,	10.5000,	3.3200,	12.0000, 3.3307,
210:		12.5000,	3.9600,	19.8000,	3.9600,	20.8300, 2.7177,
211:		23.0000,	1.1479,	25.0000,	1.0600,	28.0000, 1.0600,
212:		30.0000,	.5568,	31.0000,	.4212,	32.0000, .3300,
213:		33.0000,	.3300,	34.0000,	.2900,	100.0000, .2900,
214:		100.0010,	.2894,	100.0020,	.2897,	100.0030, .2894,
215:		100.0040,	.2911,	100.0050,	.2894,	100.0060, .2897,
216:		100.0070,	.2911,	100.0080,	.2894,	100.0090, .2897,
217:		100.0100,	.2911,	100.0110,	.2894,	100.0120, .2894,
218:		100.0130,	.2914,			
219:	ACE				DIR=Z	
220:		.1000,	.0000,	.8000,	.3064,	1.2900, .4189,
221:		2.1660,	.8645,	2.2500,	1.2045,	2.3000, 1.6304,
222:		2.3500,	2.3450,	2.7000,	2.3450,	3.2000, 3.5600,
223:		4.8000,	3.5600,	5.0000,	2.9819,	5.7000, 1.6770,
224:		5.8500,	1.7057,	6.7500,	1.9300,	10.0000, 1.9300,
225:		11.0000,	1.2140,	11.5000,	1.1028,	12.2000, 1.4000,
226:		18.0000,	1.4000,	19.2000,	.9295,	30.0000, .5800,

227:	35.0000,	.2786,	37.0000,	.2500,	100.0000,	.2500,
228:	100.0010,	.2500,	100.0020,	.2500,	100.0030,	.2500,
229:	100.0040,	.2500,	100.0050,	.2500,	100.0060,	.2500,
230:	100.0070,	.2500,	100.0080,	.2500,	100.0090,	.2500,
231:	100.0100,	.2500,	100.0110,	.2500,	100.0120,	.2500,
232:	100.0130,	.2500,				
233:	EOA					
234:	ACE					
235:	ACE					
236:	ACE					
237:	ACE					
238:	ACE					
239:	.1000,	.0300,	.1200,	.0478,	1.2000,	.6512,
240:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
241:	2.5000,	2.1700,	2.9000,	2.7900,	4.3000,	2.7900,
242:	5.0000,	1.5615,	5.3000,	1.6010,	6.0000,	1.9209,
243:	7.2000,	3.4800,	7.4000,	3.6400,	12.0000,	3.6400,
244:	14.0000,	1.8571,	14.5000,	1.6600,	17.2000,	1.1738,
245:	22.0000,	.8600,	25.0000,	.8600,	28.0000,	.5763,
246:	31.2500,	.4730,	43.0000,	.4730,	43.0010,	.4735,
247:	43.0020,	.4727,	43.0030,	.4727,	43.0040,	.4735,
248:	43.0050,	.4727,	43.0060,	.4735,	43.0070,	.4727,
249:	43.0080,	.4734,	43.0090,	.4727,	100.0010,	.4730,
250:	ACE					
251:	.1000,	.0240,	.1200,	.0452,	.4000,	.2115,
252:	1.2900,	.3902,	2.2000,	.4731,	2.7000,	.7361,
253:	3.3000,	1.0458,	3.5000,	1.1600,	5.1000,	2.1900,
254:	6.7000,	2.1900,	7.2000,	2.2500,	12.0000,	2.2500,
255:	12.5000,	1.8682,	13.0000,	1.9400,	19.2000,	1.9400,
256:	21.0000,	1.7000,	23.0000,	.8232,	24.0000,	.7497,
257:	25.0000,	.7000,	26.6600,	.5700,	28.0000,	.5700,
258:	29.5000,	.4671,	32.5000,	.4130,	100.0000,	.4130,
259:	100.0010,	.4127,	100.0020,	.4121,	100.0030,	.4127,
260:	100.0040,	.4130,	100.0050,	.4130,	100.0060,	.4130,
261:	100.0070,	.4130,	100.0080,	.4130,	100.0090,	.4130,
262:	ACE					
263:	.1000,	.0300,	.1200,	.0432,	.2330,	.1265,
264:	.5660,	.2593,	.7500,	.3037,	.9500,	.3727,
265:	.9800,	.3833,	1.2000,	.4713,	1.4500,	.6940,
266:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
267:	2.5000,	2.1700,	2.8000,	2.1700,	3.3000,	2.3100,
268:	4.8000,	2.3100,	5.0000,	1.8682,	5.3000,	1.6010,
269:	6.0000,	1.6850,	8.8000,	1.6850,	12.5000,	.9130,
270:	14.0000,	.8600,	14.8000,	.7800,	18.0000,	.7800,
271:	20.5000,	.6100,	23.3300,	.6100,	30.0000,	.3646,
272:	31.2500,	.3322,	32.0000,	.3230,	100.0000,	.3230,
273:	100.0010,	.3230,	100.0020,	.3230,	100.0030,	.3230,
274:	EOA					
275:	ACE					
276:	ACE					
277:	ACE					
278:	ACE					
279:	ACE					
280:	.1000,	.0080,	1.7000,	.0080,	2.6087,	.0151,
281:	2.7000,	.0251,	3.2000,	.0750,	3.8000,	.0800,
282:	4.4000,	.2750,	5.6000,	.2750,	6.2000,	.2340,
283:	6.5000,	.2340,	7.0000,	.4060,	9.2000,	.4060,
284:	10.7000,	.2500,	11.5000,	.2082,	12.1739,	.2340,
285:	12.5000,	.2500,	15.5000,	.5780,	19.9800,	.5940,
286:	23.0000,	.6408,	24.3478,	.6671,	26.0000,	.7500,

LDNAME=SEISO2,
TITLE=ENVELOPE OF SSERBC719

TYP=3,POI=33,
DIR=X

LDNAME=SEISO3,
TITLE=ENVELOPE OF SRVRBC719

TYP=3,COEF=CS4,POI=54,
DIR=X

287:	32.0000.	1.5940.	42.5000.	1.5940.	48.0000.	1.0000.
288:	54.5000.	.8750.	57.0000.	.8750.	64.0000.	.6720.
289:	70.0000.	.6720.	74.9000.	.4060.	80.5000.	.3408.
290:	86.0000.	.3280.	92.0010.	.3280.	100.0010.	.2730.
291:	100.0540.	.2730.	100.0550.	.2730.	100.0560.	.2730.
292:	100.0570.	.2730.	100.0580.	.2730.	100.0590.	.2730.
293:	100.0600.	.2730.	100.0610.	.2730.	100.0620.	.2730.
294:	100.0630.	.2730.	100.0640.	.2730.	100.0650.	.2730.
295:	100.0660.	.2730.	100.0670.	.2730.	100.0680.	.2730.
296:	100.0690.	.2730.	100.0700.	.2730.	100.0710.	.2730.
297:	100.0720.	.2730.	100.0730.	.2730.	100.0740.	.2730.
298: ACE				DIR=Y		
299:	.1000.	.0160.	1.7000.	.0160.	2.3000.	.0200.
300:	3.0000.	.0310.	3.2500.	.0310.	3.5000.	.0350.
301:	4.0500.	.1060.	4.4000.	.1060.	4.7826.	.1380.
302:	5.4050.	.1380.	5.6522.	.1510.	5.7565.	.1700.
303:	6.0870.	.1740.	6.5217.	.1740.	6.9000.	.2741.
304:	6.9565.	.2890.	7.3044.	.4750.	7.3913.	.5050.
305:	9.7750.	.5050.	10.3500.	.4700.	10.4075.	.4510.
306:	10.4348.	.4431.	11.3043.	.6330.	11.5000.	.6707.
307:	11.7381.	.7200.	11.7500.	.7212.	12.1739.	.9010.
308:	12.8696.	1.5700.	13.0435.	1.6900.	17.2500.	1.6900.
309:	17.9130.	1.4207.	17.9400.	1.4100.	18.4000.	1.1500.
310:	19.3913.	.7856.	20.0000.	.6817.	20.7000.	.6230.
311:	22.7700.	.6230.	23.0000.	.6130.	23.6900.	.5660.
312:	24.1500.	.5050.	25.1850.	.4078.	25.2500.	.4060.
313:	28.5000.	.3590.	34.0000.	.3440.	42.0000.	.2340.
314:	45.9000.	.2270.	57.0000.	.2190.	68.0000.	.2190.
315:	72.6800.	.1789.	74.5000.	.1664.	80.0000.	.1640.
316:	85.0000.	.1640.	100.0070.	.1410.	100.0480.	.1410.
317: ACE				DIR=Z		
318:	.1000.	.0160.	1.7000.	.0160.	3.2200.	.0184.
319:	3.4500.	.0187.	3.4783.	.0190.	3.7950.	.0190.
320:	4.0000.	.0192.	5.0000.	.0284.	7.0000.	.0470.
321:	10.0000.	.0780.	13.0435.	.1597.	16.0000.	.2500.
322:	19.0000.	.4530.	20.7000.	.4702.	21.7391.	.5240.
323:	26.0000.	.7500.	32.0000.	1.5940.	42.5000.	1.5940.
324:	48.0000.	1.0000.	54.5000.	.8750.	57.0000.	.8750.
325:	64.0000.	.6720.	70.0000.	.6720.	74.9000.	.4060.
326:	86.0000.	.2810.	100.0040.	.2500.	100.0540.	.2500.
327:	100.0550.	.2500.	100.0560.	.2500.	100.0570.	.2500.
328:	100.0580.	.2500.	100.0590.	.2500.	100.0600.	.2500.
329:	100.0610.	.2500.	100.0620.	.2500.	100.0630.	.2500.
330:	100.0640.	.2500.	100.0650.	.2500.	100.0660.	.2500.
331:	100.0670.	.2500.	100.0680.	.2500.	100.0690.	.2500.
332:	100.0700.	.2500.	100.0710.	.2500.	100.0720.	.2500.
333:	100.0730.	.2500.	100.0740.	.2500.	100.0750.	.2500.
334:	100.0760.	.2500.	100.0770.	.2500.	100.0780.	.2500.
335:	100.0790.	.2500.	100.0800.	.2500.	100.0810.	.2500.
336: EOA						
337: ACE				LDNAME=SEISO4.		
338: ACE				TITLE=ENVELOPE OF CHGCORBC719		
339: ACE						
340: ACE				TYP=3,COEF=CS4,POI=84.		
341: ACE				DIR=X		
342:	1.7391.	.0048.	1.9130.	.0059.	2.0870.	.0070.
343:	2.2609.	.0083.	2.3000.	.0086.	2.4348.	.0098.
344:	2.6087.	.0124.	2.8696.	.0131.	2.9900.	.0167.
345:	3.0000.	.0170.	3.1304.	.0222.	3.4783.	.0222.
346:	3.7950.	.0293.	3.8261.	.0301.	4.0870.	.0513.

347:	4.3478.	.0892.	5.6522.	.0892.	5.7500.	.0923.
348:	6.0870.	.1388.	6.5217.	.1388.	6.9000.	.1915.
349:	6.9565.	.2019.	7.3913.	.2181.	9.7750.	.2181.
350:	10.3500.	.2123.	10.4348.	.2123.	11.3043.	.2227.
351:	12.1739.	.2549.	13.0435.	.3056.	13.2250.	.3173.
352:	13.8000.	.3651.	13.9130.	.3763.	15.6522.	.6131.
353:	17.3913.	.9609.	18.6957.	1.4179.	19.1304.	1.6008.
354:	19.2174.	1.6480.	20.4348.	2.3677.	21.7391.	3.1225.
355:	24.3478.	5.6300.	26.0870.	6.9096.	34.5000.	6.9096.
356:	34.7826.	6.8850.	36.9565.	6.7020.	37.9500.	6.6219.
357:	40.2500.	5.7278.	43.1250.	4.0577.	43.1304.	4.0564.
358:	43.4783.	3.9746.	44.9650.	3.8705.	46.0000.	3.8483.
359:	48.8750.	3.3983.	51.7500.	3.7972.	52.1739.	3.8730.
360:	56.5217.	4.2237.	60.3750.	4.8168.	60.8696.	4.8902.
361:	63.2500.	4.8901.	80.5000.	4.8901.	86.2500.	4.6939.
362:	92.0000.	4.6939.	100.0000.	4.3486.	100.0010.	4.3288.
363:	100.0020.	4.3586.	100.0030.	4.3562.	100.0040.	4.3288.
364:	100.0050.	4.3562.	100.0060.	4.3586.	100.0070.	4.3288.
365:	100.0080.	4.3562.	100.0090.	4.3586.	100.0100.	4.3288.
366:	100.0110.	4.3562.	100.0120.	4.3562.	100.0130.	4.3586.
367:	100.0140.	4.3288.	100.0150.	4.3562.	100.0160.	4.3586.
368:	100.0170.	4.3486.	100.0210.	4.3486.	100.0220.	4.3486.
369:	100.0230.	4.3486.	100.0240.	4.3486.	100.0250.	4.3486.

ACE

DIR=Y

370:	1.7391.	.0071.	2.0870.	.0093.	2.3000.	.0103.
371:	2.4000.	.0107.	2.5300.	.0111.	2.7600.	.0132.
372:	2.9900.	.0159.	3.1510.	.0174.	3.4783.	.0194.
373:	3.7950.	.0277.	3.8261.	.0286.	4.1400.	.0442.
374:	4.6000.	.1353.	4.8522.	.1920.	5.2174.	.1920.
375:	5.6522.	.1970.	5.7565.	.2390.	6.5217.	.2390.
376:	6.9000.	.3445.	7.3044.	.6400.	7.4750.	.6450.
377:	9.6600.	.6450.	10.0000.	.6084.	10.3500.	.5381.
378:	10.4075.	.5591.	11.3043.	.9330.	11.7391.	1.5200.
379:	12.1739.	1.5200.	12.6500.	2.1441.	12.8696.	2.4600.
380:	17.0200.	2.4600.	17.2500.	2.2600.	17.9130.	2.2600.
381:	18.2609.	2.0219.	19.0435.	1.5645.	19.3913.	1.3774.
382:	20.7000.	1.0800.	21.3900.	1.0800.	21.7350.	1.0100.
383:	22.1950.	1.0000.	22.7700.	1.0000.	23.0000.	.9820.
384:	24.1500.	.7551.	25.3000.	.6801.	26.0870.	.6522.
385:	28.4348.	.5826.	33.4650.	.5826.	34.5000.	.6067.
386:	34.7826.	.6138.	36.9565.	.6706.	39.1304.	.6972.
387:	43.4783.	.6972.	45.6522.	.7696.	47.8261.	.8408.
388:	57.5000.	.8409.	60.3750.	.8484.	60.8696.	.8542.
389:	80.5000.	.8542.	86.2500.	.8406.	92.0000.	.7244.
390:	100.0030.	.7006.	100.0180.	.7006.	100.0190.	.7006.
391:	100.0200.	.7006.	100.0210.	.7006.	100.0220.	.7006.
392:	100.0230.	.7006.	100.0240.	.7006.	100.0250.	.7006.
393:	100.0260.	.7006.	100.0270.	.7006.	100.0280.	.7006.
394:	100.0290.	.7006.	100.0300.	.7006.	100.0310.	.7006.
395:	100.0320.	.7006.	100.0330.	.7006.	100.0340.	.7006.
396:	100.0350.	.7006.	100.0360.	.7006.	100.0370.	.7006.
397:	100.0380.	.7006.	100.0390.	.7006.	100.0400.	.7006.

ACE

DIR=Z

398:	1.0000.	.0048.	1.7391.	.0048.	1.9130.	.0059.
399:	2.0870.	.0070.	2.2609.	.0083.	2.3000.	.0086.
400:	2.4348.	.0098.	2.6087.	.0124.	2.8696.	.0131.
401:	3.0000.	.0170.	3.1304.	.0222.	3.4783.	.0222.
402:	3.7950.	.0293.	3.8261.	.0301.	4.0870.	.0513.
403:	4.3478.	.0892.	5.6522.	.0892.	5.7500.	.0923.
404:	6.0870.	.1388.	6.5217.	.1388.	6.9000.	.1915.

407:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
408:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
409:	12.1739,	.2549,	13.0435,	.3056,	13.8000,	.3651,
410:	13.9130,	.3763,	15.6522,	.6131,	17.3913,	.9609,
411:	19.1304,	1.6008,	21.7391,	3.1225,	24.3478,	5.6300,
412:	26.0870,	6.9096,	34.5000,	6.9096,	34.7826,	6.8850,
413:	36.9565,	6.7020,	37.9500,	6.6219,	40.2500,	5.7278,
414:	43.1250,	4.0577,	43.4783,	3.9746,	46.0000,	3.8483,
415:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
416:	52.5550,	3.9049,	56.5217,	4.2237,	60.3750,	4.8168,
417:	60.5217,	4.8386,	60.8696,	4.8902,	61.0650,	4.8901,
418:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
419:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
420:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
421:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
422:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
423:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
424:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
425:	100.0170,	4.3288,	100.0180,	4.3562,	100.0190,	4.3562,
426:	100.0200,	4.3310,	100.0210,	4.3562,	100.0220,	4.3562,
427:	100.0230,	4.3586,	100.0240,	4.3486,	100.0680,	4.3486,

428: EOA

429: END

+	+	+	+	+	+	+	+	+	+	+	+
1	4	7	10	21	32	43	51	61	71	80	
COL	COL		COL	COL	COL	COL	COL	COL	COL	COL	

*** CORE CHANGED FROM 79253 TO 48797 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48797 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 51327 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51327 TO 51585 DECIMAL WORDS ***
 *** CORE CHANGED FROM 51585 TO 55358 DECIMAL WORDS ***

NODE DATA

ME101/I2

DATE 040182

PAGE 43

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SAMO1

NUMBER OF NODE POINTS : 89
DYNAMIC DEGREES OF FREEDOM : 267
PUNCHED CARD OUTPUT :
PLOT REQUESTED : NOPLT FOR PLOTTER : NOPLTR

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
5	ANCH		.000	.000	.000	.00	
10			-.374	.000	.159	.00	SIF = .1300+01
15			-1.506	.000	.639	20.00	SIF = .1300+01
20			-2.312	.000	.981	.00	SIF = .1300+01
25			-2.312	-.365	.981	.00	
30			-2.312	-.729	.981	20.00	SIF = .1300+01
35			-2.312	-1.333	.981	20.00	SIF = .1300+01
40			-2.312	-1.979	.981	2.00	
45 B			-2.312	1.125	.981	.00	
45	TINP		-2.312	1.542	.981	.00	
45 E			-2.312	1.542	1.397	.00	
50			-2.312	1.542	1.585	.00	
55			-2.312	1.542	2.647	.00	SIF = .1300+01
60			-3.374	1.542	3.710	.00	SIF = .1300+01
65			-3.374	1.542	3.960	.00	
70			-3.374	1.542	4.783	50.00	SIF = .1300+01
75			-3.374	1.542	5.793	50.00	SIF = .1300+01
80 B			-3.374	1.542	6.137	.00	
80	TINP		-3.374	1.542	6.554	.00	
80 E			-3.374	1.958	6.554	.00	
85			-3.374	2.208	6.554	.00	
90			-3.374	4.708	6.554	.00	SIF = .1300+01
95			-3.374	4.708	8.137	.00	
100 B			-3.374	4.708	8.637	.00	
100	TINP		-3.374	4.708	9.054	.00	
100 E			-3.374	5.125	9.054	.00	
105			-3.374	5.771	9.054	.00	
110			-3.374	6.198	9.054	.00	SIF = .1300+01
115			-3.885	6.198	9.054	.00	
120 B			-5.707	6.198	9.054	.00	
120	TINP		-6.124	6.198	9.054	.00	
120 E			-6.124	6.198	9.470	.00	
125			-6.124	6.198	11.054	.00	SIF = .1300+01

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
130			-6.124	6.594	11.054	.00	
130A			-6.124	8.177	11.054	.00	
135			-6.124	9.760	11.054	.00	
135A			-6.124	11.344	11.054	.00	
137			-6.124	12.927	11.054	.00	
138			-6.124	12.927	11.970	20.00	SIF = .1300+01
140			-6.124	14.260	11.054	.00	
140A			-6.124	16.260	11.054	.00	
145	ANCH		-6.124	18.260	11.054	.00	
145A			-6.124	21.323	11.054	.00	
150			-6.124	24.385	11.054	.00	
155			-6.124	24.802	11.054	.00	SIF = .1300+01
160			-3.707	24.802	11.054	.00	
165			-.770	24.802	11.054	.00	
170			-.541	24.802	11.054	.00	
175			-.270	24.802	11.054	.00	SIF = .1300+01
180 B			-.270	25.505	11.757	.00	
180	TINP		-.270	25.627	11.879	.00	
180 E			-.270	25.800	11.879	.00	
185			-.270	29.835	11.879	.00	
185A			-.270	31.752	11.879	.00	
190			-.270	33.669	11.879	.00	
190A			-.270	35.762	11.879	.00	
195			-.270	37.856	11.879	.00	
200			-.270	38.690	11.879	.00	SIF = .1300+01
205			-.270	38.690	12.629	.00	
205A			-.270	38.690	14.280	.00	
210			-.270	38.690	15.931	.00	
210A			-.270	38.690	18.249	.00	
215			-.270	38.690	20.566	.00	
215A			-.270	38.690	23.816	.00	
220			-.270	38.690	27.066	.00	
225 B			-.270	38.690	29.129	.00	
225	TINP		-.270	38.690	29.545	.00	
225 E			.147	38.690	29.545	.00	
230			2.730	38.690	29.545	.00	
230A			5.714	38.690	29.545	.00	
235			8.699	38.690	29.545	.00	
235A			11.709	38.690	29.545	.00	
240			14.720	38.690	29.545	.00	
245			17.720	38.690	29.545	.00	SIF = .1300+01
250			17.720	38.690	30.077	.00	
255 B			17.720	38.690	31.212	.00	

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
255	TINP		17.720	38.690	31.629	.00	
255 E			18.136	38.690	31.629	.00	
260			18.470	38.690	31.629	.00	
265 B			22.568	38.690	31.629	.00	
265	TINP		22.740	38.690	31.629	.00	
265 E			22.862	38.690	31.751	.00	
270			23.720	38.690	32.608	.00	SIF = .1300+01
275			23.720	40.294	32.608	.00	
280			23.720	45.190	32.608	.00	SIF = .1300+01
285			23.720	45.190	32.025	.00	SIF = .1300+01
290			23.720	45.419	32.025	.00	
290A			23.720	47.856	32.025	.00	
295			23.720	50.294	32.025	.00	
300			23.720	51.065	32.025	.00	SIF = .1300+01
305			23.720	51.065	31.588	.00	
310 B			23.720	51.065	31.504	.00	
310	TINP		23.720	51.065	31.088	.00	
310 E			23.303	51.065	31.088	.00	
315			22.470	51.065	31.088	.00	SIF = .1300+01
320 B			22.470	51.523	31.088	.00	
320	TINP		22.470	51.940	31.088	.00	
320 E			22.175	51.940	31.382	.00	
500	ANCH		21.645	51.940	31.913	.00	

ELEMENT DATA

ME101/I2

DATE 040182

PAGE 46

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SAM01

ELEMENT FROM TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
5 10	TNGT	SA376-TP304	.41	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
10 15	TNGT	SA376-TP304	1.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
15 20	TNGT	SA376-TP304	.88	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20 25	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
25 30	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
30 35	TNGT	SA376-TP304	.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
35 40	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20 45 B	TNGT	SA376-TP304	1.12	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
45 B 45 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
45 E 50	TNGT	SA376-TP304	.19	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
50 55	TNGT	SA376-TP304	1.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
55 60	TNGT	SA376-TP304	1.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
60 65	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
65 70	TNGT	SA376-TP304	.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
70 75	TNGT	SA376-TP304	1.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
75 80 B	TNGT	SA376-TP304	.34	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
80 B 80 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
80 E 85	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
85 90	TNGT	SA376-TP304	2.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
90 95	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
95 100 B	TNGT	SA376-TP304	.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
100 B 100 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
100 E 105	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
105 110	TNGT	SA376-TP304	.43	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
110 115	TNGT	SA376-TP304	.51	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
115 120 B	TNGT	SA376-TP304	1.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
120 B 120 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
120 E 125	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
125 130	TNGT	SA376-TP304	.40	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130 130A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130A 135	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135 135A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135A 137	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137 138	TNGT	SA376-TP304	.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137 140	TNGT	SA376-TP304	1.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140 140A	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140A 145	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145 145A	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145A 150	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

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ELEMENT FROM TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
150 155	TNGT	SA376-TP304	.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
155 160	TNGT	SA376-TP304	2.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
160 165	TNGT	SA376-TP304	2.94	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
165 170	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
170 175	TNGT	SA376-TP304	.27	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
175 180 B	TNGT	SA376-TP304	.99	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
180 B 180 E	BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
180 E 185	TNGT	SA376-TP304	4.04	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185 185A	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185A 190	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190 190A	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190A 195	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
195 200	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
200 205	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205 205A	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205A 210	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210 210A	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210A 215	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215 215A	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215A 220	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
220 225 B	TNGT	SA376-TP304	2.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
225 B 225 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
225 E 230	TNGT	SA376-TP304	2.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230 230A	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230A 235	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235 235A	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235A 240	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
240 245	TNGT	SA376-TP304	3.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
245 250	TNGT	SA376-TP304	.53	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
250 255 B	TNGT	SA376-TP304	1.14	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
255 B 255 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
255 E 260	TNGT	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
260 265 B	TNGT	SA376-TP304	4.10	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
265 B 265 E	BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
265 E 270	TNGT	SA376-TP304	1.21	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
270 275	TNGT	SA376-TP304	1.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
275 280	TNGT	SA376-TP304	4.90	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
280 285	TNGT	SA376-TP304	.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
285 290	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290 290A	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290A 295	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
295 300	TNGT	SA376-TP304	.77	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
300 305	TNGT	SA376-TP304	.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
305 310 B	TNGT	SA376-TP304	.08	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
310 B 310 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
310 E 315	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
315 320 B	TNGT	SA376-TP304	.46	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
320 B 320 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
320 E 500	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

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TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SAMO1

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT	TRANSLATIONAL FLEXIBILITY (IN/LB)	TORSIONAL FLEXIBILITY (RAD/LB-IN)
				X Y Z		
5	ANCH		-A-	1.0000 .0000 .0000	.000000000000	.000000000000
5	ANCH		-B-	.0000 1.0000 .0000	.000000000000	.000000000000
5	ANCH		-C-	.0000 .0000 1.0000	.000000000000	.000000000000
25	RAD			.3908 .0000 .9205	.000000000000	
50	RAD			.0000 1.0000 .0000	.000000000000	
65	RAD			1.0000 .0000 .0000	.000000000000	
65	RAD			.0000 1.0000 .0000	.000000000000	
85	RAD			1.0000 .0000 .0000	.000000000000	
85	RAD			.0000 .0000 1.0000	.000000000000	
95	RAD			.0000 1.0000 .0000	.000000000000	
105	RAD			1.0000 .0000 .0000	.000000000000	
115	RAD			.0000 1.0000 .0000	.000000000000	
115	RAD			.0000 .0000 1.0000	.000000000000	
130	RAD			1.0000 .0000 .0000	.000000000000	
130	RAD			.0000 .0000 1.0000	.000000000000	
135	RAD			1.0000 .0000 .0000	.000000000000	
135	RAD			.0000 .0000 1.0000	.000000000000	
140	RAD			1.0000 .0000 .0000	.000000000000	
140	RAD			.0000 .0000 1.0000	.000000000000	
145	ANCH		-A-	1.0000 .0000 .0000	.000000000000	.000000000000
145	ANCH		-B-	.0000 1.0000 .0000	.000000000000	.000000000000
145	ANCH		-C-	.0000 .0000 1.0000	.000000000000	.000000000000
150	RAD			1.0000 .0000 .0000	.000000000000	
150	RAD			.0000 .0000 1.0000	.000000000000	
160	RAD			.0000 .0000 1.0000	.000000000000	
170	RAD			.0000 .0000 1.0000	.000000000000	
185	RAD			1.0000 .0000 .0000	.000000000000	
185	RAD			.0000 .0000 1.0000	.000000000000	
190	RAD			1.0000 .0000 .0000	.000000000000	
190	RAD			.0000 .0000 1.0000	.000000000000	
195	RAD			1.0000 .0000 .0000	.000000000000	

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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SAM01

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES	SEISMIC	ANCHOR MOVEMENTS (IN)	DIRECTION OF SAM : X
				COSAX COSAY COSAZ	PHASE: CNT	RB	
5	ANC	-A-	1.000	.000	.000	.007	.000
5	ANC	-B-	.000	1.000	.000	.000	.000
5	ANC	-C-	.000	.000	1.000	.000	.000
25	RAD		.391	.000	.920	.003	.000
50	RAD		.000	1.000	.000	.000	.000
65	RAD		1.000	.000	.000	.000	.032
65	RAD		.000	1.000	.000	.000	.000
85	RAD		1.000	.000	.000	.000	.032
85	RAD		.000	.000	1.000	.000	.000
95	RAD		.000	1.000	.000	.000	.000
105	RAD		1.000	.000	.000	.000	.032
115	RAD		.000	1.000	.000	.000	.000
115	RAD		.000	.000	1.000	.000	.000
130	RAD		1.000	.000	.000	.000	.032
130	RAD		.000	.000	1.000	.000	.000
135	RAD		1.000	.000	.000	.000	.084
135	RAD		.000	.000	1.000	.000	.000
140	RAD		1.000	.000	.000	.000	.084
140	RAD		.000	.000	1.000	.000	.000
145	ANC	-A-	1.000	.000	.000	.000	.084
145	ANC	-B-	.000	1.000	.000	.000	.000
145	ANC	-C-	.000	.000	1.000	.000	.000
150	RAD		1.000	.000	.000	.000	.084
150	RAD		.000	.000	1.000	.000	.000
160	RAD		.000	.000	1.000	.000	.000
170	RAD		.000	.000	1.000	.000	.000
185	RAD		1.000	.000	.000	.000	.084
185	RAD		.000	.000	1.000	.000	.000
190	RAD		1.000	.000	.000	.000	.084
190	RAD		.000	.000	1.000	.000	.000

DESCRIPTION OF LOAD

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195	RAD	1.000	.000	.000
195	RAD	.000	.000	1.000
205	RAD	1.000	.000	.000

.000	.084
.000	.000
.000	.084



POINT	TYPE	TITLE	AXIS DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : X
			COSAX	COSAY	COSAZ		RB		
205	RAD		.000	1.000	.000		.000	.000	
210	RAD		1.000	.000	.000		.000	.084	
210	RAD		.000	1.000	.000		.000	.000	
215	RAD		1.000	.000	.000		.000	.084	
215	RAD		.000	1.000	.000		.000	.000	
220	RAD		1.000	.000	.000		.000	.084	
220	RAD		.000	1.000	.000		.000	.000	
230	RAD		.000	1.000	.000		.000	.000	
230	RAD		.000	.000	1.000		.000	.000	
235	RAD		.000	1.000	.000		.000	.000	
235	RAD		.000	.000	1.000		.000	.000	
240	RAD		.000	1.000	.000		.000	.000	
240	RAD		.000	.000	1.000		.000	.000	
250	RAD		1.000	.000	.000		.000	.084	
250	RAD		.000	1.000	.000		.000	.000	
260	RAD		.000	1.000	.000		.000	.000	
260	RAD		.000	.000	1.000		.000	.000	
275	RAD		1.000	.000	.000		.000	.084	
275	RAD		.000	.000	1.000		.000	.000	
290	RAD		1.000	.000	.000		.000	.138	
290	RAD		.000	.000	1.000		.000	.000	
295	RAD		1.000	.000	.000		.000	.138	
295	RAD		.000	.000	1.000		.000	.000	
305	RAD		.000	1.000	.000		.000	.000	
500	ANC	-A-	1.000	.000	.000		.000	.138	
500	ANC	-B-	.000	1.000	.000		.000	.000	
500	ANC	-C-	.000	.000	1.000		.000	.000	

POINT	TYPE	TITLE	AXIS DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : Y
			COSAX	COSAY	COSAZ		RB		
5	ANC	-A-	1.000	.000	.000		.000	.000	
5	ANC	-B-	.000	1.000	.000		.000	.000	
5	ANC	-C-	.000	.000	1.000		.000	.000	
25	RAD		.391	.000	.920		.000	.000	
50	RAD		.000	1.000	.000		.000	.000	
65	RAD		1.000	.000	.000		.000	.000	
65	RAD		.000	1.000	.000		.000	.002	
85	RAD		1.000	.000	.000		.000	.000	
85	RAD		.000	.000	1.000		.000	.000	
95	RAD		.000	1.000	.000		.000	.002	
105	RAD		1.000	.000	.000		.000	.000	
115	RAD		.000	1.000	.000		.000	.002	
115	RAD		.000	.000	1.000		.000	.000	
130	RAD		1.000	.000	.000		.000	.000	
130	RAD		.000	.000	1.000		.000	.000	
135	RAD		1.000	.000	.000		.000	.000	
135	RAD		.000	.000	1.000		.000	.000	
140	RAD		1.000	.000	.000		.000	.000	
140	RAD		.000	.000	1.000		.000	.000	
145	ANC	-A-	1.000	.000	.000		.000	.000	
145	ANC	-B-	.000	1.000	.000		.000	.004	
145	ANC	-C-	.000	.000	1.000		.000	.000	
150	RAD		1.000	.000	.000		.000	.000	
150	RAD		.000	.000	1.000		.000	.000	
160	RAD		.000	.000	1.000		.000	.000	
170	RAD		.000	.000	1.000		.000	.000	
185	RAD		1.000	.000	.000		.000	.000	
185	RAD		.000	.000	1.000		.000	.000	
190	RAD		1.000	.000	.000		.000	.000	
190	RAD		.000	.000	1.000		.000	.000	
195	RAD		1.000	.000	.000		.000	.000	
195	RAD		.000	.000	1.000		.000	.000	
205	RAD		1.000	.000	.000		.000	.000	

POINT	TYPE	TITLE	AXIS DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : Y
			COSAX	COSAY	COSAZ		RB		
205	RAD		.000	1.000	.000		.000	.004	
210	RAD		1.000	.000	.000		.000	.000	
210	RAD		.000	1.000	.000		.000	.004	
215	RAD		1.000	.000	.000		.000	.000	
215	RAD		.000	1.000	.000		.000	.004	
220	RAD		1.000	.000	.000		.000	.000	
220	RAD		.000	1.000	.000		.000	.004	
230	RAD		.000	1.000	.000		.000	.015	
230	RAD		.000	.000	1.000		.000	.000	
235	RAD		.000	1.000	.000		.000	.015	
235	RAD		.000	.000	1.000		.000	.000	
240	RAD		.000	1.000	.000		.000	.015	
240	RAD		.000	.000	1.000		.000	.000	
250	RAD		1.000	.000	.000		.000	.000	
250	RAD		.000	1.000	.000		.000	.015	
260	RAD		.000	1.000	.000		.000	.015	
260	RAD		.000	.000	1.000		.000	.000	
275	RAD		1.000	.000	.000		.000	.000	
275	RAD		.000	.000	1.000		.000	.000	
290	RAD		1.000	.000	.000		.000	.000	
290	RAD		.000	.000	1.000		.000	.000	
295	RAD		1.000	.000	.000		.000	.000	
295	RAD		.000	.000	1.000		.000	.000	
305	RAD		.000	1.000	.000		.000	.020	
500	ANC	-A-	1.000	.000	.000		.000	.000	
500	ANC	-B-	.000	1.000	.000		.000	.020	
500	ANC	-C-	.000	.000	1.000		.000	.000	



POINT	TYPE	TITLE	AXIS	DIRECTION COSINES	SEISMIC	ANCHOR	MOVEMENTS (IN)	DIRECTION OF SAM : Z
				COSAX COSAY COSAZ	PHASE: CNT		RB	
5	ANC		-A-	1.000 .000 .000		.000	.000	
5	ANC		-B-	.000 1.000 .000		.000	.000	
5	ANC		-C-	.000 .000 1.000		.007	.000	
25	RAD			.391 .000 .920		.006	.000	
50	RAD			.000 1.000 .000		.000	.000	
65	RAD			1.000 .000 .000		.000	.000	
65	RAD			.000 1.000 .000		.000	.000	
85	RAD			1.000 .000 .000		.000	.000	
85	RAD			.000 .000 1.000		.000	.056	
95	RAD			.000 1.000 .000		.000	.000	
105	RAD			1.000 .000 .000		.000	.000	
115	RAD			.000 1.000 .000		.000	.000	
115	RAD			.000 .000 1.000		.000	.056	
130	RAD			1.000 .000 .000		.000	.000	
130	RAD			.000 .000 1.000		.000	.056	
135	RAD			1.000 .000 .000		.000	.000	
135	RAD			.000 .000 1.000		.000	.064	
140	RAD			1.000 .000 .000		.000	.000	
140	RAD			.000 .000 1.000		.000	.064	
145	ANC		-A-	1.000 .000 .000		.000	.000	
145	ANC		-B-	.000 1.000 .000		.000	.000	
145	ANC		-C-	.000 .000 1.000		.000	.064	
150	RAD			1.000 .000 .000		.000	.000	
150	RAD			.000 .000 1.000		.000	.064	
160	RAD			.000 .000 1.000		.000	.064	
170	RAD			.000 .000 1.000		.000	.064	
185	RAD			1.000 .000 .000		.000	.000	
185	RAD			.000 .000 1.000		.000	.064	
190	RAD			1.000 .000 .000		.000	.000	
190	RAD			.000 .000 1.000		.000	.064	
195	RAD			1.000 .000 .000		.000	.000	
195	RAD			.000 .000 1.000		.000	.064	
205	RAD			1.000 .000 .000		.000	.000	

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : Z
				COSAX	COSAY	COSAZ		RB		
205	RAD			.000	1.000	.000		.000	.000	
210	RAD			1.000	.000	.000		.000	.000	
210	RAD			.000	1.000	.000		.000	.000	
215	RAD			1.000	.000	.000		.000	.000	
215	RAD			.000	1.000	.000		.000	.000	
220	RAD			1.000	.000	.000		.000	.000	
220	RAD			.000	1.000	.000		.000	.000	
230	RAD			.000	1.000	.000		.000	.000	
230	RAD			.000	.000	1.000		.000	.064	
235	RAD			.000	1.000	.000		.000	.000	
235	RAD			.000	.000	1.000		.000	.064	
240	RAD			.000	1.000	.000		.000	.000	
240	RAD			.000	.000	1.000		.000	.064	
250	RAD			1.000	.000	.000		.000	.000	
250	RAD			.000	1.000	.000		.000	.000	
260	RAD			.000	1.000	.000		.000	.000	
260	RAD			.000	.000	1.000		.000	.064	
275	RAD			1.000	.000	.000		.000	.000	
275	RAD			.000	.000	1.000		.000	.064	
290	RAD			1.000	.000	.000		.000	.000	
290	RAD			.000	.000	1.000		.000	.071	
295	RAD			1.000	.000	.000		.000	.000	
295	RAD			.000	.000	1.000		.000	.071	
305	RAD			.000	1.000	.000		.000	.000	
500	ANC		-A-	1.000	.000	.000		.000	.000	
500	ANC		-B-	.000	1.000	.000		.000	.000	
500	ANC		-C-	.000	.000	1.000		.000	.071	

DIAGNOSTIC MESSAGE ANALYSIS

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TITLE : SP-HCB-108-LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : *ALL*

LEVEL	TAG TO	DIAGNOSTIC MESSAGE
-------	--------	--------------------

LOAD CASE(S) : SAMO1

+WRN+
 +WRN+

145

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
 BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .056 SEC.

DIAGNOSTIC MESSAGE ANALYSIS

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#TIME FOR ME101I#	INPT00	INPT10	TBLDMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.846	15.649	.000	.173	.062	.004	.105	.031	.374	3.141	.025	26.411

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***
 CHECKPOINT

QXQT,KM *ME101.ME101I . SAM02

ME101I ME101I/FEB05
 *** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***
 *** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES :

	COL 1	COL 4	COL 7	COL 10	COL 21	COL 32	COL 43	COL 51	COL 61	COL 71	COL 80
	+	+	+	+	+	+	+	+	+	+	+
1:	HED										
2:											
3:											
4:											
5:											
6:	ANC	5		-.0451	.021	.0192					
7:											
8:											
9:											
10:											
11:											
12:											
13:											
14:		10		-0-4.49		0-1.91					
15:		15		-1-1.58		0-5.76					
16:		20		-0-9.67		0-4.1					
17:		25			-0-4.375						
18:	RAD	25		.391		.921					
19:											
20:		30			-0-4.375						
21:		35			-0-7.25						
22:		40			-0-7.75						
23:		20 45			1-6.5		5D				
24:		50				0-7.25					
25:	RAD	50			1						
26:											
27:		55				1-.75					
28:		60		-1-.75		1-.75					
29:		65				0-3					
30:	RAD	65	1								
31:											
32:	RAD	65			1						
33:											
34:		70				0-9-7/8					
35:		75				1-.125					
36:		80				0-9.125	5D				
37:		85			0-8						
38:	RAD	85	1								
39:											
40:	RAD	85				1					
41:											
42:		90			2.5						
43:		95				1-7					
44:	RAD	95			1						
45:											
46:		100				0-11	5D				

TIT=SP-HCB-108 LINE,
 PROJNO=8856,PROBNO=5280,
 EIGEN=3,
 MODES=35,PER=0.01,
 UNITS=2,USER=J.ABISAMRA,
 PHASE=CNT,
 DX=.008,DY=.0006,DZ=.008,
 OD=1.315,THI=.133,
 TEMP=200,LBS/FT=2.75,
 CODE=SC374,CLASS=2,
 PPRESS=30,DPRESS=30,
 MAT=SA376-TP304,E=28.3E6,
 SC=18800,SH=17800,
 SIF=1.3,
 SIF=1.3,ADDWT=20,
 SIF=1.3,

PHASE=CNT,
 DX=.008,DZ=.008,
 SIF=1.3,ADDWT=20,
 SIF=1.3,ADDWT=20,
 ADDWT=2,

PHASE=CNT,DISP=.021,
 DY=.0006,
 SIF=1.3,
 SIF=1.3,

PHASE=RB,
 DX=.039,
 PHASE=RB,
 DY=.0024,
 SIF=1.3,ADDWT=50,
 SIF=1.3,ADDWT=50,

PHASE=RB,
 DX=.039,
 PHASE=RB,
 DZ=.068,
 SIF=1.3,

PHASE=RB,
 DY=.0024,

47:	105	1-.75			
48:	RAD 1051.0				PHASE=RB,
49:					DX=.039,
50:	110	0-5.125			SIF=1.3,
51:	115-0-6.125				
52:	RAD 115	1			PHASE=RB,
53:					DY=.0024,
54:	RAD 115		1		PHASE=RB,
55:					DZ=.068,
56:	120-2-2-7/8			5D	
57:	125		2.0		SIF=1.3,
58:	130	0-4.75			
59:	RAD 1301.0				PHASE=RB,
60:					DX=.039,
61:	RAD 130		1		PHASE=RB,
62:					DZ=.068,
63:	135	3-2			SEG=2,
64:	RAD 1351.0				PHASE=RB,
65:					DX=.102,
66:	RAD 135		1		PHASE=RB,
67:					DZ=.077,
68:	137	3-2			SEG=2,
69:	138		0-11		SIF=1.3,ADDWT=20,
70:	137140	1-4			
71:	RAD 1401.0				PHASE=RB,
72:					DX=.102,
73:	RAD 140		1.0		PHASE=RB,
74:					DZ=.077,
75:	145	4.0			SEG=2,
76:	ANC 145				PHASE=RB,
77:					DX=.102,DY=.005,DZ=.077,
78:	145150	6-1.5			SEG=2,
79:	RAD 1501.0				PHASE=RB,
80:					DX=.102,
81:	RAD 150		1.0		PHASE=RB,
82:					DZ=.077,
83:	155	0-5			SIF=1.3,
84:	1602-5				
85:	RAD 160		1.0		PHASE=RB,
86:					DZ=.077,
87:	1652-11.25				
88:	SPD 165	1			
89:	1700-2.75				
90:	RAD 170		1.0		PHASE=RB,
91:					DZ=.077,
92:	1750-3.25				SIF=1.3,
93:	180	0-9.9	0-9.9	5D	
94:	185	4-2.5			
95:	RAD 1851.0				PHASE=RB,
96:					DX=.102,
97:	RAD 185		1.0		PHASE=RB,
98:					DZ=.077,
99:	190	3-10			SEG=2,
100:	RAD 1901.0				PHASE=RB,
101:					DX=.102,
102:	RAD 190		1.0		PHASE=RB,
103:					DZ=.077,
104:	195	4-2.25			SEG=2,
105:	RAD 1951.0				PHASE=RB,
106:					DX=.102,



INPUT DATA SCAN

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107: RAD	195		1.0	PHASE=RB, DZ=.077, SIF=1.3,
108:				
109:	200	0-10		
110:	205		0-9	
111: RAD	2051.0			PHASE=RB, DX=.102, PHASE=RB, DY=.005, SEG=2, PHASE=RB, DX=.102, PHASE=RB, DY=.005, SEG=2, PHASE=RB, DX=.102, PHASE=RB, DY=.005, SEG=2, PHASE=RB, DX=.102, PHASE=RB, DY=.005,
112:				
113: RAD	205	1.0		
114:				
115:	210		3-3-5/8	
116: RAD	2101.0			
117:				
118: RAD	210	1.0		
119:				
120:	215		4-7-5/8	
121: RAD	2151.0			
122:				
123: RAD	215	1.0		
124:				
125:	220		6-6	
126: RAD	2201.0			
127:				
128: RAD	220	1.0		
129:				
130:	225		2-5.75	5D
131:	2303.0			
132: RAD	230	1.0		
133:				
134: RAD	230		1.0	
135:				
136:	2355-11-5/8			
137: RAD	235	1.0		
138:				
139: RAD	235		1.0	
140:				
141:	2406-.25			
142: RAD	240	1.0		
143:				
144: RAD	240		1.0	
145:				
146:	2453.0			
147:	250		0-6-3/8	
148: RAD	2501.0			
149:				
150: RAD	250	1.0		
151:				
152:	255		1-6-5/8	5D
153:	2600-9			
154: RAD	260	1.0		
155:				
156: RAD	260		1.0	
157:				
158:	2654-3.25			
159:	2700-11.756		0-11.756	5D
160:	275	1-7.25		
161: RAD	2751.0			
162:				
163: RAD	275		1.0	
164:				
165:	280	4-10.75		
166:	285		-0-7	

167:	290	0-2.75				
168:	RAD 2901.0				PHASE=RB,	
169:					DX=.166,	
170:	RAD 290	1.0			PHASE=RB,	
171:					DZ=.086,	
172:	295	4-10.5			SEG=2,	
173:	RAD 2951.0				PHASE=RB,	
174:					DX=.166,	
175:	RAD 295	1.0			PHASE=RB,	
176:					DZ=.086,	
177:	300	0-9.25			SIF=1.3,	
178:	305	-0-5.25				
179:	RAD 305	1.0			PHASE=RB,	
180:					DY=.024,	
181:	310	-0-6	5D			
182:	315-1-3				SIF=1.3,	
183:	320	0-10.5	5D			
184:	500-0-9.9	0-9.9				
185:	ANC 500				PHASE=RB,	
186:					DX=.166,DY=.024,DZ=.086,	
187:	ACE				LDNAME=SEISO1,	
188:	ACE				TITLE=ENVELOPE OF OBERBC719	
189:	ACE					
190:	ACE				TYP=3,POI=37,	
191:	ACE				DIR=X	
192:		.1000,	.0000,	.9200,	.4495,	1.7000,
193:		2.2500,	1.2251,	2.3000,	1.6304,	2.3500,
194:		2.5000,	2.3450,	2.8000,	5.3600,	4.2000,
195:		4.3000,	4.9813,	5.5000,	1.6089,	5.7000,
196:		6.3000,	2.5635,	7.3000,	4.8500,	12.0000,
197:		13.2000,	2.7602,	14.0000,	2.0700,	15.0000,
198:		20.0000,	1.1751,	24.0000,	1.0200,	25.0000,
199:		26.0000,	.7800,	27.2000,	.7800,	28.0000,
200:		28.9000,	.6097,	33.9500,	.4045,	35.0000,
201:		100.0000,	.3730,	100.0010,	.3716,	100.0020,
202:		100.0030,	.3733,	100.0040,	.3716,	100.0050,
203:		100.0060,	.3716,	100.0070,	.3716,	100.0080,
204:		100.0090,	.3716,			.3716,
205:	ACE				DIR=Y	
206:		.1000,	.0150,	.1150,	.0178,	.4000,
207:		3.5000,	.4400,	3.8000,	.7889,	4.3000,
208:		5.1000,	2.9600,	5.8000,	2.9600,	6.8000,
209:		6.9000,	3.3200,	10.5000,	3.3200,	12.0000,
210:		12.5000,	3.9600,	19.8000,	3.9600,	20.8300,
211:		23.0000,	1.1479,	25.0000,	1.0600,	28.0000,
212:		30.0000,	.5568,	31.0000,	.4212,	32.0000,
213:		33.0000,	.3300,	34.0000,	.2900,	100.0000,
214:		100.0010,	.2894,	100.0020,	.2897,	100.0030,
215:		100.0040,	.2911,	100.0050,	.2894,	100.0060,
216:		100.0070,	.2911,	100.0080,	.2894,	100.0090,
217:		100.0100,	.2911,	100.0110,	.2894,	100.0120,
218:		100.0130,	.2914,			.2894,
219:	ACE				DIR=Z	
220:		.1000,	.0000,	.8000,	.3064,	1.2900,
221:		2.1660,	.8645,	2.2500,	1.2045,	2.3000,
222:		2.3500,	2.3450,	2.7000,	2.3450,	3.2000,
223:		4.8000,	3.5600,	5.0000,	2.9819,	5.7000,
224:		5.8500,	1.7057,	6.7500,	1.9300,	10.0000,
225:		11.0000,	1.2140,	11.5000,	1.1028,	12.2000,
226:		18.0000,	1.4000,	19.2000,	.9295,	30.0000,

227:	35.0000,	.2786,	37.0000,	.2500,	100.0000,	.2500,
228:	100.0010,	.2500,	100.0020,	.2500,	100.0030,	.2500,
229:	100.0040,	.2500,	100.0050,	.2500,	100.0060,	.2500,
230:	100.0070,	.2500,	100.0080,	.2500,	100.0090,	.2500,
231:	100.0100,	.2500,	100.0110,	.2500,	100.0120,	.2500,
232:	100.0130,	.2500,				
233:	EOA					
234:	ACE					
235:	ACE					
236:	ACE					
237:	ACE					
238:	ACE					
239:	.1000,	.0300,	.1200,	.0478,	1.2000,	.6512,
240:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
241:	2.5000,	2.1700,	2.9000,	2.7900,	4.3000,	2.7900,
242:	5.0000,	1.5615,	5.3000,	1.6010,	6.0000,	1.9209,
243:	7.2000,	3.4800,	7.4000,	3.6400,	12.0000,	3.6400,
244:	14.0000,	1.8571,	14.5000,	1.6600,	17.2000,	1.1738,
245:	22.0000,	.8600,	25.0000,	.8600,	28.0000,	.5763,
246:	31.2500,	.4730,	43.0000,	.4730,	43.0010,	.4735,
247:	43.0020,	.4727,	43.0030,	.4727,	43.0040,	.4735,
248:	43.0050,	.4727,	43.0060,	.4735,	43.0070,	.4727,
249:	43.0080,	.4734,	43.0090,	.4727,	100.0010,	.4730,
250:	ACE			DIR=Y		
251:	.1000,	.0240,	.1200,	.0452,	.4000,	.2115,
252:	1.2900,	.3902,	2.2000,	.4731,	2.7000,	.7361,
253:	3.3000,	1.0458,	3.5000,	1.1600,	5.1000,	2.1900,
254:	6.7000,	2.1900,	7.2000,	2.2500,	12.0000,	2.2500,
255:	12.5000,	1.8682,	13.0000,	1.9400,	19.2000,	1.9400,
256:	21.0000,	1.7000,	23.0000,	.8232,	24.0000,	.7497,
257:	25.0000,	.7000,	26.6600,	.5700,	28.0000,	.5700,
258:	29.5000,	.4671,	32.5000,	.4130,	100.0000,	.4130,
259:	100.0010,	.4127,	100.0020,	.4121,	100.0030,	.4127,
260:	100.0040,	.4130,	100.0050,	.4130,	100.0060,	.4130,
261:	100.0070,	.4130,	100.0080,	.4130,	100.0090,	.4130,
262:	ACE			DIR=Z		
263:	.1000,	.0300,	.1200,	.0432,	.2330,	.1265,
264:	.5660,	.2593,	.7500,	.3037,	.9500,	.3727,
265:	.9800,	.3833,	1.2000,	.4713,	1.4500,	.6940,
266:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
267:	2.5000,	2.1700,	2.8000,	2.1700,	3.3000,	2.3100,
268:	4.8000,	2.3100,	5.0000,	1.8682,	5.3000,	1.6010,
269:	6.0000,	1.6850,	8.8000,	1.6850,	12.5000,	.9130,
270:	14.0000,	.8600,	14.8000,	.7800,	18.0000,	.7800,
271:	20.5000,	.6100,	23.3300,	.6100,	30.0000,	.3646,
272:	31.2500,	.3322,	32.0000,	.3230,	100.0000,	.3230,
273:	100.0010,	.3230,	100.0020,	.3230,	100.0030,	.3230,
274:	EOA					
275:	ACE					
276:	ACE					
277:	ACE					
278:	ACE					
279:	ACE					
280:	.1000,	.0080,	1.7000,	.0080,	2.6087,	.0151,
281:	2.7000,	.0251,	3.2000,	.0750,	3.8000,	.0800,
282:	4.4000,	.2750,	5.6000,	.2750,	6.2000,	.2340,
283:	6.5000,	.2340,	7.0000,	.4060,	9.2000,	.4060,
284:	10.7000,	.2500,	11.5000,	.2082,	12.1739,	.2340,
285:	12.5000,	.2500,	15.5000,	.5780,	19.9800,	.5940,
286:	23.0000,	.6408,	24.3478,	.6671,	26.0000,	.7500,

LDNAME=SEISO2,
TITLE=ENVELOPE OF SSERBC719

TYP=3,POI=33,
DIR=X

LDNAME=SEISO3,
TITLE=ENVELOPE OF SRVRBC719

TYP=3,COEF=CS4,POI=54,
DIR=X

287:	32.0000,	1.5940,	42.5000,	1.5940,	48.0000,	1.0000,
288:	54.5000,	.8750,	57.0000,	.8750,	64.0000,	.6720,
289:	70.0000,	.6720,	74.9000,	.4060,	80.5000,	.3408,
290:	86.0000,	.3280,	92.0010,	.3280,	100.0010,	.2730,
291:	100.0540,	.2730,	100.0550,	.2730,	100.0560,	.2730,
292:	100.0570,	.2730,	100.0580,	.2730,	100.0590,	.2730,
293:	100.0600,	.2730,	100.0610,	.2730,	100.0620,	.2730,
294:	100.0630,	.2730,	100.0640,	.2730,	100.0650,	.2730,
295:	100.0660,	.2730,	100.0670,	.2730,	100.0680,	.2730,
296:	100.0690,	.2730,	100.0700,	.2730,	100.0710,	.2730,
297:	100.0720,	.2730,	100.0730,	.2730,	100.0740,	.2730,
298: ACE				DIR=Y		
299:	.1000,	.0160,	1.7000,	.0160,	2.3000,	.0200,
300:	3.0000,	.0310,	3.2500,	.0310,	3.5000,	.0350,
301:	4.0500,	.1060,	4.4000,	.1060,	4.7826,	.1380,
302:	5.4050,	.1380,	5.6522,	.1510,	5.7565,	.1700,
303:	6.0870,	.1740,	6.5217,	.1740,	6.9000,	.2741,
304:	6.9565,	.2890,	7.3044,	.4750,	7.3913,	.5050,
305:	9.7750,	.5050,	10.3500,	.4700,	10.4075,	.4510,
306:	10.4348,	.4431,	11.3043,	.6330,	11.5000,	.6707,
307:	11.7381,	.7200,	11.7500,	.7212,	12.1739,	.9010,
308:	12.8696,	1.5700,	13.0435,	1.6900,	17.2500,	1.6900,
309:	17.9130,	1.4207,	17.9400,	1.4100,	18.4000,	1.1500,
310:	19.3913,	.7856,	20.0000,	.6817,	20.7000,	.6230,
311:	22.7700,	.6230,	23.0000,	.6130,	23.6900,	.5660,
312:	24.1500,	.5050,	25.1850,	.4078,	25.2500,	.4060,
313:	28.5000,	.3590,	34.0000,	.3440,	42.0000,	.2340,
314:	45.9000,	.2270,	57.0000,	.2190,	68.0000,	.2190,
315:	72.6800,	.1789,	74.5000,	.1664,	80.0000,	.1640,
316:	85.0000,	.1640,	100.0070,	.1410,	100.0480,	.1410,
317: ACE				DIR=Z		
318:	.1000,	.0160,	1.7000,	.0160,	3.2200,	.0184,
319:	3.4500,	.0187,	3.4783,	.0190,	3.7950,	.0190,
320:	4.0000,	.0192,	5.0000,	.0284,	7.0000,	.0470,
321:	10.0000,	.0780,	13.0435,	.1597,	16.0000,	.2500,
322:	19.0000,	.4530,	20.7000,	.4702,	21.7391,	.5240,
323:	26.0000,	.7500,	32.0000,	1.5940,	42.5000,	1.5940,
324:	48.0000,	1.0000,	54.5000,	.8750,	57.0000,	.8750,
325:	64.0000,	.6720,	70.0000,	.6720,	74.9000,	.4060,
326:	86.0000,	.2810,	100.0040,	.2500,	100.0540,	.2500,
327:	100.0550,	.2500,	100.0560,	.2500,	100.0570,	.2500,
328:	100.0580,	.2500,	100.0590,	.2500,	100.0600,	.2500,
329:	100.0610,	.2500,	100.0620,	.2500,	100.0630,	.2500,
330:	100.0640,	.2500,	100.0650,	.2500,	100.0660,	.2500,
331:	100.0670,	.2500,	100.0680,	.2500,	100.0690,	.2500,
332:	100.0700,	.2500,	100.0710,	.2500,	100.0720,	.2500,
333:	100.0730,	.2500,	100.0740,	.2500,	100.0750,	.2500,
334:	100.0760,	.2500,	100.0770,	.2500,	100.0780,	.2500,
335:	100.0790,	.2500,	100.0800,	.2500,	100.0810,	.2500,
336: EOA						
337: ACE				LDNAME=SEISO4,		
338: ACE				TITLE=ENVELOPE OF CHGCORBC719		
339: ACE						
340: ACE				TYP=3, COEF=CS4, POI=84,		
341: ACE				DIR=X		
342:	1.7391,	.0048,	1.9130,	.0059,	2.0870,	.0070,
343:	2.2609,	.0083,	2.3000,	.0086,	2.4348,	.0098,
344:	2.6087,	.0124,	2.8696,	.0131,	2.9900,	.0167,
345:	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
346:	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,

347:	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
348:	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
349:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
350:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
351:	12.1739,	.2549,	13.0435,	.3056,	13.2250,	.3173,
352:	13.8000,	.3651,	13.9130,	.3763,	15.6522,	.6131,
353:	17.3913,	.9609,	18.6957,	1.4179,	19.1304,	1.6008,
354:	19.2174,	1.6480,	20.4348,	2.3677,	21.7391,	3.1225,
355:	24.3478,	5.6300,	26.0870,	6.9096,	34.5000,	6.9096,
356:	34.7826,	6.8850,	36.9565,	6.7020,	37.9500,	6.6219,
357:	40.2500,	5.7278,	43.1250,	4.0577,	43.1304,	4.0564,
358:	43.4783,	3.9746,	44.9650,	3.8705,	46.0000,	3.8483,
359:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
360:	56.5217,	4.2237,	60.3750,	4.8168,	60.8696,	4.8902,
361:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
362:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
363:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
364:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
365:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
366:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
367:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
368:	100.0170,	4.3486,	100.0210,	4.3486,	100.0220,	4.3486,
369:	100.0230,	4.3486,	100.0240,	4.3486,	100.0250,	4.3486,
370:	ACE			DIR=Y		
371:	1.7391,	.0071,	2.0870,	.0093,	2.3000,	.0103,
372:	2.4000,	.0107,	2.5300,	.0111,	2.7600,	.0132,
373:	2.9900,	.0159,	3.1510,	.0174,	3.4783,	.0194,
374:	3.7950,	.0277,	3.8261,	.0286,	4.1400,	.0442,
375:	4.6000,	.1353,	4.8522,	.1920,	5.2174,	.1920,
376:	5.6522,	.1970,	5.7565,	.2390,	6.5217,	.2390,
377:	6.9000,	.3445,	7.3044,	.6400,	7.4750,	.6450,
378:	9.6600,	.6450,	10.0000,	.6084,	10.3500,	.5381,
379:	10.4075,	.5591,	11.3043,	.9330,	11.7391,	1.5200,
380:	12.1739,	1.5200,	12.6500,	2.1441,	12.8696,	2.4600,
381:	17.0200,	2.4600,	17.2500,	2.2600,	17.9130,	2.2600,
382:	18.2609,	2.0219,	19.0435,	1.5645,	19.3913,	1.3774,
383:	20.7000,	1.0800,	21.3900,	1.0800,	21.7350,	1.0100,
384:	22.1950,	1.0000,	22.7700,	1.0000,	23.0000,	.9820,
385:	24.1500,	.7551,	25.3000,	.6801,	26.0870,	.6522,
386:	28.4348,	.5826,	33.4650,	.5826,	34.5000,	.6067,
387:	34.7826,	.6138,	36.9565,	.6706,	39.1304,	.6972,
388:	43.4783,	.6972,	45.6522,	.7696,	47.8261,	.8408,
389:	57.5000,	.8409,	60.3750,	.8484,	60.8696,	.8542,
390:	80.5000,	.8542,	86.2500,	.8406,	92.0000,	.7244,
391:	100.0030,	.7006,	100.0180,	.7006,	100.0190,	.7006,
392:	100.0200,	.7006,	100.0210,	.7006,	100.0220,	.7006,
393:	100.0230,	.7006,	100.0240,	.7006,	100.0250,	.7006,
394:	100.0260,	.7006,	100.0270,	.7006,	100.0280,	.7006,
395:	100.0290,	.7006,	100.0300,	.7006,	100.0310,	.7006,
396:	100.0320,	.7006,	100.0330,	.7006,	100.0340,	.7006,
397:	100.0350,	.7006,	100.0360,	.7006,	100.0370,	.7006,
398:	100.0380,	.7006,	100.0390,	.7006,	100.0400,	.7006,
399:	ACE			DIR=Z		
400:	.1000,	.0048,	1.7391,	.0048,	1.9130,	.0059,
401:	2.0870,	.0070,	2.2609,	.0083,	2.3000,	.0086,
402:	2.4348,	.0098,	2.6087,	.0124,	2.8696,	.0131,
403:	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
404:	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
405:	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
406:	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,

407:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
408:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
409:	12.1739,	.2549,	13.0435,	.3056,	13.8000,	.3651,
410:	13.9130,	.3763,	15.6522,	.6131,	17.3913,	.9609,
411:	19.1304,	1.6008,	21.7391,	3.1225,	24.3478,	5.6300,
412:	26.0870,	6.9096,	34.5000,	6.9096,	34.7826,	6.8850,
413:	36.9565,	6.7020,	37.9500,	6.6219,	40.2500,	5.7278,
414:	43.1250,	4.0577,	43.4783,	3.9746,	46.0000,	3.8483,
415:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
416:	52.5550,	3.9049,	56.5217,	4.2237,	60.3750,	4.8168,
417:	60.5217,	4.8386,	60.8696,	4.8902,	61.0650,	4.8901,
418:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
419:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
420:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
421:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
422:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
423:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
424:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
425:	100.0170,	4.3288,	100.0180,	4.3562,	100.0190,	4.3562,
426:	100.0200,	4.3310,	100.0210,	4.3562,	100.0220,	4.3562,
427:	100.0230,	4.3586,	100.0240,	4.3486,	100.0680,	4.3486,

428: EOA

429: END

+	+	+	+	+	+	+	+	+	+	+
1	4	7	10	21	32	43	51	61	71	80
COL COL				COL	COL	COL	COL	COL	COL	COL

*** CORE CHANGED FROM 79253 TO 48797 DECIMAL WORDS ***

*** CORE CHANGED FROM 48797 TO 48600 DECIMAL WORDS ***

*** CORE CHANGED FROM 48600 TO 51327 DECIMAL WORDS ***

*** CORE CHANGED FROM 51327 TO 51585 DECIMAL WORDS ***

*** CORE CHANGED FROM 51585 TO 55358 DECIMAL WORDS ***

NODE DATA

ME101/12

DATE 040182

PAGE 67

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SAM02

NUMBER OF NODE POINTS : 89
DYNAMIC DEGREES OF FREEDOM : 267
PUNCHED CARD OUTPUT :
PLOT REQUESTED : NO PLOT FOR PLOTTER : NO PLTR

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
5	ANCH'		.000	.000	.000	.00	
10			-.374	.000	.159	.00	SIF = .1300+01
15			-1.506	.000	.639	20.00	SIF = .1300+01
20			-2.312	.000	.981	.00	SIF = .1300+01
25			-2.312	-.365	.981	.00	
30			-2.312	-.729	.981	20.00	SIF = .1300+01
35			-2.312	-1.333	.981	20.00	SIF = .1300+01
40			-2.312	-1.979	.981	2.00	
45 B			-2.312	1.125	.981	.00	
45	TINP		-2.312	1.542	.981	.00	
45 E			-2.312	1.542	1.397	.00	
50			-2.312	1.542	1.585	.00	
55			-2.312	1.542	2.647	.00	SIF = .1300+01
60			-3.374	1.542	3.710	.00	SIF = .1300+01
65			-3.374	1.542	3.960	.00	
70			-3.374	1.542	4.783	50.00	SIF = .1300+01
75			-3.374	1.542	5.793	50.00	SIF = .1300+01
80 B			-3.374	1.542	6.137	.00	
80	TINP		-3.374	1.542	6.554	.00	
80 E			-3.374	1.958	6.554	.00	
85			-3.374	2.208	6.554	.00	
90			-3.374	4.708	6.554	.00	SIF = .1300+01
95			-3.374	4.708	8.137	.00	
100 B			-3.374	4.708	8.637	.00	
100	TINP		-3.374	4.708	9.054	.00	
100 E			-3.374	5.125	9.054	.00	
105			-3.374	5.771	9.054	.00	
110			-3.374	6.198	9.054	.00	SIF = .1300+01
115			-3.885	6.198	9.054	.00	
120 B			-5.707	6.198	9.054	.00	
120	TINP		-6.124	6.198	9.054	.00	
120 E			-6.124	6.198	9.470	.00	
125			-6.124	6.198	11.054	.00	SIF = .1300+01

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
130			-6.124	6.594	11.054	.00	
130A			-6.124	8.177	11.054	.00	
135			-6.124	9.760	11.054	.00	
135A			-6.124	11.344	11.054	.00	
137			-6.124	12.927	11.054	.00	
138			-6.124	12.927	11.970	20.00	SIF = .1300+01
140			-6.124	14.260	11.054	.00	
140A			-6.124	16.260	11.054	.00	
145	ANCH		-6.124	18.260	11.054	.00	
145A			-6.124	21.323	11.054	.00	
150			-6.124	24.385	11.054	.00	
155			-6.124	24.802	11.054	.00	SIF = .1300+01
160			-3.707	24.802	11.054	.00	
165			-.770	24.802	11.054	.00	
170			-.541	24.802	11.054	.00	
175			-.270	24.802	11.054	.00	SIF = .1300+01
180 B			-.270	25.505	11.757	.00	
180	TINP		-.270	25.627	11.879	.00	
180 E			-.270	25.800	11.879	.00	
185			-.270	29.835	11.879	.00	
185A			-.270	31.752	11.879	.00	
190			-.270	33.669	11.879	.00	
190A			-.270	35.762	11.879	.00	
195			-.270	37.856	11.879	.00	
200			-.270	38.690	11.879	.00	SIF = .1300+01
205			-.270	38.690	12.629	.00	
205A			-.270	38.690	14.280	.00	
210			-.270	38.690	15.931	.00	
210A			-.270	38.690	18.249	.00	
215			-.270	38.690	20.566	.00	
215A			-.270	38.690	23.816	.00	
220			-.270	38.690	27.066	.00	
225 B			-.270	38.690	29.129	.00	
225	TINP		-.270	38.690	29.545	.00	
225 E			.147	38.690	29.545	.00	
230			2.730	38.690	29.545	.00	
230A			5.714	38.690	29.545	.00	
235			8.699	38.690	29.545	.00	
235A			11.709	38.690	29.545	.00	
240			14.720	38.690	29.545	.00	
245			17.720	38.690	29.545	.00	SIF = .1300+01
250			17.720	38.690	30.077	.00	
255 B			17.720	38.690	31.212	.00	

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
255		TINP	17.720	38.690	31.629	.00	
255	E		18.136	38.690	31.629	.00	
260			18.470	38.690	31.629	.00	
265	B		22.568	38.690	31.629	.00	
265		TINP	22.740	38.690	31.629	.00	
265	E		22.862	38.690	31.751	.00	
270			23.720	38.690	32.608	.00	SIF = .1300+01
275			23.720	40.294	32.608	.00	
280			23.720	45.190	32.608	.00	SIF = .1300+01
285			23.720	45.190	32.025	.00	SIF = .1300+01
290			23.720	45.419	32.025	.00	
290A			23.720	47.856	32.025	.00	
295			23.720	50.294	32.025	.00	
300			23.720	51.065	32.025	.00	SIF = .1300+01
305			23.720	51.065	31.588	.00	
310	B		23.720	51.065	31.504	.00	
310		TINP	23.720	51.065	31.088	.00	
310	E		23.303	51.065	31.088	.00	
315			22.470	51.065	31.088	.00	SIF = .1300+01
320	B		22.470	51.523	31.088	.00	
320		TINP	22.470	51.940	31.088	.00	
320	E		22.175	51.940	31.382	.00	
500		ANCH	21.645	51.940	31.913	.00	

ELEMENT DATA

ME101/I2

DATE 040182

PAGE 70

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SAM02

ELEMENT FROM	TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
5	10	TNGT	SA376-TP304	.41	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
10	15	TNGT	SA376-TP304	1.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
15	20	TNGT	SA376-TP304	.88	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20	25	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
25	30	TNGT	SA376-TP304	.36	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
30	35	TNGT	SA376-TP304	.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
35	40	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
20	45	B TNGT	SA376-TP304	1.12	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
45	45	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
45	50	TNGT	SA376-TP304	.19	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
50	55	TNGT	SA376-TP304	1.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
55	60	TNGT	SA376-TP304	1.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
60	65	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
65	70	TNGT	SA376-TP304	.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
70	75	TNGT	SA376-TP304	1.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
75	80	B TNGT	SA376-TP304	.34	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
80	80	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
80	85	TNGT	SA376-TP304	.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
85	90	TNGT	SA376-TP304	2.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
90	95	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
95	100	B TNGT	SA376-TP304	.50	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
100	100	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
100	105	TNGT	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
105	110	TNGT	SA376-TP304	.43	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
110	115	TNGT	SA376-TP304	.51	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
115	120	B TNGT	SA376-TP304	1.82	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
120	120	E BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
120	125	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
125	130	TNGT	SA376-TP304	.40	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130	130A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
130A	135	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135	135A	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
135A	137	TNGT	SA376-TP304	1.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137	138	TNGT	SA376-TP304	.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
137	140	TNGT	SA376-TP304	1.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140	140A	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
140A	145	TNGT	SA376-TP304	2.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145	145A	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
145A	150	TNGT	SA376-TP304	3.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

ELEMENT FROM	ELEMENT TO	TYPE/TITLE	MATERIAL	ELEMENT LENGTH (FT)	PIPE DIAM (IN)	WALL THICK (IN)	E (PSI)	MU	WEIGHT DENS (LB/IN3)	UNIF WEIGHT (LB/FT)	PRESS (PSI)	CODE AND CLASS	BEND RAD (FT)	ANGLE (DEG)
150	155	TNGT	SA376-TP304	.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
155	160	TNGT	SA376-TP304	2.42	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
160	165	TNGT	SA376-TP304	2.94	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
165	170	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
170	175	TNGT	SA376-TP304	.27	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
175	180 B	TNGT	SA376-TP304	.99	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
180 B	180 E	BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
180 E	185	TNGT	SA376-TP304	4.04	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185	185A	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
185A	190	TNGT	SA376-TP304	1.92	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190	190A	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
190A	195	TNGT	SA376-TP304	2.09	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
195	200	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
200	205	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205	205A	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
205A	210	TNGT	SA376-TP304	1.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210	210A	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
210A	215	TNGT	SA376-TP304	2.32	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215	215A	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
215A	220	TNGT	SA376-TP304	3.25	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
220	225 B	TNGT	SA376-TP304	2.06	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
225 B	225 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
225 E	230	TNGT	SA376-TP304	2.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230	230A	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
230A	235	TNGT	SA376-TP304	2.98	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235	235A	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
235A	240	TNGT	SA376-TP304	3.01	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
240	245	TNGT	SA376-TP304	3.00	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
245	250	TNGT	SA376-TP304	.53	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
250	255 B	TNGT	SA376-TP304	1.14	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
255 B	255 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
255 E	260	TNGT	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
260	265 B	TNGT	SA376-TP304	4.10	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
265 B	265 E	BEND	SA376-TP304	.33	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	45.000
265 E	270	TNGT	SA376-TP304	1.21	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
270	275	TNGT	SA376-TP304	1.60	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
275	280	TNGT	SA376-TP304	4.90	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
280	285	TNGT	SA376-TP304	.58	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
285	290	TNGT	SA376-TP304	.23	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290	290A	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
290A	295	TNGT	SA376-TP304	2.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
295	300	TNGT	SA376-TP304	.77	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
300	305	TNGT	SA376-TP304	.44	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
305	310 B	TNGT	SA376-TP304	.08	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
310 B	310 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
310 E	315	TNGT	SA376-TP304	.83	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
315	320 B	TNGT	SA376-TP304	.46	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		
320 B	320 E	BEND	SA376-TP304	.65	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2	.417	90.000
320 E	500	TNGT	SA376-TP304	.75	1.31	.133	.283+08	.30	.00000	2.750	0.	SC374 2		

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TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : SAMO2

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES OF RESTRAINT			TRANSLATIONAL FLEXIBILITY (IN/LB)	TORSIONAL FLEXIBILITY (RAD/LB-IN)
				X	Y	Z		
5	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
5	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
5	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
25	RAD			.3908	.0000	.9205	.000000000000	
50	RAD			.0000	1.0000	.0000	.000000000000	
65	RAD			1.0000	.0000	.0000	.000000000000	
65	RAD			.0000	1.0000	.0000	.000000000000	
85	RAD			1.0000	.0000	.0000	.000000000000	
85	RAD			.0000	.0000	1.0000	.000000000000	
95	RAD			.0000	1.0000	.0000	.000000000000	
105	RAD			1.0000	.0000	.0000	.000000000000	
115	RAD			.0000	1.0000	.0000	.000000000000	
115	RAD			.0000	.0000	1.0000	.000000000000	
130	RAD			1.0000	.0000	.0000	.000000000000	
130	RAD			.0000	.0000	1.0000	.000000000000	
135	RAD			1.0000	.0000	.0000	.000000000000	
135	RAD			.0000	.0000	1.0000	.000000000000	
140	RAD			1.0000	.0000	.0000	.000000000000	
140	RAD			.0000	.0000	1.0000	.000000000000	
145	ANCH		-A-	1.0000	.0000	.0000	.000000000000	.000000000000
145	ANCH		-B-	.0000	1.0000	.0000	.000000000000	.000000000000
145	ANCH		-C-	.0000	.0000	1.0000	.000000000000	.000000000000
150	RAD			1.0000	.0000	.0000	.000000000000	
150	RAD			.0000	.0000	1.0000	.000000000000	
160	RAD			.0000	.0000	1.0000	.000000000000	
170	RAD			.0000	.0000	1.0000	.000000000000	
185	RAD			1.0000	.0000	.0000	.000000000000	
185	RAD			.0000	.0000	1.0000	.000000000000	
190	RAD			1.0000	.0000	.0000	.000000000000	
190	RAD			.0000	.0000	1.0000	.000000000000	
195	RAD			1.0000	.0000	.0000	.000000000000	

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195	RAD		.0000	.0000	1.0000	.000000000000	
205	RAD		1.0000	.0000	.0000	.000000000000	
205	RAD		.0000	1.0000	.0000	.000000000000	
210	RAD		1.0000	.0000	.0000	.000000000000	
210	RAD		.0000	1.0000	.0000	.000000000000	
215	RAD		1.0000	.0000	.0000	.000000000000	
215	RAD		.0000	1.0000	.0000	.000000000000	
220	RAD		1.0000	.0000	.0000	.000000000000	
220	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	1.0000	.0000	.000000000000	
230	RAD		.0000	.0000	1.0000	.000000000000	
235	RAD		.0000	1.0000	.0000	.000000000000	
235	RAD		.0000	.0000	1.0000	.000000000000	
240	RAD		.0000	1.0000	.0000	.000000000000	
240	RAD		.0000	.0000	1.0000	.000000000000	
250	RAD		1.0000	.0000	.0000	.000000000000	
250	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	1.0000	.0000	.000000000000	
260	RAD		.0000	.0000	1.0000	.000000000000	
275	RAD		1.0000	.0000	.0000	.000000000000	
275	RAD		.0000	.0000	1.0000	.000000000000	
290	RAD		1.0000	.0000	.0000	.000000000000	
290	RAD		.0000	.0000	1.0000	.000000000000	
295	RAD		1.0000	.0000	.0000	.000000000000	
295	RAD		.0000	.0000	1.0000	.000000000000	
305	RAD		.0000	1.0000	.0000	.000000000000	
500	ANCH	-A-	1.0000	.0000	.0000	.000000000000	.000000000000
500	ANCH	-B-	.0000	1.0000	.0000	.000000000000	.000000000000
500	ANCH	-C-	.0000	.0000	1.0000	.000000000000	.000000000000

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SAM02

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES	SEISMIC	ANCHOR MOVEMENTS (IN)	DIRECTION OF SAM : X
				COSAX COSAY COSAZ	PHASE: CNT	RB	
5	ANC	-A-	1.000	.000	.000	.008	.000
5	ANC	-B-	.000	1.000	.000	.000	.000
5	ANC	-C-	.000	.000	1.000	.000	.000
25	RAD		.391	.000	.920	.003	.000
50	RAD		.000	1.000	.000	.000	.000
65	RAD		1.000	.000	.000	.000	.039
65	RAD		.000	1.000	.000	.000	.000
85	RAD		1.000	.000	.000	.000	.039
85	RAD		.000	.000	1.000	.000	.000
95	RAD		.000	1.000	.000	.000	.000
105	RAD		1.000	.000	.000	.000	.039
115	RAD		.000	1.000	.000	.000	.000
115	RAD		.000	.000	1.000	.000	.000
130	RAD		1.000	.000	.000	.000	.039
130	RAD		.000	.000	1.000	.000	.000
135	RAD		1.000	.000	.000	.000	.102
135	RAD		.000	.000	1.000	.000	.000
140	RAD		1.000	.000	.000	.000	.102
140	RAD		.000	.000	1.000	.000	.000
145	ANC	-A-	1.000	.000	.000	.000	.102
145	ANC	-B-	.000	1.000	.000	.000	.000
145	ANC	-C-	.000	.000	1.000	.000	.000
150	RAD		1.000	.000	.000	.000	.102
150	RAD		.000	.000	1.000	.000	.000
160	RAD		.000	.000	1.000	.000	.000
170	RAD		.000	.000	1.000	.000	.000
185	RAD		1.000	.000	.000	.000	.102
185	RAD		.000	.000	1.000	.000	.000
190	RAD		1.000	.000	.000	.000	.102
190	RAD		.000	.000	1.000	.000	.000

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195	RAD	1.000	.000	.000
195	RAD	.000	.000	1.000
205	RAD	1.000	.000	.000

.000	.102
.000	.000
.000	.102

POINT	TYPE	TITLE	AXIS DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : X
			COSAX	COSAY	COSAZ		RB		
205	RAD		.000	1.000	.000		.000	.000	
210	RAD		1.000	.000	.000		.000	.102	
210	RAD		.000	1.000	.000		.000	.000	
215	RAD		1.000	.000	.000		.000	.102	
215	RAD		.000	1.000	.000		.000	.000	
220	RAD		1.000	.000	.000		.000	.102	
220	RAD		.000	1.000	.000		.000	.000	
230	RAD		.000	1.000	.000		.000	.000	
230	RAD		.000	.000	1.000		.000	.000	
235	RAD		.000	1.000	.000		.000	.000	
235	RAD		.000	.000	1.000		.000	.000	
240	RAD		.000	1.000	.000		.000	.000	
240	RAD		.000	.000	1.000		.000	.000	
250	RAD		1.000	.000	.000		.000	.102	
250	RAD		.000	1.000	.000		.000	.000	
260	RAD		.000	1.000	.000		.000	.000	
260	RAD		.000	.000	1.000		.000	.000	
275	RAD		1.000	.000	.000		.000	.102	
275	RAD		.000	.000	1.000		.000	.000	
290	RAD		1.000	.000	.000		.000	.166	
290	RAD		.000	.000	1.000		.000	.000	
295	RAD		1.000	.000	.000		.000	.166	
295	RAD		.000	.000	1.000		.000	.000	
305	RAD		.000	1.000	.000		.000	.000	
500	ANC	-A-	1.000	.000	.000		.000	.166	
500	ANC	-B-	.000	1.000	.000		.000	.000	
500	ANC	-C-	.000	.000	1.000		.000	.000	

POINT	TYPE	TITLE	AXIS DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : Y
			COSAX	COSAY	COSAZ		RB		
5	ANC	-A-	1.000	.000	.000		.000	.000	
5	ANC	-B-	.000	1.000	.000		.001	.000	
5	ANC	-C-	.000	.000	1.000		.000	.000	
25	RAD		.391	.000	.920		.000	.000	
50	RAD		.000	1.000	.000		.001	.000	
65	RAD		1.000	.000	.000		.000	.000	
65	RAD		.000	1.000	.000		.000	.002	
85	RAD		1.000	.000	.000		.000	.000	
85	RAD		.000	.000	1.000		.000	.000	
95	RAD		.000	1.000	.000		.000	.002	
105	RAD		1.000	.000	.000		.000	.000	
115	RAD		.000	1.000	.000		.000	.002	
115	RAD		.000	.000	1.000		.000	.000	
130	RAD		1.000	.000	.000		.000	.000	
130	RAD		.000	.000	1.000		.000	.000	
135	RAD		1.000	.000	.000		.000	.000	
135	RAD		.000	.000	1.000		.000	.000	
140	RAD		1.000	.000	.000		.000	.000	
140	RAD		.000	.000	1.000		.000	.000	
145	ANC	-A-	1.000	.000	.000		.000	.000	
145	ANC	-B-	.000	1.000	.000		.000	.005	
145	ANC	-C-	.000	.000	1.000		.000	.000	
150	RAD		1.000	.000	.000		.000	.000	
150	RAD		.000	.000	1.000		.000	.000	
160	RAD		.000	.000	1.000		.000	.000	
170	RAD		.000	.000	1.000		.000	.000	
185	RAD		1.000	.000	.000		.000	.000	
185	RAD		.000	.000	1.000		.000	.000	
190	RAD		1.000	.000	.000		.000	.000	
190	RAD		.000	.000	1.000		.000	.000	
195	RAD		1.000	.000	.000		.000	.000	
195	RAD		.000	.000	1.000		.000	.000	
205	RAD		1.000	.000	.000		.000	.000	

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES	SEISMIC	ANCHOR MOVEMENTS (IN)	DIRECTION OF SAM : Y
				COSAX COSAY COSAZ	PHASE: CNT	RB	
205	RAD			.000 1.000 .000		.000 .005	
210	RAD			1.000 .000 .000		.000 .000	
210	RAD			.000 1.000 .000		.000 .005	
215	RAD			1.000 .000 .000		.000 .000	
215	RAD			.000 1.000 .000		.000 .005	
220	RAD			1.000 .000 .000		.000 .000	
220	RAD			.000 1.000 .000		.000 .005	
230	RAD			.000 1.000 .000		.000 .018	
230	RAD			.000 .000 1.000		.000 .000	
235	RAD			.000 1.000 .000		.000 .018	
235	RAD			.000 .000 1.000		.000 .000	
240	RAD			.000 1.000 .000		.000 .018	
240	RAD			.000 .000 1.000		.000 .000	
250	RAD			1.000 .000 .000		.000 .000	
250	RAD			.000 1.000 .000		.000 .018	
260	RAD			.000 1.000 .000		.000 .018	
260	RAD			.000 .000 1.000		.000 .000	
275	RAD			1.000 .000 .000		.000 .000	
275	RAD			.000 .000 1.000		.000 .000	
290	RAD			1.000 .000 .000		.000 .000	
290	RAD			.000 .000 1.000		.000 .000	
295	RAD			1.000 .000 .000		.000 .000	
295	RAD			.000 .000 1.000		.000 .000	
305	RAD			.000 1.000 .000		.000 .024	
500	ANC		-A-	1.000 .000 .000		.000 .000	
500	ANC		-B-	.000 1.000 .000		.000 .024	
500	ANC		-C-	.000 .000 1.000		.000 .000	

POINT	TYPE	TITLE	AXIS	DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : Z
				COSAX	COSAY	COSAZ		RB		
5	ANC		-A-	1.000	.000	.000		.000	.000	
5	ANC		-B-	.000	1.000	.000		.000	.000	
5	ANC		-C-	.000	.000	1.000		.008	.000	
25	RAD			.391	.000	.920		.007	.000	
50	RAD			.000	1.000	.000		.000	.000	
65	RAD			1.000	.000	.000		.000	.000	
65	RAD			.000	1.000	.000		.000	.000	
85	RAD			1.000	.000	.000		.000	.000	
85	RAD			.000	.000	1.000		.000	.068	
95	RAD			.000	1.000	.000		.000	.000	
105	RAD			1.000	.000	.000		.000	.000	
115	RAD			.000	1.000	.000		.000	.000	
115	RAD			.000	.000	1.000		.000	.068	
130	RAD			1.000	.000	.000		.000	.000	
130	RAD			.000	.000	1.000		.000	.068	
135	RAD			1.000	.000	.000		.000	.000	
135	RAD			.000	.000	1.000		.000	.077	
140	RAD			1.000	.000	.000		.000	.000	
140	RAD			.000	.000	1.000		.000	.077	
145	ANC		-A-	1.000	.000	.000		.000	.000	
145	ANC		-B-	.000	1.000	.000		.000	.000	
145	ANC		-C-	.000	.000	1.000		.000	.077	
150	RAD			1.000	.000	.000		.000	.000	
150	RAD			.000	.000	1.000		.000	.077	
160	RAD			.000	.000	1.000		.000	.077	
170	RAD			.000	.000	1.000		.000	.077	
185	RAD			1.000	.000	.000		.000	.000	
185	RAD			.000	.000	1.000		.000	.077	
190	RAD			1.000	.000	.000		.000	.000	
190	RAD			.000	.000	1.000		.000	.077	
195	RAD			1.000	.000	.000		.000	.000	
195	RAD			.000	.000	1.000		.000	.077	
205	RAD			1.000	.000	.000		.000	.000	

POINT	TYPE	TITLE	AXIS DIRECTION COSINES			SEISMIC PHASE: CNT	ANCHOR MOVEMENTS (IN)		DIRECTION OF SAM : Z
			COSAX	COSAY	COSAZ			RB	
205	RAD		.000	1.000	.000		.000	.000	
210	RAD		1.000	.000	.000		.000	.000	
210	RAD		.000	1.000	.000		.000	.000	
215	RAD		1.000	.000	.000		.000	.000	
215	RAD		.000	1.000	.000		.000	.000	
220	RAD		1.000	.000	.000		.000	.000	
220	RAD		.000	1.000	.000		.000	.000	
230	RAD		.000	1.000	.000		.000	.000	
230	RAD		.000	.000	1.000		.000	.077	
235	RAD		.000	1.000	.000		.000	.000	
235	RAD		.000	.000	1.000		.000	.077	
240	RAD		.000	1.000	.000		.000	.000	
240	RAD		.000	.000	1.000		.000	.077	
250	RAD		1.000	.000	.000		.000	.000	
250	RAD		.000	1.000	.000		.000	.000	
260	RAD		.000	1.000	.000		.000	.000	
260	RAD		.000	.000	1.000		.000	.077	
275	RAD		1.000	.000	.000		.000	.000	
275	RAD		.000	.000	1.000		.000	.077	
290	RAD		1.000	.000	.000		.000	.000	
290	RAD		.000	.000	1.000		.000	.086	
295	RAD		1.000	.000	.000		.000	.000	
295	RAD		.000	.000	1.000		.000	.086	
305	RAD		.000	1.000	.000		.000	.000	
500	ANC	-A-	1.000	.000	.000		.000	.000	
500	ANC	-B-	.000	1.000	.000		.000	.000	
500	ANC	-C-	.000	.000	1.000		.000	.086	

DIAGNOSTIC MESSAGE ANALYSIS

ME101/I2

DATE 040182

PAGE

81

TITLE : SP-HCB-108 LINE
PROJECT NUMBER : 8856
PROBLEM NUMBER : 5280
USER : J.ABISAMRA
LOAD CASES : *ALL*

LEVEL TAG TO DIAGNOSTIC MESSAGE

LOAD CASE(S) : SAM02

+WRN+

145

+WRN+

POINT IS ASSUMED TO BE AN INLINE ANCHOR.
BANDWIDTH REDUCTION: 18 BAND, 4 PASSES, 89 NODES, 1 START, .056 SEC.

DIAGNOSTIC MESSAGE ANALYSIS

ME101/I2

DATE 040182

PAGE

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#TIME FOR ME101I#	INPT00	INPT10	TBLMP	INPT20	INPT30	INPT40	INPT50	INPT60	INPT70	INPT80	INPT90	TOTAL
	6.854	15.673	.000	.174	.062	.004	.105	.031	.372	3.132	.025	26.433

*** CORE CHANGED FROM 55358 TO 48600 DECIMAL WORDS ***
 CHECKPOINT

@XQT,KM *ME101.ME101I . SEISO1

ME101I ME101I/FEB05
 *** CORE CHANGED FROM 42600 TO 48600 DECIMAL WORDS ***
 *** CORE CHANGED FROM 48600 TO 78741 DECIMAL WORDS ***
 *** CORE CHANGED FROM 78741 TO 79253 DECIMAL WORDS ***



INPUT DATA SCAN

ME101/I2

DATE 040182

PAGE 83

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES :

	COL 1	COL 4	COL 7	COL 10	COL 21	COL 32	COL 43	COL 51	COL 61	COL 71	COL 80
1: HED	+	+	+	+	+	+	+	+	+	+	+
2:											
3:											
4:											
5:											
6: ANC		5		-.0451	.021	.0192					
7:											
8:											
9:											
10:											
11:											
12:											
13:		10		-0-4.49		0-1.91					
14:		15		-1-1.58		0-5.76					
15:		20		-0-9.67		0-4.1					
16:		25			-0-4.375						
17: RAD		25		.391		.921					
18:		30			-0-4.375						
19:		35			-0-7.25						
20:		40			-0-7.75						
21:		20 45			1-6.5		5D				
22:		50				0-7.25					
23: RAD		50			1						
24:		55				1-.75					
25:		60		-1-.75		1-.75					
26:		65				0-3					
27: RAD		65		1							
28: RAD		65			1						
29:		70				0-9-7/8					
30:		75				1-.125					
31:		80				0-9.125	5D				
32:		85			0-8						
33: RAD		85		1							
34: RAD		85				1					
35:		90			2.5						
36:		95				1-7					
37: RAD		95			1						
38:		100				0-11	5D				
39:		105			1-.75						
40: RAD		105 1.0									
41:		110			0-5.125						
42:		115-0-6.125									
43: RAD		115			1						
44: RAD		115				1					
45:		120-2-2-7/8					5D				
46:		125				2.0					

TIT=SP-HCB-108 LINE,
 PROJNO=8856,PROBNO=5280,
 EIGEN=3,
 MODES=35,PER=0.01,
 UNITS=2,USER=J.ABISAMRA,
 PHASE=CNT,
 OD=1.315,THI=.133,
 TEMP=200,LBS/FT=2.75,
 CODE=SC374,CLASS=2,
 PPRESS=30,DPRESS=30,
 MAT=SA376-TP304,E=28.3E6,
 SC=18800,SH=17800,
 SIF=1.3,
 SIF=1.3,ADDWT=20,
 SIF=1.3,
 PHASE=CNT,
 SIF=1.3,ADDWT=20,
 SIF=1.3,ADDWT=20,
 ADDWT=2,

PHASE=CNT,DISP=.021,
 SIF=1.3,
 SIF=1.3,

PHASE=RB,
 PHASE=RB,
 SIF=1.3,ADDWT=50,
 SIF=1.3,ADDWT=50,

PHASE=RB,
 PHASE=RB,
 SIF=1.3,

PHASE=RB,

PHASE=RB,
 SIF=1.3,

PHASE=RB,
 PHASE=RB,

SIF=1.3,

47:	130	0-4.75			
48: RAD	1301.0				PHASE=RB,
49: RAD	130		1		PHASE=RB,
50:	135	3-2			SEG=2,
51: RAD	1351.0				PHASE=RB,
52: RAD	135		1		PHASE=RB,
53:	137	3-2			SEG=2,
54:	138		0-11		SIF=1.3, ADDWT=20,
55:	137 140	1-4			
56: RAD	1401.0				PHASE=RB,
57: RAD	140		1.0		PHASE=RB,
58:	145	4.0			SEG=2,
59: ANC	145				PHASE=RB,
60:	145 150	6-1.5			SEG=2,
61: RAD	1501.0				PHASE=RB,
62: RAD	150		1.0		PHASE=RB,
63:	155	0-5			SIF=1.3,
64:	1602-5				
65: RAD	160		1.0		PHASE=RB,
66:	1652-11.25				
67: SPD	165	1			
68:	1700-2.75				
69: RAD	170		1.0		PHASE=RB,
70:	1750-3.25				SIF=1.3,
71:	180	0-9.9	0-9.9	5D	
72:	185	4-2.5			
73: RAD	1851.0				PHASE=RB,
74: RAD	185		1.0		PHASE=RB,
75:	190	3-10			SEG=2,
76: RAD	1901.0				PHASE=RB,
77: RAD	190		1.0		PHASE=RB,
78:	195	4-2.25			SEG=2,
79: RAD	1951.0				PHASE=RB,
80: RAD	195		1.0		PHASE=RB,
81:	200	0-10			SIF=1.3,
82:	205		0-9		
83: RAD	2051.0				PHASE=RB,
84: RAD	205	1.0			PHASE=RB,
85:	210		3-3-5/8		SEG=2,
86: RAD	2101.0				PHASE=RB,
87: RAD	210	1.0			PHASE=RB,
88:	215		4-7-5/8		SEG=2,
89: RAD	2151.0				PHASE=RB,
90: RAD	215	1.0			PHASE=RB,
91:	220		6-6		SEG=2,
92: RAD	2201.0				PHASE=RB,
93: RAD	220	1.0			PHASE=RB,
94:	225		2-5.75	5D	
95:	2303.0				
96: RAD	230	1.0			PHASE=RB,
97: RAD	230		1.0		PHASE=RB,
98:	2355-11-5/8				SEG=2,
99: RAD	235	1.0			PHASE=RB,
100: RAD	235		1.0		PHASE=RB,
101:	2406-.25				SEG=2,
102: RAD	240	1.0			PHASE=RB,
103: RAD	240		1.0		PHASE=RB,
104:	2453.0				SIF=1.3,
105:	250		0-6-3/8		
106: RAD	2501.0				PHASE=RB,

107: RAD	250	1.0			PHASE=RB,	
108:	255		1-6-5/8	5D		
109:	2600-9					
110: RAD	260	1.0			PHASE=RB,	
111: RAD	260		1.0		PHASE=RB,	
112:	2654-3.25			5D		
113:	2700-11.756		0-11.756		SIF=1.3,	
114:	275	1-7.25				
115: RAD	2751.0				PHASE=RB,	
116: RAD	275		1.0		PHASE=RB,	
117:	280	4-10.75			SIF=1.3,	
118:	285		-0-7		SIF=1.3,	
119:	290	0-2.75				
120: RAD	2901.0				PHASE=RB,	
121: RAD	290		1.0		PHASE=RB,	
122:	295	4-10.5			SEG=2,	
123: RAD	2951.0				PHASE=RB,	
124: RAD	295		1.0		PHASE=RB,	
125:	300	0-9.25			SIF=1.3,	
126:	305		-0-5.25			
127: RAD	305	1.0			PHASE=RB,	
128:	310		-0-6	5D		
129:	315-1-3				SIF=1.3,	
130:	320	0-10.5		5D		
131:	500-0-9.9		0-9.9			
132: ANC	500				PHASE=RB,	
133: ACE					LDNAME=SEISO1,	
134: ACE					TITLE=ENVELOPE OF OBERBC719	
135: ACE						
136: ACE					TYP=3,POI=37,	
137: ACE					DIR=X	
138:	.1000,	.0000,	.9200,	.4495,	1.7000,	.9728,
139:	2.2500,	1.2251,	2.3000,	1.6304,	2.3500,	2.3450,
140:	2.5000,	2.3450,	2.8000,	5.3600,	4.2000,	5.3600,
141:	4.3000,	4.9813,	5.5000,	1.6089,	5.7000,	1.6649,
142:	6.3000,	2.5635,	7.3000,	4.8500,	12.0000,	4.8500,
143:	13.2000,	2.7602,	14.0000,	2.0700,	15.0000,	2.0700,
144:	20.0000,	1.1751,	24.0000,	1.0200,	25.0000,	.8691,
145:	26.0000,	.7800,	27.2000,	.7800,	28.0000,	.6608,
146:	28.9000,	.6097,	33.9500,	.4045,	35.0000,	.3730,
147:	100.0000,	.3730,	100.0010,	.3716,	100.0020,	.3741,
148:	100.0030,	.3733,	100.0040,	.3716,	100.0050,	.3716,
149:	100.0060,	.3716,	100.0070,	.3716,	100.0080,	.3716,
150:	100.0090,	.3716,				
151: ACE				DIR=Y		
152:	.1000,	.0150,	.1150,	.0178,	.4000,	.1716,
153:	3.5000,	.4400,	3.8000,	.7889,	4.3000,	1.5045,
154:	5.1000,	2.9600,	5.8000,	2.9600,	6.8000,	3.2581,
155:	6.9000,	3.3200,	10.5000,	3.3200,	12.0000,	3.3307,
156:	12.5000,	3.9600,	19.8000,	3.9600,	20.8300,	2.7177,
157:	23.0000,	1.1479,	25.0000,	1.0600,	28.0000,	1.0600,
158:	30.0000,	.5568,	31.0000,	.4212,	32.0000,	.3300,
159:	33.0000,	.3300,	34.0000,	.2900,	100.0000,	.2900,
160:	100.0010,	.2894,	100.0020,	.2897,	100.0030,	.2894,
161:	100.0040,	.2911,	100.0050,	.2894,	100.0060,	.2897,
162:	100.0070,	.2911,	100.0080,	.2894,	100.0090,	.2897,
163:	100.0100,	.2911,	100.0110,	.2894,	100.0120,	.2894,
164:	100.0130,	.2914,				
165: ACE				DIR=Z		
166:	.1000,	.0000,	.8000,	.3064,	1.2900,	.4189,

167:	2.1660,	.8645,	2.2500,	1.2045,	2.3000,	1.6304,
168:	2.3500,	2.3450,	2.7000,	2.3450,	3.2000,	3.5600,
169:	4.8000,	3.5600,	5.0000,	2.9819,	5.7000,	1.6770,
170:	5.8500,	1.7057,	6.7500,	1.9300,	10.0000,	1.9300,
171:	11.0000,	1.2140,	11.5000,	1.1028,	12.2000,	1.4000,
172:	18.0000,	1.4000,	19.2000,	.9295,	30.0000,	.5800,
173:	35.0000,	.2786,	37.0000,	.2500,	100.0000,	.2500,
174:	100.0010,	.2500,	100.0020,	.2500,	100.0030,	.2500,
175:	100.0040,	.2500,	100.0050,	.2500,	100.0060,	.2500,
176:	100.0070,	.2500,	100.0080,	.2500,	100.0090,	.2500,
177:	100.0100,	.2500,	100.0110,	.2500,	100.0120,	.2500,
178:	100.0130,	.2500,				

179: EOA
180: ACE
181: ACE
182: ACE
183: ACE
184: ACE

LDNAME=SEISO2.
TITLE=ENVELOPE OF SSERBC719

TYP=3,POI=33,
DIR=X

185:	.1000,	.0300,	.1200,	.0478,	1.2000,	.6512,
186:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
187:	2.5000,	2.1700,	2.9000,	2.7900,	4.3000,	2.7900,
188:	5.0000,	1.5615,	5.3000,	1.6010,	6.0000,	1.9209,
189:	7.2000,	3.4800,	7.4000,	3.6400,	12.0000,	3.6400,
190:	14.0000,	1.8571,	14.5000,	1.6600,	17.2000,	1.1738,
191:	22.0000,	.8600,	25.0000,	.8600,	28.0000,	.5763,
192:	31.2500,	.4730,	43.0000,	.4730,	43.0010,	.4735,
193:	43.0020,	.4727,	43.0030,	.4727,	43.0040,	.4735,
194:	43.0050,	.4727,	43.0060,	.4735,	43.0070,	.4727,
195:	43.0080,	.4734,	43.0090,	.4727,	100.0010,	.4730,

DIR=Y

196: ACE						
197:	.1000,	.0240,	.1200,	.0452,	.4000,	.2115,
198:	1.2900,	.3902,	2.2000,	.4731,	2.7000,	.7361,
199:	3.3000,	1.0458,	3.5000,	1.1600,	5.1000,	2.1900,
200:	6.7000,	2.1900,	7.2000,	2.2500,	12.0000,	2.2500,
201:	12.5000,	1.8682,	13.0000,	1.9400,	19.2000,	1.9400,
202:	21.0000,	1.7000,	23.0000,	.8232,	24.0000,	.7497,
203:	25.0000,	.7000,	26.6600,	.5700,	28.0000,	.5700,
204:	29.5000,	.4671,	32.5000,	.4130,	100.0000,	.4130,
205:	100.0010,	.4127,	100.0020,	.4121,	100.0030,	.4127,
206:	100.0040,	.4130,	100.0050,	.4130,	100.0060,	.4130,
207:	100.0070,	.4130,	100.0080,	.4130,	100.0090,	.4130,

DIR=Z

208: ACE						
209:	.1000,	.0300,	.1200,	.0432,	.2330,	.1265,
210:	.5660,	.2593,	.7500,	.3037,	.9500,	.3727,
211:	.9800,	.3833,	1.2000,	.4713,	1.4500,	.6940,
212:	1.6700,	.8755,	1.7000,	.9000,	2.0000,	.9900,
213:	2.5000,	2.1700,	2.8000,	2.1700,	3.3000,	2.3100,
214:	4.8000,	2.3100,	5.0000,	1.8682,	5.3000,	1.6010,
215:	6.0000,	1.6850,	8.8000,	1.6850,	12.5000,	.9130,
216:	14.0000,	.8600,	14.8000,	.7800,	18.0000,	.7800,
217:	20.5000,	.6100,	23.3300,	.6100,	30.0000,	.3646,
218:	31.2500,	.3322,	32.0000,	.3230,	100.0000,	.3230,
219:	100.0010,	.3230,	100.0020,	.3230,	100.0030,	.3230,

LDNAME=SEISO3.
TITLE=ENVELOPE OF SRVRBC719

TYP=3,COEF=CS4,POI=54,
DIR=X

220: EOA						
221: ACE						
222: ACE						
223: ACE						
224: ACE						
225: ACE						
226:	.1000,	.0080,	1.7000,	.0080,	2.6087,	.0151,

227:	2.7000,	.0251,	3.2000,	.0750,	3.8000,	.0800,
228:	4.4000,	.2750,	5.6000,	.2750,	6.2000,	.2340,
229:	6.5000,	.2340,	7.0000,	.4060,	9.2000,	.4060,
230:	10.7000,	.2500,	11.5000,	.2082,	12.1739,	.2340,
231:	12.5000,	.2500,	15.5000,	.5780,	19.9800,	.5940,
232:	23.0000,	.6408,	24.3478,	.6671,	26.0000,	.7500,
233:	32.0000,	1.5940,	42.5000,	1.5940,	48.0000,	1.0000,
234:	54.5000,	.8750,	57.0000,	.8750,	64.0000,	.6720,
235:	70.0000,	.6720,	74.9000,	.4060,	80.5000,	.3408,
236:	86.0000,	.3280,	92.0010,	.3280,	100.0010,	.2730,
237:	100.0540,	.2730,	100.0550,	.2730,	100.0560,	.2730,
238:	100.0570,	.2730,	100.0580,	.2730,	100.0590,	.2730,
239:	100.0600,	.2730,	100.0610,	.2730,	100.0620,	.2730,
240:	100.0630,	.2730,	100.0640,	.2730,	100.0650,	.2730,
241:	100.0660,	.2730,	100.0670,	.2730,	100.0680,	.2730,
242:	100.0690,	.2730,	100.0700,	.2730,	100.0710,	.2730,
243:	100.0720,	.2730,	100.0730,	.2730,	100.0740,	.2730,

244: ACE

DIR=Y

245:	.1000,	.0160,	1.7000,	.0160,	2.3000,	.0200,
246:	3.0000,	.0310,	3.2500,	.0310,	3.5000,	.0350,
247:	4.0500,	.1060,	4.4000,	.1060,	4.7826,	.1380,
248:	5.4050,	.1380,	5.6522,	.1510,	5.7565,	.1700,
249:	6.0870,	.1740,	6.5217,	.1740,	6.9000,	.2741,
250:	6.9565,	.2890,	7.3044,	.4750,	7.3913,	.5050,
251:	9.7750,	.5050,	10.3500,	.4700,	10.4075,	.4510,
252:	10.4348,	.4431,	11.3043,	.6330,	11.5000,	.6707,
253:	11.7381,	.7200,	11.7500,	.7212,	12.1739,	.9010,
254:	12.8696,	1.5700,	13.0435,	1.6900,	17.2500,	1.6900,
255:	17.9130,	1.4207,	17.9400,	1.4100,	18.4000,	1.1500,
256:	19.3913,	.7856,	20.0000,	.6817,	20.7000,	.6230,
257:	22.7700,	.6230,	23.0000,	.6130,	23.6900,	.5660,
258:	24.1500,	.5050,	25.1850,	.4078,	25.2500,	.4060,
259:	28.5000,	.3590,	34.0000,	.3440,	42.0000,	.2340,
260:	45.9000,	.2270,	57.0000,	.2190,	68.0000,	.2190,
261:	72.6800,	.1789,	74.5000,	.1664,	80.0000,	.1640,
262:	85.0000,	.1640,	100.0070,	.1410,	100.0480,	.1410,

263: ACE

DIR=Z

264:	.1000,	.0160,	1.7000,	.0160,	3.2200,	.0184,
265:	3.4500,	.0187,	3.4783,	.0190,	3.7950,	.0190,
266:	4.0000,	.0192,	5.0000,	.0284,	7.0000,	.0470,
267:	10.0000,	.0780,	13.0435,	.1597,	16.0000,	.2500,
268:	19.0000,	.4530,	20.7000,	.4702,	21.7391,	.5240,
269:	26.0000,	.7500,	32.0000,	1.5940,	42.5000,	1.5940,
270:	48.0000,	1.0000,	54.5000,	.8750,	57.0000,	.8750,
271:	64.0000,	.6720,	70.0000,	.6720,	74.9000,	.4060,
272:	86.0000,	.2810,	100.0040,	.2500,	100.0540,	.2500,
273:	100.0550,	.2500,	100.0560,	.2500,	100.0570,	.2500,
274:	100.0580,	.2500,	100.0590,	.2500,	100.0600,	.2500,
275:	100.0610,	.2500,	100.0620,	.2500,	100.0630,	.2500,
276:	100.0640,	.2500,	100.0650,	.2500,	100.0660,	.2500,
277:	100.0670,	.2500,	100.0680,	.2500,	100.0690,	.2500,
278:	100.0700,	.2500,	100.0710,	.2500,	100.0720,	.2500,
279:	100.0730,	.2500,	100.0740,	.2500,	100.0750,	.2500,
280:	100.0760,	.2500,	100.0770,	.2500,	100.0780,	.2500,
281:	100.0790,	.2500,	100.0800,	.2500,	100.0810,	.2500,

282: EOA

283: ACE

284: ACE

285: ACE

286: ACE

LDNAME=SEISO4.
TITLE=ENVELOPE OF CHGCORBC719

TYP=3,COEF=CS4,POI=84.

287: ACE

DIR=X

288:	1.7391,	.0048,	1.9130,	.0059,	2.0870,	.0070,
289:	2.2609,	.0083,	2.3000,	.0086,	2.4348,	.0098,
290:	2.6087,	.0124,	2.8696,	.0131,	2.9900,	.0167,
291:	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
292:	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
293:	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
294:	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
295:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
296:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
297:	12.1739,	.2549,	13.0435,	.3056,	13.2250,	.3173,
298:	13.8000,	.3651,	13.9130,	.3763,	15.6522,	.6131,
299:	17.3913,	.9609,	18.6957,	1.4179,	19.1304,	1.6008,
300:	19.2174,	1.6480,	20.4348,	2.3677,	21.7391,	3.1225,
301:	24.3478,	5.6300,	26.0870,	6.9096,	34.5000,	6.9096,
302:	34.7826,	6.8850,	36.9565,	6.7020,	37.9500,	6.6219,
303:	40.2500,	5.7278,	43.1250,	4.0577,	43.1304,	4.0564,
304:	43.4783,	3.9746,	44.9650,	3.8705,	46.0000,	3.8483,
305:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
306:	56.5217,	4.2237,	60.3750,	4.8168,	60.8696,	4.8902,
307:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
308:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
309:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
310:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
311:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
312:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
313:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
314:	100.0170,	4.3486,	100.0210,	4.3486,	100.0220,	4.3486,
315:	100.0230,	4.3486,	100.0240,	4.3486,	100.0250,	4.3486,

316: ACE

DIR=Y

317:	1.7391,	.0071,	2.0870,	.0093,	2.3000,	.0103,
318:	2.4000,	.0107,	2.5300,	.0111,	2.7600,	.0132,
319:	2.9900,	.0159,	3.1510,	.0174,	3.4783,	.0194,
320:	3.7950,	.0277,	3.8261,	.0286,	4.1400,	.0442,
321:	4.6000,	.1353,	4.8522,	.1920,	5.2174,	.1920,
322:	5.6522,	.1970,	5.7565,	.2390,	6.5217,	.2390,
323:	6.9000,	.3445,	7.3044,	.6400,	7.4750,	.6450,
324:	9.6600,	.6450,	10.0000,	.6084,	10.3500,	.5381,
325:	10.4075,	.5591,	11.3043,	.9330,	11.7391,	1.5200,
326:	12.1739,	1.5200,	12.6500,	2.1441,	12.8696,	2.4600,
327:	17.0200,	2.4600,	17.2500,	2.2600,	17.9130,	2.2600,
328:	18.2609,	2.0219,	19.0435,	1.5645,	19.3913,	1.3774,
329:	20.7000,	1.0800,	21.3900,	1.0800,	21.7350,	1.0100,
330:	22.1950,	1.0000,	22.7700,	1.0000,	23.0000,	.9820,
331:	24.1500,	.7551,	25.3000,	.6801,	26.0870,	.6522,
332:	28.4348,	.5826,	33.4650,	.5826,	34.5000,	.6067,
333:	34.7826,	.6138,	36.9565,	.6706,	39.1304,	.6972,
334:	43.4783,	.6972,	45.6522,	.7696,	47.8261,	.8408,
335:	57.5000,	.8409,	60.3750,	.8484,	60.8696,	.8542,
336:	80.5000,	.8542,	86.2500,	.8406,	92.0000,	.7244,
337:	100.0030,	.7006,	100.0180,	.7006,	100.0190,	.7006,
338:	100.0200,	.7006,	100.0210,	.7006,	100.0220,	.7006,
339:	100.0230,	.7006,	100.0240,	.7006,	100.0250,	.7006,
340:	100.0260,	.7006,	100.0270,	.7006,	100.0280,	.7006,
341:	100.0290,	.7006,	100.0300,	.7006,	100.0310,	.7006,
342:	100.0320,	.7006,	100.0330,	.7006,	100.0340,	.7006,
343:	100.0350,	.7006,	100.0360,	.7006,	100.0370,	.7006,
344:	100.0380,	.7006,	100.0390,	.7006,	100.0400,	.7006,

345: ACE

DIR=Z

346:	.1000,	.0048,	1.7391,	.0048,	1.9130,	.0059,
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347:	2.0870,	.0070,	2.2609,	.0083,	2.3000,	.0086,
348:	2.4348,	.0098,	2.6087,	.0124,	2.8696,	.0131,
349:	3.0000,	.0170,	3.1304,	.0222,	3.4783,	.0222,
350:	3.7950,	.0293,	3.8261,	.0301,	4.0870,	.0513,
351:	4.3478,	.0892,	5.6522,	.0892,	5.7500,	.0923,
352:	6.0870,	.1388,	6.5217,	.1388,	6.9000,	.1915,
353:	6.9565,	.2019,	7.3913,	.2181,	9.7750,	.2181,
354:	10.3500,	.2123,	10.4348,	.2123,	11.3043,	.2227,
355:	12.1739,	.2549,	13.0435,	.3056,	13.8000,	.3651,
356:	13.9130,	.3763,	15.6522,	.6131,	17.3913,	.9609,
357:	19.1304,	1.6008,	21.7391,	3.1225,	24.3478,	5.6300,
358:	26.0870,	6.9096,	34.5000,	6.9096,	34.7826,	6.8850,
359:	36.9565,	6.7020,	37.9500,	6.6219,	40.2500,	5.7278,
360:	43.1250,	4.0577,	43.4783,	3.9746,	46.0000,	3.8483,
361:	48.8750,	3.3983,	51.7500,	3.7972,	52.1739,	3.8730,
362:	52.5550,	3.9049,	56.5217,	4.2237,	60.3750,	4.8168,
363:	60.5217,	4.8386,	60.8696,	4.8902,	61.0650,	4.8901,
364:	63.2500,	4.8901,	80.5000,	4.8901,	86.2500,	4.6939,
365:	92.0000,	4.6939,	100.0000,	4.3486,	100.0010,	4.3288,
366:	100.0020,	4.3586,	100.0030,	4.3562,	100.0040,	4.3288,
367:	100.0050,	4.3562,	100.0060,	4.3586,	100.0070,	4.3288,
368:	100.0080,	4.3562,	100.0090,	4.3586,	100.0100,	4.3288,
369:	100.0110,	4.3562,	100.0120,	4.3562,	100.0130,	4.3586,
370:	100.0140,	4.3288,	100.0150,	4.3562,	100.0160,	4.3586,
371:	100.0170,	4.3288,	100.0180,	4.3562,	100.0190,	4.3562,
372:	100.0200,	4.3310,	100.0210,	4.3562,	100.0220,	4.3562,
373:	100.0230,	4.3586,	100.0240,	4.3486,	100.0680,	4.3486,
374:	EOA					
375:	END					

TITLE : SP-HCB-108 LINE
 PROJECT NUMBER : 8856
 PROBLEM NUMBER : 5280
 USER : J.ABISAMRA
 LOAD CASES : SEISO1

NUMBER OF NODE POINTS : 89
 DYNAMIC DEGREES OF FREEDOM : 267
 PUNCHED CARD OUTPUT :
 PLOT REQUESTED : NOPLT FOR PLOTTER : NOPLTR

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
5	ANCH		.000	.000	.000	.00	
10			-.374	.000	.159	.00	SIF = .1300+01
15			-1.506	.000	.639	20.00	SIF = .1300+01
20			-2.312	.000	.981	.00	SIF = .1300+01
25			-2.312	-.365	.981	.00	
30			-2.312	-.729	.981	20.00	SIF = .1300+01
35			-2.312	-1.333	.981	20.00	SIF = .1300+01
40			-2.312	-1.979	.981	2.00	
45 B			-2.312	1.125	.981	.00	
45	TINP		-2.312	1.542	.981	.00	
45 E			-2.312	1.542	1.397	.00	
50			-2.312	1.542	1.585	.00	
55			-2.312	1.542	2.647	.00	SIF = .1300+01
60			-3.374	1.542	3.710	.00	SIF = .1300+01
65			-3.374	1.542	3.960	.00	
70			-3.374	1.542	4.783	50.00	SIF = .1300+01
75			-3.374	1.542	5.793	50.00	SIF = .1300+01
80 B			-3.374	1.542	6.137	.00	
80	TINP		-3.374	1.542	6.554	.00	
80 E			-3.374	1.958	6.554	.00	
85			-3.374	2.208	6.554	.00	
90			-3.374	4.708	6.554	.00	SIF = .1300+01
95			-3.374	4.708	8.137	.00	
100 B			-3.374	4.708	8.637	.00	
100	TINP		-3.374	4.708	9.054	.00	
100 E			-3.374	5.125	9.054	.00	
105			-3.374	5.771	9.054	.00	
110			-3.374	6.198	9.054	.00	SIF = .1300+01
115			-3.885	6.198	9.054	.00	
120 B			-5.707	6.198	9.054	.00	
120	TINP		-6.124	6.198	9.054	.00	
120 E			-6.124	6.198	9.470	.00	
125			-6.124	6.198	11.054	.00	SIF = .1300+01

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
130			-6.124	6.594	11.054	.00	
130A			-6.124	8.177	11.054	.00	
135			-6.124	9.760	11.054	.00	
135A			-6.124	11.344	11.054	.00	
137			-6.124	12.927	11.054	.00	
138			-6.124	12.927	11.970	20.00	SIF = .1300+01
140			-6.124	14.260	11.054	.00	
140A			-6.124	16.260	11.054	.00	
145	ANCH		-6.124	18.260	11.054	.00	
145A			-6.124	21.323	11.054	.00	
150			-6.124	24.385	11.054	.00	
155			-6.124	24.802	11.054	.00	SIF = .1300+01
160			-3.707	24.802	11.054	.00	
165			-.770	24.802	11.054	.00	
170			-.541	24.802	11.054	.00	
175			-.270	24.802	11.054	.00	SIF = .1300+01
180 B			-.270	25.505	11.757	.00	
180	TINP		-.270	25.627	11.879	.00	
180 E			-.270	25.800	11.879	.00	
185			-.270	29.835	11.879	.00	
185A			-.270	31.752	11.879	.00	
190			-.270	33.669	11.879	.00	
190A			-.270	35.762	11.879	.00	
195			-.270	37.856	11.879	.00	
200			-.270	38.690	11.879	.00	SIF = .1300+01
205			-.270	38.690	12.629	.00	
205A			-.270	38.690	14.280	.00	
210			-.270	38.690	15.931	.00	
210A			-.270	38.690	18.249	.00	
215			-.270	38.690	20.566	.00	
215A			-.270	38.690	23.816	.00	
220			-.270	38.690	27.066	.00	
225 B			-.270	38.690	29.129	.00	
225	TINP		-.270	38.690	29.545	.00	
225 E			.147	38.690	29.545	.00	
230			2.730	38.690	29.545	.00	
230A			5.714	38.690	29.545	.00	
235			8.699	38.690	29.545	.00	
235A			11.709	38.690	29.545	.00	
240			14.720	38.690	29.545	.00	
245			17.720	38.690	29.545	.00	SIF = .1300+01
250			17.720	38.690	30.077	.00	
255 B			17.720	38.690	31.212	.00	

DATA PT	TYPE	TITLE	COORDINATES (FT)			ADDITIONAL WEIGHT (LBS)	SIF INPUT DATA
			X	Y	Z		
255	TINP		17.720	38.690	31.629	.00	
255 E			18.136	38.690	31.629	.00	
260			18.470	38.690	31.629	.00	
265 B			22.568	38.690	31.629	.00	
265	TINP		22.740	38.690	31.629	.00	
265 E			22.862	38.690	31.751	.00	
270			23.720	38.690	32.608	.00	SIF = .1300+01
275			23.720	40.294	32.608	.00	
280			23.720	45.190	32.608	.00	SIF = .1300+01
285			23.720	45.190	32.025	.00	SIF = .1300+01
290			23.720	45.419	32.025	.00	
290A			23.720	47.856	32.025	.00	
295			23.720	50.294	32.025	.00	
300			23.720	51.065	32.025	.00	SIF = .1300+01
305			23.720	51.065	31.588	.00	
310 B			23.720	51.065	31.504	.00	
310	TINP		23.720	51.065	31.088	.00	
310 E			23.303	51.065	31.088	.00	
315			22.470	51.065	31.088	.00	SIF = .1300+01
320 B			22.470	51.523	31.088	.00	
320	TINP		22.470	51.940	31.088	.00	
320 E			22.175	51.940	31.382	.00	
500	ANCH		21.645	51.940	31.913	.00	