

BENDING MOMENT (T.M)		FORCE		MIN CASE.	
J	CASE, MAX	J	CASE, MIN	FORCE	FORCE
43	54	12	14.423	12	9.489
54	43	15	-15.747	12	-17.307
54	65	15	-15.736	12	-17.295
65	54	12	-10.583	12	-15.533
65	76	12	-10.583	12	-15.533
76	65	12	-4.997	12	-14.936
76	87	12	-4.989	12	-14.918
87	76	12	-2.495	12	-7.460
87	98	12	-2.495	12	-7.460
98	87	12	-0.001	12	-0.002
11	22	12	-0.007	12	-0.008
22	11	12	23.387	12	18.771
22	33	12	23.387	12	18.771
33	22	12	33.108	12	23.873
33	44	12	33.073	12	23.847
44	33	12	14.220	12	9.610
44	55	12	14.220	12	9.610
55	44	15	-17.707	15	-18.920
55	66	15	-17.694	15	-18.906
66	55	12	-11.192	12	-15.865
66	77	12	-11.192	12	-15.865
77	66	12	-4.096	12	-13.437
77	88	12	-4.088	12	-13.421
88	77	12	-2.045	12	-6.711
88	99	12	-2.045	12	-6.711
99	88	12	-0.001	12	-0.002
1	2	12	0.004	12	-0.153
2	1	12	0.110	12	0.001
2	3	14	0.015	14	-0.027
3	2	14	0.017	14	0.001
3	4	12	-0.018	12	-0.071
4	3	12	0.055	12	0.020
4	5	14	-0.002	14	-0.007
5	4	12	0.006	15	0.004
5	6	12	-0.021	12	-0.035
6	5	12	0.027	12	0.019
6	7	12	-0.002	12	-0.004
7	6	12	0.007	12	0.006
7	8	12	-0.018	12	-0.022
8	7	12	0.020	12	0.016
8	9	12	-0.007	12	-0.009
9	8	12	0.009	12	0.007
9	10	12	-0.014	12	-0.019
10	9	12	0.014	12	0.010
10	11	12	-0.011	12	-0.014
11	10	12	0.029	12	0.023
23	24	12	0.083	12	-0.533
24	23	12	42.220	12	-29.211
24	25	12	42.080	12	-29.489
25	24	12	57.355	12	-22.987

BENDING MOMENT (T.M)		MIN		MAX	
I	J	CASE	FORCE	CASE	FORCE
25	26	12	57.262	12	-23.233
26	25	12	46.864	12	-33.818
27	26	12	46.769	12	-33.838
27	27	12	28.927	12	-45.928
27	28	12	28.823	12	-46.119
28	27	12	13.024	12	-46.097
28	29	12	12.904	12	-46.239
29	28	12	9.531	12	-31.410
29	30	12	9.410	12	-31.516
30	29	12	7.153	12	-17.467
30	31	12	7.028	12	-17.559
31	30	12	4.467	12	-7.652
31	32	12	4.344	12	-7.738
32	31	12	1.831	12	-2.360
32	33	12	1.708	12	-2.448
33	32	12	0.126	12	0.092
45	46	14	0.283	12	0.026
46	45	12	-0.021	14	-0.161
47	47	12	-0.070	12	0.004
47	46	12	-0.026	15	-0.074
47	48	15	0.065	13	0.034
48	47	12	-0.033	15	-0.066
48	49	15	0.044	13	0.028
49	48	14	-0.037	15	-0.041
49	50	15	0.035	15	0.025
50	49	15	-0.032	15	-0.031
50	51	15	0.036	15	0.018
51	50	15	-0.018	15	-0.025
51	52	14	0.034	15	0.018
52	51	15	-0.015	12	-0.021
52	53	12	0.034	15	0.019
53	52	12	-0.026	12	-0.031
53	54	14	0.014	12	0.010
54	53	12	-0.005	14	-0.009
54	55	12	0.036	12	0.033
55	54	15	-0.005	15	-0.048
67	68	12	0.214	12	-0.395
66	67	12	26.649	12	-64.746
66	66	12	26.666	12	-44.877
69	68	12	16.749	12	-63.800
69	70	12	16.819	12	-63.902
70	69	12	13.212	12	-67.517
70	71	12	13.320	12	-67.591
71	70	12	15.620	12	-59.234
71	72	12	16.005	12	-59.235
72	71	12	15.939	12	-43.463
72	73	12	16.005	12	-43.418
73	72	12	13.431	12	-27.747
73	74	12	13.481	12	-27.681
74	73	12	9.597	12	-15.193

** UHUKU BRIDGE **

** PICKUP TABLE ** NO. 1

BENDING MOMENT (T.M)		FORCE		MIN		FORCE	
J	CASE,	MAX	CASE,	MAX	CASE,	MIN	CASE,
74	75	12	12	9.636	12	-15.122	12
75	74	12	12	5.504	12	-6.728	12
75	76	12	12	5.536	12	-6.658	12
76	75	12	12	2.086	12	-1.938	12
76	77	12	12	2.114	12	-1.874	12
77	76	12	12	-0.026	12	-0.060	12
89	90	12	12	0.026	12	-0.130	12
90	89	12	12	0.077	12	-0.017	12
90	91	14	14	0.019	14	-0.024	14
91	90	12	12	0.031	12	-0.018	12
91	92	14	14	0.001	12	-0.013	12
92	91	12	12	0.010	12	0.003	12
92	93	12	12	0.024	12	-0.013	12
93	92	12	12	0.004	12	-0.022	12
93	94	12	12	0.001	12	-0.010	12
94	93	12	12	0.005	12	0.002	12
94	95	12	12	0.016	12	0.006	12
95	94	12	12	-0.004	12	-0.009	12
95	96	12	12	0.003	12	-0.001	12
96	95	12	12	-0.003	12	-0.008	12
96	97	12	12	0.003	12	0.001	12
97	96	12	12	0.001	12	0.001	12
97	98	12	12	0.011	12	0.005	12
98	97	12	12	-0.005	12	-0.011	12
98	99	12	12	-0.001	12	-0.002	12
99	98	12	12	-0.002	12	-0.006	12

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

BENDING MOMENT (T.M)

		MAX		MIN		FORCE	
I	J	CASE.	FORCE	CASE.	FORCE	CASE.	FORCE
1	12	17	0.003	17	-0.042	17	-0.042
12	23	17	122.280	17	-7.974	17	-7.974
23	12	17	130.488	17	-15.951	17	-15.951
34	23	17	130.350	17	-15.917	17	-15.917
34	34	17	68.948	17	-61.320	17	-61.320
45	34	17	-14.998	18	-126.489	18	-126.489
45	56	17	-14.987	18	-126.412	18	-126.412
56	45	17	63.961	17	-65.607	17	-65.607
56	67	17	63.961	17	-65.607	17	-65.607
67	56	17	120.539	17	-24.723	17	-24.723
67	78	17	120.416	17	-24.682	17	-24.682
78	67	17	117.241	17	-12.343	17	-12.343
78	89	17	117.241	17	-12.345	17	-12.345
89	78	17	0.037	17	-0.004	17	-0.004
2	13	17	-0.000	17	-0.032	17	-0.032
13	2	17	92.094	17	1.084	17	1.084
13	24	17	92.094	17	1.084	17	1.084
24	13	17	106.623	17	-3.302	17	-3.302
24	35	17	106.621	17	-3.287	17	-3.287
35	24	17	49.855	17	-41.454	17	-41.454
35	46	17	49.855	17	-41.454	17	-41.454
46	35	17	-24.746	17	-104.247	17	-104.247
46	57	17	-24.726	17	-104.186	17	-104.186
57	46	17	44.597	17	-46.983	17	-46.983
57	68	17	44.597	17	-46.983	17	-46.983
68	57	17	95.990	17	-14.850	17	-14.850
68	79	17	95.990	17	-14.826	17	-14.826
79	68	17	86.941	17	-4.678	17	-4.678
79	90	17	86.941	17	-4.678	17	-4.678
90	79	17	0.028	17	-0.001	17	-0.001
3	14	17	-0.005	17	-0.022	17	-0.022
14	3	17	63.573	17	14.115	17	14.115
14	25	17	63.573	17	14.115	17	14.115
25	14	17	78.511	17	-3.942	17	-3.942
25	36	17	78.428	17	-3.936	17	-3.936
36	25	17	28.063	17	-21.536	17	-21.536
36	47	17	28.063	17	-21.536	17	-21.536
47	36	17	-40.125	19	-76.809	19	-76.809
47	58	17	-40.099	19	-76.757	19	-76.757
58	47	17	21.506	17	-27.972	17	-27.972
58	69	17	21.506	17	-27.972	17	-27.972
69	58	17	65.235	17	-17.220	17	-17.220
69	80	17	65.168	17	-17.201	17	-17.201
80	69	17	56.919	17	7.489	17	7.489
80	91	17	56.919	17	7.489	17	7.489
91	80	17	0.019	17	0.002	17	0.002
4	15	17	-0.005	17	-0.014	17	-0.014
15	4	17	41.262	17	15.554	17	15.554

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

BENDING MOMENT (T.M)		MIN		FORCE	
I	J	MAX	CASE	MIN	CASE
15	26	17		17	15.554
26	15	17		17	9.037
26	37	17		17	9.026
37	26	17		17	-10.904
37	48	17		17	-10.904
48	37	17		17	-57.627
48	59	20		20	-57.587
59	48	17		17	-17.876
59	70	17		17	-17.876
70	59	17		17	-5.032
70	81	17		17	-5.026
81	70	17		17	8.527
81	92	17		17	8.527
92	81	17		17	0.003
92	16	17		17	-0.009
16	5	17		17	14.627
16	27	17		17	14.627
27	16	17		17	18.251
27	38	17		17	18.251
38	27	17		17	-4.465
38	49	17		17	-4.465
49	38	20		20	-41.301
49	60	20		20	-41.272
60	49	17		17	-11.273
60	71	17		17	-11.273
71	60	17		17	4.482
71	82	17		17	4.480
82	71	17		17	7.745
82	93	17		17	7.745
93	82	17		17	0.003
93	17	17		17	0.006
17	6	17		17	12.442
17	28	17		17	12.442
28	17	17		17	20.512
28	39	17		17	20.496
39	28	17		17	-1.731
39	50	17		17	-1.731
50	39	20		20	-31.600
50	61	20		20	-31.578
61	50	17		17	-8.303
61	72	17		17	-8.303
72	61	17		17	7.342
72	83	17		17	7.337
83	72	17		17	5.857
83	94	17		17	5.857
94	83	17		17	0.002
94	7	17		17	-0.006
18	7	17		17	12.884
18	29	17		17	12.884
29	18	17		17	14.758
29	18	17		17	

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

BENDING MOMENT (T.M)

MAX		MIN		FORCE	
I	J	CASE	CASE	FORCE	FORCE
29	40	17	17	24.358	14.743
40	29	17	17	4.637	0.020
40	51	17	17	4.637	0.020
51	40	20	20	-24.240	-29.057
51	62	20	20	-24.224	-29.036
62	51	17	17	-1.525	-6.206
62	73	17	17	-1.525	-6.206
73	62	17	17	11.985	2.299
73	84	17	17	11.974	2.298
84	73	17	17	11.496	6.657
84	95	17	17	11.496	6.657
95	84	17	17	0.004	0.002
8	19	17	17	-0.004	-0.006
19	8	17	17	17.300	12.534
19	30	17	17	17.300	12.534
30	19	17	17	22.660	13.124
30	41	17	17	22.637	13.111
41	30	17	17	4.853	0.169
41	52	17	17	4.853	0.169
52	41	20	20	-23.583	-27.782
52	63	20	20	-23.567	-27.763
63	52	17	17	-1.090	-5.759
63	74	17	17	-1.090	-5.759
74	63	17	17	10.766	1.199
74	85	17	17	10.755	1.197
85	74	17	17	11.353	6.573
85	96	17	17	11.353	6.573
96	85	17	17	0.004	0.002
9	20	17	17	-0.004	-0.006
20	9	17	17	17.420	12.268
20	31	17	17	17.420	12.268
31	20	17	17	22.896	12.591
31	42	17	17	22.873	12.579
42	31	17	17	4.945	-0.188
42	53	17	17	4.945	-0.188
53	42	20	20	-24.110	-27.147
53	64	20	20	-24.094	-27.129
64	53	17	17	-0.805	-5.968
64	75	17	17	-0.805	-5.968
75	64	17	17	11.332	1.026
75	86	17	17	11.320	1.026
86	75	17	17	11.636	6.488
86	97	17	17	11.636	6.488
97	86	17	17	0.004	0.002
10	21	17	17	-0.004	-0.006
21	10	17	17	17.207	12.290
21	32	17	17	17.207	12.290
32	21	17	17	23.398	13.561
32	43	17	17	23.374	13.547
43	32	17	17	4.516	-0.418

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

BENDING MOMENT (T.M)

MAX		MIN		FORCE
I	J	CASE	CASE	FORCE
43	54	17	17	-0.418
54	63	20	17	-26.530
54	65	17	17	-26.512
65	54	17	17	-5.907
65	76	17	17	-5.907
76	65	17	17	2.509
76	87	17	17	2.507
87	76	17	17	6.766
87	98	17	17	6.766
98	87	17	17	0.002
11	22	17	17	-0.006
22	11	17	17	13.505
22	33	17	17	13.505
33	22	17	17	15.391
33	44	17	17	15.375
44	33	17	17	-0.435
44	55	17	17	-0.435
55	44	20	20	-28.488
55	66	20	20	-28.488
66	55	17	17	-6.064
66	77	17	17	-6.064
77	66	17	17	4.104
77	88	17	17	4.100
88	77	17	17	7.863
88	99	17	17	7.863
99	88	17	17	7.863
1	2	17	17	0.003
2	1	17	17	-0.147
2	3	19	19	-0.005
3	2	19	19	-0.027
3	4	17	17	0.002
4	3	17	17	-0.063
4	5	17	17	0.013
5	4	17	17	-0.007
5	6	17	20	0.004
6	5	17	17	-0.027
6	7	17	17	0.012
7	6	17	17	-0.004
7	8	17	17	0.004
8	7	17	17	-0.016
8	9	17	17	0.010
9	8	17	17	-0.007
9	10	17	17	0.006
10	9	17	17	-0.014
10	11	17	17	0.009
11	10	17	17	-0.008
23	24	17	17	0.022
24	23	17	17	0.122
24	25	17	17	39.250
25	24	17	17	39.151
25	24	17	17	-32.419
25	24	17	17	-30.240

** UNURU BRIDGE **

** PICKUP TABLE ** NO. 2

BENDING MOMENT (T.M)

BENDING MOMENT (T.M)		MIN		MAX		FORCE	
I	J	CASE.	CASE.	CASE.	CASE.	MIN	MAX
25	26	17	17	50.050	17	30.466	
26	25	17	17	40.176	17	-40.307	
26	27	17	17	40.146	17	-40.521	
27	26	17	17	25.307	17	-49.548	
27	28	17	17	25.251	17	-49.692	
28	27	17	17	12.199	17	-46.922	
28	29	17	17	12.125	17	-47.016	
29	28	17	17	9.472	17	-31.469	
29	30	17	17	9.397	17	-31.529	
30	29	17	17	7.312	17	-17.308	
30	31	17	17	7.231	17	-17.356	
31	30	17	17	4.631	17	-7.488	
31	32	17	17	4.549	17	-7.533	
32	31	17	17	1.726	17	-2.266	
32	33	17	17	1.643	17	-2.313	
33	32	17	17	0.087	17	0.053	
45	46	19	19	0.297	17	0.040	
46	45	17	17	-0.052	19	-0.172	
46	47	17	17	0.082	17	0.015	
47	46	17	17	-0.041	20	-0.090	
47	48	20	20	0.102	17	0.051	
48	47	17	17	-0.049	20	-0.083	
48	49	20	20	0.061	18	0.044	
49	48	19	19	-0.044	20	-0.057	
49	50	20	20	0.049	20	0.039	
50	49	20	20	-0.035	20	-0.044	
50	51	20	20	0.038	20	0.031	
51	50	20	20	-0.031	20	-0.038	
51	52	19	19	0.036	20	0.030	
52	51	20	20	-0.028	17	-0.034	
52	53	17	17	0.035	20	0.030	
53	52	17	17	-0.033	17	-0.038	
53	54	19	19	0.030	17	0.026	
54	53	17	17	-0.018	19	-0.022	
54	55	17	17	0.046	17	0.042	
55	54	20	20	-0.069	20	-0.072	
67	68	17	17	0.153	17	0.457	
68	67	17	17	35.224	17	-36.171	
68	69	17	17	35.165	17	-36.378	
69	68	17	17	39.936	17	-40.613	
69	70	17	17	39.932	17	-40.789	
70	69	17	17	31.821	17	-48.908	
70	71	17	17	31.843	17	-49.069	
71	70	17	17	22.138	17	-53.018	
71	72	17	17	22.131	17	-53.109	
72	71	17	17	13.018	17	-46.384	
72	73	17	17	12.993	17	-46.430	
73	72	17	17	10.508	17	-30.670	
73	74	17	17	10.477	17	-30.685	
74	73	17	17	7.960	17	-16.830	

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

BENDING MOMENT (T.M)		MAX		MIN		FORCE	
I	J	CASE	17	CASE	17	FORCE	17
74	75		7.923			-16.835	
75	74		4.927			-7.305	
75	76		4.886			-7.308	
76	75		1.834			-2.191	
76	77		1.790			-2.198	
77	76		0.047			0.012	
89	90		0.015			-0.141	
90	89		0.084			-0.009	
90	91		0.011			-0.032	
91	90		0.052			0.003	
91	92		-0.005			-0.018	
92	91		0.005			-0.002	
92	93		-0.005			-0.042	
93	92		0.033			0.007	
93	94		0.010			-0.002	
94	93		0.001			-0.002	
94	95		-0.006			-0.016	
95	94		0.010			0.005	
95	96		-0.002			-0.005	
96	95		0.009			0.004	
96	97		-0.004			-0.005	
97	96		0.003			0.002	
97	98		-0.005			-0.012	
98	97		0.011			0.004	
98	99		-0.003			-0.004	
99	98		0.015			0.010	

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

BENDING MOMENT (T.M)

I	J	CASE.	MAX	MIN	FORCE	FORCE
1	1	12	3	12	0.002	-0.044
12	1	12	12	3	127.105	-6.031
12	23	12	12	3	127.105	-6.031
12	23	12	12	3	140.139	-12.085
12	23	12	12	3	139.991	-12.053
12	34	12	12	12	76.333	-53.935
12	34	12	12	12	76.333	-53.935
12	45	12	12	13	5.888	-121.269
12	45	12	12	13	5.888	-121.269
12	56	12	12	12	57.606	-71.962
12	56	12	12	12	57.606	-71.962
12	67	12	12	12	102.705	-42.557
12	67	12	12	12	102.599	-42.499
12	78	12	12	12	108.331	-21.253
12	78	12	12	12	108.331	-21.253
12	89	12	12	12	0.035	-0.007
12	89	12	12	12	0.001	-0.034
12	13	12	12	3	97.300	-3.196
12	13	12	12	3	97.300	-3.196
12	24	12	12	3	116.079	-9.451
12	24	12	12	3	115.966	-9.452
12	35	12	12	12	59.496	-31.813
12	35	12	12	12	59.496	-31.813
12	46	12	12	12	2.127	-95.368
12	46	12	12	12	2.126	-95.313
12	57	12	12	12	35.898	-55.682
12	57	12	12	12	35.898	-55.682
12	68	12	12	12	75.189	-35.651
12	68	12	12	12	75.123	-35.605
12	79	12	12	12	73.813	-17.805
12	79	12	12	12	73.813	-17.805
12	90	12	12	12	0.024	-0.006
12	90	12	12	12	0.001	-0.024
12	14	12	12	3	67.867	-3.706
12	14	12	12	3	69.867	-3.706
12	25	12	12	3	65.466	-12.817
12	25	12	12	3	85.372	-12.817
12	36	12	12	12	41.524	-7.953
12	36	12	12	12	41.524	-7.953
12	47	12	12	14	2.155	-62.621
12	47	12	12	14	2.154	-62.578
12	58	12	12	12	6.522	-42.957
12	58	12	12	12	6.522	-42.957
12	69	12	12	12	53.263	-29.192
12	69	12	12	12	53.215	-29.153
12	80	12	12	12	34.850	-14.579
12	80	12	12	12	34.850	-14.579
12	91	12	12	12	0.011	-0.005
12	91	12	12	12	0.001	-0.022
12	4	12	12	3	62.359	-3.795
12	4	12	12	3	62.359	-3.795

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

BENDING MOMENT (T.M)

I	J	CASE	MAX	MIN	FORCE
43	54	3	43.222	3	-4.470
54	43	3	2.128	3	-50.259
54	65	3	2.127	3	-50.227
65	54	3	2.254	3	-36.530
65	76	3	2.254	3	-36.530
76	65	3	2.863	3	-24.878
76	87	3	2.860	3	-24.847
87	76	3	1.430	3	-12.425
87	98	3	1.430	3	-12.425
98	87	3	0.000	3	-0.005
11	22	3	0.002	3	-0.027
22	11	3	77.146	3	-5.966
22	33	3	77.146	3	-5.966
33	22	3	97.121	3	-11.940
33	44	3	97.020	3	-11.929
44	33	3	47.369	3	-4.642
44	55	3	47.369	3	-4.642
55	44	3	5.866	3	-4.642
55	66	3	5.862	3	-59.788
66	55	3	5.862	3	-59.746
66	77	3	4.470	3	-44.230
77	66	3	4.470	3	-44.230
77	88	3	5.143	3	-29.644
88	77	3	5.138	3	-29.604
88	99	3	2.569	3	-14.804
99	88	3	2.569	3	-14.804
99	88	3	0.000	3	-14.804
1	2	12	0.007	12	-0.005
2	1	12	0.110	12	-0.004
3	2	14	0.015	14	-0.027
3	2	3	0.019	3	-0.006
3	4	3	0.002	12	-0.071
4	3	3	0.060	3	-0.002
4	5	3	0.006	3	-0.021
5	4	3	0.020	3	-0.005
5	6	3	0.002	3	-0.062
6	5	3	0.058	3	-0.002
6	7	3	0.005	3	-0.023
7	6	3	0.026	3	-0.004
7	8	3	0.002	3	-0.054
8	7	3	0.050	3	-0.002
8	9	3	0.004	3	-0.030
9	8	3	0.031	3	-0.003
9	10	3	0.002	3	-0.051
10	9	3	0.043	3	-0.007
10	11	3	0.005	3	-0.048
11	10	3	0.095	3	-0.007
23	24	12	0.083	12	-0.533
24	23	12	42.220	12	-29.211
24	25	12	42.080	12	-29.489
25	24	12	57.325	12	-41.816

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

BENDING MOMENT (T.M)		MIN CASE.		FORCE	
I	J	MAX	MIN	MAX	MIN
25	26	12	3	57.262	-41.927
26	25	3	3	61.060	-48.451
26	27	3	3	60.864	-48.538
27	26	3	3	64.428	-48.878
27	28	3	3	64.231	-48.934
28	27	3	3	64.718	-48.672
28	29	3	3	64.515	-48.708
29	28	3	3	64.465	-48.839
29	30	3	3	64.269	-48.894
30	29	3	3	61.230	-48.344
30	31	3	3	61.036	-48.433
31	30	3	3	50.535	-41.684
31	32	3	3	50.347	-41.795
32	31	3	3	28.900	-25.668
32	33	3	3	28.695	-25.777
33	32	3	3	0.364	-0.040
45	46	14	3	0.283	-0.016
46	45	3	14	0.006	-0.161
46	47	12	3	0.070	-0.007
47	46	3	15	0.002	-0.074
47	48	15	3	0.085	-0.003
48	47	3	15	0.002	-0.066
48	49	3	3	0.054	-0.003
49	48	3	3	0.003	-0.055
49	50	3	3	0.059	-0.004
50	49	3	3	0.004	-0.058
50	51	3	3	0.056	-0.004
51	50	3	3	0.004	-0.056
51	52	3	3	0.058	-0.003
52	51	3	3	0.004	-0.053
52	53	3	3	0.060	-0.003
53	52	3	3	0.003	-0.075
53	54	3	3	0.039	-0.003
54	53	3	3	0.008	-0.029
54	55	3	3	0.104	-0.006
55	54	3	3	0.016	-0.153
67	68	12	12	0.214	-0.395
68	67	12	12	26.649	-44.746
68	69	12	12	26.666	-44.877
69	68	12	12	16.749	-63.800
69	70	12	12	16.819	-63.902
70	69	3	12	15.970	-67.517
70	71	3	12	15.999	-67.591
71	70	3	12	18.858	-59.236
71	72	3	12	18.880	-59.235
72	71	3	12	19.789	-43.463
72	73	3	12	19.808	-43.418
73	72	3	12	18.816	-27.747
73	74	3	12	18.838	-27.681
74	73	3	3	15.896	-17.679

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

BENDING MOMENT (T.M)

I	J	MAX CASE.	MIN CASE.	FORCE	FORCE
74	75	3	3	15.926	-17.613
75	74	3	3	11.306	-12.946
75	76	3	3	11.348	-12.883
76	75	3	3	5.832	-6.329
76	77	3	3	5.876	-6.259
77	76	3	3	0.020	-0.144
89	90	12	12	0.026	-0.130
90	89	12	12	0.077	-0.017
90	91	14	14	0.019	-0.024
91	90	12	12	0.031	-0.018
91	92	3	12	0.001	-0.013
92	91	12	3	0.010	-0.000
92	93	12	12	0.024	-0.013
93	92	12	12	0.004	-0.022
93	94	12	3	0.001	-0.011
94	93	3	3	0.007	-0.000
94	95	3	3	0.017	-0.000
95	94	3	3	0.000	-0.010
95	96	12	3	0.003	-0.002
96	95	3	3	0.001	-0.010
96	97	3	3	0.003	-0.001
97	96	3	3	0.004	-0.001
97	98	3	3	0.017	-0.001
98	97	3	3	0.001	-0.018
98	99	3	3	0.000	-0.004
99	98	3	3	0.003	-0.018

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

BENDING MOMENT (T.M)		CASE		FORCE	MIN	FORCE
I	J	MAX	MIN	MIN	CASE	MIN
1	12	4	4	0.006	17	-0.042
12	1	17	17	122.280	4	-17.799
12	23	17	17	122.280	4	-17.799
23	12	17	17	130.488	4	-35.605
23	34	17	17	130.350	4	-35.561
34	23	17	17	68.948	17	-61.320
34	45	17	17	68.948	17	-61.320
45	34	4	4	9.274	18	-126.489
45	56	4	4	9.267	18	-126.412
56	45	17	17	63.961	17	-65.607
56	67	17	17	63.961	17	-65.607
67	56	17	17	120.539	4	-35.332
67	78	17	17	120.416	4	-35.290
78	67	17	17	117.241	4	-17.647
78	89	17	17	117.241	4	-17.647
89	78	17	17	0.037	4	-0.006
2	13	4	4	0.004	17	-0.032
13	2	17	17	92.094	4	-13.561
13	24	17	17	92.094	4	-13.561
24	13	17	17	106.623	4	-28.764
24	35	17	17	106.521	4	-28.735
35	24	17	17	49.855	17	-41.454
35	46	17	17	49.855	17	-41.454
46	35	4	4	3.382	17	-104.247
46	57	4	4	3.389	17	-104.186
57	46	17	17	44.597	17	-46.983
57	68	17	17	44.597	17	-46.983
68	57	17	17	95.990	4	-28.855
68	79	17	17	95.990	4	-28.826
79	68	17	17	86.941	4	-13.646
79	90	17	17	86.941	4	-13.646
90	79	17	17	0.028	4	-0.005
3	14	4	4	0.004	17	-0.032
14	3	17	17	63.573	4	-12.664
14	25	17	17	63.573	4	-12.664
25	14	17	17	78.511	4	-28.610
25	36	17	17	78.428	4	-28.585
36	25	4	4	39.724	4	-32.879
36	47	4	4	39.724	4	-32.879
47	36	4	4	3.335	19	-76.809
47	58	4	4	3.333	19	-76.757
58	47	4	4	39.791	4	-32.897
58	69	4	4	39.791	4	-32.897
69	58	4	4	70.590	4	-28.592
69	80	4	4	70.526	4	-28.568
80	69	4	4	60.114	4	-12.642
80	91	4	4	60.114	4	-12.642
91	80	4	4	0.019	4	-0.005
4	15	4	4	0.004	4	-0.021
15	4	4	4	58.546	4	-11.561

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

BENDING MOMENT (T.M)

I	J	CASE,	MAX	MIN	FORCE	FORCE
15	26	4	4	4	58.546	-11.561
26	15	4	4	4	67.171	-26.679
26	37	4	4	4	67.105	-26.657
37	26	4	4	4	38.080	-31.257
37	48	4	4	4	38.080	-31.257
48	37	4	4	4	3.653	-74.461
48	59	4	4	4	3.651	-74.415
59	48	4	4	4	37.896	-31.133
59	70	4	4	4	37.896	-31.133
70	59	4	4	4	66.857	-26.620
70	81	4	4	4	66.797	-26.599
81	70	4	4	4	58.329	-11.489
81	92	4	4	4	58.329	-11.489
92	81	4	4	4	0.019	-0.004
92	16	4	4	4	0.004	-0.021
16	5	4	4	4	58.201	-10.908
16	27	4	4	4	58.201	-10.908
27	16	4	4	4	66.734	-25.475
27	38	4	4	4	66.674	-25.455
38	27	4	4	4	37.821	-31.147
38	49	4	4	4	37.821	-31.147
49	38	4	4	4	4.821	-75.337
49	60	4	4	4	4.819	-75.290
60	49	4	4	4	37.722	-30.959
60	71	4	4	4	37.722	-30.959
71	60	4	4	4	66.843	-25.449
71	82	4	4	4	66.782	-25.429
82	71	4	4	4	58.323	-10.922
82	93	4	4	4	58.323	-10.922
93	82	4	4	4	0.019	-0.004
93	6	4	4	4	0.003	-0.020
6	17	4	4	4	58.622	-10.932
17	6	4	4	4	58.622	-10.932
17	28	4	4	4	67.271	-25.351
28	17	4	4	4	67.205	-25.329
28	39	4	4	4	37.740	-30.937
39	28	4	4	4	37.740	-30.937
39	50	4	4	4	5.596	-75.947
50	39	4	4	4	5.593	-75.900
50	61	4	4	4	37.793	-30.974
61	50	4	4	4	37.793	-30.974
61	72	4	4	4	67.172	-25.328
72	61	4	4	4	67.117	-25.308
72	83	4	4	4	58.553	-10.907
83	72	4	4	4	58.553	-10.907
83	94	4	4	4	0.019	-0.004
94	83	4	4	4	0.004	-0.021
94	7	4	4	4	58.255	-10.905
7	18	4	4	4	58.255	-10.905
18	7	4	4	4	66.757	-25.450
18	29	4	4	4	66.757	-25.450
29	18	4	4	4	66.757	-25.450

** URURU BRIDGE **

** PICKUP TABLE ** NO. 4

BENDING MOMENT (T.M)

J	MAX. CASE.	MIN. CASE.	FORCE
29	40	4	66.695
30	29	4	37.526
40	51	4	37.526
51	40	4	4.816
51	62	4	4.814
62	51	4	38.014
62	73	4	38.014
73	62	4	66.944
73	84	4	66.882
84	73	4	58.365
84	95	4	58.365
95	84	4	0.019
8	19	4	0.004
19	8	4	58.517
19	30	4	58.517
30	19	4	67.174
30	41	4	67.110
41	30	4	38.146
41	52	4	38.146
52	41	4	3.934
52	63	4	3.632
63	52	4	38.026
63	74	4	38.026
74	63	4	67.257
74	85	4	67.196
85	74	4	58.619
85	96	4	58.619
96	85	4	0.019
9	20	4	0.004
20	9	4	60.171
20	31	4	60.171
31	20	4	70.614
31	42	4	70.546
42	31	4	39.552
42	53	4	39.552
53	42	4	3.377
53	64	4	3.376
64	53	4	39.760
64	75	4	39.760
75	64	4	70.314
75	86	4	70.249
86	75	4	59.921
86	97	4	59.921
97	86	4	0.020
10	21	4	0.005
21	10	4	63.575
21	32	4	63.575
32	21	4	78.958
32	43	4	78.880
43	32	4	41.674
43	54	4	41.674
54	43	4	-25.429
54	65	4	-30.883
65	54	4	-30.883
65	76	4	-75.485
76	65	4	-75.438
76	87	4	-31.257
87	76	4	-31.257
87	98	4	-25.526
98	87	4	-25.503
98	99	4	-10.955
99	98	4	-10.955
99	100	4	-0.004
100	99	4	-0.021
100	111	4	-11.575
111	100	4	-11.575
111	122	4	-26.766
122	111	4	-26.743
122	133	4	-31.371
133	122	4	-31.371
133	144	4	-74.606
144	133	4	-74.559
144	155	4	-31.198
155	144	4	-31.198
155	166	4	-26.786
166	155	4	-26.764
166	177	4	-11.610
177	166	4	-11.610
177	188	4	-0.004
188	177	4	-0.021
188	199	4	-12.634
199	188	4	-12.634
199	200	4	-28.585
200	199	4	-28.560
200	211	4	-32.740
211	200	4	-32.740
211	222	4	-75.169
222	211	4	-75.121
222	233	4	-33.020
233	222	4	-33.020
233	244	4	-28.627
244	233	4	-28.603
244	255	4	-12.603
255	244	4	-12.603
255	266	4	-0.005
266	255	4	-0.023
266	277	4	-13.508
277	266	4	-13.508
277	288	4	-28.687
288	277	4	-28.658
288	299	4	-36.166
299	288	4	-36.166

** UHUKU BRIDGE **

** PICKUP TABLE ** NO. 4

BENDING MOMENT (T.M)

J	I	MAX CASE.	MIN CASE.	FORCE	FORCE
43	54	4	4	41.674	-36.166
54	43	4	4	3.584	-80.129
54	65	4	4	3.382	-80.077
65	54	4	4	41.817	-36.170
65	76	4	4	41.817	-36.170
76	65	4	4	79.341	-28.825
76	87	4	4	79.266	-28.796
87	76	4	4	63.845	-13.613
87	98	4	4	63.845	-13.613
98	87	4	4	0.021	-0.005
11	22	4	4	0.006	-0.026
22	11	4	4	73.211	-17.437
22	33	4	4	73.211	-17.437
33	22	4	4	93.407	-34.886
33	44	4	4	93.309	-34.841
44	33	4	4	46.948	-43.119
44	55	4	4	46.948	-43.119
55	44	4	4	9.193	-94.687
55	66	4	4	9.186	-94.620
66	55	4	4	47.605	-43.668
66	77	4	4	47.605	-43.668
77	66	4	4	93.734	-35.217
77	88	4	4	93.639	-35.174
88	77	4	4	73.342	-17.588
88	99	4	4	73.342	-17.588
99	88	4	4	0.024	-0.006
1	2	4	4	0.021	-0.147
2	1	17	17	0.104	-0.017
2	3	19	19	0.015	-0.027
3	2	4	4	0.019	-0.006
3	4	4	4	0.015	-0.063
4	3	4	4	0.056	-0.013
4	5	4	4	0.006	-0.021
5	4	4	4	0.020	-0.005
5	6	4	4	0.013	-0.057
6	5	4	4	0.054	-0.012
6	7	4	4	0.005	-0.022
7	6	4	4	0.025	-0.005
7	8	4	4	0.011	-0.050
8	7	4	4	0.047	-0.010
8	9	4	4	0.005	-0.029
9	8	4	4	0.030	-0.005
9	10	4	4	0.011	-0.048
10	9	4	4	0.040	-0.012
10	11	4	4	0.009	-0.046
11	10	4	4	0.090	-0.022
23	24	4	4	0.159	-0.495
24	23	17	17	39.250	-32.182
24	25	17	17	39.151	-32.419
25	24	4	4	53.469	-46.533

** UHURU BRIDGE **

** PICKUP TABLE ** NO: 4

BENDING MOMENT (T.M)

I	J	MAX CASE.	MIN CASE.	FORCE	FORCE
25	26	4	4	53.324	-46.594
26	25	4	4	66.526	-55.768
26	27	4	4	66.365	-55.804
27	26	4	4	71.682	-57.947
27	28	4	4	71.516	-57.951
28	27	4	4	72.630	-58.333
28	29	4	4	72.455	-58.317
29	28	4	4	71.679	-57.920
29	30	4	4	71.512	-57.923
30	29	4	4	66.612	-55.709
30	31	4	4	66.453	-55.746
31	30	4	4	53.656	-46.476
31	32	4	4	53.512	-46.536
32	31	4	4	30.208	-27.558
32	33	4	4	30.049	-27.613
33	32	4	4	0.350	-0.157
35	46	19	4	0.297	-0.025
46	45	4	19	0.009	-0.172
46	47	17	4	0.082	-0.010
47	46	4	20	0.003	-0.090
47	48	20	4	0.102	-0.004
48	47	4	4	0.004	-0.089
48	49	4	4	0.088	-0.005
49	48	4	4	0.005	-0.090
49	50	4	4	0.092	-0.006
50	49	4	4	0.007	-0.091
50	51	4	4	0.091	-0.007
51	50	4	4	0.006	-0.091
51	52	4	4	0.090	-0.005
52	51	4	4	0.005	-0.089
52	53	4	4	0.090	-0.004
53	52	4	4	0.004	-0.099
53	54	4	4	0.089	-0.005
54	53	4	4	0.011	-0.075
54	55	4	4	0.143	-0.010
55	54	4	4	0.024	-0.242
67	68	4	17	0.157	-0.457
68	67	17	17	35.224	-36.171
68	69	17	17	35.165	-36.378
69	68	4	4	53.519	-46.609
69	70	4	4	53.375	-46.670
70	69	4	4	66.694	-55.890
70	71	4	4	66.537	-55.926
71	70	4	4	71.827	-58.124
71	72	4	4	71.658	-58.126
72	71	4	4	72.809	-58.536
72	73	4	4	72.636	-58.522
73	72	4	4	71.813	-58.069
73	74	4	4	71.643	-58.071
74	73	4	4	66.691	-55.763

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

BENDING MOMENT (T.M)		CASE		FORCE	
I	J	MAX	MIN	MAX	MIN
74	75	4	4	66.532	-55.800
75	74	4	4	53.760	-46.469
75	76	4	4	53.615	-46.530
76	75	4	4	30.181	-27.543
76	77	4	4	30.022	-27.599
77	76	4	4	0.353	-0.159
89	90	4	17	0.021	-0.141
90	89	17	4	0.084	-0.014
90	91	19	19	0.011	-0.032
91	90	4	4	0.056	-0.014
91	92	4	4	0.005	-0.022
92	91	4	4	0.014	-0.018
92	93	4	4	0.020	-0.079
93	92	4	4	0.083	-0.021
93	94	4	4	0.021	-0.013
94	93	4	4	0.013	-0.012
94	95	4	4	0.017	-0.071
95	94	4	4	0.050	-0.011
95	96	4	4	0.007	-0.028
96	95	4	4	0.046	-0.011
96	97	4	4	0.004	-0.027
97	96	4	4	0.019	-0.007
97	98	4	4	0.017	-0.064
98	97	4	4	0.064	-0.020
98	99	4	4	0.007	-0.024
99	98	4	4	0.089	-0.021

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

SHEARING FORCE (T)

I	J	MAX CASE	MIN CASE	FORCE	FORCE
1	1	16	12	34.092	-0.676
12	1	12	15	10.478	-20.004
12	2	15	12	20.004	-10.478
23	12	12	12	23.243	-12.101
33	34	12	12	10.455	-22.095
34	23	12	13	36.051	-0.282
34	45	12	12	-1.351	-37.378
45	34	12	14	45.637	3.655
45	56	12	14	41.662	-0.278
56	45	16	12	7.710	-28.977
56	67	12	16	27.441	-7.710
67	56	12	14	19.581	-17.640
67	78	12	12	23.823	-10.490
78	67	12	13	22.465	-10.699
78	89	16	12	7.210	-22.465
89	78	16	12	30.140	-4.559
2	13	13	15	30.169	0.173
13	2	12	12	8.029	-19.612
13	24	12	12	17.143	-8.029
24	13	12	13	21.337	-9.976
24	35	15	12	12.998	-17.899
35	24	12	14	29.869	-0.896
35	46	14	12	0.896	-29.869
46	35	12	12	38.395	3.396
46	57	12	12	52.628	-2.432
57	46	16	12	6.813	-23.794
57	68	12	16	22.218	-6.813
68	57	12	12	17.174	-13.817
68	79	12	12	21.257	-10.038
79	68	12	13	18.222	-9.892
79	90	15	12	9.586	-16.933
90	79	15	15	24.381	-5.656
3	14	12	12	19.963	8.436
14	3	12	12	0.938	-9.789
14	25	12	12	9.789	-0.938
25	14	12	12	14.435	2.592
25	36	15	12	8.680	-4.754
36	25	12	13	16.907	4.631
36	47	14	12	-4.821	-16.907
47	36	12	14	26.044	12.933
47	58	12	14	14.482	1.365
58	47	16	12	-0.324	-12.809
58	69	12	16	12.809	0.324
69	58	15	12	1.241	-11.847
69	80	12	12	5.687	-6.649
80	69	12	13	7.366	-3.264
80	91	12	12	3.127	-7.366
91	80	12	12	8.408	-3.127
4	15	12	12	13.001	7.485
15	4	12	12	-1.917	-7.434

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

SHEARING FORCE (T)

I	J	CASE		FORCE		MIN CASE	FORCE
		MAX	MIN	MAX	MIN		
15	26	12	12	7.434	1.917	12	1.917
26	15	12	12	6.021	-0.263	12	-0.263
26	37	14	12	2.198	-4.853	12	-4.853
37	26	12	14	11.601	5.740	14	5.740
37	48	14	12	-5.740	-11.601	12	-11.601
48	37	12	14	17.168	11.308	14	11.308
48	59	12	14	7.121	1.257	14	1.257
59	48	14	12	-1.257	-7.121	12	-7.121
59	70	12	14	7.121	1.257	14	1.257
70	59	14	12	-1.257	-8.312	12	-8.312
70	81	12	12	2.553	-3.702	12	-3.702
81	70	12	12	2.553	-2.533	12	-2.533
81	92	12	12	2.937	-2.937	12	-2.937
92	81	12	12	2.937	-2.533	12	-2.533
5	16	12	12	8.453	5.868	12	5.868
16	5	12	12	-3.090	-5.675	12	-5.675
16	27	12	12	5.675	3.090	12	3.090
27	16	12	12	0.871	-2.023	12	-2.023
27	38	13	12	-1.836	-5.120	12	-5.120
38	27	12	13	8.613	5.798	13	5.798
38	49	13	12	-5.798	-8.613	12	-8.613
49	38	12	12	11.391	8.576	12	8.576
49	60	12	12	3.483	0.645	12	0.645
60	49	12	12	-0.645	-3.483	12	-3.483
60	71	12	12	3.483	0.645	12	0.645
71	60	12	12	-0.645	-3.483	12	-3.483
71	82	12	12	2.059	-0.874	12	-0.874
82	71	12	12	0.531	-2.059	12	-2.059
82	93	12	12	2.059	-0.531	12	-0.531
93	82	12	12	0.531	-2.059	12	-2.059
6	17	12	12	5.863	4.526	12	4.526
17	6	12	12	-3.422	-4.779	12	-4.779
17	28	12	12	4.779	3.422	12	3.422
28	17	12	12	-1.746	-3.293	12	-3.293
28	39	13	12	-3.520	-5.391	12	-5.391
39	28	12	13	7.000	5.339	13	5.339
39	50	13	12	-5.339	-7.000	12	-7.000
50	39	12	13	8.104	6.543	13	6.543
50	61	12	12	1.660	-0.004	12	-0.004
61	50	12	12	0.004	-1.660	12	-1.660
61	72	12	12	1.660	-0.004	12	-0.004
72	61	12	12	0.327	-1.816	12	-1.816
72	83	12	12	2.021	0.476	12	0.476
83	72	12	12	-0.476	-2.021	12	-2.021
83	94	12	12	1.921	0.586	12	0.586
94	83	12	12	-0.586	-1.921	12	-1.921
7	18	12	12	6.479	5.447	12	5.447
18	7	12	12	-2.668	-3.700	12	-3.700
18	29	12	12	3.700	2.668	12	2.668
29	18	12	12	1.436	0.238	12	0.238

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

SHEARING FORCE (T)

I	J	CASE		FORCE	
		MAX	MIN	MAX	MIN
29	40	12	12	-0.141	-1.687
40	29	12	12	5.619	4.354
40	51	12	12	-4.354	-5.619
51	40	12	12	8.398	7.133
51	62	12	12	1.049	-0.220
62	51	12	12	0.220	-1.049
62	73	12	12	1.049	-0.220
73	62	12	12	0.467	-1.079
73	84	12	12	2.049	0.847
84	73	12	12	-0.871	-1.909
84	95	12	12	1.909	0.871
95	84	12	12	-0.871	-1.909
8	19	12	12	6.471	5.448
19	8	12	12	-2.434	-3.457
19	30	12	12	3.457	2.434
30	19	12	12	2.011	0.841
30	41	12	14	0.497	-0.913
41	30	14	12	5.211	4.040
41	52	12	14	-4.040	-5.211
52	41	14	12	8.225	7.054
52	63	14	14	0.928	-0.252
63	52	14	12	0.252	-0.928
63	74	14	14	0.928	-0.252
74	63	14	12	0.490	-0.928
74	85	12	12	2.002	0.829
85	74	12	12	-0.829	-1.854
85	96	12	12	1.854	0.829
96	85	12	12	-0.829	-1.854
9	20	12	12	6.441	5.326
20	9	12	12	-2.322	-3.427
20	31	12	12	3.427	2.322
31	20	12	12	2.120	0.871
31	42	12	12	0.526	-0.826
42	31	12	12	5.124	3.988
42	53	12	12	-3.988	-5.124
53	42	12	12	8.138	7.002
53	64	12	12	1.037	-0.096
64	53	12	12	0.096	-1.037
64	75	12	12	1.037	-0.096
75	64	12	12	0.311	-1.037
75	86	12	12	1.907	0.661
86	75	12	12	-0.661	-1.764
86	97	12	12	1.764	0.661
97	86	12	12	-0.661	-1.764
10	21	12	12	6.238	5.123
21	10	12	12	-2.382	-3.437
21	32	12	12	3.437	2.382
32	21	12	12	1.693	0.527
32	43	12	12	-0.002	-1.201
43	32	12	12	5.165	4.114

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

SHEARING FORCE (T)

I	CASE.		FORCE		MIN	CASE.	FORCE
	MAX	MIN	MAX	MIN			
43	54	12	-6.114	12	12	-5.165	
54	43	12	7.945	12	12	6.894	
54	65	12	1.200	12	12	0.128	
65	54	12	-0.128	12	12	-1.200	
65	76	12	1.200	12	12	0.128	
76	65	12	0.022	12	12	-1.200	
76	87	12	1.711	12	12	0.535	
87	76	12	-0.535	12	12	-1.599	
87	98	12	1.599	12	12	0.535	
98	87	12	-0.535	12	12	-1.599	
11	22	12	6.482	12	12	5.491	
22	11	12	-2.560	12	12	-3.550	
22	33	12	3.550	12	12	2.560	
33	22	12	1.694	12	12	0.630	
33	44	12	-0.249	12	12	-1.328	
44	33	12	5.508	12	12	4.504	
44	55	12	-6.504	12	12	-5.508	
55	44	12	8.438	12	12	7.448	
55	66	12	1.521	12	12	0.519	
66	55	12	-0.507	12	12	-1.521	
66	77	12	1.521	12	12	0.507	
77	66	12	-0.431	12	12	-1.521	
77	88	12	1.513	12	12	0.438	
88	77	12	-0.438	12	12	-1.438	
88	99	12	1.438	12	12	0.438	
99	88	12	-0.438	12	12	-1.438	
1	2	12	0.132	12	12	-0.002	
2	1	12	0.002	12	12	-0.132	
2	3	14	0.023	14	14	-0.000	
3	2	14	0.006	14	14	-0.023	
3	4	12	0.063	12	12	0.019	
4	3	12	-0.019	12	12	-0.063	
4	5	14	0.006	14	14	0.004	
5	4	14	-0.004	14	14	-0.006	
5	6	12	0.031	12	12	0.021	
6	5	12	-0.021	12	12	-0.031	
6	7	12	0.005	12	12	0.004	
7	6	12	-0.004	12	12	-0.005	
7	8	12	0.021	12	12	0.017	
8	7	12	-0.017	12	12	-0.021	
8	9	12	0.009	12	12	0.007	
9	8	12	-0.007	12	12	-0.009	
9	10	12	0.016	12	12	0.012	
10	9	12	-0.012	12	12	-0.016	
10	11	12	0.022	12	12	0.017	
11	10	12	-0.017	12	12	-0.022	
23	24	12	21.424	12	12	-14.627	
24	23	12	1.627	12	12	-21.424	
24	25	12	15.394	12	12	-4.324	
25	24	12	4.324	12	12	-15.394	

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

SHEARINGS FORCE (T)

I	J	CASE.		MIN	FORCE
		MAX	MIN		
25	26	12	12	12	-12.021
26	25	12	12	12	-1.075
26	27	12	12	12	-3.064
27	26	12	12	12	12.185
27	28	12	12	12	0.403
28	27	12	12	12	8.445
28	29	12	12	12	-0.403
29	28	12	12	12	7.487
29	30	12	12	12	1.728
30	29	12	12	12	7.092
30	31	12	12	12	-1.147
31	30	12	12	12	1.147
31	32	12	12	12	5.001
32	31	12	12	12	-1.293
32	33	12	12	12	1.293
33	32	12	12	12	-2.715
45	46	12	12	12	2.715
46	45	12	12	12	1.369
46	47	12	12	12	1.369
47	46	12	12	12	-2.715
47	48	12	12	12	1.282
48	47	12	12	12	-0.698
48	49	12	12	12	1.282
49	48	12	12	12	-0.698
49	50	12	12	12	-0.024
50	49	12	12	12	0.230
50	51	12	12	12	-0.024
51	50	12	12	12	0.070
51	52	12	12	12	-0.034
52	51	12	12	12	0.077
52	53	12	12	12	-0.034
53	52	12	12	12	0.077
53	54	12	12	12	-0.028
54	53	12	12	12	0.028
54	55	12	12	12	-0.028
55	54	12	12	12	0.028
67	68	12	12	12	-0.024
68	67	12	12	12	0.033
68	69	12	12	12	-0.018
69	68	12	12	12	0.018
69	70	12	12	12	-0.025
70	69	12	12	12	0.025
70	71	12	12	12	-0.017
71	70	12	12	12	0.017
71	72	12	12	12	-0.023
72	71	12	12	12	0.023
72	73	12	12	12	-0.028
73	72	12	12	12	0.028
73	74	12	12	12	-0.008
74	73	12	12	12	0.008
74	75	12	12	12	-0.012
75	74	12	12	12	0.012
75	76	12	12	12	-0.042
76	75	12	12	12	0.042
76	77	12	12	12	-0.040
77	76	12	12	12	0.040
77	78	12	12	12	-22.595
78	77	12	12	12	13.527
78	79	12	12	12	-13.527
79	78	12	12	12	22.595
79	80	12	12	12	-2.579
80	79	12	12	12	17.125
80	81	12	12	12	-2.579
81	80	12	12	12	17.125
81	82	12	12	12	-8.604
82	81	12	12	12	4.482
82	83	12	12	12	-8.604
83	82	12	12	12	4.482
83	84	12	12	12	-1.876
84	83	12	12	12	7.276
84	85	12	12	12	-1.876
85	84	12	12	12	7.276
85	86	12	12	12	-0.504
86	85	12	12	12	8.382
86	87	12	12	12	-0.504
87	86	12	12	12	8.382
87	88	12	12	12	-1.330
88	87	12	12	12	7.934
88	89	12	12	12	-1.330
89	88	12	12	12	7.934
89	90	12	12	12	-1.973
90	89	12	12	12	6.322
90	91	12	12	12	-1.973
91	90	12	12	12	6.322
91	92	12	12	12	-6.322
92	91	12	12	12	1.973

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

SHEARING FORCE (T)		MAX		MIN		FORCE	
J	K	CASE	FORCE	CASE	FORCE	CASE	FORCE
74	75	12	4.249	12	-2.091	12	-2.091
75	76	12	2.091	12	-4.249	12	-4.249
75	76	12	2.389	12	-1.746	12	-1.746
76	75	12	1.746	12	-2.389	12	-2.389
76	77	12	0.918	12	-1.083	12	-1.083
77	76	12	1.083	12	-0.918	12	-0.918
89	90	12	0.105	12	-0.021	12	-0.021
90	89	12	0.021	12	-0.105	12	-0.105
90	91	12	0.025	12	-0.014	12	-0.014
91	90	12	0.014	12	-0.025	12	-0.025
91	92	15	0.009	14	-0.002	15	-0.002
92	91	14	-0.002	15	0.009	14	0.009
92	93	12	0.009	12	-0.023	12	-0.023
93	92	12	0.023	12	-0.009	12	-0.009
93	94	12	0.008	12	0.000	12	0.000
94	93	12	0.000	12	-0.008	12	-0.008
94	95	12	-0.005	12	-0.013	12	-0.013
95	94	12	0.013	12	0.005	12	0.005
95	96	12	-0.001	12	-0.006	12	-0.006
96	95	12	0.006	12	0.001	12	0.001
96	97	12	0.000	12	-0.001	12	-0.001
97	96	12	0.001	12	0.000	12	0.000
97	98	12	-0.005	12	-0.011	12	-0.011
98	97	12	0.011	12	0.005	12	0.005
98	99	12	-0.000	12	-0.003	12	-0.003
99	98	12	0.003	12	0.000	12	0.000

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

SHEARING FORCE (T)		MIN		FORCE	
I	J	CASE	MAX	CASE	MIN
1	12	21	33.056	17	-1.712
12	1	17	11.514	20	-18.968
12	23	20	18.968	17	-11.514
23	12	17	24.278	18	-11.066
23	34	17	10.939	17	-21.611
34	23	17	35.267	18	-0.766
34	45	17	-0.867	17	-36.894
45	34	17	45.153	19	3.171
45	56	17	44.125	19	2.185
56	45	21	5.267	17	-31.469
56	67	17	29.904	21	-5.247
67	56	17	17.118	19	-20.103
67	78	17	21.912	17	-12.401
78	67	17	24.376	18	-8.788
78	89	21	5.299	17	-24.376
89	78	21	32.051	17	-2.647
2	13	18	28.949	20	-1.047
13	2	17	9.043	17	-18.598
13	24	17	16.126	17	-9.043
24	13	17	22.146	18	-9.167
24	35	20	12.853	17	-18.044
35	24	17	29.809	19	-0.957
35	46	19	0.957	17	-29.809
46	35	17	38.129	17	3.130
46	57	17	36.985	17	1.925
57	46	21	3.629	17	-26.978
57	68	17	25.401	21	-3.629
68	57	17	15.164	17	-15.826
68	79	17	20.202	17	-11.093
79	68	17	20.450	18	-7.663
79	90	20	7.557	17	-19.163
90	79	18	27.784	20	-2.255
3	14	17	18.028	17	6.481
14	3	17	1.684	17	-9.043
14	25	17	9.043	17	-1.684
25	14	17	13.972	17	2.130
25	36	20	6.695	17	-6.739
36	25	17	17.684	18	5.608
36	47	19	-5.598	17	-17.684
47	36	17	25.612	19	12.501
47	58	17	24.190	19	11.073
58	47	21	-3.129	17	-15.614
58	69	17	15.614	21	5.129
69	58	20	5.339	17	-7.749
69	80	17	11.308	17	-1.027
80	69	17	8.648	18	-1.982
80	91	17	1.845	17	-8.648
91	80	17	16.590	17	5.056
4	15	17	11.222	17	-5.706
15	4	17	-0.970	17	-6.486

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

SHEARING FORCE (T)

I	J	CASE		FORCE	
		MAX	MIN	MAX	MIN
15	26	17	17	6.486	0.970
26	15	17	17	6.137	-0.147
26	37	19	19	0.820	-6.230
37	26	17	19	12.147	6.287
37	48	19	17	6.287	-12.147
48	37	17	19	16.883	11.023
48	59	17	19	15.366	9.501
59	48	17	19	4.765	-10.830
59	70	17	19	10.630	4.765
70	59	19	17	-0.029	-7.084
70	81	17	17	5.275	-0.980
81	70	17	17	4.951	-0.539
81	92	17	17	0.539	-4.951
92	81	17	17	9.685	4.195
5	16	17	17	6.903	4.319
16	5	17	17	-1.958	-4.542
16	27	17	17	4.542	1.958
27	16	17	17	1.587	-1.309
27	38	20	17	-2.413	-5.696
38	27	17	20	8.773	3.258
38	49	20	17	-5.958	-8.773
49	38	17	20	11.134	8.319
49	60	17	20	9.677	6.839
60	49	20	17	-4.477	-7.316
60	71	17	20	7.316	4.477
71	60	20	17	-2.116	-5.426
71	82	17	17	1.881	-1.022
82	71	17	17	3.070	0.480
82	93	17	17	-0.480	-3.070
93	82	17	17	5.431	2.841
6	17	17	17	4.476	3.139
17	6	17	17	-2.200	-3.537
17	28	17	17	3.537	2.200
28	17	17	17	-0.690	-2.237
28	39	20	17	-3.551	-5.613
39	28	17	20	6.866	5.204
39	50	20	17	-3.204	-6.866
50	39	17	20	7.804	6.143
50	61	17	20	6.394	4.730
61	50	20	17	-3.791	-5.455
61	72	17	20	5.455	3.791
72	61	20	17	-2.610	-4.673
72	83	17	17	0.252	-1.293
83	72	17	17	2.122	0.787
83	94	17	17	-0.787	-2.122
94	83	17	17	3.060	1.724
7	18	17	17	4.977	3.945
18	7	17	17	-1.583	-2.615
18	29	17	17	2.615	1.583
29	18	17	17	2.104	0.906

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

SHEARING FORCE (T)		MIN		FORCE	
I	J	CASE	CASE	MAX	MIN
29	40	17	17	-0.534	-2.080
40	29	17	17	5.595	4.330
40	51	17	17	-4.330	-5.595
51	40	17	17	7.957	6.692
51	62	17	17	6.627	5.358
62	51	17	17	-2.986	-4.265
62	73	17	17	4.265	2.996
73	62	17	17	-0.387	-1.933
73	84	17	17	2.256	1.054
84	73	17	17	1.284	0.246
84	95	17	17	-0.246	-1.284
95	84	17	17	3.645	2.607
8	19	17	17	4.992	3.970
19	8	17	17	-1.408	-2.430
19	30	17	17	2.430	1.408
30	19	17	17	2.586	1.415
30	41	17	17	0.030	-1.381
41	30	19	19	5.226	4.056
41	52	17	17	-4.056	-5.226
52	41	19	17	7.788	6.618
52	63	19	17	6.514	5.335
63	52	17	19	-2.773	-3.953
63	74	19	17	3.953	2.773
74	63	17	19	0.028	-1.391
74	85	17	17	2.582	1.409
85	74	17	17	1.153	0.128
85	96	17	17	-0.128	-1.153
96	85	17	17	3.714	2.689
9	20	17	17	5.018	3.913
20	9	17	17	-1.350	-2.435
20	31	17	17	2.455	1.350
31	20	17	17	2.639	1.391
31	42	17	17	0.043	-1.309
42	31	17	17	5.155	4.019
42	53	17	17	-4.019	-5.155
53	42	17	17	7.717	6.581
53	64	17	17	6.476	5.343
64	53	17	17	-2.781	-3.914
64	75	17	17	3.914	2.781
75	64	17	17	-0.004	-1.352
75	86	17	17	2.596	1.349
86	75	17	17	1.213	0.110
86	97	17	17	-0.110	-1.213
97	86	17	17	3.775	2.671
10	21	17	17	4.872	3.818
21	10	17	17	-1.454	-2.509
21	32	17	17	2.509	1.454
32	21	17	17	2.204	1.038
32	43	17	17	-0.481	-1.680
43	32	17	17	5.227	4.176

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

I	J	SHEARING FORCE (T)		MIN CASE	FORCE
		MAX CASE	MIN CASE		
43	54	17	-4.176	17	-5.227
54	43	17	2.590	17	0.539
54	65	17	6.421	17	5.350
65	54	17	-2.986	17	-4.058
65	76	17	4.058	17	2.986
76	65	17	-0.473	17	-1.695
76	87	17	2.207	17	1.039
87	76	17	1.333	17	0.269
87	98	17	-0.269	17	-1.333
98	87	17	3.695	17	2.631
11	22	17	5.132	17	4.142
22	11	17	-1.650	17	-2.640
22	33	17	2.640	17	1.650
33	22	17	2.164	17	1.100
33	44	17	-0.807	17	-1.885
44	33	17	5.625	17	4.622
44	55	17	-4.622	17	-5.625
55	44	17	8.117	17	7.126
55	66	17	6.919	17	5.916
66	55	17	-3.412	17	-4.427
66	77	17	4.427	17	3.412
77	66	17	-0.844	17	-1.935
77	88	17	2.128	17	1.052
88	77	17	1.440	17	0.439
88	99	17	-0.439	17	-1.440
99	88	17	3.931	17	2.921
1	2	17	0.126	17	-0.008
2	1	17	0.008	17	-0.126
3	3	19	0.022	19	-0.007
3	2	19	0.007	19	-0.022
3	4	17	0.056	17	0.012
4	3	17	-0.012	17	-0.056
4	5	19	0.006	17	0.004
5	4	17	-0.004	19	-0.006
5	6	17	0.024	17	0.015
6	5	17	-0.013	17	-0.024
6	7	17	0.005	17	0.003
7	6	17	-0.003	17	-0.005
7	8	17	0.013	17	0.011
8	7	17	-0.011	17	-0.013
8	9	17	0.007	17	0.005
9	8	17	-0.005	17	-0.007
9	10	17	0.012	17	0.008
10	9	17	-0.008	17	-0.012
10	11	17	0.017	17	0.013
11	10	17	-0.013	17	-0.017
23	24	17	19.905	17	-16.147
24	23	17	16.147	17	-19.905
24	25	17	13.210	17	-6.508
25	24	17	6.508	17	-13.210

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

SHEARING FORCE (T.)		FORCE CASE,		MIN CASE,		FORCE	
I	J	MAX				MIN	MAX
25	26	17	1.340	17	1.340	17	-11.757
26	25	17	11.757	17	-1.340	17	-1.340
26	27	17	-1.537	17	-10.659	17	-10.659
27	26	17	10.659	17	1.537	17	1.537
27	28	17	1.790	17	-7.058	17	-7.058
28	27	17	7.058	17	-1.790	17	-1.790
28	29	17	7.850	17	-1.365	17	-1.365
29	28	17	1.365	17	-7.850	17	-7.850
29	30	17	7.179	17	-1.060	17	-1.060
30	29	17	1.060	17	-7.179	17	-7.179
30	31	17	4.982	17	-1.312	17	-1.312
31	30	17	1.312	17	-4.982	17	-4.982
31	32	17	2.659	17	-1.425	17	-1.425
32	31	17	1.425	17	-2.659	17	-2.659
32	33	17	1.195	17	-0.785	17	-0.785
33	32	17	0.785	17	-1.195	17	-1.195
45	46	17	-0.037	19	-0.242	19	-0.242
46	45	19	0.242	17	0.037	17	0.037
46	47	17	-0.029	18	-0.084	18	-0.084
47	46	18	0.084	17	0.029	17	0.029
47	48	17	-0.051	20	-0.093	20	-0.093
48	47	20	0.093	17	0.051	17	0.051
48	49	19	-0.045	20	-0.060	20	-0.060
49	48	20	0.060	19	0.045	19	0.045
49	50	20	-0.037	20	-0.047	20	-0.047
50	49	20	0.047	20	0.037	20	0.037
50	51	20	-0.031	20	-0.038	20	-0.038
51	50	20	0.038	20	0.031	20	0.031
51	52	20	-0.029	17	-0.035	17	-0.035
52	51	17	0.035	20	0.029	20	0.029
52	53	17	-0.032	17	-0.037	17	-0.037
53	52	17	0.037	20	0.032	20	0.032
53	54	17	-0.022	19	-0.026	19	-0.026
54	53	19	0.026	17	0.022	17	0.022
54	55	20	-0.057	17	-0.059	17	-0.059
55	54	17	0.059	20	0.057	20	0.057
67	68	17	17.902	17	-18.221	17	-18.221
68	67	17	18.221	17	-17.902	17	-17.902
68	69	17	10.017	17	-9.687	17	-9.687
69	68	17	9.687	17	-10.017	17	-10.017
69	70	17	2.201	17	-10.885	17	-10.885
70	69	17	10.885	17	-2.201	17	-2.201
70	71	17	1.046	17	-8.107	17	-8.107
71	70	17	8.107	17	-1.046	17	-1.046
71	72	17	3.801	17	-3.084	17	-3.084
72	71	17	3.084	17	-3.801	17	-3.801
72	73	17	7.979	17	-1.284	17	-1.284
73	72	17	1.284	17	-7.979	17	-7.979
73	74	17	7.014	17	-1.281	17	-1.281
74	73	17	1.281	17	-7.014	17	-7.014

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

SHEARING FORCE (T)		MAX	MIN	FORCE	FORCE
J	I	CASE,	CASE,	MAX	MIN
74	75	17	17	4.824	17
75	74	17	17	1.516	-1.516
75	76	17	17	2.590	-1.545
76	75	17	17	1.545	-2.590
76	77	17	17	1.119	-0.883
77	76	17	17	0.883	-1.119
89	90	17	17	0.114	-0.012
90	89	17	17	0.012	-0.114
90	91	17	17	0.040	0.001
91	90	17	17	-0.001	-0.040
91	92	20	19	0.010	0.003
92	91	19	20	-0.003	-0.010
92	93	17	17	0.038	0.006
93	92	17	17	-0.006	-0.038
93	94	17	17	0.002	-0.006
94	93	17	17	0.006	0.002
94	95	17	17	0.013	-0.002
95	94	17	17	-0.006	-0.013
95	96	17	17	0.007	0.003
96	95	17	17	-0.003	-0.007
96	97	17	17	0.004	0.003
97	96	17	17	-0.003	-0.004
97	98	17	17	0.011	0.005
98	97	17	17	-0.005	-0.011
98	99	17	17	0.009	0.007
99	98	17	17	-0.007	-0.009

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

SHEARING FORCE (T)

MAX		MIN		FORCE	
I	J	CASE	CASE	FORCE	FORCE
1	12	16	3	34.092	-1.294
12	1	12	15	10.478	-20.004
12	23	12	12	20.004	-10.478
12	12	12	13	23.243	-12.101
23	34	3	12	10.712	-22.095
34	23	12	3	36.051	-4.623
34	45	3	12	4.623	-37.378
45	34	12	3	45.637	-1.878
45	56	12	3	41.662	-1.318
56	45	16	12	7.710	-28.977
56	67	12	16	27.441	-7.710
67	56	12	14	19.581	-17.640
67	78	12	12	23.823	-10.490
78	67	12	13	22.465	-10.699
78	89	16	12	7.210	-22.465
89	78	16	12	30.140	-4.559
2	13	13	3	30.169	-1.431
13	2	12	12	8.029	-19.612
13	24	12	12	17.143	-8.029
24	13	12	13	21.337	-9.976
24	35	15	12	12.998	-17.899
35	24	12	3	29.869	-4.578
35	46	3	12	4.578	-29.869
46	35	12	3	38.395	-1.718
46	57	12	12	32.628	-2.432
57	46	16	12	6.813	-23.794
57	68	12	16	22.218	-6.813
68	57	12	12	17.174	-13.817
68	79	12	13	21.257	-10.038
79	68	12	13	18.222	9.892
79	90	15	12	9.586	-16.933
90	79	13	15	24.381	-5.656
3	14	3	3	20.921	-0.795
14	3	3	3	6.742	-11.920
14	25	3	3	11.920	-6.742
25	14	3	3	14.980	-7.539
25	36	3	3	13.017	-11.045
36	25	13	3	16.907	-5.116
36	47	3	12	5.116	-16.907
47	36	12	3	26.044	-1.342
47	58	12	3	14.482	-0.897
58	47	3	12	0.897	-12.809
58	69	12	3	12.809	-0.897
69	58	15	12	1.241	-11.847
69	80	12	12	5.687	-6.649
80	69	12	13	7.366	-3.264
80	91	12	12	3.127	-7.366
91	80	12	12	8.408	-3.127
4	15	3	3	20.650	-0.814
15	4	3	3	6.825	-11.582

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

SHEARING FORCE (T)

I	J	MAX		MIN		FORCE
		CASE	FORCE	CASE	FORCE	
15	26	3	11.582	3	-6.825	
26	15	3	15.155	3	-7.198	
26	37	3	13.235	3	-10.646	
37	26	3	16.035	3	-5.216	
37	48	3	5.216	3	-16.055	
48	37	3	24.654	3	-1.385	
48	59	3	10.204	3	-0.940	
59	48	3	0.940	12	-7.121	
59	70	12	7.121	3	-0.940	
70	59	3	0.940	12	-8.312	
70	81	12	2.553	12	-3.702	
81	70	12	2.937	12	-2.553	
81	92	12	2.553	12	-2.937	
92	81	12	2.937	12	-2.553	
5	16	3	20.640	3	-0.745	
16	5	3	6.790	3	-11.567	
16	27	3	11.567	3	-6.790	
27	16	3	15.110	3	-7.203	
27	38	3	13.244	3	-10.708	
38	27	3	16.115	3	-5.214	
38	49	3	5.214	3	-16.115	
49	38	3	24.710	3	-1.423	
49	60	3	10.241	3	-1.006	
60	49	3	1.006	3	-3.932	
60	71	3	3.932	3	-1.006	
71	60	3	1.006	12	-3.955	
71	82	12	2.039	12	-0.844	
82	71	12	0.531	12	-2.059	
82	93	12	2.039	12	-0.531	
93	82	12	0.531	12	-2.059	
6	17	3	20.728	3	-0.767	
17	6	3	6.782	3	-11.682	
17	28	3	11.682	3	-6.782	
28	17	3	15.094	3	-7.289	
28	39	3	13.288	3	-10.865	
39	28	3	16.248	3	-5.261	
39	50	3	5.261	3	-16.248	
50	39	3	24.827	3	-1.475	
50	61	3	10.274	3	-1.054	
61	50	3	1.054	3	-3.960	
61	72	3	3.960	3	-1.054	
72	61	3	1.054	3	-3.960	
72	83	3	2.036	3	-0.126	
83	72	3	0.126	3	-2.036	
83	94	3	2.036	3	-0.126	
94	83	3	0.126	3	-2.036	
7	18	3	20.645	3	-0.758	
18	7	3	6.795	3	-11.571	
18	29	3	11.571	3	-6.795	
29	18	3	15.120	3	-7.201	

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

SHEARING FORCE (T)

I.	J.	MAX		MIN		FORCE
		CASE.	FORCE	CASE.	FORCE	
29	40	3	13.235	3	-10.739	3
40	29	3	16.151	3	-5.206	3
40	51	3	5.206	3	-16.151	3
31	40	3	24.743	3	-1.420	3
51	62	3	10.272	3	-1.002	3
62	51	3	1.002	3	-3.974	3
62	73	3	3.974	3	-1.002	3
73	62	3	1.002	3	-3.974	3
73	84	3	2.066	3	-0.176	3
84	73	3	0.176	3	-2.066	3
84	95	3	2.066	3	-0.176	3
95	84	3	0.176	3	-2.066	3
8	19	3	20.649	3	-0.813	3
19	8	3	6.838	3	-11.573	3
19	30	3	11.573	3	-6.838	3
30	19	3	15.173	3	-7.196	3
30	41	3	13.230	3	-10.640	3
41	30	3	16.055	3	-5.225	3
41	52	3	5.225	3	-16.055	3
52	41	3	24.661	3	-1.389	3
52	63	3	10.198	3	-0.935	3
63	52	3	0.935	3	-3.907	3
63	74	3	3.907	3	-0.935	3
74	63	3	0.935	3	-3.907	3
74	85	3	2.168	3	-0.232	3
85	74	3	0.232	3	-2.168	3
85	96	3	2.168	3	-0.232	3
96	85	3	0.232	3	-2.168	3
9	20	3	20.927	3	-0.806	3
20	9	3	6.756	3	-11.918	3
31	20	3	11.918	3	-6.756	3
31	31	3	15.004	3	-7.531	3
31	42	3	13.031	3	-11.052	3
42	31	3	16.463	3	-5.122	3
42	53	3	5.122	3	-16.463	3
53	42	3	25.001	3	-1.351	3
53	64	3	10.082	3	-0.890	3
64	53	3	0.890	3	-3.774	3
64	75	3	3.774	3	-0.890	3
75	64	3	0.890	3	-3.774	3
75	86	3	2.404	3	-0.278	3
86	75	3	0.278	3	-2.404	3
86	97	3	2.404	3	-0.278	3
97	86	3	0.278	3	-2.404	3
10	21	3	21.562	3	-1.430	3
21	10	3	6.241	3	-12.721	3
21	32	3	12.721	3	-6.241	3
32	21	3	13.991	3	-8.604	3
32	43	3	11.754	3	-12.308	3
43	32	3	17.423	3	-4.582	3

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

SHEARING FORCE (T)

I	J	CASE,		FORCE	MIN	CASE,	FORCE
		MAX	MIN				
43	54	3	3	4.582	3	-17.423	
54	43	3	3	25.854	3	-1.719	
54	65	3	3	10.052	3	-1.268	
65	54	3	3	1.047	3	-3.659	
65	76	3	3	3.659	3	-1.047	
76	65	3	3	1.047	3	-3.659	
76	87	3	3	2.663	3	-0.507	
87	76	3	3	0.307	3	-2.663	
87	98	3	3	2.663	3	-0.507	
98	87	3	3	0.307	3	-2.663	
11	22	3	3	22.724	3	-1.280	
22	11	3	3	6.051	3	-14.206	
22	33	3	3	14.206	3	-6.051	
33	22	3	3	13.040	3	-8.825	
33	44	3	3	10.735	3	-13.286	
44	33	3	3	19.497	3	-4.614	
44	55	3	3	4.614	3	-19.497	
55	44	3	3	27.536	3	-1.863	
55	66	3	3	10.243	3	-1.500	
66	55	3	3	1.300	3	-4.095	
66	77	3	3	4.095	3	-1.300	
77	66	3	3	1.300	3	-4.095	
77	88	3	3	3.173	3	-0.551	
88	77	3	3	0.551	3	-3.173	
88	99	3	3	3.173	3	-0.551	
99	88	3	3	0.551	3	-3.173	
1	2	12	12	0.132	3	-0.005	
2	1	12	12	0.005	12	-0.132	
2	3	14	14	0.023	3	-0.008	
3	2	14	14	0.007	14	-0.023	
3	4	12	12	0.063	3	-0.002	
4	3	12	12	0.002	12	-0.063	
4	5	3	3	0.020	3	-0.005	
5	4	3	3	0.005	3	-0.020	
5	6	3	3	0.060	3	-0.002	
6	5	3	3	0.002	3	-0.060	
6	7	3	3	0.024	3	-0.004	
7	6	3	3	0.004	3	-0.024	
7	8	3	3	0.052	3	-0.002	
8	7	3	3	0.002	3	-0.052	
8	9	3	3	0.031	3	-0.003	
9	8	3	3	0.003	3	-0.031	
9	10	3	3	0.047	3	-0.004	
10	9	3	3	0.004	3	-0.047	
10	11	3	3	0.071	3	-0.005	
11	10	3	3	0.005	3	-0.071	
23	24	12	12	21.424	12	-14.627	
24	23	12	12	14.627	12	-21.424	
24	25	3	3	16.083	3	-12.842	
25	24	3	3	12.842	3	-16.083	

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

SHEARING FORCE (T)

I	J	CASE	MAX	MIN	FORCE	CASE	MIN	FORCE
25	26	3	17.166	3	-15.039			
26	25	3	15.039	3	-17.166			
26	27	3	19.071	3	-18.128			
27	26	3	18.128	3	-19.071			
27	28	3	20.197	3	-19.927			
28	27	3	19.927	3	-20.197			
28	29	3	20.094	3	-20.030			
29	28	3	20.030	3	-20.094			
29	30	3	18.312	3	-18.874			
30	29	3	18.874	3	-18.312			
30	31	3	15.214	3	-16.978			
31	30	3	16.978	3	-15.214			
31	32	3	13.024	3	-15.941			
32	31	3	15.941	3	-13.024			
32	33	3	13.070	3	-14.373			
33	32	3	14.373	3	-13.070			
45	46	14	0.011	14	-0.230			
46	45	14	0.230	14	-0.011			
46	47	3	0.004	3	-0.070			
47	46	3	0.070	3	-0.004			
47	48	3	0.002	3	-0.077			
48	47	3	0.077	3	-0.002			
48	49	3	0.003	3	-0.055			
49	48	3	0.054	3	-0.003			
49	50	3	0.004	3	-0.059			
50	49	3	0.059	3	-0.004			
50	51	3	0.004	3	-0.057			
51	50	3	0.056	3	-0.004			
51	52	3	0.003	3	-0.056			
52	51	3	0.056	3	-0.003			
52	53	3	0.003	3	-0.067			
53	52	3	0.067	3	-0.003			
53	54	3	0.005	3	-0.034			
54	53	3	0.035	3	-0.005			
54	55	3	0.010	3	-0.130			
55	54	3	0.130	3	-0.010			
67	68	12	13.527	12	-22.595			
68	67	12	22.595	12	-13.527			
68	69	3	3.469	3	-17.125			
69	68	3	17.125	3	-3.469			
69	70	12	4.482	12	-8.604			
70	69	12	8.604	12	-4.482			
70	71	12	7.276	12	-3.859			
71	70	12	3.859	12	-7.276			
71	72	12	8.382	12	-3.900			
72	71	12	3.900	12	-8.382			
72	73	12	7.934	12	-3.840			
73	72	12	3.840	12	-7.934			
73	74	12	6.522	12	-3.664			
74	73	12	3.664	12	-6.522			

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

SHEARING FORCE (T)		MAX		MIN		FORCE	
I	J	CASE	FORCE	CASE	FORCE	CASE	FORCE
74	75	12	4.249	3	-3.569	3	-3.569
75	76	3	3.569	12	-4.249	3	-4.249
75	76	3	3.923	3	-3.523	3	-3.523
76	75	3	3.523	3	-3.923	3	-3.923
76	77	3	3.128	3	-2.998	3	-2.998
77	76	3	2.998	3	-3.128	3	-3.128
89	90	12	0.105	12	-0.021	12	-0.021
90	89	12	0.021	12	-0.105	12	-0.105
90	91	12	0.025	12	-0.014	12	-0.014
91	90	12	0.014	12	-0.025	12	-0.025
91	92	15	0.009	3	-0.000	3	-0.000
92	91	3	0.000	15	-0.009	3	-0.009
92	93	12	0.009	12	-0.023	12	-0.023
93	92	12	0.023	12	-0.009	12	-0.009
93	94	3	0.009	3	-0.000	3	-0.000
94	93	3	0.000	3	-0.009	3	-0.009
94	95	3	0.014	3	-0.014	3	-0.014
95	94	3	0.014	3	-0.014	3	-0.014
95	96	3	0.001	3	-0.006	3	-0.006
96	95	3	0.006	3	-0.001	3	-0.001
96	97	3	0.002	3	-0.002	3	-0.002
97	96	3	0.001	3	-0.003	3	-0.003
97	98	3	0.001	3	-0.017	3	-0.017
98	97	3	0.017	3	-0.001	3	-0.001
98	99	3	0.002	3	-0.008	3	-0.008
99	98	3	0.008	3	-0.002	3	-0.002

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

SHEARING FORCE (T)		MAX		MIN		FORCE	
I	J	CASE	FORCE	CASE	FORCE	CASE	FORCE
1	12	21	33,056	4	-3,820	4	-3,820
12	1	17	11,514	20	-18,988	20	-18,988
12	23	20	18,888	17	-11,514	17	-11,514
23	12	17	24,278	18	-11,066	18	-11,066
23	34	17	10,839	17	-21,611	17	-21,611
34	23	17	35,567	4	-5,212	4	-5,212
34	45	4	5,212	17	-36,894	17	-36,894
45	34	17	45,153	4	-2,584	4	-2,584
45	56	17	64,125	6	-2,589	6	-2,589
56	45	21	5,247	17	-31,440	17	-31,440
56	67	17	29,904	21	-5,247	21	-5,247
67	56	17	17,118	19	-20,103	19	-20,103
67	78	17	21,912	17	-12,401	17	-12,401
78	67	17	24,376	18	-8,788	18	-8,788
78	89	4	7,884	17	-24,376	17	-24,376
89	78	21	32,051	4	-3,785	4	-3,785
2	13	18	28,949	4	-3,210	4	-3,210
13	2	17	9,043	17	-18,588	17	-18,588
13	24	17	16,128	17	-9,043	17	-9,043
24	13	17	22,146	18	-9,167	18	-9,167
24	35	20	12,853	17	-18,044	17	-18,044
35	24	17	29,809	4	-4,955	4	-4,955
35	46	4	4,955	17	-29,809	17	-29,809
46	35	17	38,129	4	-2,800	4	-2,800
46	57	17	36,985	4	-2,208	4	-2,208
57	46	4	4,964	17	-26,978	17	-26,978
57	68	17	25,401	4	-4,964	4	-4,964
68	57	17	15,164	17	-15,826	17	-15,826
68	79	17	20,202	17	-11,093	17	-11,093
79	68	17	20,450	4	-7,723	4	-7,723
79	90	4	7,723	17	-19,162	17	-19,162
90	79	18	27,784	4	-3,226	4	-3,226
3	14	4	19,640	4	-2,718	4	-2,718
14	3	4	8,052	4	-11,294	4	-11,294
14	25	4	11,294	4	-8,052	4	-8,052
25	14	4	15,663	4	-7,146	4	-7,146
25	36	4	12,781	4	-12,596	4	-12,596
36	25	17	17,684	4	-5,406	4	-5,406
36	47	4	5,406	17	-17,684	17	-17,684
47	36	17	25,612	4	-1,795	4	-1,795
47	58	4	25,461	4	-1,798	4	-1,798
58	47	4	5,413	4	-17,662	4	-17,662
58	69	4	17,662	4	-5,413	4	-5,413
69	58	4	12,801	4	-12,598	4	-12,598
69	80	4	15,667	4	-7,137	4	-7,137
80	69	4	11,281	4	-8,052	4	-8,052
80	91	4	8,052	4	-11,281	4	-11,281
91	80	4	19,624	4	-2,711	4	-2,711
4	15	4	19,371	4	-2,481	4	-2,481
15	4	4	7,953	4	-10,957	4	-10,957

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

SHEARING_FORCE (T)		MAX		MIN		FORCE	
I	J	CASE	FORCE	CASE	FORCE	CASE	FORCE
15	26	4	10.957	4	-7.953	4	-7.953
26	15	4	15.647	4	-6.805	4	-6.805
26	37	4	13.046	4	-12.371	4	-12.371
37	26	4	17.447	4	-5.552	4	-5.552
37	48	4	5.552	4	-17.447	4	-17.447
48	37	4	25.315	4	-1.888	4	-1.888
48	59	4	25.300	4	-1.903	4	-1.903
59	48	4	5.559	4	-17.431	4	-17.431
59	70	4	17.431	4	-5.559	4	-5.559
70	59	4	13.061	4	-12.349	4	-12.349
70	81	4	15.657	4	-6.766	4	-6.766
81	70	4	10.906	4	-7.956	4	-7.956
81	92	4	7.956	4	-10.906	4	-10.906
92	81	4	19.326	4	-2.464	4	-2.464
5	16	4	19.309	4	-2.340	4	-2.340
16	5	4	7.839	4	-10.888	4	-10.888
16	27	4	10.888	4	-7.839	4	-7.839
27	16	4	15.522	4	-6.756	4	-6.756
27	38	4	13.119	4	-12.478	4	-12.478
38	27	4	17.552	4	-5.613	4	-5.613
38	49	4	5.613	4	-17.552	4	-17.552
49	38	4	25.416	4	-1.988	4	-1.988
49	60	4	25.425	4	-1.983	4	-1.983
60	49	4	5.616	4	-17.568	4	-17.568
60	71	4	17.568	4	-5.616	4	-5.616
71	60	4	13.117	4	-12.500	4	-12.500
71	82	4	15.516	4	-6.759	4	-6.759
82	71	4	10.902	4	-7.828	4	-7.828
82	93	4	7.828	4	-10.902	4	-10.902
93	82	4	19.311	4	-2.342	4	-2.342
93	82	4	19.360	4	-2.346	4	-2.346
6	17	4	7.816	4	-10.967	4	-10.967
17	6	4	10.967	4	-7.816	4	-7.816
17	28	4	15.493	4	-6.808	4	-6.808
28	17	4	13.195	4	-12.629	4	-12.629
28	39	4	13.195	4	-5.691	4	-5.691
39	28	4	17.679	4	-17.679	4	-17.679
39	50	4	5.691	4	-2.072	4	-2.072
50	39	4	25.527	4	-2.072	4	-2.072
50	61	4	25.520	4	-2.072	4	-2.072
61	50	4	5.696	4	-17.671	4	-17.671
61	72	4	17.671	4	-5.696	4	-5.696
72	61	4	13.202	4	-12.622	4	-12.622
72	83	4	15.496	4	-6.791	4	-6.791
83	72	4	10.946	4	-7.815	4	-7.815
83	94	4	7.815	4	-10.946	4	-10.946
94	83	4	19.337	4	-2.339	4	-2.339
7	18	4	19.317	4	-2.339	4	-2.339
18	7	4	7.836	4	-10.896	4	-10.896
18	29	4	10.896	4	-7.836	4	-7.836
29	18	4	15.524	4	-6.757	4	-6.757

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

SHEARING FORCE (T)

I	J	MAX CASE.	FORCE	MIN CASE.	FORCE
29	40	4	13,114	4	-12,493
40	29	4	17,572	4	-5,609
40	51	4	5,609	4	-17,572
51	40	4	25,432	4	-1,989
51	62	4	25,432	4	-1,980
62	51	4	5,623	4	-17,569
62	73	4	17,569	4	-5,623
73	62	4	13,129	4	-12,505
73	84	4	15,526	4	-6,758
84	73	4	10,910	4	-7,837
84	95	4	7,837	4	-10,910
95	84	4	19,320	4	-2,349
8	19	4	19,371	4	-2,485
19	8	4	7,967	4	-10,949
19	30	4	10,949	4	-7,967
30	19	4	15,665	4	-6,804
30	41	4	13,053	4	-12,375
41	30	4	17,457	4	-5,555
41	52	4	5,555	4	-17,457
52	41	4	25,331	4	-1,835
52	63	4	25,331	4	-1,837
63	52	4	5,562	4	-17,472
63	74	4	17,472	4	-5,562
74	63	4	13,059	4	-12,394
74	85	4	15,664	4	-6,804
85	74	4	10,959	4	-7,962
85	96	4	7,962	4	-10,959
96	85	4	19,371	4	-2,489
9	20	4	19,649	4	-2,710
20	9	4	8,056	4	-11,294
20	31	4	11,294	4	-8,056
31	20	4	15,676	4	-7,142
31	42	4	12,807	4	-12,603
42	31	4	17,679	4	-5,414
42	53	4	5,414	4	-17,679
53	42	4	25,484	4	-1,808
53	64	4	25,461	4	-1,820
64	53	4	5,429	4	-17,646
64	75	4	17,646	4	-5,429
75	64	4	12,834	4	-12,570
75	86	4	15,692	4	-7,105
86	75	4	11,238	4	-8,070
86	97	4	8,070	4	-11,238
97	86	4	19,601	4	-2,701
10	21	4	20,252	4	-3,197
21	10	4	7,731	4	-12,061
21	32	4	12,061	4	-7,731
32	21	4	14,898	4	-8,173
32	43	4	11,667	4	-13,798
43	32	4	18,565	4	-4,956

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

SHEARING FORCE (T)		MIN		MAX	
I	J	CASE	FORCE	CASE	FORCE
43	54	4	4.956	4	-18.565
54	43	4	26.265	4	-2.199
54	65	4	26.288	4	-2.209
65	54	4	4.971	4	-18.596
65	76	4	18.596	4	-4.971
76	65	4	11.670	4	-13.839
76	87	4	14.892	4	-8.198
87	76	4	12.103	4	-7.725
87	98	4	7.725	4	-12.103
98	87	4	20.276	4	-3.218
11	22	4	21.431	4	-3.740
22	11	4	7.863	4	-13.612
22	33	4	13.612	4	-7.863
33	22	4	14.339	4	-8.597
33	44	4	10.936	4	-15.073
44	33	4	20.787	4	-5.196
44	55	4	5.196	4	-20.787
55	44	4	28.053	4	-2.561
55	66	4	28.055	4	-2.563
66	55	4	5.217	4	-20.785
66	77	4	20.783	4	-5.217
77	66	4	10.963	4	-15.082
77	88	4	14.360	4	-8.619
88	77	4	13.631	4	-7.885
88	99	4	7.885	4	-13.631
99	88	4	21.445	4	-3.770
1	2	17	0.126	4	-0.019
2	1	4	0.019	17	-0.126
2	3	19	0.022	4	-0.008
3	2	4	0.007	19	-0.022
3	4	4	0.058	4	-0.014
4	3	4	0.014	4	-0.058
4	5	4	0.020	4	-0.005
5	4	4	0.005	4	-0.021
5	6	4	0.056	4	-0.012
6	5	4	0.012	4	-0.056
6	7	4	0.023	4	-0.005
7	6	4	0.004	4	-0.024
7	8	4	0.049	4	-0.010
8	7	4	0.010	4	-0.049
8	9	4	0.029	4	-0.005
9	8	4	0.005	4	-0.029
9	10	4	0.044	4	-0.011
10	9	4	0.011	4	-0.044
10	11	4	0.067	4	-0.015
11	10	4	0.015	4	-0.067
11	10	4	19.905	17	-16.147
23	24	17	16.147	17	-19.905
24	23	4	17.013	4	-14.274
24	25	4	17.013	4	-17.013
25	24	4	14.274	4	-17.013

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

SHEARING FORCE (T)

I	J	MAX CASE.	MIN CASE.	FORCE	FORCE
25	26	4	4	18.002	-16.283
26	25	4	4	16.283	-18.002
26	27	4	4	19.710	-19.033
27	26	4	4	19.033	-19.710
27	28	4	4	20.791	-20.631
28	27	4	4	20.631	-20.791
28	29	4	4	20.736	-20.682
29	28	4	4	20.682	-20.736
29	30	4	4	19.152	-19.575
30	29	4	4	19.575	-19.152
30	31	4	4	16.405	-17.870
31	30	4	4	17.870	-16.405
31	32	4	4	14.406	-16.917
32	31	4	4	16.917	-14.406
32	33	4	4	13.968	-13.968
33	32	4	4	15.082	-15.082
45	46	4	4	0.017	-0.242
46	45	19	19	0.242	-0.017
46	47	4	4	0.006	-0.084
47	46	18	18	0.084	-0.006
47	48	4	4	0.004	-0.093
48	47	20	20	0.093	-0.004
48	49	4	4	0.005	-0.089
49	48	4	4	0.089	-0.005
49	50	4	4	0.006	-0.092
50	49	4	4	0.091	-0.006
50	51	4	4	0.006	-0.091
51	50	4	4	0.091	-0.006
51	52	4	4	0.005	-0.090
52	51	4	4	0.089	-0.005
52	53	4	4	0.004	-0.095
53	52	4	4	0.095	-0.004
53	54	4	4	0.007	-0.081
54	53	4	4	0.081	-0.007
54	55	4	4	0.017	-0.194
55	54	4	4	0.194	-0.017
67	68	17	17	17.902	-18.221
68	67	17	17	18.221	-17.902
68	69	4	4	17.094	-14.296
69	68	4	4	14.296	-17.094
69	70	4	4	18.055	-16.299
70	69	4	4	16.299	-18.055
70	71	4	4	19.723	-19.080
71	70	4	4	19.080	-19.723
71	72	4	4	20.838	-20.669
72	71	4	4	20.669	-20.838
72	73	4	4	20.775	-20.729
73	72	4	4	20.729	-20.775
73	74	4	4	19.199	-19.612
74	73	4	4	19.612	-19.199

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

SHEARING FORCE (T)

I	J	CASE	MAX	MIN	FORCE
74	75	4	16.454	4	-17.881
75	74	4	17.881	4	-16.454
75	76	4	14.418	4	-17.001
76	75	4	17.001	4	-14.418
76	77	4	13.999	4	-15.108
77	76	4	15.108	4	-13.999
89	90	17	0.114	4	-0.018
90	89	4	0.017	17	-0.114
90	91	4	0.043	4	-0.011
91	90	4	0.011	4	-0.043
91	92	4	0.017	4	-0.011
92	91	4	0.011	4	-0.017
92	93	4	0.082	4	-0.021
93	92	4	0.021	4	-0.082
93	94	4	0.013	4	-0.016
94	93	4	0.016	4	-0.013
94	95	4	0.062	4	-0.014
95	94	4	0.014	4	-0.062
95	96	4	0.037	4	-0.008
96	95	4	0.007	4	-0.037
96	97	4	0.023	4	-0.005
97	96	4	0.005	4	-0.023
97	98	4	0.064	4	-0.018
98	97	4	0.018	4	-0.064
98	99	4	0.054	4	-0.011
99	98	4	0.011	4	-0.054

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 1

TORSIONAL MOMENT (T-M)

MAX
CASE.

I J

FORCE

MIN
CASE.

FORCE

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 2

TORSIONAL MOMENT (CT-M)

MAX
CASE. FORCE MIN
CASE. FORCE

FORCE

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 3

TORSIONAL MOMENT (T.M)
MAX
MIN

MIN
CASE. FORCE

FORCE

I J CASE.

** UHURU BRIDGE **

** PICKUP TABLE ** NO. 4

TORSIONAL MOMENT (T.M)

	1	J	CASE.	FORCE	MIN	CASE.	FORCE
--	---	---	-------	-------	-----	-------	-------

Uhuru Bridge

TOTAL MOMENT

POINT	G I ③		U. L. S			S. L. S		
		MOMENT M (kNm)	γ fL	γ 3	MOMENT OF DESIGN Mu=M γ fL γ 3 (kNm)	γ fL	γ 3	MOMENT OF DESIGN Mu=M γ fL γ 3 (kNm)
DEAD LOAD		694.8	1.20	1.15	958.8	1.00	1.00	694.8
LIVE LOAD	HA	1373.0	1.50	1.10	2265.5	1.20	1.00	1647.6
	HA							
	HB	0.0	1.30	1.10	0.0	1.10	1.00	0.0
TOTAL					3224.3			2342.4
DESIGN MOMENT					958.8			694.8
RESISTANCE MOMENT								
					3224.3			2342.4
					4947.6			2504.0

TOTAL MOMENT

POINT	G I ⑤		U. L. S			S. L. S		
		MOMENT M (kNm)	γ fL	γ 3	MOMENT OF DESIGN Mu=M γ fL γ 3 (kNm)	γ fL	γ 3	MOMENT OF DESIGN Mu=M γ fL γ 3 (kNm)
DEAD LOAD		-1674.8	1.20	1.15	-2311.2	1.00	1.00	-1674.8
LIVE LOAD	HA	-929.4	1.50	1.10	-1533.5	1.20	1.00	-1115.3
	HA							
	HB	-1239.6	1.30	1.10	-1772.6	1.10	1.00	-1363.6
TOTAL					-3844.7			-2790.1
DESIGN MOMENT					-4083.9			-3038.4
RESISTANCE MOMENT								
					-4083.9			-3038.4
					-5223.0			-3307.8

TOTAL MOMENT

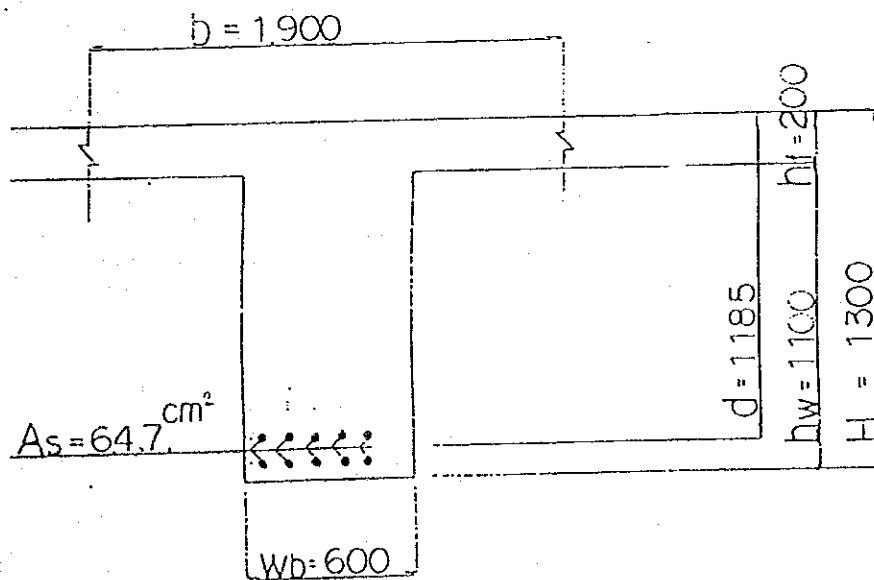
POINT	G I ⑤		U. L. S			S. L. S		
		MOMENT M (kNm)	γ fL	γ 3	MOMENT OF DESIGN Mu=M γ fL γ 3 (kNm)	γ fL	γ 3	MOMENT OF DESIGN Mu=M γ fL γ 3 (kNm)
DEAD LOAD		-1351.9	1.20	1.15	-1865.6	1.00	1.00	-1351.9
LIVE LOAD	HA	-929.4	1.50	1.10	-1533.5	1.20	1.00	-1115.3
	HA							
	HB	-1021.6	1.30	1.10	-1460.9	1.10	1.00	-1123.8
TOTAL					-3399.1			-2467.2
DESIGN MOMENT					-3326.5			-2475.7
RESISTANCE MOMENT								
					-3399.1			-2475.7
					-5223.0			-2870.3

U. FLG b=	190	AS=	64.7
U. FLG hf=	20	fcu=	3000
WEB hw=	110	fy=	41000
d=	118.5		

$$Z = d - 1/2 * hf = 108.5$$

$$MRC = 0.4 * fcu * b * hf * Z = 4947.6$$

$$MRS = 0.87 * fy * AS * Z = 2504.0$$



G1

U. FLG b=	190	AS=	96.5
U. FLG hf=	20	fcu=	3000
WEB hw=	110	fy=	41000
WEB Wb=	60	AS' =	40.2
d=	120	d' =	7.5
X=0.87*fy*AS/(0.4*fcu*Wb)			47.8

$$Z = d - 1/2 * X = 96.1$$

$$MRC = 0.15 * fcu * b * d^2 + 0.72 * fy * AS' * (d - d') = 5223.0$$

$$MRS = 0.87 * fy * AS * Z = 3307.8$$

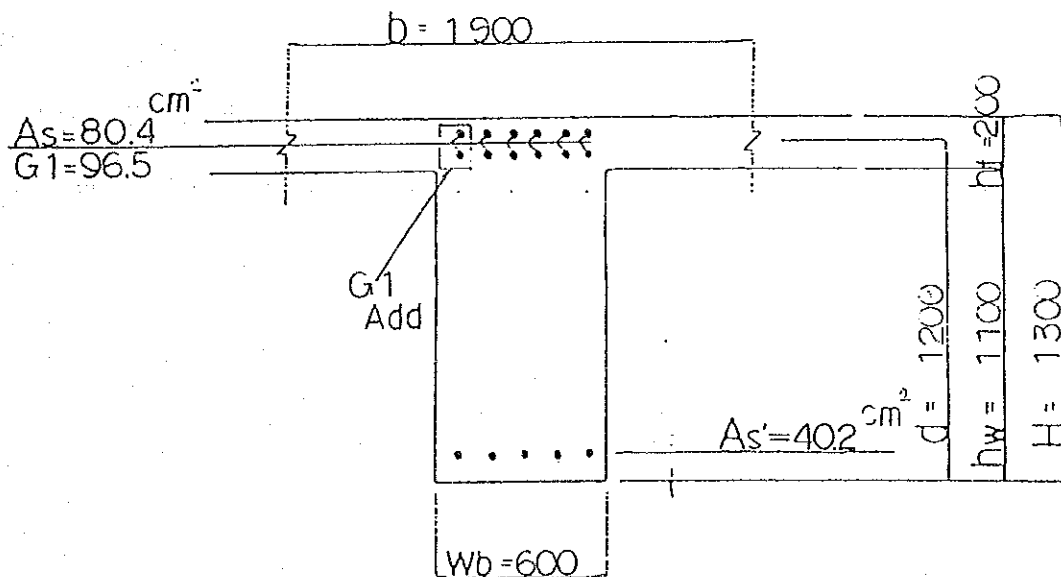
G2

U. FLG b=	190	AS=	80.4
U. FLG hf=	20	fcu=	3000
WEB hw=	110	fy=	41000
WEB Wb=	60	AS' =	40.2
d=	120	d' =	7.5
X=0.87*fy*AS/(0.4*fcu*Wb)			39.8

$$Z = d - 1/2 * X = 100.1$$

$$MRC = 0.15 * fcu * b * d^2 + 0.72 * fy * AS' * (d - d') = 5223.0$$

$$MRS = 0.87 * fy * AS * Z = 2870.3$$



Calculation of deck slab for Main bridge (U.L.S)

1. Span and bending moment

a) Span $\ell = 1.925 - 0.600 = 1.325 \approx 1.400^m$

b) moment of middle span

$$M \approx \left\{ 0.80 (0.12 \ell + 0.07) P + \frac{1}{10} \omega d \ell^2 \right\} \times 1.5 \times 1.1$$
$$= \left\{ 0.8 (0.12 \times 1.40 + 0.07) \times 100 + \frac{1}{10} \times 4.72 \times 1.40^2 \right\} \times 1.5 \times 1.1 = 33.0 \text{ KNm/m}$$

c) moment of each fulcrum

$$M \approx \left\{ (0.15 \ell + 0.125) P + \frac{1}{10} \omega d \ell^2 \right\} \times 1.5 \times 1.1$$
$$= \left\{ (0.15 \times 1.40 + 0.125) \times 100 + \frac{1}{10} \times 4.72 \times 1.40^2 \right\} \times 1.5 \times 1.1 = 56.8 \text{ KNm/m}$$

where :

$P = 100^{\text{KN}}$: Single nominal wheel load

$\omega d =$ dead load of deck slab

$$= 23.6 \times 0.20 = 4.720 \text{ KN/m}$$

d) over hanging slab

Span $\ell = 1.40 - 0.60 - 0.30 - 0.25 = 1.250^m$

moment $M = \frac{P \cdot \ell}{1.30 \ell + 0.25} = \frac{100 \times 0.25}{1.30 \times 0.25 + 0.25} = 43.5 \text{ KNm} < 56.8 \text{ KNm} \quad \text{OK}$

2. Calculation of stress

a) middle span $b = 100 \text{ cm}$ $h = 20$ $d = 15.0$ $d' = 5.0$

$$A_s = Y_{12} - 150^{\text{ccc}} = 1.131/0.150 = 7.540 \text{ cm}^2$$

$$P = \frac{7.540}{100 \times 15.0} \times 100 = 0.503 \%$$

$$x = \frac{0.87 \times 41000 \times 7.540}{0.40 \times 3000 \times 100} = 2.4 \text{ cm}$$

$$Z = 15.0 - \frac{1}{2} \times 2.4 = 13.8 \text{ cm} < 0.95 \times 15 = 14.25 \text{ cm}$$

$$M_{RS} = 0.87 \times 41000 \times 7.54 \times 13.8 \times 10^{-6} = 37.1 \text{ KNm} > 33.0 \text{ KNm}$$

$$M_{RC} = 0.40 \times 3000 \times 100 \times 2.4 \times 13.8 \times 10^{-6} = 39.7 \text{ KNm} > 33.0 \text{ KNm} \quad \text{OK}$$

b) each fulcrum $b = 100 \text{ cm}$ $h = 20$ $d = 16.0$ $d' = 4.0$

$$A_s = Y_{16} - 150^{\text{ccc}} = 2.011/0.150 = 13.407 \text{ cm}^2$$

$$P = \frac{13.407}{100 \times 16.0} \times 100 = 0.838 \%$$

$$x = \frac{0.87 \times 41000 \times 13.407}{0.4 \times 3000 \times 100} = 4.0 \text{ cm}$$

$$Z = 16.0 - \frac{1}{2} \times 4.0 = 14.0 \text{ cm} < 0.95 \times 16.0 = 15.2 \text{ cm}$$

$$M_{RS} = 0.87 \times 41000 \times 13.407 \times 14.0 \times 10^{-6} = 66.9 \text{ KNm} > 56.8 \text{ KNm}$$

$$M_{RC} = 0.40 \times 3000 \times 100 \times 4.0 \times 14.0 \times 10^{-6} = 67.2 \text{ KNm} > 56.8 \text{ KNm} \quad \text{OK}$$

Calculation of deck slab (S.L.S) : Check

Span $l \approx 1.40\text{m}$... review of fulcrum for bending moment

$$\text{moment } M = \left\{ (0.15 \times 1.40 + 0.125) \times 100 + \frac{1}{10} \times 4.720 \times 1.40^2 \right\} = 34.5 \text{ kNm}$$

Calculation of stress

$$b = 100 \text{ cm} \quad h = 20 \quad d = 16.0 \quad d' = 4.0$$

$$A_s = Y_{16} - 150 \text{ c.c.} = 13.407 \text{ cm}^2$$

$$P = \frac{13.407}{100 \times 16.0} \times 100 = 0.838 \%$$

$$X = \frac{0.80 \times 41000 \times 13.407}{0.25 \times 3000 \times 100} = 6.3 \text{ cm}$$

$$Z = 16.0 - \frac{1}{3} \times 6.3 = 12.9 \text{ cm}$$

$$M_{RS} = 0.80 \times 41000 \times 13.407 \times 12.9 \times 10^{-5} = 56.7 \text{ kNm} > 34.5 \text{ kNm}$$

$$M_{RC} = 0.25 \times 3000 \times 100 \times 6.3 \times 12.9 \times 10^{-5} = 60.9 \text{ kNm} > 34.5 \text{ kNm} \quad \text{OK}$$

Calculation of Shoe

1) quantity of expansion between

Girder-edge and Parapet face of abutment

quantity of expansion or shrinkage (maximum)

for temperature : $dt = a \times T \times L = (1.0 \times 10^{-5} \times 15.0 \times L) = (0.150 \times L) \text{ mm}$

for shrinkage : $ds = a \times T \times L \times b = (1.0 \times 10^{-5} \times 20.0 \times L \times 0.8) = (0.160 \times L) \text{ mm}$

for creep : $dc = \frac{P}{E \times A} \times \phi \times L \times b = \frac{750}{27 \times 10^6} \times 1.9 \times L \times 0.8 = (0.430 \times L) \text{ mm}$

for other : $d0 = 5.0 \text{ mm}$
 total $dL = (0.80L + 5.0) \text{ mm}$

- where a = coefficient of thermal expansion or shrinkage
- T = quantity of temperature variance
- L = girder length
- b = coefficient of decrease
- E = young's modulus
- $P/A = 0.5 \text{ fcu} / 2 = 0.5 \times 300 / 2 = 750 \text{ N/cm}^2$
- ϕ = creep factor
- fcu = strength of concrete (30 N/mm^2)

UHURU - TU - Bridge

calculation of shoe

$$\begin{aligned}
 \text{edge fulcrum } Rd &= 2508.8 / 11 \times 1.1 && \doteq 250.9 \text{ KN/choe} \\
 \text{(MOV) } RL1 &= 1634.6 / 11 \times 1.1 && \doteq 163.6 \text{ " } \\
 \text{or } RL2 &= (465.5 + 372.4 + 215.6 + 126.4 + 83.3) / 5 && \doteq 252.6 \text{ " }
 \end{aligned}$$

$$R_{max} = \doteq 503.5 \text{ "}$$

$$\therefore dL = (0.80L + 5) = (0.80 \times 19.0 + 5) = 21 \text{ mm}$$

$$\begin{aligned}
 \text{middle fulcrum } Rd &= 8084.0 / 11 \times 1.1 && \doteq 808.5 \text{ KN/choe} \\
 \text{(Fix) } RL1 &= 2978.2 / 11 \times 1.1 && \doteq 297.9 \text{ " } \\
 \text{or } RL2 &= (690.9 + 599.8 + 400.8 + 280.3 + 178.2) / 5 && \doteq 432.0 \text{ " }
 \end{aligned}$$

$$R_{max} = = 1240.5 \text{ "}$$

$$\therefore dL = 0$$

Notice : this case is a bridge and apply MOMBASA-Br

where

$$\text{edge fulcrum : } 279 \text{ mm} \times 229 \times 46 \text{ --- (A1, A2)}$$

(mov)

$$\text{middle fulcrum : } 432 \text{ mm} \times 203 \times 18 \text{ --- (P1)}$$

(Fix)

U H U L U - Substructure

Reaction from Superstructure

1) For Abut (Movable) ... S.L.S.

For all width of Abut (B = 22.700m)

$$\text{dead load : } R_d = 2508.8 \text{ KN}$$

$$\text{live load : } R_\ell = 1634.6 \text{ KN}$$

$$\text{total : } R = 4143.4 \text{ KN}$$

For Unit width of Abut

(1) For Vertical load

$$R_d = \frac{2508.8}{22.70} = 110.520 \text{ KN/m}$$

$$R_\ell = \frac{1634.6}{22.70} = 72.009 \text{ KN/m}$$

$$R = \quad = 182.529 \text{ KN/m}$$

(2) For Horizontal force for temperature or seismic

$$H_T = H_D = 110.520 \times 0.15 = 16.578 \text{ KN/m}$$

2) For Pier (Fixed) ... S.L.S.

(1) For Vertical load

$$\text{dead load : } R_d = 8084.0 \text{ KN}$$

$$\text{live load : } R_l = 2978.2 \text{ KN}$$

$$\text{total : } R = 11062.2 \text{ KN}$$

(2) For Horizontal load

a) Longitudinal direction

$$\text{Braking : } H_B = 8.0 \times 38.0 + 200 = 504.0 \text{ KN}$$

$$\text{Seismic : } H_D = (2 \times 2508.8 + 8084.0) \times 0.10 = 1310.2 \text{ KN}$$

b) Crossing direction

$$\text{Skidding : } H_S = \quad \quad \quad = 250 \text{ KN}$$

$$\text{Seismic : } H_D = 8084.0 \times 0.10 = 808.4 \text{ KN}$$

** UHURU-ABUT **

(1) SHAPE AND SIZE

H0 = 9.000 (m) B0 = 5.000 (m)
H1 = 1.400 (m) B1 = 1.500 (m)
H2 = 0.000 (m) B2 = 1.100 (m)
H3 = 0.000 (m) B3 = 0.300 (m)
H4 = 6.800 (m) B4 = 2.400 (m)
H5 = 0.000 (m) B5 = 0.800 (m)
H6 = 0.800 (m) B6 = 0.000 (m)
BW1 = 1.000 (m) HU1 = 0.500 (m)
BW2 = 1.000 (m) HU2 = 0.500 (m)
HW1 = 1.000 (m)
HW2 = 1.000 (m)

REACTION OF DEAD LOAD RL = 72.999 (t)
LIVE LOAD RD = 110.520 (t)
HORIZONTAL FORCE FOR HT = 16.578 (t)
TEMPERATURE SEISMIC HD = 16.578 (t)

SITUATION OF REACTION RX = 0.350 (m)
AND HORIZONTAL FORCE RY = 1.200 (m)

QL = 34.300 (t/m²)
QD = 0.000 (t/m²)
KH = 0.10
KHS = 0.00

SEISMIC COEFFICIENT

UNITY VOLUME WEIGHTS

FOR CONCRETE GAMC = 23.600 (t/m³)
FOR BACK FILL GAM1 = 19.600 (t/m³)
≅ (UNDERWATER) GAM1S = 10.800 (t/m³)
INTERNAL FRICTION ANGLE FAI = 35.000 (°)
FOR ABOVE TOE SLAB GAM2 = 18.600 (t/m³)
≅ (UNDERWATER) GAM2S = 9.800 (t/m³)
FOR WATER WATS = 9.800 (t/m³)

NOTE: THE DIMENSION (t) BE EXCHANGED TO

DIMENSION (KM) INTO THIS CALCULATION

FOR FOUNDATION GROUND

COHESIVE DOWER C = 0.00 (t/m²)
FRICTION FACTOR tan φB = 0.500
ALLOWABLE PRESSURE Qa = 350.00 (t/m²)

CALCULATION OF WEIGHT AND FORCE OR LOAD

(1) CONCRETE

NO.	V(t)	H(t)	X(m)	Y(m)	MX(t·m)	MY(t·m)
1	9.912	0.991	2.450	8.300	24.284	8.227
4	175.528	17.653	2.050	4.200	351.882	74.142
8	94.400	9.440	2.500	0.400	236.000	3.776
Σ 1	280.840	28.084			622.167	86.145

V = X*Y*BW*GAM1
MX = V*X

H = V*KH
MY = H*Y

(2) EARTH

a) BACK FILLING

NO.	V(t)	H(t)	X(m)	Y(m)	MX(t·m)	MY(t·m)
1	65.856	6.586	3.800	8.300	250.253	54.661
4	319.872	31.987	3.800	4.200	1215.510	134.345
Σ 2	385.728	38.573			1465.770	189.007

V = X*Y*BW*GAM1
MX = V*X

H = V*KHS
MY = H*Y

b) SURCHARGE OF TOE SLAB

NO.	V(t)	H(t)	X(m)	Y(m)	MX(t·m)	MY(t·m)
6	27.900	0.000	0.750	1.300	20.925	0.000
Σ 3	27.900	0.000			20.925	0.000

V = X*Y*BW*GAM1
MX = V*X

H = V*KHS
MY = H*Y

(3) REACTION

STATE	RV(t)	RH(t)	RMX(t·m)	RMV(t·m)
ORDINARY TEMPERATURE	182.529	0.000	355.932	0.000
SEISMIC	182.529	16.578	355.932	145.886
	110.520	16.578	215.514	145.886

TEMPERATURE

RV :
RMX= RV*X

RH :
RMV= RH*Y

(4) EARTH PRESSURE FACTOR

	ORDINARY OR TEMPERATURE		SEISMIC	
SIN(δ)	0.2497	0.2508	0.3056	0.3277
COS(δ)	0.5736	0.2022	0.3007	0.0000
	0.8192	0.9793	0.9537	1.0000

(5) EARTH PRESSURE

	V(t)	H(t)	X(m)	Y(m)	MX(t·m)	MY(t·m)
	44.216	63.147	5.000	4.500	221.080	284.162
	113.698	162.378	5.000	3.000	568.491	487.134
	83.224	118.857	5.000	3.867	416.121	459.579
	29.409	42.000	5.000	0.640	147.044	26.896
	72.941	231.339	5.000	3.000	364.705	694.018
	53.391	169.335	5.000	3.867	266.955	654.761
	18.867	59.838	5.000	0.640	94.334	38.318

(6) BUOYANCY

	V(t)	H(t)	X(m)	Y(m)	MX(t·m)	MY(t·m)
	92.610	0.000	3.650	0.000	338.027	0.000
	-61.750	0.000	2.496	0.000	-154.128	0.000
	-61.750	0.000	2.496	0.000	-154.128	0.000

TOTAL OF ACTION FORCE
1. EXCLUDE BUOYANCY

(1) ORDINARY...FOR FOUNDATION

LOAD	V(t)	H(t)	MX(t·m)	MY(t·m)
Σ1	280.840	0.000	622.167	0.000
Σ2	385.728	0.000	1465.770	0.000
	44.216	63.147	221.080	284.162
	113.698	162.378	568.491	487.134
	182.529	0.000	355.932	0.000
	92.610	0.000	338.027	0.000
Σ3	27.900	0.000	20.925	0.000
TOTAL	1127.520	225.525	3592.390	771.296

$M_0 = \Sigma MX - \Sigma MY = 2821.090 \text{ (t·m)}$

(2) ORDINARY...FOR INVERSION OR SLIDE

	V(t)	H(t)	MX(t·m)	MY(t·m)
SAME	280.840	0.000	622.167	0.000
1 (1)	385.728	0.000	1465.770	0.000
	44.216	63.147	221.080	284.162
	113.698	162.378	568.491	487.134
	110.520	0.000	215.514	0.000
	27.900	0.000	20.925	0.000
	962.902	225.525	3113.940	771.296

$M_0 = \Sigma MX - \Sigma MY = 2342.650 \text{ (t·m)}$

(3) TEMPERATURE...FOR FOUNDATION

	V(t)	H(t)	MX(t·m)	MY(t·m)
SAME	280.840	0.000	622.167	0.000
1 (1)	385.728	0.000	1465.770	0.000
	44.216	63.147	221.080	284.162
	113.698	162.378	568.491	487.134
	182.529	16.578	355.932	145.886
	92.610	0.000	338.027	0.000
	27.900	0.000	20.925	0.000
	1127.520	242.103	3592.390	917.182

$M_0 = \Sigma MX - \Sigma MY = 2675.210 \text{ (t·m)}$

(4) TEMPERATURE...INVERSION OR SLIDE

	V(t)	H(t)	MX(t·m)	MY(t·m)
SAME	280.840	0.000	622.167	0.000
1 (1)	385.728	0.000	1465.770	0.000
	44.216	63.147	221.080	284.162
	113.698	162.378	568.491	487.134
	110.520	16.578	215.514	145.886
	27.900	0.000	20.925	0.000
	962.902	242.103	3113.940	917.182

$M_0 = \Sigma MX - \Sigma MY = 2196.760 \text{ (t·m)}$

(5) SEISMIC

	V(t)	H(t)	MX(t·m)	MY(t·m)
SAME	280.840	28.084	622.167	86.145
1 (1)	385.728	38.573	1465.770	189.007
	72.941	231.339	364.705	694.018
	110.520	16.578	215.514	145.886
	27.900	0.000	20.925	0.000
	877.929	314.574	2689.080	1115.060

$M_0 = \Sigma MX - \Sigma MY = 1574.020 \text{ (t·m)}$

2. INCLUDE BUOYANCY
(1) ORDINARY

V(t)	H(t)	MX(t·m)	MY(t·m)
280.840	0.000	622.167	0.000
385.728	0.000	1465.770	0.000
44.216	63.147	221.080	284.162
83.224	118.857	416.121	459.579
29.409	42.000	147.044	26.896
182.529	0.000	355.932	0.000
92.610	0.000	338.027	0.000
27.900	0.000	20.925	0.000
-61.750	0.000	-154.128	0.000
1064.710	224.004	3432.930	770.637

$M_0 = \Sigma MX - \Sigma MY = 2662.300 \text{ (t·m)}$

(2) ORDINARY

V(t)	H(t)	MX(t·m)	MY(t·m)
280.840	0.000	622.167	0.000
385.728	0.000	1465.770	0.000
44.216	63.147	221.080	284.162
83.224	118.857	416.121	459.579
29.409	42.000	147.044	26.896
110.520	0.000	215.514	0.000
27.900	0.000	20.925	0.000
-61.750	0.000	-154.128	0.000
900.087	224.004	2954.490	770.637

$M_0 = \Sigma MX - \Sigma MY = 2183.850 \text{ (t·m)}$

(3) TEMPERATURE

V(t)	H(t)	MX(t·m)	MY(t·m)
280.840	0.000	622.167	0.000
385.728	0.000	1465.770	0.000
44.216	63.147	221.080	284.162
83.224	118.857	416.121	459.579
29.409	42.000	147.044	26.896
182.529	16.578	355.932	145.885
92.610	0.000	338.027	0.000
27.900	0.000	20.925	0.000
-61.750	0.000	-154.128	0.000
1064.710	240.582	3432.930	916.523

$M_0 = \Sigma MX - \Sigma MY = 2516.410 \text{ (t·m)}$

(4) TEMPERATURE

V(t)	H(t)	MX(t·m)	MY(t·m)
280.840	0.000	622.167	0.000
385.728	0.000	1465.770	0.000
44.216	63.147	221.080	284.162
83.224	118.857	416.121	459.579
29.409	42.000	147.044	26.895
110.520	16.578	215.514	145.885
27.900	0.000	20.925	0.000
-61.750	0.000	-154.128	0.000
900.087	240.582	2954.490	916.523

$M_0 = \Sigma MX - \Sigma MY = 2037.970 \text{ (t·m)}$

TOTAL FORCE FOR UNDER FOUNDATION CENTER

LOAD	V(t)	H(t)	Mo(t·m)	e(m)	Ma(t·m)
A					
1	1127.520	225.525	2821.090	-0.002	-2.289
2	962.902	225.525	2342.650	0.067	64.608
3	1127.520	242.103	2675.210	0.127	143.598
4	962.902	242.103	2196.760	0.219	210.494
5	877.929	314.574	1574.020	0.707	620.801
B					
1	1064.710	224.004	2662.300	-0.001	-0.533
2	900.087	224.004	2183.850	0.074	66.364
3	1064.710	240.582	2516.410	0.137	145.354
4	900.087	240.582	2037.970	0.236	212.250
5	815.496	312.407	1417.420	0.762	621.323

WHERE

A AND B: EXCLUDE OF BOUYANCY
OR INCLUDE BOUYANCY

1. ORDINARY : FOR FOUNDATION
2. : FOR INVERSION OR SLIDE
3. TEMPERATURE : STATE OF 1
4. : : 2
5. SEISMIC

(5) SEISMIC

V(t)	H(t)	MX(t·m)	MY(t·m)
280.840	28.084	622.167	86.145
385.728	38.573	1465.770	189.007
53.391	169.335	266.955	654.761
19.867	59.838	94.334	38.318
110.520	16.578	215.514	145.886
27.900	0.000	20.925	0.000
-61.750	0.000	-154.128	0.000
815.496	312.407	2531.530	1114.120

$M_o = \sum MX - \sum MY = 1417.420 (t \cdot m)$

CALCULATION OF SECURITY
FOR DIRECT FOUNDATION

FOR INVERSION

	V(t)	Mc(t·m)	e(m)
A	1	64.608	0.067 < 0.833
	2	210.494	0.219 < 0.833
	3	620.801	0.707 < 1.667
B	1	66.364	0.074 < 0.833
	2	212.250	0.236 < 0.833
	3	621.323	0.762 < 1.667

$e = Mc/V$

e :

$B0/6 \geq e$
 $B0/3 \geq e$

FOR SLIDE

	A'(m ²)	V(t)	Hb(t)	Hu(t)	Fs
A	1	4.87	225.525	481.45	2.13 > 1.5
	2	4.56	242.103	481.45	1.99 > 1.5
	3	3.59	314.574	438.97	1.40 > 1.2
B	1	4.85	224.004	450.04	2.01 > 1.5
	2	4.53	240.582	450.04	1.87 > 1.5
	3	3.48	312.407	407.75	1.31 > 1.2

$C = 0.00 (t/m^2)$ $\tan(\phi B) = 0.50$

$Hu = C \cdot A' + V \cdot \tan(\phi B)$

$Fs = Hu/Hb$

FOR CONTACT PRESSURE
UNDER FOUNDATION

EXCLUDE BOUYANCY

STATE	1	3	5
B (m)	5.000	5.000	5.000
L (m)	1.000	1.000	1.000
V (t)	1127.520	1127.520	877.929
H (t)	225.525	242.103	314.574
Mc (t·m)	-2.289	143.598	620.801
e (m)	-0.002	0.127	0.707
X (m)	5.000	5.000	5.000
Qmax(t/m ²)	226.054	259.968	324.578
Qmin(t/m ²)	224.955	191.041	26.594

INCLUDE BOUYANCY

STATE				
B (m)	5.000	5.000	5.000	5.000
L (m)	1.000	1.000	1.000	1.000
V (t)	1064.710	1064.710	815.496	815.496
H (t)	224.004	240.582	312.407	312.407
Mc (t·m)	-0.533	145.354	621.323	621.323
e (m)	-0.001	0.137	0.762	0.762
X (m)	5.000	5.000	5.000	5.000
Qmax(t/m ²)	213.069	247.826	312.217	312.217
Qmin(t/m ²)	212.813	178.056	13.982	13.982

$Q = V/(B \cdot L) + 6 \cdot Mc / (L \cdot B^2)$

$Q = 2 \cdot V / (L \cdot X) : X = 3 \cdot (B0/2 - Mc/V)$

U H U R U - A B U T

Calculation for vertical wall... U.L.S

1. Action force

(i) state of normal load ... only earth pressure

$$M_1 = \frac{1}{6} \times 19.6 \times 0.251 \times 8.20^3 \times 1.5 \times 1.1 = 746.0 \text{ KN}\cdot\text{m}$$

$$M_2 = \frac{1}{2} \times 34.3 \times 0.251 \times 8.20^2 \times 1.5 \times 1.1 = 477.6 \text{ KN}\cdot\text{m}$$

$$M_u = \phantom{\frac{1}{6} \times 19.6 \times 0.251 \times 8.20^3 \times 1.5 \times 1.1} = 1223.6 \text{ KN}\cdot\text{m}$$

$$S_1 = \frac{1}{2} \times 19.6 \times 0.251 \times 8.20^2 \times 1.5 \times 1.1 = 272.9 \text{ KN}$$

$$S_2 = 34.3 \times 0.251 \times 8.20 \times 1.5 \times 1.1 = 116.5 \text{ KN}$$

$$S_u = = 389.4 \text{ KN}$$

(2) State of Temperature and normal load

$$M_u = 1223.6 + 16.578 \times 8.00 \times 1.30 \times 1.1 = 1413.3 \text{ KN}\cdot\text{m}$$

$$S_u = 389.4 + 16.578 \times 1.3 \times 1.1 = 413.1 \text{ KN}$$

(3) State of seismic

$$M_u = \left(\frac{1}{6} \times 19.6 \times 0.328 \times 8.20^3 + 16.578 \times 8.00 \right) \times 1.35 \times 1.1 = 1000.4 \text{ KN}\cdot\text{m}$$

$$S_u = \left(\frac{1}{2} \times 19.6 \times 0.328 \times 8.20^2 + 16.578 \right) \times 1.35 \times 1.1 = 345.6 \text{ KN}$$

2. Calculation of stress for U.L.S.

section $b = 100\text{cm}$ $h = 110$ $d = 103.0$ $d' = 7.0$

$$A_s = Y_{32} - 150^{\text{c}^{\text{t}^{\text{c}}}} = 8.042 / 0.15 = 53.613 \text{ cm}^2$$

$$P = \frac{A_s}{bd} \times 100 = \frac{53.613}{100 \times 103.0} \times 100 = 0.520 \%$$

$$\chi = \frac{0.87f_y \cdot A_s}{0.40f_{cu} \cdot b} = \frac{0.87 \times 41000 \times 53.613}{0.40 \times 2500 \times 100} = 19.2\text{cm}$$

$$Z = d - \frac{\chi}{2} = 103.0 - \frac{19.2}{2} = 93.4\text{cm} < 0.95d = 0.95 \times 103.0 = 97.8\text{cm} \quad \text{OK}$$

$$M_{RS} = 0.87f_y \cdot A_s \cdot Z = 0.87 \times 41000 \times 53.613 \times 93.4 \times 10^{-5} \\ = 1786.1\text{KNm} > M_u = 1413.3\text{KNm}$$

$$M_{RC} = 0.40f_{cu}bxZ = 0.40 \times 2500 \times 100 \times 19.2 \times 93.4 \times 10^{-5} \\ = 1793.3\text{KNm} > M_u = 1413.3\text{KNm} \quad \text{OK}$$

$$V_c = \frac{Su}{bd} = \frac{413.1 \times 10^3}{100 \times 103.0} = 40.1 \text{ N/cm}^2$$

$$< V_{ca} = 50.0 + 15.0 \left(\frac{0.520 - 0.50}{0.50} \right) = 50.6 \text{ N/cm}^2 \quad \text{OK}$$

U H U R U - A B U T

Calculation of stability for S.L.S.

1) action force for bottom of Foundation

(from output of computer)

load state	N ^{KN}	H ^{KN}	M ^{KNm}
Normal	1127.6	225.6	-2.3 ≐ 0
Temperature	1127.6	242.1	143.6
Seismic	878.0	314.6 × 0.80 = 251.7	* 398.0

$$* \left\{ \frac{5.00}{2} - (2689.1 - 1115.1 \times 0.80) / 878.0 \right\} \times 878.0 = 398.0 \text{ KNm}$$

2) stability for Foundation

a) Normal state

$$e = \frac{M}{N} \doteq 0$$

$$q = \frac{N}{B} = \frac{1127.6}{5.0} = 225.6 \text{ KN/m}^2 < q_a =$$

$$F_s = \frac{N \cdot \mu}{H} = \frac{1127.6 \times 0.50}{225.6} = 2.5 > 1.5 \quad \text{OK}$$

b) Temperature state

$$e = \frac{M}{N} \doteq \frac{143.6}{1127.6} = 0.128 \text{ m} < \frac{B}{6} = \frac{5.00}{6} = 0.833 \text{ m}$$

$$q = \frac{N}{B} \left(1 \pm \frac{6e}{B} \right) = \frac{1127.6}{5.00} \left(1 \pm \frac{6 \times 0.128}{5.00} \right) = \left(\begin{array}{l} 260.2 \text{ KN/m}^2 \\ 190.9 \text{ KN/m}^2 \end{array} \right) < q_a =$$

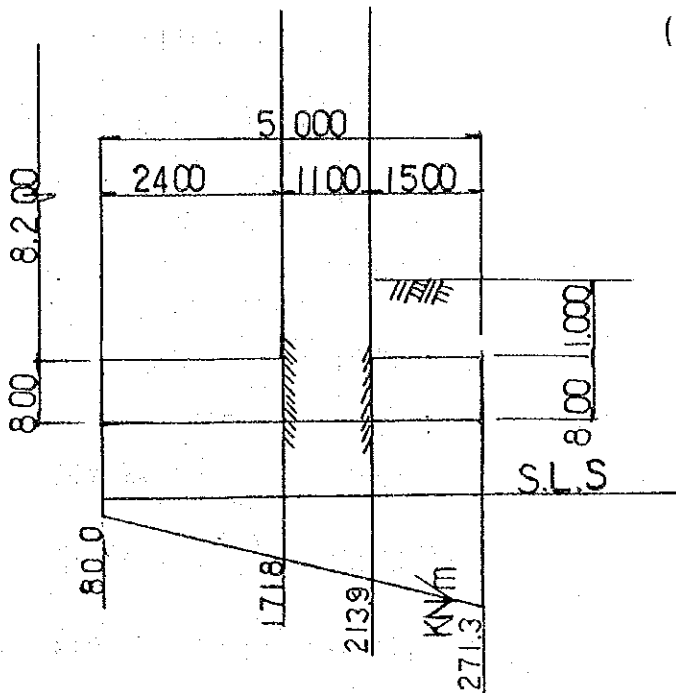
$$F_s = \frac{N \cdot \mu}{H} = \frac{1127.6 \times 0.50}{242.1} = 2.3 > 1.5 \quad \text{OK}$$

c) seismic state

$$e = \frac{M}{N} = \frac{398.0}{878.0} = 0.454 \text{ m} < \frac{B}{6} = 0.833 \text{ m}$$

$$q = \frac{N}{B} \left(1 \pm \frac{6e}{B} \right) = \frac{878.0}{5.00} \left(1 \pm \frac{6 \times 0.454}{5.00} \right) = \left(\begin{array}{l} 271.3 \text{ KN/m}^2 \\ 80.0 \text{ KN/m}^2 \end{array} \right) < q_a =$$

3) Calculation of action force for each section ... Seismic state



(1) Surcharge load

a) toe footing slab

$$\omega = 23.6 \times 0.80 + 18.6 \times 1.00 = 37.480 \text{ kN/m}$$

b) heel footing slab

$$\omega = 23.6 \times 0.80 + 19.6 \times 8.20 = 179.6 \text{ kN/m}$$

(2) Calculation of bending moment and shearing force

a) toe footing slab

$$M = \frac{1.50^2}{6} (2 \times 271.3 + 213.9) - \frac{1.50^2}{2} \times 37.480 = 241.6 \text{ kNm}$$

$$S = \frac{1.50}{2} (271.3 + 213.9) - 1.50 \times 37.480 = 307.7 \text{ kN}$$

b) heel footing slab

$$M = \frac{2.40^2}{2} \times 179.6 - \frac{2.40^2}{6} (2 \times 80.0 + 171.8) = 198.8 \text{ kNm}$$

$$S = 2.40 \times 179.6 - \frac{2.40}{2} (80.0 + 171.8) = 128.9 \text{ kN}$$

U H U R U - A B U T

Calculation of stability for U.L.S.

1) action force for bottom of Foundation

load state	N ^{KN}	H ^{KN}	M ^{KNm}
Normal	$1127.6 \times 1.2 \times 1.15$ $= 1556.1$	$225.6 \times 1.5 \times 1.1$ $= 372.3$	※1 205.4
Temperature	1556.1	$242.1 \times 1.5 \times 1.1$ $= 399.5$	※2 446.2
Seismic	$878.0 \times 1.2 \times 1.15$ $= 1211.7$	$314.6 \times 1.35 \times 1.1$ $= 467.2$	※3 974.3

$$\text{※1 } M = \left\{ \frac{5.00}{2} - (3592.4 \times 1.380 - 771.3 \times 1.65) / 1556.1 \right\} \times 1556.1 = 205.4^{\text{KNm}}$$

$$\text{※2 } M = \left\{ \frac{5.00}{2} - (3592.4 \times 1.380 - 917.2 \times 1.65) / 1556.1 \right\} \times 1556.1 = 446.2^{\text{KNm}}$$

$$\text{※3 } M = \left\{ \frac{5.00}{2} - (2689.1 \times 1.380 - 1115.1 \times 1.485) / 1211.7 \right\} \times 1211.7 = 974.3^{\text{KNm}}$$

2) Stability of Foundation

a) Normal state

$$e = \frac{205.4}{1556.1} = 0.132^{\text{m}} < \frac{B}{6} = \frac{5.00}{6} = 0.833^{\text{m}}$$

$$q = \frac{1556.1}{5.00} \left(1 \pm \frac{6 \times 0.132}{5.00} \right) = \begin{cases} 360.6 \text{ KN/m}^2 \\ 262.0 \text{ KN/m}^2 \end{cases} < q_a =$$

$$F_s = \frac{1556.1 \times 0.50}{372.3} = 2.1 > 1.1$$

b) Temperature state

$$e = \frac{446.2}{1556.1} = 0.287^{\text{m}} < \frac{B}{6} = 0.833^{\text{m}}$$

$$q = \frac{1556.1}{5.00} \left(1 \pm \frac{6 \times 0.287}{5.00} \right) = \begin{cases} 418.4 \text{ KN/m}^2 \\ 204.1 \text{ KN/m}^2 \end{cases} < q_a =$$

$$F_s = \frac{1556.1 \times 0.50}{399.5} = 1.9 > 1.1$$

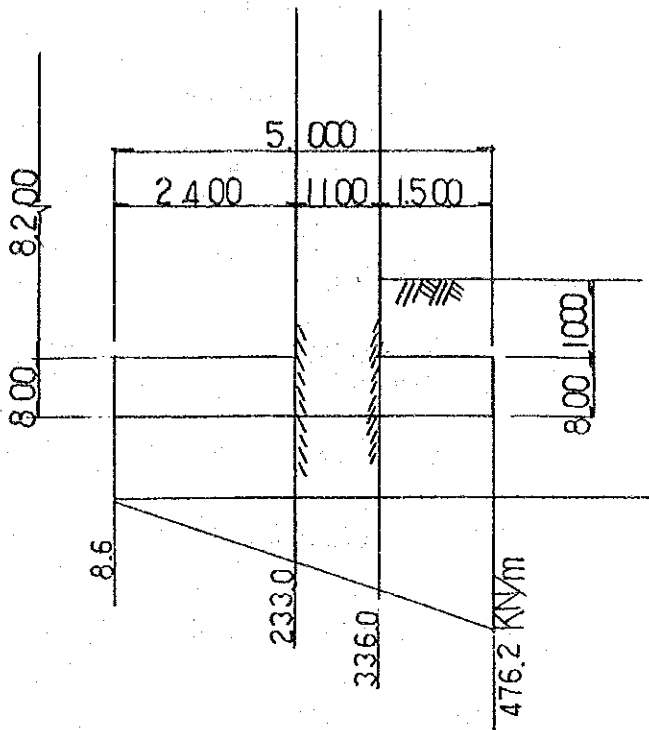
c) Seismic state

$$e = \frac{974.3}{1211.7} = 0.804^{\text{m}} < \frac{B}{6} = 0.833^{\text{m}}$$

$$q = \frac{1211.7}{5.00} \left(1 \pm \frac{6 \times 0.804}{5.00} \right) = \begin{cases} 476.2 \text{ KN/m}^2 \\ 8.6 \text{ KN/m}^2 \end{cases} < q_a =$$

$$F_s = \frac{1211.7 \times 0.50}{467.2} = 1.3 > 1.1 \quad \text{OK}$$

3) Calculation of action force for each section ... Seismic state



(1) Surcharge load

a) toe footing slab

$$\omega = (23.6 \times 0.80 + 18.6 \times 1.00) \times 1.380 = 51.722 \text{ kN/m}$$

b) heel footing slab

$$\omega = (23.6 \times 0.80 + 19.6 \times 8.20) \times 1.38 = 247.848 \text{ kN/m}$$

(2) Calculation of bending moment and shearing force

a) toe footing slab

$$M = \frac{1.50^2}{6} (2 \times 476.2 + 336.0) - \frac{1.50^2}{2} \times 51.722 = 425.0 \text{ kNm}$$

$$S = \frac{1.50}{2} (476.2 + 336.0) - 1.50 \times 51.722 = 531.6 \text{ kN}$$

b) heel footing slab

$$M = \frac{2.40^2}{2} \times 247.848 - \frac{2.40^2}{6} (2 \times 8.6 + 233.0) = 473.7 \text{ kNm}$$

$$S = 2.40 \times 247.848 - \frac{2.40}{2} (8.6 + 233.0) = 305.0 \text{ kN}$$

U H U R U - A B U T

Calculation of stress for footing slab (U.L.S)

section $b = 100 \text{ cm}$ $h = 80$ $d = 73.5$ $d' = 6.5$

$$A_s = Y_{25} - 150^{\text{ctc}} = 4.909 / 0.150 = 32.727 \text{ cm}^2$$

$$P = \frac{A_s}{bd} \times 100 = \frac{32.727}{100 \times 73.5} \times 100 = 0.445 \%$$

$$x = \frac{0.87 f_y \cdot A_s}{0.40 f_{cu} \cdot b} = \frac{0.87 \times 41000 \times 32.727}{0.40 \times 2500 \times 100} = 11.8 \text{ cm}$$

$$Z = d - \frac{x}{2} = 73.5 - \frac{11.8}{2} = 67.6 \text{ cm} < 0.95d = 0.95 \times 73.5 = 69.8 \text{ cm}$$

$$M_{RS} = 0.87 f_y A_s \cdot Z = 0.87 \times 41000 \times 32.727 \times 67.6 \times 10^{-5} \\ = 789.1 \text{ kNm} > M_u = 473.7 \text{ kNm}$$

$$M_{RC} = 0.40 f_{cu} \cdot b x Z = 0.40 \times 2500 \times 100 \times 11.8 \times 67.6 \times 10^{-5} \\ = 797.6 \text{ kNm} > M_u = 473.7 \text{ kNm} \text{ OK}$$

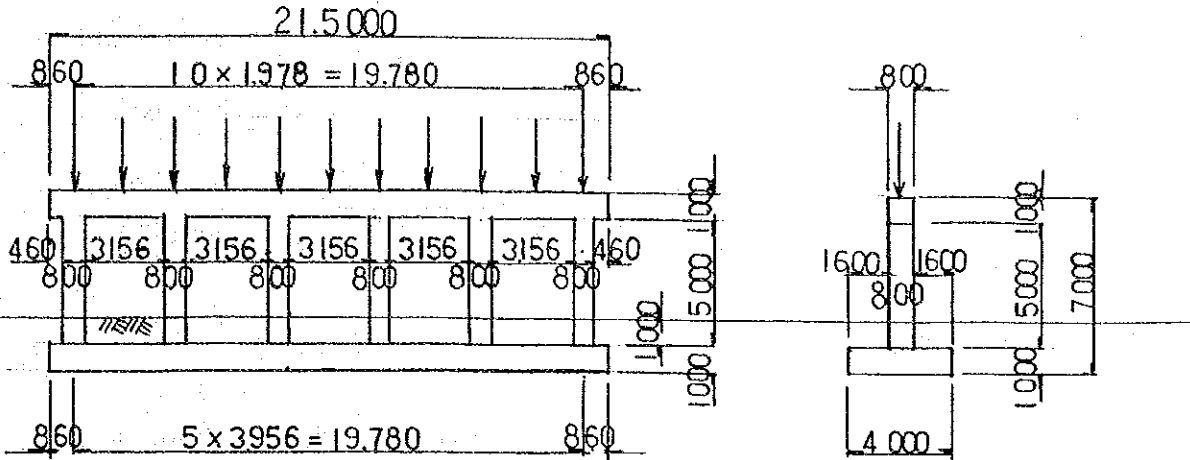
$$V_c = \frac{S_u}{bd} = \frac{531.6 \times 10^3}{100 \times 73.5} = 72.4 \text{ N/cm}^2$$

$$V_{ca} = 35.0 + 15.0 \left(\frac{0.445 - 0.25}{0.25} \right) \times 2 = 93.4 \text{ N/cm}^2 \text{ OK}$$

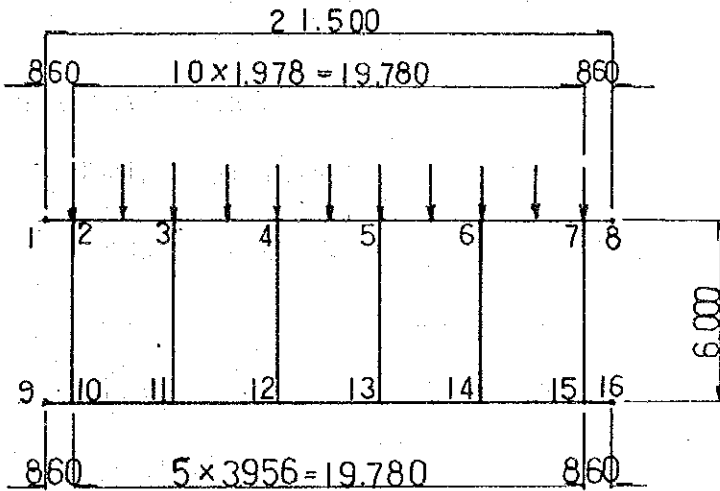
UHURU — PIER

Crossing direction

1) Shape and size



2) Frame



3) factor of section

beam $A = 0.80 \times 1.00 = 0.8000 \text{ m}^2$

$$I = \frac{0.80 \times 1.00^3}{12} = 0.06667 \text{ m}^4$$

pillar $A = 0.80 \times 0.80 = 0.6400 \text{ m}^2$

$$I = \frac{0.80^4}{12} = 0.03413 \text{ m}^4$$

footing $A = 4.00 \times 1.00 = 4.0000 \text{ m}^2$

$$I = \frac{4.00 \times 1.00^3}{12} = 0.33333 \text{ m}^4$$

$$E_c = 2.5 \times 10^7 \text{ KN/m}^2$$

4) load

a) Reaction from Superstructure

Dead load

$$R d_{1 \sim 11} = 8084.0 / 11 \text{ Girder} = 734.910 \text{ KN/shoe}$$

Live load

$$R \ell_{1 \sim 4} = R \ell_{8 \sim 11} = 140.0 \text{ KN/shoe}$$

$$R \ell_5 = R \ell_6 = R \ell_7 = (2978.2 - 8 \times 140.0) / 3 = 619.4 \text{ KN/shoe}$$

b) Dead load of Substructure

$$\text{beam} \quad \omega d_1 = 23.6 \times 1.00 \times 0.80 = 18.880 \text{ KN/m}$$

$$\text{pillar} \quad \omega d_2 = 23.6 \times 0.80 \times 0.80 = 15.104 \text{ KN/m}$$

$$\text{footing} \quad \omega d_3 = 23.6 \times 1.00 \times 4.00 = 94.400 \text{ KN/m}$$

$$\text{surcharge} \quad \omega d_4 = 18.6 \times 1.00 \times 4.00 = 74.400 \text{ KN/m}$$

c) Seismic state

Horizontal load

$$\text{Superstructure} \quad H d = 8084.0 \times 0.10 = 808.4 \text{ KN}$$

$$M d = 808.4 \times 1.20 / 21.50 = 45.120 \text{ KNm/m}$$

$$\text{beam} \quad H d_1 = 18.880 \times 0.10 = 1.888 \text{ KN/m}$$

$$\text{pillar} \quad H d_2 = 15.101 \times 0.10 = 1.511 \text{ KN/m}$$

$$\text{footing} \quad H d_3 = 94.400 \times 0.10 = 9.440 \text{ KN/m}$$

d) Temperature

$$T = 12.5 \text{ }^\circ\text{C}$$

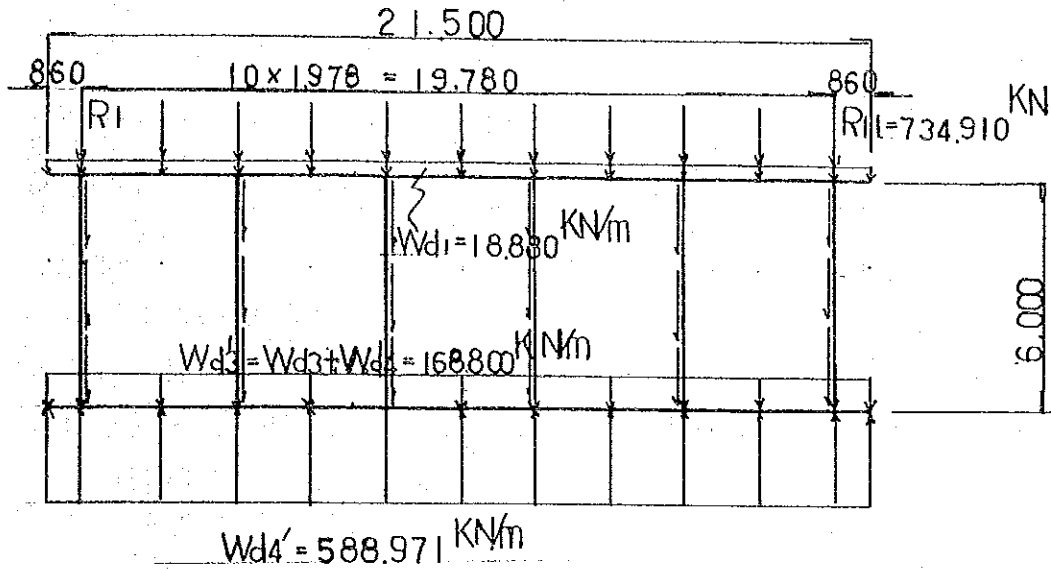
$$\alpha = 1.2 \times 10^{-5}$$

$$E_c = 2.5 \times 10^7 \text{ KN/m}^2$$

U H U R U - P I E R

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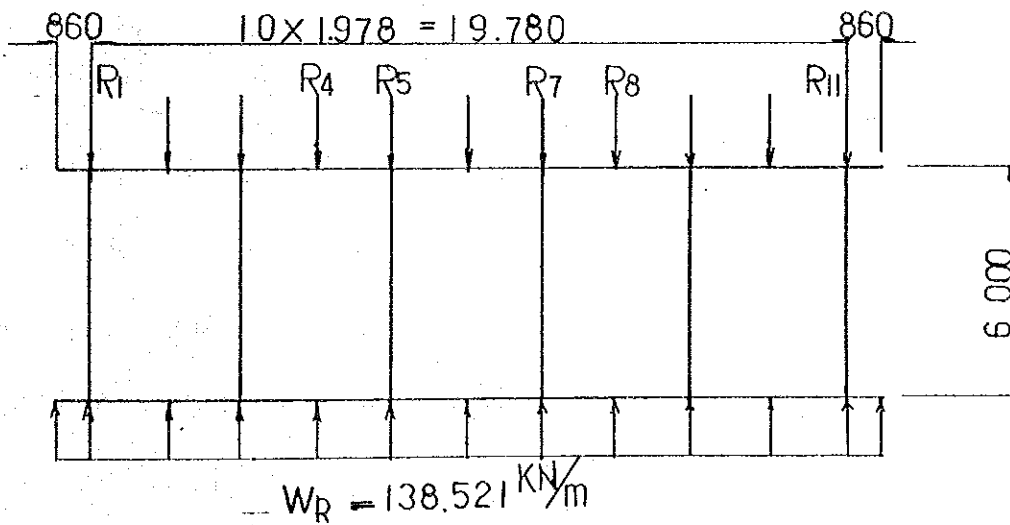
Case-1 Dead load



$$\begin{aligned} \omega_d &= 588.971 - 168.800 \\ &= 420.171 \text{ KN/m} \end{aligned}$$

$$\begin{aligned} \omega_{d_4'} &= (734.910 \times 11 + 18.880 \times 21.50 + 15.104 \times 6.00 \times 6) / 21.50 + 168.800 \\ &= 420.171 + 168.800 = 588.971 \text{ KN/m} \end{aligned}$$

Case-2 Live load

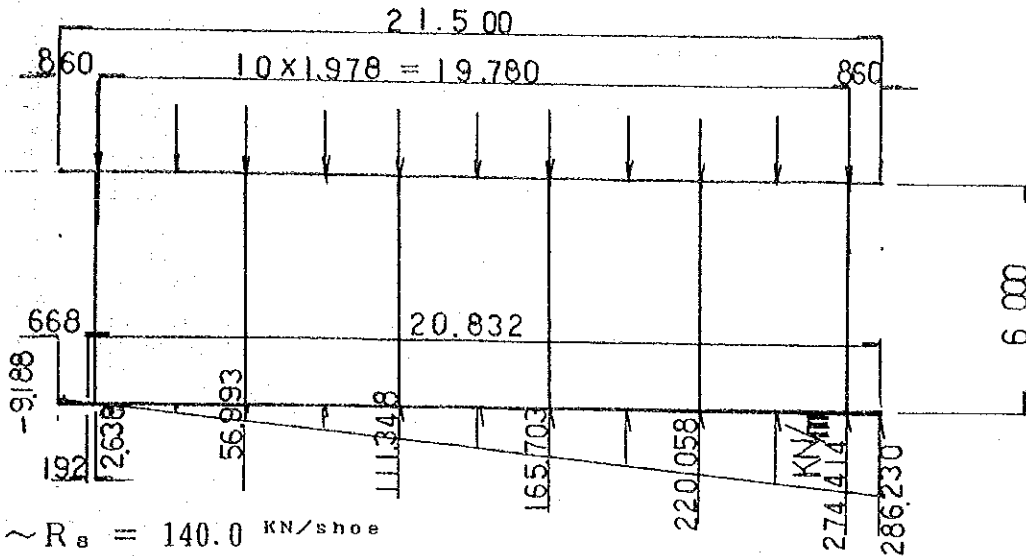


$$R_{1 \sim 4} = R_{8 \sim 11} = 140.0 \text{ KN/shoe}$$

$$R_5 = R_6 = R_7 = 619.4 \text{ KN/shoe}$$

$$\omega_R = (140.0 \times 8 + 619.4 \times 3) / 21.50 = 138.521 \text{ KN/m}$$

Case-3 Live load



$$R_1 \sim R_8 = 140.0 \text{ KN/shoe}$$

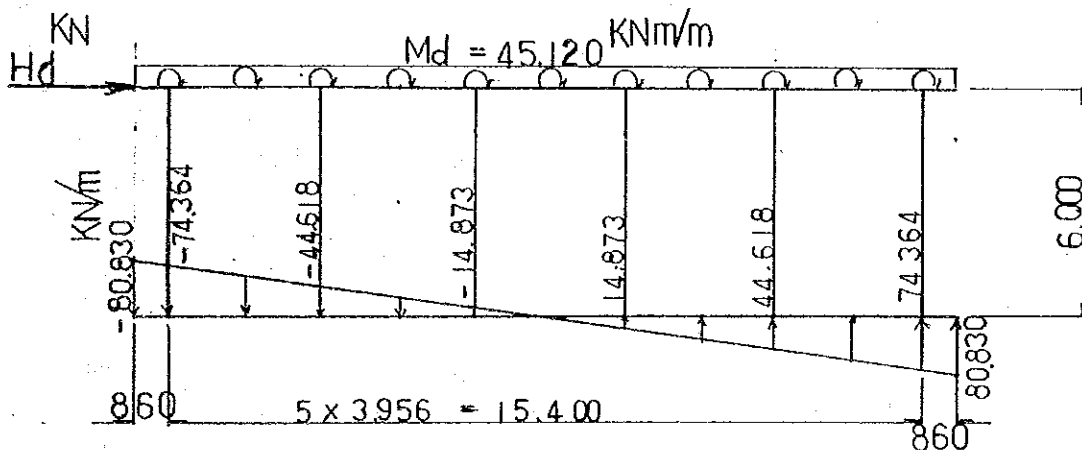
$$R_9 = R_{10} = R_{11} = 619.4 \text{ KN/shoe} \quad \Sigma R = 8 \times 140.0 + 3 \times 619.4 = 2978.2 \text{ KN}$$

$$M_e = (-8 \times 140.0 \times 2.967 + 3 \times 619.4 \times 7.912) = 11379.1 \text{ KNm}$$

$$e = \frac{11379.1}{2978.2} = 3.821 \text{ m}$$

$$\omega_{Ri} = \frac{2978.2}{21.50} \left(1 \pm \frac{6 \times 3.821}{21.50} \right) = \begin{cases} \omega_{R1} = 286.230 \text{ KN/m} \\ \omega_{R2} = -9.188 \text{ KN/m} \end{cases}$$

Case-4 Seismic state



$$\text{load : } H_d = 808.4 + 21.50 \times 1.888 = 848.992 \text{ KN}$$

$$M = 45.120 \times 21.50 + \frac{6.00^2}{2} \times 1.511 \times 6 + 848.992 \times 6.00 = 6227.220 \text{ KNm}$$

$$q = \pm \frac{6M}{B^2} = \pm \frac{6 \times 6227.220}{21.50^2} = \pm 80.830 \text{ KN/m}$$

Case-5

Temperature

$$t = 12.5 \text{ } ^\circ\text{C} \quad \alpha = 1.2 \times 10^{-5}$$

$$E_c = 2.5 \times 10^7 \text{ Kg/m}^2$$

	X (m)	Y (m)
1	0.0000	6.0000
2	0.8600	6.0000
3	4.8160	6.0000
4	8.7720	6.0000
5	12.7280	6.0000
6	16.6840	6.0000
7	20.6400	6.0000
8	21.5000	6.0000
9	0.0000	0.0000
10	0.8600	0.0000
11	4.8160	0.0000
12	8.7720	0.0000
13	12.7280	0.0000
14	16.6840	0.0000
15	20.6400	0.0000
16	21.5000	0.0000

NOTE: THE DIMENSION(I) BE EXCHANG TO
DIMENSION(KN) INTO THIS CALCULATION

No	I	J	A (m2)	I (m4)	I - J	L (m)	E (t/m2)	EPS
1	1	2	0.80000	0.066670	Fix - Fix	0.860	2.50E+07	1.20E-05
2	2	3	0.80000	0.066670	Fix - Fix	3.956	2.50E+07	1.20E-05
3	3	4	0.80000	0.066670	Fix - Fix	3.956	2.50E+07	1.20E-05
4	4	5	0.80000	0.066670	Fix - Fix	3.956	2.50E+07	1.20E-05
5	5	6	0.80000	0.066670	Fix - Fix	3.956	2.50E+07	1.20E-05
6	6	7	0.80000	0.066670	Fix - Fix	3.956	2.50E+07	1.20E-05
7	7	8	0.80000	0.066670	Fix - Fix	0.860	2.50E+07	1.20E-05
8	9	10	4.00000	0.333330	Fix - Fix	0.860	2.50E+07	1.20E-05
9	10	11	4.00000	0.333330	Fix - Fix	3.956	2.50E+07	1.20E-05
10	11	12	4.00000	0.333330	Fix - Fix	3.956	2.50E+07	1.20E-05
11	12	13	4.00000	0.333330	Fix - Fix	3.956	2.50E+07	1.20E-05
12	13	14	4.00000	0.333330	Fix - Fix	3.956	2.50E+07	1.20E-05
13	14	15	4.00000	0.333330	Fix - Fix	3.956	2.50E+07	1.20E-05
14	15	16	4.00000	0.333330	Fix - Fix	0.860	2.50E+07	1.20E-05
15	2	10	0.64000	0.034130	Fix - Fix	6.000	2.50E+07	1.20E-05
16	3	11	0.64000	0.034130	Fix - Fix	6.000	2.50E+07	1.20E-05
17	4	12	0.64000	0.034130	Fix - Fix	6.000	2.50E+07	1.20E-05
18	5	13	0.64000	0.034130	Fix - Fix	6.000	2.50E+07	1.20E-05
19	6	14	0.64000	0.034130	Fix - Fix	6.000	2.50E+07	1.20E-05
20	7	15	0.64000	0.034130	Fix - Fix	6.000	2.50E+07	1.20E-05

No	X (t/m)	Y (t/m)	M (tm/Rad)
9	Fix	Fix	Free
16	Free	Fix	Free

No	L-No	L-No	L-No	L-No	L-No	L-No	L-No	L-No	L-No	L-No
	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
1	0									
2	3	0.989	1.978	2.967						
3	3	0.989	1.978	2.967						
4	3	0.989	1.978	2.967						
5	3	0.989	1.978	2.967						
6	3	0.989	1.978	2.967						
7	0									
8	0									
9	3	0.989	1.978	2.967						
10	3	0.989	1.978	2.967						
11	3	0.989	1.978	2.967						
12	3	0.989	1.978	2.967						
13	3	0.989	1.978	2.967						
14	0									
15	3	1.500	3.000	4.500						
16	3	1.500	3.000	4.500						
17	3	1.500	3.000	4.500						
18	3	1.500	3.000	4.500						
19	3	1.500	3.000	4.500						
20	3	1.500	3.000	4.500						

UHURU PIER(F)

: Dead Load
 No. : 1
 No. : 1

No	i	-j		Li (m)	Lo (m)	Pi (t/m)	Pj (t/m)
2	2-	3	-Y	0.001		-734.910	
2	2-	3	-Y	1.978		-734.910	
3	3-	4	-Y	0.001		-734.910	
3	3-	4	-Y	1.978		-734.910	
4	4-	5	-Y	0.001		-734.910	
4	4-	5	-Y	1.978		-734.910	
4	4-	5	-Y	3.955		-734.910	
5	5-	6	-Y	1.978		-734.910	
5	5-	6	-Y	3.955		-734.910	
6	6-	7	-Y	1.978		-734.910	
6	6-	7	-Y	3.955		-734.910	
1	1-	2	-Y	0.000			
2	2-	3	-Y	0.000	0.860	-18.880	-18.880
3	3-	4	-Y	0.000	3.956	-18.880	-18.880
4	4-	5	-Y	0.000	3.956	-18.880	-18.880
5	5-	6	-Y	0.000	3.956	-18.880	-18.880
6	6-	7	-Y	0.000	3.956	-18.880	-18.880
7	7-	8	-Y	0.000	0.860	-18.880	-18.880
8	9-	10	-Y	0.000	0.860	420.171	420.171
9	10-	11	-Y	0.000	3.956	420.171	420.171
10	11-	12	-Y	0.000	3.956	420.171	420.171
11	12-	13	-Y	0.000	3.956	420.171	420.171
12	13-	14	-Y	0.000	3.956	420.171	420.171
13	14-	15	-Y	0.000	3.956	420.171	420.171
14	15-	16	-Y	0.000	0.860	420.171	420.171
15	2-	10	-Y	0.000	6.000	-15.104	-15.104
16	3-	11	-Y	0.000	6.000	-15.104	-15.104
17	4-	12	-Y	0.000	6.000	-15.104	-15.104
18	5-	13	-Y	0.000	6.000	-15.104	-15.104
19	6-	14	-Y	0.000	6.000	-15.104	-15.104
20	7-	15	-Y	0.000	6.000	-15.104	-15.104

$\Sigma V = 0.002 (t)$
 $\Sigma H = 0.000 (t)$

UHURU PIER(F)

: Live Load
 No. : 2
 No. : 1

No	i	-j		Li (m)	Lo (m)	Pi (t/m)	Pj (t/m)
2	2-	3	-Y	0.001		-140.000	
2	2-	3	-Y	1.978		-140.000	
3	3-	4	-Y	0.001		-140.000	
3	3-	4	-Y	1.978		-140.000	
4	4-	5	-Y	0.001		-619.400	
4	4-	5	-Y	1.978		-619.400	
4	4-	5	-Y	3.955		-619.400	
5	5-	6	-Y	1.978		-140.000	
5	5-	6	-Y	3.955		-140.000	
6	6-	7	-Y	1.978		-140.000	
6	6-	7	-Y	3.955		-140.000	
8	9-	10	-Y	0.000	0.860	138.521	138.521
9	10-	11	-Y	0.000	3.956	138.521	138.521
10	11-	12	-Y	0.000	3.956	138.521	138.521
11	12-	13	-Y	0.000	3.956	138.521	138.521
12	13-	14	-Y	0.000	3.956	138.521	138.521
13	14-	15	-Y	0.000	3.956	138.521	138.521
14	15-	16	-Y	0.000	0.860	138.521	138.521

$\Sigma V = 0.001 (t)$
 $\Sigma H = 0.000 (t)$

UHURU PIER(F)

: Live Load
 No. : 3
 No. : 1

No	i - j		Li (m)	Lo (m)	Pi (t/m)	Pj (t/m)
2	2- 3	-Y	0.001		-140.000	
2	2- 3	-Y	1.978		-140.000	
3	3- 4	-Y	0.001		-140.000	
3	3- 4	-Y	1.978		-140.000	
4	4- 5	-Y	0.001		-140.000	
4	4- 5	-Y	1.978		-140.000	
5	5- 6	-Y	0.001		-140.000	
5	5- 6	-Y	1.978		-140.000	
6	6- 7	-Y	0.001		-619.400	
6	6- 7	-Y	1.978		-619.400	
6	6- 7	-Y	3.955		-619.400	
8	9- 10	-Y	0.000	0.668	-9.188	0.000
8	9- 10	-Y	0.668	0.192	0.000	2.638
9	10- 11	-Y	0.000	3.956	2.638	56.993
10	11- 12	-Y	0.000	3.956	56.993	111.348
11	12- 13	-Y	0.000	3.956	111.348	165.703
12	13- 14	-Y	0.000	3.956	165.703	220.058
13	14- 15	-Y	0.000	3.956	220.058	274.414
14	15- 16	-Y	0.000	0.860	274.414	286.230

$\Sigma V = 0.098 (t)$
 $\Sigma H = 0.000 (t)$

UHURU PIER(F)

: Seismic State
 No. : 4
 No. : 1

No	X (t)	Y (t)	M (tm)
1	848.992	0.000	0.000

No	i - j		Li (m)	Lo (m)	Pi (t/m)	Pj (t/m)
1	1- 2	-M	0.000	0.860	45.120	45.120
2	2- 3	-M	0.000	3.956	45.120	45.120
3	3- 4	-M	0.000	3.956	45.120	45.120
4	4- 5	-M	0.000	3.956	45.120	45.120
5	5- 6	-M	0.000	3.956	45.120	45.120
6	6- 7	-M	0.000	3.956	45.120	45.120
7	7- 8	-M	0.000	0.860	45.120	45.120
8	9- 10	-Y	0.000	0.860	-80.830	-74.364
9	10- 11	-Y	0.000	3.956	-74.364	-44.618
10	11- 12	-Y	0.000	3.956	-44.618	-14.873
11	12- 13	-Y	0.000	1.978	-14.873	0.000
11	12- 13	-Y	1.978	1.978	0.000	14.873
12	13- 14	-Y	0.000	3.956	14.873	44.818
13	14- 15	-Y	0.000	3.956	44.818	74.364
14	15- 16	-Y	0.000	0.860	74.364	80.830
15	2- 10	-X	0.000	6.000	1.511	1.511
16	3- 11	-X	0.000	6.000	1.511	1.511
17	4- 12	-X	0.000	6.000	1.511	1.511
18	5- 13	-X	0.000	6.000	1.511	1.511
19	6- 14	-X	0.000	6.000	1.511	1.511
20	7- 15	-X	0.000	6.000	1.511	1.511

$\Sigma V = 0.791 (t)$
 $\Sigma H = 903.388 (t)$

UHURU PIER(F)

: Temperature
 No. : 5
 No. : 1

No	TO	No	T (°C)
1	—	7	12.50

$\Sigma V = 0.000$ (t)
 $\Sigma H = 0.000$ (t)

UHURU PIER(F)

*

No	C-No 1	C-No 2	C-No 3	C-No 4	C-No 5	C-No 6	C-No 7	C-No 8
No	No 6	No 7	No 8	No 9	No10	No11	No12	No13
α	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
No 1	1.3800	1.3800	1.3800	1.3800	1.3800	1.0000	1.0000	1.0000
No 2	1.6500	0.0000	0.0000	1.3800	0.0000	1.0000	0.0000	0.0000
No 3	0.0000	1.6500	0.0000	0.0000	1.3800	0.0000	1.0000	0.0000
No 4	0.0000	0.0000	1.6500	0.0000	0.0000	0.0000	0.0000	1.0000
No 5	0.0000	0.0000	0.0000	1.4300	1.4300	0.0000	0.0000	0.0000

No	C-No 9	C-No10
No	No14	No15
α	1.0000	1.0000
No 1	1.0000	1.0000
No 2	1.0000	0.0000
No 3	0.0000	1.0000
No 4	0.0000	0.0000
No 5	1.0000	1.0000

UHURU PIER(F)

No 1 : 6 7 8 9 10
 No 2 : 11 12 13 14 15

UHURU PIER(F)

No.	Case. 1			Case. 2			Case. 3		
	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)
9.	0.000	-0.001	0.000	0.000	-0.001	0.000	0.000	-0.058	0.000
16.	0.000	-0.001	0.000	0.000	-0.001	0.000	0.000	-0.040	0.000
No.	Case. 4			Case. 5			Case. 6		
	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)
9.	-903.388	90.065	0.000	0.000	0.000	0.000	0.000	-0.003	0.000
15.	0.000	-90.857	0.000	0.000	0.000	0.000	0.000	-0.003	0.000
No.	Case. 7			Case. 8			Case. 9		
	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)
9.	0.000	-0.097	0.000	-1490.590	148.607	0.000	0.000	-0.003	0.000
16.	0.000	-0.068	0.000	0.000	-149.916	0.000	0.000	-0.003	0.000
No.	Case. 10			Case. 11			Case. 12		
	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)
9.	0.000	-0.082	0.000	0.000	-0.002	0.000	0.000	-0.059	0.000
16.	0.000	-0.057	0.000	0.000	-0.002	0.000	0.000	-0.041	0.000
No.	Case. 13			Case. 14			Case. 15		
	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)	RX (t)	RY (t)	RM (tm)
9.	-903.388	90.065	0.000	0.000	-0.002	0.000	0.000	-0.059	0.000
16.	0.000	-90.859	0.000	0.000	-0.002	0.000	0.000	-0.041	0.000

No.	Case. 1			Case. 2			Case. 3		
	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)
1.	-0.01017	-0.11714	-0.16470	0.09489	-0.13521	-0.29123	-0.07019	0.07028	0.1630
2.	-0.01017	-0.25905	-0.16591	0.09489	-0.38567	-0.29123	-0.07019	0.21049	0.1630
3.	-0.00994	-0.03361	0.10350	0.07849	-1.90045	-0.35887	-0.05799	1.36312	0.2682
4.	-0.00489	0.21885	0.21885	0.4138	-3.53905	-0.29938	-0.03031	2.38611	0.1405
5.	0.00150	-0.21885	-0.02128	-0.09975	-3.53905	0.29938	0.0590	2.49977	-0.1169
6.	0.00555	-0.03361	-0.10350	-0.04686	-1.90045	0.35887	0.03563	1.25424	-0.4156
7.	0.00578	-0.25905	-0.16591	-0.06326	-0.38567	0.29123	0.04575	0.00696	-0.0208
8.	0.00678	-0.11714	0.16470	-0.06326	-0.13521	0.29123	0.04575	-0.01090	-0.0208
9.	0.00000	0.00000	0.17211	0.00000	0.00000	-0.32508	0.00000	0.00000	0.2941
10.	0.00000	0.14916	0.17745	0.00000	-0.27919	-0.32332	0.00000	0.25294	0.2941
11.	-0.00005	0.60416	0.07091	0.00328	-1.78240	-0.40247	-0.00244	1.47843	0.3009
12.	-0.00105	0.81571	0.02814	0.01070	-3.20517	-0.20966	-0.00798	2.50900	0.1699
13.	-0.00233	0.81571	-0.02814	0.02093	-3.20517	0.20966	-0.01522	2.63617	-0.1205
14.	-0.00334	0.60416	-0.07091	0.02835	-1.78240	0.40247	-0.02116	1.65214	-0.3006
15.	-0.00339	0.14916	-0.17745	0.03163	-0.27919	0.32332	-0.02319	0.30833	-0.3618
16.	-0.00339	0.00000	-0.17211	0.03163	0.00000	0.32508	-0.02319	0.00000	-0.3582

No.	Case. 4			Case. 5			Case. 6		
	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)
1.	3.89141	0.07727	-0.28635	-1.59536	-0.03096	0.18644	0.14254	-0.38476	-0.7078
2.	3.85491	-0.17187	-0.29636	-1.46736	0.12938	0.18644	0.14254	-0.99384	-0.7095
3.	3.70759	-0.67534	-0.11219	-0.87808	0.67800	0.11215	0.11580	-3.18212	-0.4493
4.	3.58930	-0.44810	0.01350	-0.29073	0.97424	0.04046	0.06153	-5.58743	-0.4646
5.	3.50651	0.12009	0.02720	0.29511	0.97424	-0.04046	-0.01402	5.53743	0.4646
6.	3.45903	0.44714	-0.07434	0.88346	0.67800	-0.11215	-0.06829	-3.18212	0.4493
7.	3.43987	0.12850	-0.23299	1.47274	0.12938	-0.18644	-0.09502	-0.99384	0.7095
8.	3.43987	-0.06613	-0.22298	1.60174	-0.03096	-0.18644	-0.09502	-0.38476	0.7078
9.	0.00000	0.00000	-0.22417	0.00000	0.00000	0.15636	0.00000	0.00000	-0.2989
10.	0.00777	-0.19185	-0.22118	0.00000	0.13447	0.15636	0.00000	-0.25483	-0.2886
11.	0.03903	-0.68961	-0.04700	0.00082	0.67359	0.11195	0.00335	-2.10722	-0.5662
12.	0.06412	-0.45601	0.10523	0.02003	0.97356	-0.03913	0.01620	-4.16284	-0.3071
13.	0.08175	0.12825	0.11845	0.03325	0.97356	-0.03913	0.03131	-4.16284	0.3071
14.	0.09197	0.46301	-0.00927	0.04456	0.67359	-0.11195	0.04216	-2.10722	0.5662
15.	0.09616	0.14662	-0.16856	0.00538	0.13447	-0.15636	0.04751	-0.25483	0.2886
16.	0.09616	0.00000	-0.17158	0.00538	0.00000	-0.15636	0.04751	0.00000	0.2989

No.	Case. 7			Case. 8			Case. 9		
	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)
1.	-0.12984	-0.04570	0.04171	-0.03417	-0.69978	-0.69978	-2.16586	-0.39253	-0.3626
2.	-0.12984	-0.01018	0.04006	-0.64106	-0.71795	-0.71795	-1.98141	-0.70470	-0.3542
3.	-0.10940	2.20277	0.58541	-1.16069	-0.04288	-0.04288	-1.16105	-1.69946	-0.1920
4.	-0.05676	4.23909	0.26120	-0.43736	0.05166	0.05166	-0.36539	-3.18872	-0.3259
5.	0.01182	4.42663	-0.22218	0.50016	0.19551	0.19551	-0.41205	-3.18872	0.3259
6.	0.06783	2.02312	-0.82858	5.71643	-0.36550	-0.36550	1.20771	-1.69946	0.1920
7.	0.08483	-0.34601	0.19469	-0.14546	-0.15349	-0.15349	2.02308	-0.70470	0.3642
8.	0.08483	-0.17965	0.19303	-0.37078	-0.14063	-0.14063	2.21255	-0.39253	0.3626
9.	0.00000	0.00000	0.72284	0.00000	-0.13237	-0.13237	0.00000	0.00000	0.0125
10.	0.00000	0.2320	0.73008	-0.11072	-0.12006	-0.12006	0.00000	0.01385	0.0275
11.	-0.00409	3.27314	0.59433	-0.30412	0.02931	0.02931	0.00564	-0.56274	-0.2923
12.	-0.01452	5.26553	0.31908	0.37327	0.21247	0.21247	0.01622	-1.90826	-0.1946
13.	-0.02833	5.47536	-0.23771	1.33730	0.15663	0.15663	0.03044	-1.90525	0.1946
14.	-0.03953	3.55977	-0.59385	1.59771	-0.11315	-0.11315	0.04103	-0.56274	0.2975
15.	-0.04294	0.71541	-0.84186	0.47777	-0.52301	-0.52301	0.04666	0.01285	-0.0223
16.	-0.04294	0.00000	-0.82854	0.00000	-0.52062	-0.52062	0.04666	0.00000	-0.0125

No.	Case. 10			Case. 11			Case. 12		
	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)
1.	-2.39369	-0.10895	0.26431	-0.25236	-0.45933	-0.45933	-0.08036	-0.04586	-0.0017
2.	-2.20922	0.11800	0.26265	0.08472	-0.45713	-0.45713	-0.08036	-0.04856	-0.0029
3.	-1.34939	2.80427	0.67337	-1.93406	-0.25337	-0.25337	-0.06793	1.32951	0.3717
4.	-0.56432	4.98801	0.28113	0.33021	-0.27809	-0.27809	-0.93520	2.60496	0.1612
5.	0.43366	5.14486	-0.24849	-3.32021	0.27809	0.27809	0.00741	2.71862	-0.1981
6.	1.32155	2.65401	-0.87675	-1.93406	0.25337	0.25337	0.04218	1.22063	-0.5191
7.	2.17850	-0.16337	-0.05648	-0.04031	0.45713	0.45713	0.05252	-0.25309	0.1451
8.	2.36297	-0.22098	-0.06798	-0.25236	-0.45933	-0.45933	-0.12805	0.14299	0.1451
9.	0.00000	0.00000	0.86702	0.00000	-0.15298	-0.15298	0.00000	0.00000	0.4663
10.	0.00000	0.74720	0.87428	-0.13000	-0.14587	-0.14587	0.00000	0.40210	0.4715
11.	-0.00225	3.83720	0.67316	-1.17824	-0.33155	-0.33155	-0.00249	2.08258	0.3718
12.	-0.00956	5.98029	0.32918	-2.38946	-0.18153	-0.18153	-0.00903	3.32471	0.1980
13.	-0.01944	6.15879	-0.26112	-2.38946	0.18153	0.18153	-0.01758	3.45188	-0.1487
14.	-0.02730	4.07693	-0.67278	-1.17824	0.33155	0.33155	-0.02451	2.25630	-0.3715
15.	-0.02898	0.82432	-0.96777	-0.13000	0.14587	0.14587	-0.02658	0.45799	-0.5393
16.	-0.02898	0.00000	-0.95542	0.00000	0.15298	0.15298	-0.02658	0.00000	-0.5303

No.	Case. 13			Case. 14			Case. 15		
	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)	X-DIS. (mm)	Y-DIS. (mm)	ROTA. (mmRad)
1.	3.88125	-0.03088	-0.45106	-1.51104	-0.28332	-0.28332	-1.67672	-0.07783	0.1848
2.	3.84474	-0.043091	-0.46227	-1.38264	-0.51534	-0.51534	-1.54772	0.08082	0.1836
3.	3.69766	-0.70895	-0.00869	-0.80952	-1.33606	-1.33606	-0.94601	2.00751	0.4839
4.	3.58441	-0.22926	0.03479	-0.25424	-2.34596	-2.34596	-0.32593	3.57020	0.2023
5.	3.50801	0.33884	0.00591	0.28786	-2.34596	0.23763	0.00352	3.69286	-0.1785
6.	3.46558	0.41353	-0.17785	0.84314	-1.35606	0.14321	0.92564	1.89863	-0.6313
7.	3.44565	-0.13055	-0.06709	1.41626	0.27069	0.27069	-0.12271	-0.0413	-0.0413
8.	3.44565	-0.18328	-0.05828	1.54526	-0.28332	0.26549	1.65426	-0.15901	-0.0425
9.	0.00000	0.00000	-0.05206	0.00000	0.00000	0.00328	0.00000	0.00000	0.6225
10.	0.00777	0.04269	-0.04373	0.00000	0.01049	-0.01049	0.00000	0.53657	0.6279
11.	0.03898	-0.08545	0.03391	0.00406	-0.21960	-0.21960	-0.00166	2.75518	0.4838
12.	0.05306	0.35970	0.13337	0.01168	-0.14240	-0.14240	-0.00700	4.29327	0.2371
13.	0.07942	0.94997	0.09032	-1.41589	0.14240	0.14240	-0.01421	4.42544	-0.1878
14.	0.08962	1.06717	-0.08018	-1.41589	-0.21960	-0.21960	-0.01995	2.52989	-0.4835
15.	0.09277	0.29578	-0.34601	0.02956	0.00444	-0.01049	-0.02120	0.59246	-0.6956
16.	0.09277	0.00000	-0.34369	0.03362	0.00000	-0.00038	-0.03120	0.00000	-0.6867

No	Case 1 Dead Load			Case 2 Live Load			Case 3 Live Load		
	L(m)	M (tm)	S (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)
1- 2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2- 1	0.860	-6.982	-16.237	0.000	0.000	0.000	0.000	0.000	0.000
2- 3	0.000	-52.330	1027.004	-244.125	283.941	-82.896	166.394	113.213	61.676
* 1	0.989	228.052	273.422	-101.637	143.941	-82.896	140.042	-26.787	61.676
* 2	1.978	489.233	254.749	40.730	143.941	-82.896	113.550	-26.787	61.676
* 3	2.967	5.121	-499.833	44.628	3.941	-82.896	-51.402	-166.787	61.676
3- 2	3.956	-497.459	-517.505	48.526	3.941	-82.896	-216.354	-166.787	61.676
3- 4	0.000	-419.818	1137.893	-259.386	318.738	-187.600	13.899	140.697	139.975
* 1	0.989	-29.767	384.311	-82.475	178.738	-187.600	14.728	0.697	139.975
* 2	1.978	341.083	365.638	94.297	178.738	-187.600	15.418	0.697	139.975
* 3	2.967	-33.360	-387.944	132.608	38.738	-187.600	-122.353	-139.303	139.975
4- 3	3.956	-426.270	-406.616	170.930	38.738	-187.600	-260.124	-139.303	139.975
4- 5	0.000	-406.706	1139.710	-54.644	929.100	-258.536	-135.067	128.396	183.052
* 1	0.989	-14.857	386.127	252.268	309.700	-258.536	-87.064	48.396	183.052
* 2	1.978	357.789	367.455	558.562	309.700	-258.536	-39.200	48.396	183.052
* 3	2.967	-14.857	-386.127	252.268	-309.700	-258.536	-129.796	-91.604	183.052
5- 4	3.956	-406.706	-1139.710	-54.644	929.100	-258.536	-220.392	-91.604	183.052
5- 6	0.000	-426.270	406.616	170.930	-38.738	-187.600	-318.140	272.133	150.295
* 1	0.989	-33.360	387.944	132.608	-38.738	-187.600	-187.320	132.133	150.295
* 2	1.978	341.083	369.272	94.297	-38.738	-187.600	-86.641	132.133	150.295
* 3	2.967	-29.767	-384.311	-82.475	-178.738	-187.600	-64.422	-7.867	150.295
6- 5	3.956	-419.818	-1137.893	-259.386	-318.738	-187.600	-72.202	-7.867	150.295
6- 7	0.000	-497.459	517.505	48.526	-3.941	-82.896	-386.030	1053.201	51.137
* 1	0.989	5.121	498.833	44.628	-3.941	-82.896	43.618	433.801	51.137
* 2	1.978	489.233	480.161	40.730	-3.941	-82.896	472.648	433.801	51.137
* 3	2.967	228.052	-273.422	-101.637	-143.941	-82.896	289.090	-185.599	51.137
7- 6	3.956	-52.330	-1027.004	-244.125	-283.941	-82.896	104.913	-804.999	51.137
7- 8	0.000	-6.982	16.237	0.000	0.000	0.000	0.000	0.000	0.000
8- 7	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9- 10	0.000	0.000	-0.001	0.000	-0.001	0.000	0.000	-0.058	0.000
10- 9	0.860	155.378	361.346	51.224	119.127	0.000	-1.989	-2.873	0.000
10- 11	0.000	207.686	-772.519	-202.028	-164.814	82.896	201.671	-116.087	-61.676
* 1	0.989	-350.846	356.970	-297.284	-27.816	82.896	90.367	-106.758	-61.676
* 2	1.978	-498.401	58.579	-257.949	109.181	82.896	-5.066	-83.990	-61.676
* 3	2.967	-234.977	474.128	-81.324	246.178	82.896	-71.335	-47.783	-61.676
11- 10	3.956	439.425	889.677	229.891	383.175	82.896	-95.150	1.863	-61.676
11- 12	0.000	507.796	-856.345	-90.420	68.379	187.600	144.393	-305.620	-139.975
* 1	0.989	-133.640	-440.796	44.951	205.376	187.600	-127.777	-242.534	-139.975
* 2	1.978	-364.098	-25.247	315.814	342.373	187.600	-330.910	-166.009	-139.975
* 3	2.967	-183.578	390.302	722.166	479.371	187.600	-451.713	-76.045	-139.975
12- 11	3.956	407.920	805.852	1264.009	616.368	187.600	-476.895	27.338	-139.975

No	L(m)	Case 1 Dead Load			Case 2 Live Load			Case 3 Live Load		
		M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)
12- 13	0.000	-439.433	-831.098	-32.341	1063.960	-273.995	258.536	-343.493	-300.341	-183.052
* 1	0.989	-187.034	-415.549	-32.341	860.725	-136.997	258.536	-583.858	-183.498	-183.052
* 2	1.978	-392.523	0.000	-32.341	732.980	0.000	258.536	-702.021	-93.216	-183.052
* 3	2.967	-187.034	415.549	-32.341	860.725	136.997	258.536	-684.689	90.505	-183.052
13- 12	3.956	429.433	831.098	-32.341	1063.960	273.995	258.536	-518.571	247.666	-183.052
13- 14	0.000	407.920	-805.852	-25.495	1264.009	-616.368	187.600	-617.365	-116.071	-150.295
* 1	0.989	-183.578	-390.302	-25.495	722.166	-479.371	187.600	-648.995	54.529	-150.295
* 2	1.978	-364.098	25.247	-25.495	315.814	342.373	187.600	-505.076	238.568	-150.295
* 3	2.967	-133.640	440.796	-25.495	44.951	-205.376	187.600	-172.587	436.047	-150.295
14- 13	3.956	507.796	856.345	-25.495	-90.420	-68.379	187.600	361.835	646.964	-150.295
14- 15	0.000	439.425	-889.677	-1.160	229.891	-383.175	82.896	80.737	-414.104	-51.137
* 1	0.989	-234.977	-474.128	-1.160	81.324	-246.178	82.896	-218.975	-189.746	-51.137
* 2	1.978	-498.401	-58.579	-1.160	-257.049	-109.181	82.896	-290.151	48.050	-51.137
* 3	2.967	-350.846	356.970	-1.160	-297.284	37.816	82.896	-119.501	299.286	-51.137
15- 14	3.956	207.686	772.519	-1.160	-202.028	164.814	82.896	306.268	563.962	-51.137
15- 16	0.000	155.378	-361.346	0.000	51.224	-119.127	0.000	104.357	-241.037	0.000
16- 15	0.860	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.040	0.000
2- 10	0.000	45.348	1.160	-1043.241	244.135	-82.896	-283.941	-166.394	61.676	-113.213
* 1	1.500	47.088	1.160	-1065.897	119.781	-82.896	-283.941	-73.880	61.676	-113.213
* 2	3.000	48.828	1.160	-1088.553	-4.564	-82.896	-283.941	18.633	61.676	-113.213
* 3	4.500	50.568	1.160	-1111.209	-138.908	-82.896	-283.941	111.147	61.676	-113.213
10- 2	6.000	52.308	1.160	-1133.865	-253.253	-82.896	-283.941	203.660	61.676	-113.213
3- 11	0.000	-77.640	24.335	-1655.398	307.912	-104.704	-314.796	-230.254	78.299	-307.484
* 1	1.500	-41.137	24.335	-1678.054	150.856	-104.704	-314.796	-112.805	78.299	-307.484
* 2	3.000	-4.635	24.335	-1700.710	-6.230	-104.704	-314.796	4.645	78.299	-307.484
* 3	4.500	31.868	24.335	-163.235	-163.235	-104.704	-314.796	122.094	78.299	-307.484
11- 3	6.000	68.371	24.335	-1746.022	-320.311	-104.704	-314.796	239.543	78.299	-307.484
4- 12	0.000	-19.564	6.846	-1546.326	225.564	-70.935	-890.362	-125.057	43.077	-327.699
* 1	1.500	-9.295	6.846	-1568.982	119.161	-70.935	-890.362	-60.442	43.077	-327.699
* 2	3.000	0.974	6.846	-1591.638	12.738	-70.935	-890.362	4.173	43.077	-327.699
* 3	4.500	11.244	6.846	-1614.294	-93.645	-70.935	-890.362	68.789	43.077	-327.699
12- 4	6.000	21.513	6.846	-1636.950	-200.048	-70.935	-890.362	133.404	43.077	-327.699
5- 13	0.000	19.564	-6.846	-1546.326	-225.564	70.935	-890.362	97.747	-32.757	-363.737
* 1	1.500	9.295	-6.846	-1568.982	119.161	70.935	-890.362	48.612	-32.757	-363.737
* 2	3.000	-0.974	-6.846	-1591.638	-12.738	70.935	-890.362	-0.523	-32.757	-363.737
* 3	4.500	-11.244	-6.846	-1614.294	93.645	70.935	-890.362	-49.659	-32.757	-363.737
13- 5	6.000	-21.513	-6.846	-1636.950	200.048	70.935	-890.362	-98.794	-32.757	-363.737
6- 14	0.000	77.640	-24.335	-1655.398	-307.912	104.704	-314.796	313.828	-99.158	-1061.068
* 1	1.500	41.137	-24.335	-1678.054	-150.856	104.704	-314.796	165.091	-99.158	-1061.068
* 2	3.000	4.635	-24.335	-1700.710	6.230	104.704	-314.796	16.355	-99.158	-1061.068
* 3	4.500	-31.868	-24.335	-1723.365	163.235	104.704	-314.796	-132.382	-99.158	-1061.068
14- 6	6.000	-68.371	-24.335	-1746.022	-320.311	104.704	-314.796	-281.118	-99.158	-1061.068
7- 15	0.000	-45.348	-1.160	-1043.241	-244.135	82.896	-283.941	104.913	-51.137	-804.999
* 1	1.500	-47.088	-1.160	-1065.897	-119.781	82.896	-283.941	28.207	-51.137	-804.999
* 2	3.000	-48.828	-1.160	-1088.553	4.564	82.896	-283.941	-48.499	-51.137	-804.999
* 3	4.500	-50.568	-1.160	-1111.209	-138.908	82.896	-283.941	-125.205	-51.137	-804.999
15- 7	6.000	-52.308	-1.160	-1133.865	-253.253	82.896	-283.941	-201.910	-51.137	-804.999

No	Case 4 Seismic State		Case 5 Temperature		Case 6			
	L(m)	S (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)
1-	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2-	1	0.860	-38.803	0.000	0.000	-9.635	-22.407	0.000
2-	3	0.000	272.271	-53.300	13.571	-475.022	1865.768	-135.178
*	1	0.989	174.933	-53.300	13.571	147.037	614.825	-135.178
*	2	1.978	77.596	-53.300	13.571	742.347	589.057	-135.178
*	3	2.967	-19.741	-53.300	13.571	80.703	-681.887	-135.178
3-	2	3.956	-117.079	-53.300	13.571	-606.425	-707.554	-135.178
3-	4	0.000	322.903	-91.353	1.819	-1007.336	2095.209	-274.357
*	1	0.989	187.931	-91.353	1.819	-177.161	825.266	-274.357
*	2	1.978	52.959	-91.353	1.819	626.285	799.498	-274.357
*	3	2.967	-82.013	-91.353	1.819	172.767	-471.446	-274.357
4-	3	3.956	-216.985	-91.353	1.819	-306.235	-497.213	-274.357
4-	5	0.000	317.405	-112.431	0.000	-651.417	3105.814	-381.953
*	1	0.989	161.587	-112.431	0.000	395.740	1043.861	-381.953
*	2	1.978	5.770	-112.431	0.000	1415.376	1018.093	-381.953
*	3	2.967	-150.048	-112.431	0.000	395.740	-1043.861	-381.953
5-	4	3.956	-305.866	-112.431	0.000	-651.417	-3105.814	-381.953
5-	6	0.000	225.794	-90.662	-1.819	-306.235	497.213	-274.357
*	1	0.989	91.506	-90.662	-1.819	172.767	471.446	-274.357
*	2	1.978	-42.782	-90.662	-1.819	626.285	445.678	-274.357
*	3	2.967	-177.071	-90.662	-1.819	-177.161	-825.266	-274.357
6-	5	3.956	-311.359	-90.662	-1.819	-1007.336	-2096.209	-274.357
6-	7	0.000	118.007	-48.333	-13.571	-606.425	707.654	-135.178
*	1	0.989	25.582	-48.333	-13.571	80.703	681.887	-135.178
*	2	1.978	-66.842	-48.333	-13.571	742.347	656.119	-135.178
*	3	2.967	-169.267	-48.333	-13.571	147.027	-614.825	-135.178
7-	6	3.956	-251.692	-48.333	-13.571	-475.022	-1885.768	-135.178
7-	8	0.000	38.803	0.000	0.000	-9.635	22.407	0.000
8-	7	0.860	0.000	0.000	0.000	0.000	0.000	0.000
9-	10	0.000	0.000	90.066	0.000	0.000	-0.003	0.000
10-	9	0.860	-48.363	23.333	0.000	298.942	695.217	0.000
10-	11	0.000	389.888	75.633	-13.571	-46.740	-1338.019	135.178
*	1	0.989	430.521	6.764	-13.571	-974.686	-538.516	135.178
*	2	1.978	405.692	-55.750	-13.571	-1111.924	260.988	135.178
*	3	2.967	322.673	-110.909	-13.571	-458.453	1080.491	135.178
11-	10	3.956	188.738	-158.714	-13.571	985.727	1859.994	135.178
11-	12	0.000	656.328	-120.660	-1.819	551.565	-1068.931	274.357
*	1	0.989	516.986	-161.110	-1.819	-110.253	-269.428	274.357
*	2	1.978	340.076	-194.206	-1.819	18.637	530.076	274.357
*	3	2.967	-134.671	-219.947	-1.819	938.237	1329.579	274.357
12-	11	3.956	-92.554	-238.304	-1.819	2648.544	2129.082	274.357

No	L(m)	Case 4 Seismic State		Case 5 Temperature		Case 6		N (t)	S (t)	N (t)		
		M (tm)	S (t)	M (tm)	S (t)	M (tm)	S (t)					
12-13	0.000	476.991	-217.256	445.771	-164.860	0.000	0.000	33.159	-1599.007	2348.153	-1599.007	381.953
* 1	0.989	256.064	-228.288	445.771	-164.860	0.000	0.000	33.159	-799.503	1162.089	-799.503	381.953
* 2	1.978	27.862	-231.966	445.771	-164.860	0.000	0.000	33.159	0.000	766.735	0.000	381.953
* 3	2.967	-200.340	-228.288	445.771	-164.860	0.000	0.000	33.159	799.503	1162.089	799.503	381.953
13-12	3.956	-421.268	-217.256	445.771	-164.860	0.000	0.000	33.159	1599.007	2348.153	1599.007	381.953
13-14	0.000	145.415	-229.025	258.181	-156.993	1.819	1.819	30.600	-2129.082	2648.544	-2129.082	274.357
* 1	0.989	-82.486	-220.614	258.181	-156.993	1.819	1.819	30.600	-1329.579	938.237	-1329.579	274.357
* 2	1.978	-288.518	-194.798	258.181	-153.395	1.819	1.819	30.600	-530.076	18.637	-530.076	274.357
* 3	2.967	-465.356	-161.579	258.181	-151.595	1.819	1.819	30.600	269.428	-110.253	269.428	274.357
14-13	3.956	-605.680	-120.956	258.181	-149.795	1.819	1.819	30.600	1068.931	551.565	1068.931	274.357
14-15	0.000	-148.738	-163.285	105.930	-120.389	13.571	13.571	20.807	-1859.994	985.727	-1859.994	135.178
* 1	0.989	-287.105	-115.308	105.930	-106.967	13.571	13.571	20.807	-1060.491	-458.453	-1060.491	135.178
* 2	1.978	-374.409	-60.025	105.930	-93.545	13.571	13.571	20.807	-260.988	-1111.924	-260.988	135.178
* 3	2.967	-403.426	2.563	105.930	-80.123	13.571	13.571	20.807	538.516	-974.686	538.516	135.178
15-14	3.956	-366.930	72.457	105.930	-66.701	13.571	13.571	20.807	1338.019	-46.740	1338.019	135.178
15-16	0.000	-49.043	24.124	0.000	0.000	0.000	0.000	0.000	-695.217	298.942	-695.217	0.000
16-15	0.860	0.000	90.857	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2-10	0.000	-311.074	104.233	53.300	58.144	-20.807	-20.807	-13.571	-135.178	465.387	-135.178	-1908.173
* 1	1.500	-153.024	106.500	53.300	26.933	-20.807	-20.807	-13.571	-135.178	262.620	-135.178	-1929.440
* 2	3.000	8.426	108.766	53.300	-4.278	-20.807	-20.807	-13.571	-135.178	59.853	-135.178	-1970.706
* 3	4.500	173.276	111.033	53.300	-35.489	-20.807	-20.807	-13.571	-135.178	-142.915	-135.178	-2001.971
10-2	6.000	341.525	113.299	53.300	-66.701	-20.807	-20.807	-13.571	-135.178	-345.682	-135.178	-2033.236
3-11	0.000	-439.982	146.729	38.053	29.349	-9.793	-9.793	11.752	-139.179	400.911	-139.179	-2803.864
* 1	1.500	-218.189	148.995	38.053	14.660	-9.793	-9.793	11.752	-139.179	192.143	-139.179	-2835.129
* 2	3.000	7.004	151.262	38.053	-0.029	-9.793	-9.793	11.752	-139.179	-16.626	-139.179	-2866.394
* 3	4.500	235.597	153.528	38.053	-14.718	-9.793	-9.793	11.752	-139.179	-235.393	-139.179	-2897.660
11-3	6.000	467.590	155.795	38.053	-29.407	-9.793	-9.793	11.752	-139.179	-434.162	-139.179	-2928.925
4-12	0.000	-534.390	179.456	21.077	7.488	-2.559	-2.559	1.819	-107.596	345.182	-107.596	-3603.028
* 1	1.500	-263.506	181.723	21.077	3.649	-2.559	-2.559	1.819	-107.596	183.789	-107.596	-3634.293
* 2	3.000	10.778	183.989	21.077	-0.189	-2.559	-2.559	1.819	-107.596	22.395	-107.596	-3665.558
* 3	4.500	288.462	186.256	21.077	-4.028	-2.559	-2.559	1.819	-107.596	-138.998	-107.596	-3696.823
12-4	6.000	569.346	188.522	21.077	-7.866	-2.559	-2.559	1.819	-107.596	-300.392	-107.596	-3728.089
5-13	0.000	-531.660	178.524	-21.769	-7.488	2.559	2.559	1.819	107.596	-345.182	107.596	-3803.028
* 1	1.500	-262.174	180.791	-21.769	-3.649	2.559	2.559	1.819	107.596	-183.789	107.596	-3834.293
* 2	3.000	10.712	183.057	-21.769	0.189	2.559	2.559	1.819	107.596	-22.395	107.596	-3865.558
* 3	4.500	286.997	185.324	-21.769	4.028	2.559	2.559	1.819	107.596	138.998	107.596	-3896.823
13-5	6.000	566.683	187.590	-21.769	7.866	2.559	2.559	1.819	107.596	300.392	107.596	-3928.089
6-14	0.000	-429.367	143.185	-42.329	-29.349	9.793	9.793	11.752	139.179	-400.911	139.179	-3903.864
* 1	1.500	-212.880	145.452	-42.329	-14.660	9.793	9.793	11.752	139.179	-192.143	139.179	-3935.129
* 2	3.000	6.988	147.718	-42.329	0.029	9.793	9.793	11.752	139.179	16.626	139.179	-3966.394
* 3	4.500	230.265	149.985	-42.329	14.718	9.793	9.793	11.752	139.179	-225.393	139.179	-3897.660
14-6	6.000	456.942	152.251	-42.329	29.407	9.793	9.793	11.752	139.179	434.162	139.179	-3928.925
7-15	0.000	-200.455	96.864	-48.333	-58.144	20.807	20.807	-13.571	-135.178	-465.387	-135.178	-1908.173
* 1	1.500	-143.499	99.131	-48.333	-26.933	20.807	20.807	-13.571	-135.178	-262.620	-135.178	-1939.440
* 2	3.000	6.895	101.397	-48.333	4.278	20.807	20.807	-13.571	-135.178	59.853	-135.178	-1970.706
* 3	4.500	160.692	103.664	-48.333	35.489	20.807	20.807	-13.571	-135.178	-142.915	-135.178	-2001.971
15-7	6.000	317.887	105.930	-48.333	66.701	20.807	20.807	-13.571	-135.178	345.682	-135.178	-2033.236

No.	Case 7			Case 8			Case 9			
	L(m)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)
1- 2	0.000	0.000	0.000	0.000	0.000	0.000	-1400.837	0.000	0.000	0.000
2- 1	0.860	-9.635	-22.407	0.000	-73.660	-22.407	-1400.837	-9.635	-22.407	0.000
2- 3	0.000	202.335	1604.067	103.366	377.031	1329.321	-1227.251	-492.254	1828.512	-142.551
* 1	0.989	545.781	333.124	103.366	603.352	289.377	-1227.251	110.514	595.368	-142.551
* 2	1.978	862.499	307.356	103.366	803.175	263.609	-1227.251	686.591	569.600	-142.551
* 3	2.967	-77.747	-963.588	103.366	-25.507	-776.334	-1227.251	43.088	-663.543	-142.551
3- 2	3.956	-1043.478	-989.589	103.366	-879.673	-802.102	-1227.251	-625.898	-689.311	-142.551
3- 4	0.000	-556.415	1802.442	266.142	-46.559	1419.559	-951.566	-985.642	2012.752	-267.463
* 1	0.989	-16.776	531.499	266.142	269.008	379.616	-951.566	-200.660	779.608	-267.463
* 2	1.978	496.134	505.731	266.142	558.077	352.848	-951.566	557.630	753.841	-267.463
* 3	2.967	-247.920	-765.213	266.142	-181.358	-686.096	-951.566	96.342	-479.303	-267.463
4- 3	3.956	-1017.457	-790.981	266.142	-946.278	-711.863	-951.566	-390.431	-505.071	-267.463
4- 5	0.000	-784.115	1883.633	346.667	-37.536	1387.289	-646.015	-685.419	2854.957	-359.566
* 1	0.989	-164.158	612.709	346.667	246.116	347.345	-646.015	278.871	960.242	-359.566
* 2	1.978	429.069	586.941	346.667	503.269	321.577	-646.015	1215.808	934.474	-359.566
* 3	2.967	-234.667	-684.002	346.667	-268.083	-718.366	-646.015	278.871	-960.242	-359.566
5- 4	3.956	-924.901	-1723.946	346.667	-1065.932	-1758.310	-646.015	-685.419	-2854.957	-359.566
5- 6	0.000	-1113.183	1010.150	283.170	-215.691	411.538	-360.898	-390.431	505.071	-267.463
* 1	0.989	-355.115	753.382	283.170	104.948	385.770	-360.898	96.342	479.303	-267.463
* 2	1.978	377.237	727.614	283.170	400.104	360.002	-360.898	557.630	453.535	-267.463
* 3	2.967	-147.374	-543.330	283.170	-333.245	-679.941	-360.898	-200.660	-779.608	-267.463
6- 5	3.956	-698.483	-1583.273	283.170	-1093.092	-1719.885	-360.898	-985.642	-2012.752	-267.463
6- 7	0.000	-1323.443	2451.939	85.977	-491.781	634.408	-158.225	-625.898	689.311	-142.551
* 1	0.989	79.037	1404.161	85.977	49.278	608.640	-158.225	43.088	663.543	-142.551
* 2	1.978	1455.010	1378.393	85.977	564.852	582.873	-158.225	686.591	637.776	-142.551
* 3	2.967	791.711	-683.560	85.977	51.921	-457.071	-158.225	110.514	-595.368	-142.551
7- 6	3.956	100.891	-2745.514	85.977	-487.507	-1497.015	-158.225	-492.254	-1828.512	-142.551
7- 8	0.000	-9.635	22.407	0.000	54.390	22.407	0.000	-9.635	22.407	0.000
8- 7	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9- 10	0.000	0.000	-0.097	0.000	0.000	148.607	1490.590	0.000	-0.003	0.000
10- 9	0.860	211.139	493.916	0.000	294.221	537.156	1490.590	285.112	663.053	0.000
10- 11	0.000	619.364	-1257.519	-103.366	929.922	-999.632	1302.045	-87.574	-1312.927	142.551
* 1	0.989	-335.063	-668.769	-103.366	226.192	-481.458	1302.045	-1008.995	-550.413	142.551
* 2	1.978	-696.151	-57.744	-103.366	-18.401	-11.148	1302.045	-1176.290	212.102	142.551
* 3	2.967	-441.971	975.455	-103.366	208.142	471.299	1302.045	-589.459	974.616	142.551
11- 10	3.956	449.409	1230.830	-103.366	917.825	965.877	1302.045	751.499	1737.130	142.551
11- 12	0.000	939.007	-1686.029	-266.142	1783.700	-1380.846	1011.401	361.770	-1089.995	267.463
* 1	0.989	-395.255	-1008.480	-266.142	667.614	-874.130	1011.401	-339.171	-327.481	267.463
* 2	1.978	-1048.456	-308.756	-266.142	58.670	-365.280	1011.401	-285.987	435.033	267.463
* 3	2.967	-998.664	413.143	-266.142	-31.130	175.705	1011.401	521.324	1197.547	267.463
12- 11	3.956	-223.949	1157.217	-266.142	410.215	718.825	1011.401	2082.762	1960.061	267.463

No	L(m)	Case 7 M (tm)	S (t)	N (l)	Case 8 M (tm)	S (t)	N (t)	Case 9 M (tm)	S (t)	N (t)
12- 13	0.000	25.853	-1642.478	-346.667	1379.654	-1505.388	690.892	1825.134	-1525.028	359.566
* 1	0.989	-121.473	-875.230	-346.667	164.398	-950.133	690.892	893.945	-762.514	359.566
* 2	1.978	-1700.017	-87.806	-346.667	-495.709	-382.743	690.892	316.881	0.000	359.566
* 3	2.967	-1387.844	722.792	-346.667	-588.667	195.782	690.892	763.514	763.514	359.566
13- 12	3.956	-263.024	1555.565	-346.667	-102.474	788.443	690.892	1825.134	1525.028	359.566
13- 14	0.000	-453.723	-1303.592	-283.170	802.865	-1506.466	390.816	2082.762	-1960.061	267.463
* 1	0.989	-1324.031	-448.644	-283.170	-399.440	-902.630	390.816	521.324	-1197.547	267.463
* 2	1.978	-1335.801	428.478	-283.170	-978.509	-285.577	390.816	-285.987	-435.033	267.463
* 3	2.967	-469.191	1327.775	-283.170	-341.693	327.481	390.816	-339.171	327.481	267.463
14- 13	3.956	1297.819	2249.247	-283.170	-288.614	983.170	390.816	381.770	1089.995	267.463
14- 15	0.000	739.632	-1911.026	-85.977	350.988	-1497.176	173.184	751.499	-1737.130	142.551
* 1	0.989	-685.576	-967.379	-85.977	-797.991	-844.565	173.184	-589.459	-974.616	142.551
* 2	1.978	-1166.543	-1.557	-85.977	-1305.567	-179.880	173.184	-1176.230	-212.102	142.551
* 3	2.967	-681.345	986.441	-85.977	-1149.820	496.848	173.184	-1008.995	550.413	142.551
15- 14	3.956	791.948	1996.614	-85.977	-318.828	1185.630	173.184	-87.574	1312.927	142.551
15- 16	0.000	386.611	-396.368	0.000	133.500	-458.863	0.000	285.112	-663.053	0.000
16- 15	0.860	0.000	0.068	0.000	0.000	149.916	0.000	0.000	0.003	0.000
2- 10	0.000	-211.969	103.366	-1626.474	-450.691	173.586	-1381.727	482.620	-142.551	-1850.918
* 1	1.500	-58.921	103.366	-1657.740	-187.508	177.326	-1382.993	268.793	-142.551	-1882.184
* 2	3.000	98.128	103.366	-1689.005	81.286	181.065	-1414.258	54.967	-142.551	-1913.449
* 3	4.500	253.176	103.366	-1720.270	355.688	184.805	-1445.523	-158.859	-142.551	-1944.714
10- 2	6.000	408.224	103.366	-1751.535	635.701	188.545	-1476.788	-372.686	-142.551	-1975.979
3- 11	0.000	-487.062	162.777	-2791.798	-833.114	275.685	-2221.662	359.744	-124.912	-2702.063
* 1	1.500	-242.897	162.777	-2823.063	-416.781	279.425	-2252.927	172.376	-124.912	-2733.328
* 2	3.000	1.268	162.777	-2834.328	5.161	283.165	-2324.192	-14.993	-124.912	-2764.594
* 3	4.500	245.433	162.777	-2885.593	432.713	296.994	-2315.458	-202.361	-124.912	-2795.859
11- 3	6.000	489.597	162.777	-2916.859	855.875	290.644	-2346.723	-389.729	-124.912	-2827.124
4- 12	0.000	-233.342	80.524	-2674.633	-908.743	305.551	-2099.452	294.988	-92.103	-3360.028
* 1	1.500	-112.556	80.524	-2705.899	-447.612	309.290	-2130.417	156.834	-92.103	-3391.293
* 2	3.000	8.231	80.524	-2737.164	19.129	313.030	-2161.682	18.680	-92.103	-3422.559
* 3	4.500	123.017	80.524	-2768.429	491.479	316.770	-2192.948	-119.474	-92.103	-3453.824
12- 4	6.000	249.804	80.524	-2799.695	969.438	320.510	-2224.213	-257.628	-92.103	-3485.089
5- 13	0.000	188.282	-63.497	-2734.095	-850.241	285.117	-2169.848	-294.988	92.103	-3360.028
* 1	1.500	93.037	-63.497	-2765.361	-419.760	288.857	-2201.113	-156.834	92.103	-3391.293
* 2	3.000	-2.208	-63.497	-2796.626	16.330	292.597	-2232.379	-18.680	92.103	-3422.559
* 3	4.500	-97.453	-63.497	-2827.891	458.030	296.336	-2263.644	119.474	92.103	-3453.824
13- 5	6.000	-192.698	-63.497	-2859.157	905.339	300.076	-2294.909	-257.628	92.103	-3485.089
6- 14	0.000	624.960	-197.193	-4035.212	-601.311	202.673	-2354.293	-359.744	124.912	-2702.063
* 1	1.500	329.170	-197.193	-4066.477	-294.497	206.413	-2385.558	-172.376	124.912	-2733.328
* 2	3.000	33.381	-197.193	-4097.743	17.926	210.152	-2416.823	14.993	124.912	-2764.594
* 3	4.500	-262.408	-197.193	-4129.008	335.959	213.892	-2448.089	202.361	124.912	-2795.859
14- 6	6.000	-558.197	-197.193	-4160.273	659.602	217.632	-2479.354	-389.729	124.912	-2827.124
7- 15	0.000	110.526	-85.977	-2767.921	-541.898	158.225	-1519.421	-482.620	142.551	-1850.918
* 1	1.500	-19.440	-85.977	-2799.186	-301.755	161.965	-1550.687	-268.793	142.551	-1882.184
* 2	3.000	-147.405	-85.977	-2830.451	-56.004	165.704	-1581.952	-54.967	142.551	-1913.449
* 3	4.500	-276.371	-85.977	-2861.717	195.358	169.444	-1613.217	158.859	142.551	-1944.714
15- 7	6.000	-403.337	-85.977	-2892.982	452.329	173.184	-1644.483	-372.686	142.551	-1975.979

No	Case 10			Case 11			Case 12			
	L(m)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)
1- 2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2- 1	0.860	-9.635	-23.407	0.000	-6.982	-16.237	0.000	-6.982	-16.237	0.000
2- 3	0.000	74.262	1592.907	56.959	-296.453	1310.945	-81.736	114.064	1140.217	62.836
* 1	0.989	444.018	359.763	56.959	126.435	417.363	-81.736	368.094	246.635	62.836
* 2	1.978	787.081	333.996	56.959	523.963	398.690	-81.736	602.783	227.963	62.836
* 3	2.967	-89.434	-899.148	56.959	49.749	-494.892	-81.736	-46.282	-665.620	62.836
3- 2	3.956	-991.433	-924.916	56.959	-448.933	-513.564	-81.736	-713.813	-684.292	62.836
3- 4	0.000	-608.509	1767.056	184.591	-679.204	1456.631	-162.105	-405.919	1278.590	165.470
* 1	0.989	-66.520	593.912	184.591	-112.241	563.948	-162.105	-15.038	395.008	165.470
* 2	1.978	448.777	508.144	184.591	435.360	544.376	-162.105	356.501	368.335	165.470
* 3	2.967	-255.505	-724.999	184.591	99.239	-348.206	-162.105	-155.713	-527.247	165.470
4- 3	3.956	-985.272	-750.767	184.591	-255.350	-367.879	-162.105	-686.394	-545.919	165.470
4- 5	0.000	-796.403	1832.785	249.825	-461.350	2068.810	-226.194	-541.773	1328.106	215.393
* 1	0.989	-189.407	599.642	249.825	237.411	695.827	-226.194	-101.921	434.823	215.393
* 2	1.978	390.897	573.874	249.825	916.351	677.155	-226.194	318.589	415.851	215.393
* 3	2.967	-248.378	-659.269	249.825	237.411	-695.827	-226.194	-144.654	-477.731	215.393
5- 4	3.956	-914.151	-1699.213	249.825	-461.350	-2068.810	-226.194	-627.098	-1231.314	215.393
5- 6	0.000	-1065.334	934.072	198.832	-255.350	367.879	-162.105	-744.410	678.749	175.790
* 1	0.989	-345.160	715.104	198.832	99.249	349.206	-162.105	-220.680	520.077	175.790
* 2	1.978	348.336	689.337	198.832	435.380	330.534	-162.105	284.442	501.404	175.790
* 3	2.967	-175.747	-543.807	198.832	-112.241	-563.048	-162.105	-94.188	-392.178	175.790
6- 5	3.956	-727.329	-1583.751	198.832	-679.204	-1456.631	-162.105	-492.021	-1145.760	175.790
6- 7	0.000	-1225.586	2148.167	42.415	-448.933	513.564	-81.736	-893.489	1570.706	52.297
* 1	0.989	41.695	1267.628	42.415	49.749	494.892	-81.736	48.739	932.634	52.297
* 2	1.978	1282.636	1241.860	42.415	529.963	476.220	-81.736	961.881	913.962	52.297
* 3	2.967	649.704	-662.856	42.415	126.425	-417.363	-81.736	517.142	-459.031	52.297
7- 6	3.956	-10.582	-2547.571	42.415	-296.455	-1310.945	-81.736	52.583	-1832.003	52.297
7- 8	0.000	-9.635	22.407	0.000	-6.982	16.237	0.000	-6.982	16.237	0.000
8- 7	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9- 10	0.000	0.000	-0.082	0.000	0.000	-0.002	0.000	0.000	-0.059	0.000
10- 9	0.860	211.677	494.692	0.000	206.603	480.473	0.000	153.389	358.472	0.000
10- 11	0.000	469.531	-1245.683	-56.959	5.658	-937.333	81.736	409.357	-888.606	-62.836
* 1	0.989	-474.038	-669.352	-56.959	-648.130	-384.786	81.736	-260.480	-463.728	-62.836
* 2	1.978	828.553	-54.474	-56.959	-755.450	167.760	81.736	-503.466	-25.411	-62.836
* 3	2.967	-575.674	568.949	-56.959	-316.301	720.306	81.736	-306.312	426.345	-62.836
11- 10	3.956	302.943	1210.919	-56.959	669.316	1272.863	81.736	344.275	891.541	-62.836
11- 12	0.000	685.812	-1606.113	-184.591	417.376	-787.966	162.105	652.189	-1161.965	-165.470
* 1	0.989	-577.537	-945.597	-184.591	-88.688	-235.420	162.105	-261.417	-683.330	-165.470
* 2	1.978	-1178.465	-266.535	-184.591	-48.284	317.127	162.105	-695.048	-191.256	-165.470
* 3	2.967	-1098.629	431.074	-184.591	538.588	869.673	162.105	-635.291	314.257	-165.470
12- 11	3.956	-319.687	1147.228	-184.591	1671.929	1422.219	162.105	-68.976	833.210	-165.470

No	Case 10			Case 11			Case 12			
	L(m)	M (tm)	N (t)	S (t)	N (t)	S (t)	M (tm)	N (t)	S (t)	
12- 13	0.000	-117.151	-249.825	-1561.386	1493.394	-1105.093	85.941	226.194	-1121.439	-215.392
* 1	0.989	-826.685	-249.825	-826.685	673.691	-562.546	-770.892	226.194	-599.047	-215.393
* 2	1.978	-1746.220	-249.825	-1746.220	400.457	0.000	-1094.544	226.194	-53.216	-215.393
* 3	2.967	-1438.727	-249.825	698.355	673.691	552.546	-871.723	226.194	506.055	-215.393
13- 12	3.956	-358.759	-249.825	1488.695	1493.394	1105.093	-89.138	226.194	1078.754	-215.393
13- 14	0.000	-513.534	-198.832	-1269.651	1671.929	-1422.219	-209.445	162.105	-921.922	-175.790
* 1	0.989	-1370.754	-198.832	-460.766	538.588	-869.673	-832.483	162.105	-335.773	-175.790
* 2	1.978	-1418.815	-198.832	386.666	-48.284	-317.127	-869.174	162.105	283.815	-175.790
* 3	2.967	-639.374	-198.832	1212.644	-88.688	238.420	-306.227	162.105	175.790	-175.790
14- 13	3.956	985.910	-198.832	2077.169	417.376	787.966	869.651	162.105	1503.309	-175.790
14- 15	0.000	545.666	-42.415	-1779.811	689.316	-1272.853	520.162	81.736	-1303.781	-52.287
* 1	0.989	-779.416	-42.415	-896.740	-318.301	-720.306	-453.952	81.736	-663.875	-52.287
* 2	1.978	-1221.971	-42.415	4.877	-75.450	-187.760	-788.562	81.736	-10.529	-52.287
* 3	2.967	-763.656	-42.415	925.041	-648.130	384.786	-470.347	81.736	656.256	-52.287
15- 14	3.956	632.874	-42.415	1863.751	5.658	937.333	513.954	81.736	1336.481	-52.287
15- 16	0.000	358.435	0.000	-831.288	206.603	-480.473	259.735	0.000	-602.383	0.000
16- 15	0.860	0.000	0.000	0.057	0.000	0.002	0.000	0.000	0.041	0.000
2- 10	0.000	-83.897	-1615.314	86.959	289.473	-81.736	-121.046	-1327.182	62.836	-1156.454
* 1	1.500	1.541	-1646.579	56.959	166.869	-81.736	-26.792	-1349.898	62.836	-1179.110
* 2	3.000	86.978	-1677.844	56.959	44.264	-81.736	67.461	-1372.494	62.836	-1201.766
* 3	4.500	172.416	-1708.110	56.959	-78.340	-81.736	161.715	-1395.150	62.836	-1224.422
10- 2	6.000	257.854	-1740.375	56.959	-200.945	-81.736	255.968	-1417.806	62.836	-1247.078
3- 11	0.000	-382.925	-2691.971	127.632	230.272	-80.369	-307.894	-1970.195	102.635	-1962.882
* 1	1.500	-191.476	-2723.237	127.632	109.719	-80.369	-153.942	-1992.851	102.635	-1985.538
* 2	3.000	-0.028	-2754.502	127.632	-10.834	-80.369	0.010	-2015.507	102.635	-2008.194
* 3	4.500	191.421	-2785.767	127.632	-131.387	-80.369	153.962	-2038.163	102.635	-2030.850
11- 3	6.000	382.869	-2817.032	127.632	-231.940	-80.369	307.914	-2060.819	102.635	-2053.506
4- 12	0.000	-188.869	-2583.553	65.234	206.000	-64.089	-144.621	-2436.588	49.923	-1874.025
* 1	1.500	-91.018	-2614.818	65.234	109.866	-64.089	-69.737	-2459.344	49.923	-1896.681
* 2	3.000	6.833	-2646.084	65.234	13.732	-64.089	5.148	-2482.003	49.923	-1919.337
* 3	4.500	104.685	-2677.349	65.234	-82.402	-64.089	80.032	-2504.656	49.923	-1941.993
12- 4	6.000	202.536	-2708.614	65.234	-178.535	-64.089	154.917	-2527.312	49.923	-1964.649
5- 13	0.000	151.182	-2633.285	-50.993	-206.000	64.089	-117.311	-2436.688	-39.603	-1910.063
* 1	1.500	74.693	-2664.550	-50.993	-109.866	64.089	57.907	-2459.344	-39.603	-1932.719
* 2	3.000	-1.796	-2695.815	-50.993	-13.732	64.089	-1.498	-2482.000	-39.603	-1955.375
* 3	4.500	-78.286	-2727.081	-50.993	82.402	64.089	-60.903	-2504.656	-39.603	-1978.031
13- 5	6.000	-154.775	-2758.346	-50.993	178.535	64.089	-120.307	-2527.312	-39.603	-2000.687
6- 14	0.000	498.257	-3731.918	-156.417	-230.272	80.369	391.468	-1970.195	-123.493	-2716.466
* 1	1.500	263.632	-3763.183	-156.417	-109.719	80.369	206.229	-1992.851	-123.493	-2739.122
* 2	3.000	29.007	-3794.449	-156.417	10.834	80.369	20.990	-2015.507	-123.493	-2761.778
* 3	4.500	-203.618	-3825.714	-156.417	131.387	80.369	-154.250	-2038.163	-123.493	-2784.434
14- 6	6.000	-440.243	-3856.979	-156.417	231.940	80.369	-349.489	-2060.819	-123.493	-2807.090
7- 15	0.000	-0.947	-2559.978	-42.415	-289.473	81.736	59.565	-1327.182	-52.297	-1848.240
* 1	1.500	-64.570	-2601.244	-42.415	-166.869	81.736	-18.881	-1349.838	-52.297	-1870.886
* 2	3.000	-128.193	-2632.509	-42.415	-44.264	81.736	-97.327	-1372.494	-52.297	-1893.532
* 3	4.500	-191.816	-2663.774	-42.415	78.340	81.736	-175.773	-1395.150	-52.297	-1916.288
15- 7	6.000	-285.439	-2695.039	-42.415	200.945	81.736	-254.218	-1417.806	-52.297	-1938.864

No	Case 13			Case 14			Case 15			
	L(m)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)
1- 2	0.000	0.000	0.000	-848.992	0.000	0.000	0.000	0.000	0.000	0.000
2- 1	0.860	-45.785	-16.237	-848.992	-6.982	-16.237	0.000	-6.982	-16.237	0.000
2- 3	0.000	219.941	973.704	-743.599	-354.599	1324.517	-102.544	55.920	1153.789	42.028
* 1	0.989	402.986	220.122	-743.599	81.703	430.934	-102.544	323.372	260.206	42.028
* 2	1.978	566.829	201.449	-743.599	498.664	412.262	-102.544	571.483	241.534	42.028
* 3	2.967	-14.621	-552.133	-743.599	31.871	-481.320	-102.544	-64.159	-652.048	42.028
3- 2	3.956	-614.537	-570.805	-743.599	-453.388	-499.992	-102.544	-718.268	-670.720	42.028
3- 4	0.000	-96.915	1046.540	-572.534	-713.009	1458.450	-192.705	-439.723	1280.409	134.870
* 1	0.989	159.164	292.957	-572.534	-144.246	564.868	-192.705	-47.043	386.827	134.870
* 2	1.978	394.042	274.285	-572.534	405.174	545.195	-192.705	326.295	368.155	134.870
* 3	2.967	-115.373	-479.297	-572.534	70.842	-347.387	-192.705	-184.120	-525.428	134.870
4- 3	3.956	-643.255	-497.970	-572.534	-281.957	-356.059	-192.705	-713.001	-544.100	134.870
4- 5	0.000	-89.301	1027.279	-386.232	-495.445	2068.810	-259.353	-575.868	1328.106	182.234
* 1	0.989	146.730	273.597	-386.232	203.316	695.827	-259.353	-136.016	434.523	182.234
* 2	1.978	363.559	255.024	-386.232	882.256	677.155	-259.353	284.494	415.851	182.234
* 3	2.967	-164.905	-498.558	-386.232	203.316	-695.827	-259.353	-178.749	-477.731	182.234
5- 4	3.956	-712.571	-1252.140	-386.232	-495.445	-2068.810	-259.353	-661.193	-1231.314	182.234
5- 6	0.000	-200.475	315.954	-214.554	-281.957	365.059	-192.705	-771.017	676.930	145.190
* 1	0.989	58.146	297.282	-214.554	70.842	347.387	-192.705	-249.087	518.257	145.190
* 2	1.978	298.301	278.610	-214.554	405.174	328.715	-192.705	254.236	499.585	145.190
* 3	2.967	-206.838	-474.973	-214.554	-144.246	-564.868	-192.705	-126.193	-393.997	145.190
6- 5	3.956	-731.178	-1228.555	-214.554	-713.009	-1458.450	-192.705	-525.825	-1147.580	145.190
6- 7	0.000	-379.451	469.172	-95.704	-453.388	499.992	-102.544	-887.944	1557.135	31.490
* 1	0.989	30.703	450.500	-95.704	31.871	481.320	-102.544	30.861	919.062	31.490
* 2	1.978	422.391	431.828	-95.704	498.664	482.648	-102.544	930.581	900.390	31.490
* 3	2.967	68.785	-321.755	-95.704	81.703	-430.934	-102.544	472.420	-472.592	31.490
7- 6	3.956	-304.022	-1075.337	-95.704	-354.599	-1324.517	-102.544	-5.561	-1845.575	31.490
7- 8	0.000	31.821	16.237	0.000	-6.982	16.237	0.000	-6.982	16.237	0.000
8- 7	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9- 10	0.000	0.000	90.065	903.388	0.000	-0.002	0.000	0.000	-0.059	0.000
10- 9	0.860	203.741	384.679	903.388	206.503	480.473	0.000	153.389	358.472	0.000
10- 11	0.000	597.574	-695.886	788.929	-61.043	-950.904	102.544	342.656	-902.177	-42.028
* 1	0.989	79.575	-350.206	788.929	-728.253	-398.358	102.544	-340.602	-477.299	-42.028
* 2	1.978	-92.709	2.829	788.929	-848.995	154.188	102.544	-597.011	-38.982	-42.028
* 3	2.967	87.696	363.219	788.929	-423.258	706.735	102.544	-413.279	412.774	-42.028
11- 10	3.956	628.163	730.964	788.929	548.927	1359.281	102.544	223.886	877.969	-42.028
11- 12	0.000	1164.124	-977.005	608.798	267.580	-789.785	192.705	502.393	-1163.784	-134.870
* 1	0.989	382.746	-601.905	608.798	-240.284	-237.239	192.705	-413.012	-685.149	-134.870
* 2	1.978	-24.022	-219.453	608.798	-201.679	315.307	192.705	-848.402	-193.075	-134.870
* 3	2.967	-48.906	170.356	608.798	383.394	867.854	192.705	-790.485	312.438	-134.870
12- 11	3.956	315.366	567.518	608.798	1514.936	1420.400	192.705	-225.969	831.391	-134.870

No	L(m)	Case 13			Case 14			Case 15			N (t)
		M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)	M (tm)	S (t)	N (t)	
12- 13	0.000	906.425	-1048.354	413.430	1328.534	-1105.093	259.353	-78.919	-1131.439	-182.234	
* 1	0.989	69.030	-643.837	413.430	508.832	-552.546	259.353	-936.752	-599.047	-182.234	
* 2	1.978	-364.561	-231.966	413.430	233.597	0.000	259.353	-1259.404	-53.216	-182.234	
* 3	2.967	-387.374	187.261	413.430	508.832	552.546	259.353	-1036.583	506.055	-182.234	
13- 12	3.956	8.166	613.842	413.430	1328.534	1105.093	259.353	-253.997	1078.764	-182.234	
13- 14	0.000	553.336	-1044.876	232.686	1514.936	-1420.400	192.705	-366.438	-920.103	-145.190	
* 1	0.989	-266.064	-610.916	232.686	383.394	-867.854	192.705	-987.677	-232.654	-145.190	
* 2	1.978	-552.615	-168.552	232.686	-201.679	-315.307	192.705	-1042.559	285.634	-145.190	
* 3	2.967	-598.996	279.217	232.686	-240.284	237.239	192.705	-437.822	878.862	-145.190	
14- 13	3.956	-97.884	735.389	232.686	267.580	789.785	192.705	719.855	1505.139	-145.190	
14- 15	0.000	290.587	-1052.963	104.770	548.927	-1259.281	102.544	399.772	-1290.210	-31.490	
* 1	0.989	-522.081	-589.436	104.770	-433.369	-706.735	102.544	-560.919	-659.303	-31.490	
* 2	1.978	-872.809	-118.604	104.770	-848.995	-154.178	102.544	-882.037	3.042	-31.490	
* 3	2.967	-754.272	359.533	104.770	-728.253	398.358	102.544	-550.470	669.838	-31.490	
15- 14	3.956	-159.244	844.976	104.770	-61.043	950.904	102.544	447.253	1350.033	-31.490	
15- 16	0.000	106.335	-337.222	0.000	206.603	-480.473	0.000	259.735	-602.383	0.000	
15- 15	0.860	0.000	90.859	0.000	0.000	0.002	0.000	0.000	0.041	0.000	
2- 10	0.000	-265.726	105.393	-989.941	347.618	-102.544	-1340.753	-62.901	42.028	-1170.026	
* 1	1.500	-105.936	107.660	-1012.597	193.802	-102.544	-1363.409	0.141	42.028	-1192.682	
* 2	3.000	57.254	109.926	-1035.253	39.986	-102.544	-1386.065	63.183	42.028	-1215.338	
* 3	4.500	225.843	112.193	-1057.909	-113.830	-102.544	-1408.721	126.225	42.028	-1237.994	
10- 2	6.000	393.833	114.459	-1080.565	-102.645	-102.544	-1431.377	189.268	42.028	-1260.650	
3- 11	0.000	-517.622	171.064	-1617.345	259.621	-90.161	-1958.443	-278.545	92.842	-1951.130	
* 1	1.500	-259.326	173.331	-1640.001	134.379	-90.161	-1981.099	-139.282	92.842	-1973.786	
* 2	3.000	2.370	175.597	-1662.657	-0.863	-90.161	-2003.755	-0.019	92.842	-1996.442	
* 3	4.500	267.465	177.864	-1685.313	-146.105	-90.161	-2026.411	139.244	92.842	-2019.098	
11- 3	6.000	535.961	180.130	-1707.969	-281.347	-90.161	-2049.057	278.507	92.842	-2041.754	
4- 12	0.000	-559.954	186.303	-1525.248	213.488	-66.648	-2434.869	-137.133	47.364	-1872.206	
* 1	1.500	-272.801	188.569	-1547.904	113.516	-66.648	-2457.525	-66.087	47.364	-1894.862	
* 2	3.000	11.753	190.835	-1570.560	13.543	-66.648	-2480.181	4.959	47.364	-1917.513	
* 3	4.500	299.706	193.102	-1593.216	-86.429	-66.648	-2502.837	78.005	47.364	-1940.174	
12- 4	6.000	591.059	195.369	-1615.872	-186.402	-66.648	-2525.493	147.050	47.364	-1962.830	
5- 13	0.000	-512.056	171.678	-1568.095	213.488	66.648	-2434.869	109.824	-37.044	-1908.243	
* 1	1.500	-252.879	173.945	-1590.751	-113.516	66.648	-2457.525	54.257	-37.044	-1930.899	
* 2	3.000	9.737	176.211	-1613.407	-13.543	66.648	-2480.181	-1.309	-37.044	-1953.555	
* 3	4.500	275.754	178.478	-1636.063	86.429	66.648	-2502.837	-56.875	-37.044	-1976.211	
13- 5	6.000	545.170	180.744	-1658.719	186.402	66.648	-2525.493	-112.441	-37.044	-1998.867	
6- 14	0.000	-351.726	118.850	-1697.728	-259.621	90.161	-1958.443	362.119	-113.700	-2704.714	
* 1	1.500	-171.752	121.116	-1720.384	-134.379	90.161	-1981.099	191.569	-113.700	-2727.370	
* 2	3.000	11.623	123.383	-1743.040	10.863	90.161	-2003.755	21.018	-113.700	-2750.026	
* 3	4.500	198.397	125.649	-1765.696	-146.105	90.161	-2026.411	-149.532	-113.700	-2772.682	
14- 6	6.000	388.571	127.916	-1788.352	281.347	90.161	-2049.067	-320.082	-113.700	-2795.338	
7- 15	0.000	-335.843	95.704	-1091.574	-347.618	102.544	-1940.753	1.421	-31.490	-1861.811	
* 1	1.500	-190.587	97.971	-1114.230	-193.802	102.544	-1362.409	-45.814	-31.490	-1884.467	
* 2	3.000	-41.932	100.237	-1136.886	-39.986	102.544	-1386.065	-93.048	-31.490	-1907.123	
* 3	4.500	110.124	102.504	-1159.504	113.830	102.544	-1408.721	-140.283	-31.490	-1929.779	
15- 7	6.000	265.579	104.770	-1182.198	267.645	102.544	-1431.377	-187.518	-31.490	-1952.435	

PICK-UP No. 1 *

M. MAXIMUM

M. MINIMUM

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
1 - 2	0.000	C-9	0.000	0.000	0.000	C-8	0.000	0.000	-1400.837
2 - 1	0.860	C-10	-9.635	-22.407	0.000	C-8	-73.660	-22.407	-1400.837
2 - 3	0.000	C-8	377.031	1329.321	-1227.251	C-9	-492.254	1828.512	-142.551
* 1	0.989	C-8	503.352	289.377	-1227.251	C-9	110.514	595.368	-142.551
* 2	1.978	C-7	862.499	307.356	103.366	C-9	686.591	569.600	-142.551
* 3	3.956	C-6	80.703	-681.887	-135.178	C-10	-89.434	-899.148	56.959
3 - 2	3.956	C-6	-606.425	-707.654	-135.178	C-7	-1043.478	-989.355	103.366
3 - 4	0.000	C-8	-46.559	1419.559	-951.566	C-6	-1007.335	2096.209	-274.357
* 1	0.989	C-8	269.008	379.616	-951.566	C-9	-200.660	779.608	-267.463
* 2	1.978	C-6	626.285	799.498	-274.357	C-10	448.777	508.144	184.591
* 3	2.967	C-6	172.787	-471.446	-274.357	C-10	-255.505	-724.999	184.591
4 - 3	3.956	C-6	-306.235	-497.213	-274.357	C-7	-1017.457	-790.981	266.142
4 - 5	0.000	C-8	-37.536	1387.289	-646.015	C-10	-795.403	1832.785	249.825
* 1	0.989	C-6	395.740	1043.861	-381.953	C-10	-189.407	595.642	249.825
* 2	1.978	C-6	1415.376	1018.093	-381.953	C-10	390.897	573.874	249.825
* 3	2.967	C-6	395.740	-1043.861	-381.953	C-8	-268.083	-718.366	-646.015
5 - 4	3.956	C-6	-651.417	-3105.814	-381.953	C-8	-1055.922	-1758.310	-646.015
5 - 6	0.000	C-8	-215.681	411.538	-360.898	C-7	-1113.182	1010.150	283.170
* 1	0.989	C-6	172.787	471.446	-274.357	C-7	-355.115	753.382	283.170
* 2	1.978	C-6	626.285	445.678	-274.357	C-10	349.336	689.337	198.832
* 3	2.967	C-7	-147.374	-543.330	283.170	C-8	-323.245	-679.941	-360.898
6 - 5	3.956	C-7	-698.483	-1583.273	283.170	C-8	-1093.092	-1719.885	-360.898
6 - 7	0.000	C-8	-491.781	634.408	-158.225	C-7	-1323.443	2451.939	85.977
* 1	0.989	C-6	80.703	681.887	-135.178	C-10	41.695	1267.628	42.415
* 2	1.978	C-7	1455.010	1378.393	85.977	C-8	564.852	582.873	-158.225
* 3	2.967	C-7	791.711	-683.560	85.977	C-8	51.921	-457.071	-158.225
7 - 6	3.956	C-7	100.891	-2745.514	85.977	C-9	-492.254	-1828.512	-142.551
7 - 8	0.000	C-8	54.390	22.407	0.000	C-10	-9.635	22.407	0.000
8 - 7	0.860	C-7	0.000	0.000	0.000	C-9	0.000	0.000	0.000
9 - 10	0.000	C-10	0.000	-0.082	0.000	C-5	0.000	-0.003	0.000
10 - 9	0.860	C-6	298.942	695.217	0.000	C-7	211.139	493.916	0.000
10 - 11	0.000	C-8	929.922	-939.632	1302.045	C-9	-87.574	-1312.927	142.551
* 1	0.989	C-8	226.192	-481.456	1302.045	C-9	-1008.995	-550.413	142.551
* 2	1.978	C-8	-18.401	-11.148	1302.045	C-9	-1176.290	212.102	142.551
* 3	2.967	C-8	208.142	471.297	1302.045	C-9	-589.459	974.616	142.551
11 - 10	3.956	C-6	985.727	1859.994	135.178	C-10	302.943	1210.919	-56.959
11 - 12	0.000	C-8	1783.700	-1380.846	1011.401	C-9	361.770	-1089.995	267.463
* 1	0.989	C-8	667.614	-874.130	1011.401	C-10	-577.537	-945.597	-184.591
* 2	1.978	C-8	58.670	-355.280	1011.401	C-10	-1178.465	-266.535	-184.591
* 3	2.967	C-6	938.237	1329.579	274.357	C-10	-1098.629	431.074	-184.591
12 - 11	3.956	C-6	2648.544	2129.082	274.357	C-10	-319.687	1147.228	-184.591

PICK-UP No. 1 *

M. M A X I M U M

M. M I N I M U M

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
12 - 13	0.000	C- 6	2348.132	-1599.007	381.953	C-10	-117.151	-1561.386	-249.825
* 1	0.989	C- 6	1162.089	-799.503	381.953	C-10	-1299.561	-826.685	-249.825
* 2	1.978	C- 6	766.735	0.000	381.953	C-10	-1246.220	-72.438	-249.825
* 3	2.967	C- 6	1162.089	799.503	381.953	C-10	-1438.727	698.355	-249.825
13 - 12	3.956	C- 6	2348.132	1599.007	381.953	C-10	-358.759	1488.695	-249.825
13 - 14	0.000	C- 6	2548.544	-2129.082	274.357	C-10	-513.534	-1269.651	-198.832
* 1	0.989	C- 6	938.337	-1329.579	274.357	C-10	-1370.754	-460.766	-198.832
* 2	1.978	C- 6	18.637	-530.076	274.357	C-10	-1418.815	-366.666	-198.832
* 3	2.967	C- 6	-110.253	269.428	274.357	C- 8	-952.261	341.693	390.816
14 - 13	3.956	C- 7	1297.819	2249.247	-283.170	C- 8	-298.614	982.178	390.816
14 - 15	0.000	C- 6	985.727	-1859.994	135.178	C- 8	360.988	-1497.176	173.184
* 1	0.989	C- 6	-458.453	-1060.491	135.178	C- 8	-797.991	-844.555	173.184
* 2	1.978	C- 6	-1111.924	-260.988	135.178	C- 8	-1305.567	-179.880	173.184
* 3	2.967	C- 7	-681.345	986.441	-85.977	C- 8	-1149.820	496.848	173.184
15 - 14	3.956	C- 7	791.948	1996.614	-85.977	C- 8	-318.828	1185.630	173.184
15 - 16	0.000	C- 7	386.611	-896.368	0.000	C- 8	133.500	-458.853	0.000
16 - 15	0.860	C- 6	0.000	0.003	0.000	C- 8	0.000	149.916	0.000
2 - 10	0.000	C- 9	482.620	-142.551	-1850.918	C- 8	-450.691	173.586	-1351.737
* 1	1.500	C- 9	268.793	-142.551	-1882.184	C- 8	-187.508	177.326	-1382.993
* 2	3.000	C- 7	98.128	103.366	-1689.005	C- 9	54.967	-142.551	-1913.439
* 3	4.500	C- 8	355.688	184.805	-1445.523	C- 9	-158.859	-142.551	-1944.714
10 - 2	6.000	C- 8	635.701	188.545	-1476.788	C- 9	-372.686	-142.551	-1975.979
3 - 11	0.000	C- 6	400.911	-139.179	-2803.864	C- 8	-833.114	275.685	-2221.662
* 1	1.500	C- 6	192.143	-139.179	-2835.129	C- 8	-416.781	279.425	-2352.937
* 2	3.000	C- 8	5.161	283.165	-2284.192	C- 6	-16.625	-139.179	-2866.394
* 3	4.500	C- 8	432.713	286.904	-2315.458	C- 6	-225.393	-139.179	-2897.860
11 - 3	6.000	C- 8	365.875	290.644	-2346.723	C- 6	-434.162	-139.179	-2928.925
4 - 12	0.000	C- 6	345.182	-107.596	-3603.028	C- 8	-908.743	305.551	-2099.152
* 1	1.500	C- 6	183.789	-107.596	-3634.293	C- 8	-447.612	309.290	-2130.417
* 2	3.000	C- 6	22.395	107.596	-3665.558	C-10	6.833	65.234	-2646.084
* 3	4.500	C- 8	491.479	316.770	-2192.948	C- 6	-138.998	-107.596	-3696.823
12 - 4	6.000	C- 8	569.438	320.510	-2224.213	C- 6	-300.392	-107.596	-3728.089
5 - 13	0.000	C- 7	188.282	-63.497	-2734.095	C- 8	-850.241	235.117	-2169.848
* 1	1.500	C- 7	93.037	-63.497	-2765.361	C- 8	-419.760	288.857	-2201.113
* 2	3.000	C- 8	16.350	292.597	-2232.379	C- 6	-22.395	107.596	-3665.558
* 3	4.500	C- 8	458.030	296.336	-2269.644	C- 7	-97.453	-63.497	-2827.891
13 - 5	6.000	C- 8	905.339	300.076	-2294.909	C- 7	-192.698	-63.497	-2859.157
6 - 14	0.000	C- 7	624.960	-197.193	-4035.212	C- 8	-601.311	202.673	-2354.293
* 1	1.500	C- 7	329.170	-197.193	-4066.477	C- 8	-294.497	206.413	-2385.558
* 2	3.000	C- 7	33.981	-197.193	-4097.743	C- 9	14.993	124.912	-2764.594
* 3	4.500	C- 8	335.959	213.892	-2448.089	C- 7	-262.408	-197.193	-4129.008
14 - 6	6.000	C- 8	659.602	217.632	-2479.354	C- 7	-558.197	-197.193	-4160.273
7 - 15	0.000	C- 7	110.526	-85.977	-2767.921	C- 8	-541.898	158.235	-1519.421
* 1	1.500	C- 7	-18.440	-85.977	-2799.186	C- 8	-301.755	161.955	-1550.687
* 2	3.000	C- 9	54.967	142.551	-1913.449	C- 7	-147.405	-85.977	-2830.451
* 3	4.500	C- 8	195.358	169.444	-1613.217	C- 7	-276.371	-85.977	-2861.717
15 - 7	6.000	C- 8	452.329	173.184	-1644.483	C- 7	-405.337	-85.977	-2892.982

PICK-UP No. 1 *

S. M A X I M U M

S. M I N I M U M

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
1 - 2	0.000	C-7	0.000	0.000	0.000	C-9	0.000	0.000	0.000
2 - 1	0.860	C-7	-9.635	-22.407	0.000	C-9	-9.635	-22.407	0.000
2 - 3	0.000	C-6	-475.022	1885.768	-135.178	C-8	377.031	1329.321	-1227.251
* 1	0.989	C-6	147.027	614.825	-135.178	C-8	603.352	289.377	-1227.251
* 2	1.978	C-6	742.347	589.057	-135.178	C-8	803.175	263.609	-1227.251
* 3	2.967	C-9	43.088	-663.543	-142.551	C-7	-77.747	-963.538	103.366
3 - 2	3.956	C-9	-625.898	-689.311	-142.551	C-7	-1043.478	-989.355	103.366
3 - 4	0.000	C-6	-1007.336	2096.209	-274.357	C-8	-46.559	1419.559	-951.566
* 1	0.989	C-6	-177.161	825.265	-274.357	C-8	269.008	379.616	-951.566
* 2	1.978	C-6	626.285	799.498	-274.357	C-8	558.077	353.848	-951.566
* 3	2.967	C-6	172.767	-471.446	-274.357	C-7	-247.920	-765.212	266.142
4 - 3	3.956	C-6	-306.235	-497.213	-274.357	C-7	-1017.457	-790.981	266.142
4 - 5	0.000	C-6	-651.417	3105.814	-381.953	C-8	-37.536	1387.289	-646.015
* 1	0.989	C-6	395.740	1043.861	-381.953	C-8	246.116	347.345	-646.015
* 2	1.978	C-6	1415.376	1018.093	-381.953	C-8	503.269	321.577	-646.015
* 3	2.967	C-10	-248.378	-659.269	249.825	C-6	395.740	-1043.861	381.953
5 - 4	3.956	C-10	-914.151	-1699.213	249.825	C-6	-651.417	-3105.814	381.953
5 - 6	0.000	C-7	-1113.183	1010.150	283.170	C-8	-215.691	411.538	-360.898
* 1	0.989	C-7	-355.115	753.382	283.170	C-8	104.948	385.770	-360.898
* 2	1.978	C-7	377.237	727.614	283.170	C-8	400.104	360.002	-360.898
* 3	2.967	C-7	-147.374	-543.330	283.170	C-6	-177.161	-825.265	274.357
6 - 5	3.956	C-7	-698.483	-1583.273	283.170	C-6	-1007.336	-2096.209	274.357
6 - 7	0.000	C-7	-1323.443	2451.939	85.977	C-8	-491.781	634.408	-158.235
* 1	0.989	C-7	79.037	1404.161	85.977	C-8	49.278	608.640	-158.235
* 2	1.978	C-7	1455.010	1378.393	85.977	C-8	564.852	582.873	-158.235
* 3	2.967	C-8	51.921	-457.071	-158.235	C-7	791.711	-583.550	85.977
7 - 6	3.956	C-8	-487.507	-1497.015	-158.235	C-7	100.891	-2743.514	85.977
7 - 8	0.000	C-10	-9.635	22.407	0.000	C-6	-9.635	22.407	0.000
8 - 7	0.860	C-10	0.000	0.000	0.000	C-6	0.000	0.000	0.000
9 - 10	0.000	C-8	0.000	148.607	1490.590	C-7	0.000	-0.097	0.000
10 - 9	0.860	C-6	298.942	695.217	0.000	C-7	211.139	493.916	0.000
10 - 11	0.000	C-8	929.922	-939.632	1302.045	C-6	-46.740	-1338.019	135.178
* 1	0.989	C-8	226.192	-481.458	1302.045	C-7	-335.063	-658.759	-103.366
* 2	1.978	C-6	-1111.924	260.988	135.178	C-7	-57.744	-87.744	-103.366
* 3	2.967	C-6	-458.453	1060.491	135.178	C-8	208.142	471.297	1302.045
11 - 10	3.956	C-6	985.727	1859.994	135.178	C-8	917.825	965.877	1302.045
11 - 12	0.000	C-6	551.565	-1068.931	274.357	C-7	939.007	-1686.029	-266.142
* 1	0.989	C-6	-110.253	-269.428	274.357	C-7	-395.255	-1008.480	-266.142
* 2	1.978	C-6	18.637	530.076	274.357	C-8	58.670	-355.280	1011.401
* 3	2.967	C-6	938.237	1328.579	274.357	C-8	-31.130	175.705	1011.401
12 - 11	3.956	C-6	2648.544	2129.082	274.357	C-8	410.215	718.825	1011.401

S. MAXIMUM

S. MINIMUM

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
12 - 13	0.000	C-8	1375.654	-1505.388	690.892	C-7	25.856	-1642.478	-346.667
* 1	0.989	C-9	593.945	-762.514	359.565	C-8	164.398	-950.133	690.892
* 2	1.978	C-6	766.735	0.000	381.953	C-8	-495.709	-382.743	690.892
* 3	2.967	C-6	1162.089	-733.503	381.953	C-8	-588.667	196.782	690.892
13 - 12	3.956	C-6	2348.153	1559.007	381.953	C-8	-102.474	788.443	690.892
13 - 14	0.000	C-10	-513.534	-1269.651	-198.832	C-6	2648.544	-3129.082	274.357
* 1	0.989	C-7	-1324.031	-448.644	-283.170	C-6	938.237	-1329.572	274.357
* 2	1.978	C-7	-1335.831	428.478	-283.170	C-6	18.637	-530.076	274.357
* 3	2.967	C-7	-469.191	1327.775	-283.170	C-6	-110.353	269.428	274.357
14 - 13	3.956	C-7	1297.819	2249.247	-283.170	C-8	-298.614	982.178	390.816
14 - 15	0.000	C-8	360.988	-1497.175	173.184	C-7	739.622	-1911.026	-85.977
* 1	0.989	C-8	-797.991	-844.555	173.184	C-6	-458.453	1060.491	185.178
* 2	1.978	C-10	-1221.971	4.877	-42.415	C-6	-111.924	-260.988	185.178
* 3	2.967	C-7	-681.345	986.441	-85.977	C-8	-1149.820	496.848	173.184
15 - 14	3.956	C-7	791.948	1995.614	-85.977	C-8	-318.828	1185.630	173.184
15 - 16	0.000	C-8	133.500	-458.853	0.000	C-7	386.611	-896.368	0.000
16 - 15	0.860	C-8	0.000	149.916	0.000	C-9	0.000	0.000	0.000
2 - 10	0.000	C-8	-450.691	173.586	-1351.727	C-9	482.620	-142.551	-1850.918
* 1	1.500	C-8	-187.508	177.326	-1382.993	C-9	268.793	-142.551	-1882.184
* 2	3.000	C-8	81.286	181.065	-1414.258	C-9	54.967	-142.551	-1913.449
* 3	4.500	C-8	355.688	184.805	-1445.523	C-9	-158.859	-142.551	-1944.714
10 - 2	6.000	C-8	635.701	188.545	-1476.788	C-9	-372.586	-142.551	-1975.979
3 - 11	0.000	C-8	-833.114	275.685	-2221.662	C-6	400.911	-189.179	-2803.864
* 1	1.500	C-8	-416.781	279.425	-2252.927	C-6	192.143	-139.179	-2835.129
* 2	3.000	C-8	5.161	283.165	-2284.192	C-6	-16.625	-139.179	-2866.394
* 3	4.500	C-8	432.713	286.904	-2315.458	C-6	-225.393	-139.179	-2897.660
11 - 3	6.000	C-8	865.875	290.644	-2346.723	C-6	-434.162	-139.179	-2928.925
4 - 12	0.000	C-8	-908.743	305.551	-2099.152	C-6	345.182	-107.596	-3603.028
* 1	1.500	C-8	-447.612	309.290	-2130.417	C-6	183.789	-107.596	-3634.293
* 2	3.000	C-8	19.129	313.030	-2161.682	C-6	22.395	-107.596	-3665.558
* 3	4.500	C-8	491.479	316.770	-2192.948	C-6	-138.998	-107.596	-3696.823
12 - 4	6.000	C-8	969.438	320.510	-2224.213	C-6	-300.392	-107.596	-3728.089
5 - 13	0.000	C-8	-850.241	285.117	-2169.848	C-7	188.282	-63.497	-2734.095
* 1	1.500	C-8	-419.760	288.857	-2201.113	C-7	93.037	-63.497	-2765.361
* 2	3.000	C-8	16.330	292.597	-2232.379	C-7	-2.208	-63.497	-2796.626
* 3	4.500	C-8	458.030	296.336	-2263.644	C-7	-97.453	-63.497	-2827.891
13 - 5	6.000	C-8	905.339	300.076	-2294.909	C-7	-192.698	-63.497	-2859.157
6 - 14	0.000	C-8	-501.311	202.673	-2354.293	C-7	624.960	-197.193	-4035.212
* 1	1.500	C-8	-294.497	206.413	-2385.558	C-7	329.170	-197.193	-4066.477
* 2	3.000	C-8	17.926	210.152	-2416.823	C-7	33.381	-197.193	-4097.743
* 3	4.500	C-8	335.959	213.892	-2448.089	C-7	-262.408	-197.193	-4129.008
14 - 6	6.000	C-8	659.602	217.632	-2479.354	C-7	-558.197	-197.193	-4160.273
7 - 15	0.000	C-8	-541.898	158.225	-1519.421	C-7	110.526	-85.977	-2767.921
* 1	1.500	C-8	-301.755	161.965	-1550.687	C-7	-18.440	-85.977	-2799.186
* 2	3.000	C-8	-56.004	165.704	-1581.952	C-7	-147.405	-85.977	-2830.451
* 3	4.500	C-8	195.358	169.444	-1613.217	C-7	-276.371	-85.977	-2861.717
15 - 7	6.000	C-8	452.329	173.184	-1644.483	C-7	-405.327	-85.977	-2892.982

PICK-UP No. 1 *

N. M A X I M U M

N. M I N I M U M

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
1 - 2	0.000	C- 6	0.000	0.000	0.000	C- 8	0.000	0.000	-1400.837
2 - 1	0.860	C- 6	-9.635	-22.407	0.000	C- 8	-73.660	-22.407	-1400.837
2 - 3	0.000	C- 7	202.335	1604.067	103.366	C- 8	377.031	1329.321	-1227.251
* 1	0.989	C- 7	545.781	333.124	103.366	C- 8	603.352	289.377	-1227.251
* 2	1.978	C- 7	862.499	307.356	103.366	C- 8	263.609	263.609	-1227.251
* 3	2.967	C- 7	-77.747	-963.588	103.366	C- 8	-25.507	-776.334	-1227.251
3 - 2	3.956	C- 7	-1043.478	-983.355	103.366	C- 8	-879.673	-802.102	-1227.251
3 - 4	0.000	C- 7	-556.416	1802.442	266.142	C- 8	-46.559	1419.559	-951.566
* 1	0.989	C- 7	-16.776	531.499	266.142	C- 8	269.008	379.616	-951.566
* 2	1.978	C- 7	496.134	505.731	266.142	C- 8	558.077	353.848	-951.566
* 3	2.967	C- 7	-247.920	-765.213	266.142	C- 8	-181.358	-686.096	-951.566
4 - 3	3.956	C- 7	-1017.457	-790.981	266.142	C- 8	-946.278	-711.863	-951.566
4 - 5	0.000	C- 7	-784.115	1883.653	346.667	C- 8	-37.536	1387.289	-646.015
* 1	0.989	C- 7	-164.158	612.709	346.667	C- 8	246.116	347.345	-646.015
* 2	1.978	C- 7	429.069	586.941	346.667	C- 8	503.269	321.577	-646.015
* 3	2.967	C- 7	-234.667	-684.002	346.667	C- 8	-268.083	-718.366	-646.015
5 - 4	3.956	C- 7	-924.901	-1723.946	346.667	C- 8	-1065.932	-1758.310	-646.015
5 - 6	0.000	C- 7	-1113.193	1010.150	283.170	C- 8	-215.691	411.538	-360.898
* 1	0.989	C- 7	-355.115	753.382	283.170	C- 8	104.948	385.770	-360.898
* 2	1.978	C- 7	577.237	727.614	283.170	C- 8	400.104	360.002	-360.898
* 3	2.967	C- 7	-147.374	-543.330	283.170	C- 8	-333.245	-679.941	-360.898
6 - 5	3.956	C- 7	-698.483	-1583.273	283.170	C- 8	-1093.092	-1719.885	-360.898
6 - 7	0.000	C- 7	-1323.443	2451.939	85.977	C- 8	-491.781	634.408	-158.235
* 1	0.989	C- 7	79.037	1404.161	85.977	C- 8	49.278	608.640	-158.235
* 2	1.978	C- 7	1455.010	1378.393	85.977	C- 8	564.852	582.873	-158.235
* 3	2.967	C- 7	791.711	-683.560	85.977	C- 8	51.921	-457.071	-158.235
7 - 6	3.956	C- 7	100.891	-2745.514	85.977	C- 8	-487.507	-1497.015	-158.235
7 - 8	0.000	C- 9	-9.635	22.407	0.000	C- 6	-9.635	22.407	0.000
8 - 7	0.860	C- 9	0.000	0.000	0.000	C- 6	0.000	0.000	0.000
9 - 10	0.000	C- 8	0.000	148.607	1490.590	C- 6	0.000	-0.003	0.000
10 - 9	0.860	C- 8	294.221	537.156	1490.590	C- 6	298.942	695.217	0.000
10 - 11	0.000	C- 8	929.922	-939.632	1302.045	C- 7	619.364	-1257.619	-103.366
* 1	0.989	C- 8	225.192	-481.458	1302.045	C- 7	-335.063	-668.769	-103.366
* 2	1.978	C- 8	-18.401	-21.148	1302.045	C- 7	-696.151	-57.744	-103.366
* 3	2.967	C- 8	208.142	471.297	1302.045	C- 7	-441.971	575.455	-103.366
11 - 10	3.956	C- 8	917.825	965.877	1302.045	C- 7	449.409	1230.830	-103.366
11 - 12	0.000	C- 8	1783.700	-1380.846	1011.401	C- 7	939.007	-1686.029	-266.142
* 1	0.989	C- 8	667.614	-874.130	1011.401	C- 7	-395.255	-1008.480	-266.142
* 2	1.978	C- 8	58.670	-353.280	1011.401	C- 7	-1048.456	-308.756	-266.142
* 3	2.967	C- 8	-31.130	175.705	1011.401	C- 7	-998.664	413.143	-266.142
12 - 11	3.956	C- 8	410.215	718.825	1011.401	C- 7	-223.949	1157.217	-266.142

N. MAXIMUM

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
12 - 13	0.000	C- 8	1379.654	-1505.388	690.892	C- 7	25.855	-1642.478	-346.667
* 1	0.989	C- 8	164.398	-950.133	690.892	C- 7	-1321.473	-876.230	-346.667
* 2	1.978	C- 8	-495.709	-382.743	690.892	C- 7	-1700.017	-87.806	-346.667
* 3	2.967	C- 8	-888.667	196.782	690.892	C- 7	-1387.844	722.792	-346.667
13 - 12	3.956	C- 8	-102.474	788.443	690.892	C- 7	-263.024	1555.565	-346.667
13 - 14	0.000	C- 8	802.865	-1506.466	390.816	C- 7	-455.723	-1303.592	-283.170
* 1	0.989	C- 8	-389.440	-902.630	390.816	C- 7	-1324.031	-448.644	-283.170
* 2	1.978	C- 8	-978.509	-286.577	390.816	C- 7	-1335.831	428.478	-283.170
* 3	2.967	C- 8	-952.261	341.693	390.816	C- 7	-469.191	1327.775	-283.170
14 - 13	3.956	C- 8	-298.614	982.178	390.816	C- 7	1297.819	2249.247	-283.170
14 - 15	0.000	C- 8	360.988	-1497.176	173.184	C- 7	739.622	-1911.026	-85.977
* 1	0.989	C- 8	-797.991	-844.555	173.184	C- 7	-685.576	-967.379	-85.977
* 2	1.978	C- 8	-1305.567	-179.890	173.184	C- 7	-1166.543	-1.557	-85.977
* 3	2.967	C- 8	-1149.820	496.848	173.184	C- 7	-681.345	986.441	-85.977
15 - 14	3.955	C- 8	-318.828	1185.630	173.184	C- 7	791.948	1996.614	-85.977
15 - 16	0.000	C- 6	298.942	-695.217	0.000	C- 6	298.942	-695.217	0.000
16 - 15	0.860	C- 6	0.000	0.003	0.000	C- 6	0.000	0.003	0.000
2 - 10	0.000	C- 8	-450.691	173.586	-1351.727	C- 6	465.387	-135.178	-1908.175
* 1	1.500	C- 8	-187.508	177.326	-1382.993	C- 6	262.620	-135.178	-1939.440
* 2	3.000	C- 8	81.286	181.065	-1414.258	C- 6	59.853	-135.178	-1970.706
* 3	4.500	C- 8	355.688	184.805	-1445.523	C- 6	-142.915	-135.178	-2001.971
10 - 2	6.000	C- 8	635.701	188.545	-1476.788	C- 6	-345.682	-135.178	-2033.236
3 - 11	0.000	C- 8	-833.114	275.685	-2221.662	C- 6	400.911	-139.179	-2803.864
* 1	1.500	C- 8	-416.781	279.425	-2252.927	C- 6	192.143	-139.179	-2835.129
* 2	3.000	C- 8	5.161	283.165	-2284.192	C- 6	-16.625	-139.179	-2866.394
* 3	4.500	C- 8	432.713	286.904	-2315.458	C- 6	-225.353	-139.179	-2897.660
11 - 3	6.000	C- 8	865.875	290.644	-2346.723	C- 6	-434.162	-139.179	-2928.925
4 - 12	0.000	C- 8	-608.745	305.551	-2099.152	C- 6	345.182	-107.596	-3503.028
* 1	1.500	C- 8	-447.612	309.290	-2130.417	C- 6	183.789	-107.596	-3534.293
* 2	3.000	C- 8	19.129	313.030	-2161.682	C- 6	22.395	-107.596	-3565.558
* 3	4.500	C- 8	431.479	316.770	-2192.948	C- 6	-138.998	-107.596	-3596.823
12 - 4	6.000	C- 8	969.438	320.510	-2224.213	C- 6	-300.392	-107.596	-3728.089
5 - 13	0.000	C- 8	-850.241	285.117	-2169.848	C- 6	-345.182	107.596	-3603.028
* 1	1.500	C- 8	-419.760	288.857	-2201.113	C- 6	-183.789	107.596	-3634.293
* 2	3.000	C- 8	16.330	292.597	-2232.379	C- 6	-22.395	107.596	-3665.558
* 3	4.500	C- 8	458.030	296.336	-2263.644	C- 6	138.998	107.596	-3696.823
13 - 5	6.000	C- 8	905.339	300.076	-2294.909	C- 6	300.392	107.596	-3728.089
6 - 14	0.000	C- 8	-601.311	202.673	-2354.293	C- 7	624.960	-197.193	-4035.212
* 1	1.500	C- 8	-294.497	206.413	-2385.558	C- 7	329.170	-197.193	-4066.477
* 2	3.000	C- 8	17.926	210.152	-2416.823	C- 7	33.381	-197.193	-4097.743
* 3	4.500	C- 8	335.359	213.892	-2448.089	C- 7	-262.408	-197.193	-4129.008
14 - 6	6.000	C- 8	659.602	217.632	-2479.354	C- 7	-558.197	-197.193	-4160.273

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
7 - 15	0.000	C- 8	-541.898	158.225	-1519.421	C- 7	110.526	-85.977	-2767.921
* 1	1.500	C- 8	-301.755	161.965	-1550.687	C- 7	-18.440	-85.977	-2799.186
* 2	3.000	C- 8	-56.004	165.704	-1581.952	C- 7	-147.405	-85.977	-2830.451
* 3	4.500	C- 8	195.358	169.444	-1613.217	C- 7	-276.371	-85.977	-2861.717
15 - 7	6.000	C- 8	452.329	173.184	-1644.483	C- 7	-405.337	-85.977	-2892.982

M. MAXIMUM

M. MINIMUM

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
1 - 2	0.000	C-14	0.000	0.000	0.000	C-13	0.000	0.000	-848.992
2 - 1	0.860	C-15	-6.982	-16.237	0.000	C-13	-45.785	-16.237	-848.992
2 - 3	0.000	C-13	219.941	973.704	-743.599	C-14	-354.599	1324.517	-102.544
* 1	0.989	C-13	402.985	220.122	-743.599	C-14	81.703	430.934	-102.544
* 2	1.978	C-12	602.783	227.953	62.835	C-14	498.664	412.262	-102.544
* 3	2.967	C-11	49.749	-494.892	-81.736	C-15	-64.139	-652.048	42.028
3 - 2	3.956	C-11	-448.933	-513.564	-81.736	C-15	-718.268	-670.720	42.028
3 - 4	0.000	C-13	-96.915	1046.540	-572.534	C-14	-713.009	1458.450	-192.705
* 1	0.989	C-13	158.164	292.957	-572.534	C-14	-144.246	564.868	-192.705
* 2	1.978	C-11	435.350	544.376	-162.105	C-15	326.295	368.155	134.870
* 3	2.967	C-11	99.249	-349.206	-162.105	C-15	-134.120	-525.428	134.870
4 - 3	3.956	C-11	-255.350	-367.879	-162.105	C-15	-713.001	-544.100	134.870
4 - 5	0.000	C-13	-89.301	1027.279	-386.232	C-15	-575.868	1328.106	182.234
* 1	0.989	C-11	237.411	695.827	-326.194	C-15	-136.016	434.523	182.234
* 2	1.978	C-11	916.351	677.155	-326.194	C-15	284.494	415.851	182.234
* 3	2.967	C-11	237.411	-695.827	-326.194	C-15	-178.749	-477.731	182.234
5 - 4	3.956	C-11	-461.350	-2068.810	-326.194	C-13	-712.571	-1252.140	-386.232
5 - 6	0.000	C-13	-200.475	315.954	-214.554	C-15	-771.017	676.930	145.190
* 1	0.989	C-11	99.249	349.206	-162.105	C-15	-249.087	518.257	145.190
* 2	1.978	C-11	435.350	330.534	-162.105	C-15	254.236	499.585	145.190
* 3	2.967	C-12	-94.188	-392.178	175.790	C-13	-206.838	-474.973	-214.554
6 - 5	3.956	C-12	-492.021	-1145.760	175.790	C-13	-731.178	-1228.555	-214.554
6 - 7	0.000	C-13	-379.451	469.172	-95.704	C-15	-887.944	1557.135	31.490
* 1	0.989	C-11	49.749	494.892	-81.736	C-13	30.703	450.500	-95.704
* 2	1.978	C-12	961.831	913.962	52.297	C-13	422.391	431.828	-95.704
* 3	2.967	C-12	517.142	-459.021	52.297	C-13	68.785	-321.755	-95.704
7 - 6	3.956	C-12	52.583	-1832.003	52.297	C-14	-354.599	-1324.517	-102.544
7 - 8	0.000	C-13	31.821	16.237	0.000	C-15	-6.982	16.237	0.000
8 - 7	0.860	C-12	0.000	0.000	0.000	C-14	0.000	0.000	0.000
9 - 10	0.000	C-15	0.000	-0.059	0.000	C-11	0.000	-0.002	0.000
10 - 9	0.860	C-11	206.603	480.473	0.000	C-15	153.389	358.472	0.000
10 - 11	0.000	C-13	597.574	-695.886	788.929	C-14	-61.043	-950.904	102.544
* 1	0.989	C-13	79.675	-350.206	788.929	C-14	-728.253	-398.358	102.544
* 2	1.978	C-13	-92.709	2.829	788.929	C-14	-848.995	154.188	102.544
* 3	2.967	C-13	87.695	363.219	788.929	C-14	-423.268	706.735	102.544
11 - 10	3.956	C-11	669.316	1272.853	81.736	C-15	223.666	877.969	-42.028
11 - 12	0.000	C-13	1164.124	-977.005	608.798	C-14	267.580	-789.785	192.705
* 1	0.989	C-13	382.745	-601.906	608.798	C-15	-413.012	-685.149	-134.870
* 2	1.978	C-13	-24.022	-219.453	608.798	C-15	-848.402	-193.075	-134.870
* 3	2.967	C-11	538.588	869.673	162.105	C-15	-790.485	312.438	-134.870
12 - 11	3.956	C-11	1671.929	1422.219	162.105	C-15	-225.969	831.391	-134.870

M. M A X I M U M

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
12 - 13	0.000	C-11	1493.394	-1105.093	226.194	C-15	-78.919	-1131.439	-182.234
* 1	0.989	C-11	673.691	-552.546	226.194	C-15	-935.752	-599.047	-182.234
* 2	1.978	C-11	400.457	0.000	226.194	C-15	-1259.404	-53.216	-182.234
* 3	2.967	C-11	673.691	582.546	226.194	C-15	-1036.583	506.085	-182.234
13 - 12	3.956	C-11	1493.394	1105.093	226.194	C-15	-253.997	1078.764	-182.234
13 - 14	0.000	C-11	1671.929	-1432.219	162.105	C-15	-366.438	-920.103	-145.190
* 1	0.989	C-11	538.588	-869.673	162.105	C-15	-987.677	-333.984	-145.190
* 2	1.978	C-11	-48.284	-317.127	162.105	C-15	-1023.569	265.634	-145.190
* 3	2.967	C-11	-88.688	238.420	162.105	C-13	-598.996	279.217	232.686
14 - 13	3.956	C-12	869.651	1503.309	-175.790	C-13	-97.884	735.339	232.686
14 - 15	0.000	C-11	669.316	-1272.853	81.736	C-13	290.687	-1052.963	104.770
* 1	0.989	C-11	-316.301	-720.306	81.736	C-13	-560.919	-650.303	-31.490
* 2	1.978	C-11	-755.450	-167.760	81.736	C-15	-882.097	3.042	-31.490
* 3	2.967	C-12	-470.347	656.256	-52.297	C-13	-754.272	359.533	104.770
15 - 14	3.956	C-12	513.954	1336.481	-52.297	C-13	-159.244	844.976	104.770
15 - 16	0.000	C-12	259.735	-602.383	0.000	C-13	106.335	-337.222	0.000
16 - 15	0.860	C-11	0.000	0.002	0.000	C-13	0.000	90.859	0.000
2 - 10	0.000	C-14	347.618	-102.544	-1340.753	C-13	-255.726	105.393	-989.941
* 1	1.500	C-14	193.802	-102.544	-1363.409	C-13	-105.936	107.660	-1012.597
* 2	3.000	C-12	67.461	52.836	-1201.766	C-14	39.986	-102.544	-1386.065
* 3	4.500	C-13	223.843	112.193	-1057.909	C-14	-113.830	-102.544	-1408.721
10 - 2	6.000	C-13	393.833	114.439	-1080.565	C-14	-257.645	-102.544	-1431.377
3 - 11	0.000	C-14	259.621	-90.161	-1958.443	C-13	-517.622	171.064	-1517.345
* 1	1.500	C-14	124.379	-90.161	-1981.099	C-13	-259.326	173.331	-1640.001
* 2	3.000	C-13	2.370	175.597	-1862.837	C-14	-10.863	-90.161	-2008.755
* 3	4.500	C-13	267.465	177.864	-1685.313	C-14	-146.105	-90.161	-2026.411
11 - 3	6.000	C-13	535.961	180.130	-1707.969	C-14	-281.347	-90.161	-2049.067
4 - 12	0.000	C-14	213.488	-66.648	-2434.869	C-13	-353.954	186.303	-1525.248
* 1	1.500	C-14	113.516	-66.648	-2457.525	C-13	-272.801	188.569	-1547.904
* 2	3.000	C-11	13.732	-64.089	-2482.000	C-15	4.959	47.364	-1917.518
* 3	4.500	C-13	299.706	139.102	-1893.216	C-14	-86.429	-66.648	-2502.837
12 - 4	6.000	C-13	591.059	195.369	-1615.872	C-14	-186.402	-66.648	-2525.493
5 - 13	0.000	C-12	117.311	-39.603	-1910.063	C-13	-512.096	171.678	-1568.095
* 1	1.500	C-12	57.907	-39.603	-1932.719	C-13	-252.879	173.945	-1590.751
* 2	3.000	C-13	9.737	178.211	-1613.407	C-11	-13.732	64.089	-2482.000
* 3	4.500	C-13	375.754	178.478	-1536.063	C-12	-60.903	-39.603	-1978.031
13 - 5	6.000	C-13	545.170	180.744	-1858.719	C-12	-120.307	-39.603	-2000.587
6 - 14	0.000	C-12	391.468	-123.493	-2716.466	C-13	-351.726	118.850	-1697.728
* 1	1.500	C-12	205.229	-123.493	-2738.122	C-13	-171.752	121.116	-1720.384
* 2	3.000	C-15	21.018	-113.700	-2750.026	C-11	10.834	80.369	-2015.507
* 3	4.500	C-13	198.397	125.649	-1755.696	C-12	-164.350	-123.493	-2784.434
14 - 6	6.000	C-13	388.571	127.916	-1788.352	C-12	-349.489	-123.493	-2807.090
7 - 15	0.000	C-12	59.565	-52.297	-1848.240	C-14	-347.618	102.544	-1340.753
* 1	1.500	C-12	-18.381	-52.297	-1870.896	C-14	-193.802	102.544	-1363.409
* 2	3.000	C-14	-39.986	102.544	-1386.065	C-12	-97.327	-52.297	-1893.562
* 3	4.500	C-14	113.830	102.544	-1408.721	C-12	-175.773	-52.297	-1916.208
15 - 7	6.000	C-14	267.645	102.544	-1431.377	C-12	-254.218	-52.297	-1938.864

M. M I N I M U M

PICK-UP No. 2 *

S. MAX I M U M

S. M I N I M U M

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
1 - 2	0.000	C-12	0.000	0.000	0.000	C-14	0.000	0.000	0.000
2 - 1	0.860	C-12	-6.982	-16.237	0.000	C-14	-6.982	-16.237	0.000
2 - 3	0.000	C-14	-354.599	1324.517	-102.544	C-13	219.941	973.704	-743.599
* 1	0.989	C-14	81.703	430.934	-102.544	C-13	402.986	230.122	-743.599
* 2	1.978	C-14	498.664	412.262	-102.544	C-13	566.829	201.449	-743.599
* 3	2.967	C-14	31.871	-481.320	-102.544	C-12	-665.620	-655.282	62.836
3 - 2	3.956	C-14	-453.388	-499.993	-102.544	C-12	-713.813	-684.292	62.836
3 - 4	0.000	C-14	-713.009	1458.450	-192.705	C-13	-96.915	1046.540	-572.534
* 1	0.989	C-14	-144.246	564.868	-192.705	C-13	158.164	292.957	-572.534
* 2	1.978	C-14	405.174	546.195	-192.705	C-13	394.042	274.285	-572.534
* 3	2.967	C-14	70.842	-347.387	-192.705	C-12	-155.713	-527.247	165.470
4 - 3	3.956	C-14	-281.957	-366.059	-192.705	C-12	-686.394	-545.919	165.470
4 - 5	0.000	C-11	-461.350	2068.810	-225.194	C-13	-89.301	1027.279	-386.232
* 1	0.989	C-11	237.411	695.827	-225.194	C-13	145.730	273.697	-386.232
* 2	1.978	C-11	916.351	677.155	-226.194	C-13	363.559	255.024	-386.232
* 3	2.967	C-12	-144.654	-477.731	215.393	C-14	203.316	-695.827	-259.353
5 - 4	3.956	C-12	-627.098	-1231.314	215.393	C-14	-495.445	-2068.810	-259.353
5 - 6	0.000	C-12	-744.410	678.749	175.790	C-13	-200.475	315.954	-214.554
* 1	0.989	C-12	-220.680	520.077	175.790	C-13	58.146	297.282	-214.554
* 2	1.978	C-12	284.442	501.404	175.790	C-13	298.301	278.610	-214.554
* 3	2.967	C-12	-94.188	-392.178	175.790	C-14	-144.246	-564.858	-192.705
5 - 5	3.956	C-12	-492.021	-1145.760	175.790	C-14	-713.009	-1458.450	-192.705
6 - 7	0.000	C-12	-883.489	1570.706	52.297	C-13	-379.451	469.172	-95.704
* 1	0.989	C-12	48.739	932.634	52.297	C-13	30.703	450.500	-95.704
* 2	1.978	C-12	961.881	913.962	52.297	C-13	422.391	431.828	-95.704
* 3	2.967	C-13	68.785	-321.755	-95.704	C-15	472.420	-472.592	31.490
7 - 6	3.956	C-13	-304.022	-1075.337	-95.704	C-15	-5.561	-1845.575	31.490
7 - 8	0.000	C-15	-6.982	16.237	0.000	C-11	-6.982	16.237	0.000
8 - 7	0.860	C-15	0.000	0.000	0.000	C-11	0.000	0.000	0.000
9 - 10	0.000	C-13	0.000	90.065	903.388	C-15	0.000	-0.059	0.000
10 - 9	0.860	C-11	206.603	480.473	0.000	C-15	153.389	358.472	0.000
10 - 11	0.000	C-13	597.574	-695.886	788.929	C-14	-61.043	-950.904	102.544
* 1	0.989	C-13	79.675	-350.206	788.929	C-15	-340.602	-477.299	-42.028
* 2	1.978	C-11	-755.450	167.760	81.736	C-15	-597.011	-38.982	-42.028
* 3	2.967	C-11	-316.301	720.306	81.736	C-13	87.696	363.219	788.929
11 - 10	3.956	C-11	669.316	1272.853	81.736	C-13	628.163	730.964	788.929
11 - 12	0.000	C-11	417.376	-787.966	162.105	C-15	502.393	-1163.784	-134.870
* 1	0.989	C-11	-88.688	-235.420	162.105	C-15	-413.012	-685.149	-134.870
* 2	1.978	C-11	-48.284	317.127	162.105	C-13	-24.022	-219.453	608.798
* 3	2.967	C-11	538.588	869.673	162.105	C-13	-48.905	170.356	608.798
12 - 11	3.956	C-11	1671.929	1422.219	162.105	C-13	315.365	567.518	608.798

S. M A X I M U M

S. M I N I M U M

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
12 - 13	0.000	C-13	906.425	-1048.354	413.430	C-15	-78.919	-1131.439	-182.234
* 1	0.989	C-11	673.691	-552.546	226.194	C-13	69.030	-643.837	413.430
* 2	1.978	C-11	400.457	0.000	226.194	C-13	-364.661	-231.966	413.430
* 3	2.967	C-11	573.691	552.546	226.194	C-13	-387.374	187.261	413.430
13 - 12	3.956	C-11	1493.394	1105.093	226.194	C-13	8.166	613.842	413.430
13 - 14	0.000	C-15	-366.438	-920.103	-145.190	C-11	1671.929	-1422.219	162.105
* 1	0.989	C-15	-987.677	-333.954	-145.190	C-11	538.588	-869.673	162.105
* 2	1.978	C-15	-1022.569	265.634	-145.190	C-11	-48.284	-317.127	162.105
* 3	2.967	C-15	-457.822	878.662	-145.190	C-11	-88.683	235.420	162.105
14 - 13	3.956	C-15	719.855	1505.129	-145.190	C-13	-97.884	735.389	232.686
14 - 15	0.000	C-13	290.687	-1052.963	104.770	C-12	520.162	-1303.781	-52.297
* 1	0.989	C-13	-522.081	-580.436	104.770	C-11	-316.301	-720.306	81.736
* 2	1.978	C-15	-882.097	3.042	-31.490	C-11	-755.450	-167.760	81.736
* 3	2.967	C-15	-550.470	669.828	-31.490	C-13	-754.272	359.533	104.770
15 - 14	3.956	C-15	447.253	1350.053	-31.490	C-13	-159.244	844.976	104.770
15 - 16	0.000	C-13	106.335	-337.222	0.000	C-12	259.735	-602.382	0.000
16 - 15	0.860	C-13	0.000	90.859	0.000	C-11	0.000	0.002	0.000
2 - 10	0.000	C-13	-365.726	105.393	-989.941	C-14	347.618	-102.544	-1340.753
* 1	1.500	C-13	-105.936	107.660	-1012.597	C-14	193.802	-102.544	-1363.409
* 2	3.000	C-13	57.254	109.926	-1035.253	C-14	39.986	-102.544	-1386.085
* 3	4.500	C-13	223.843	112.193	-1057.909	C-14	-113.830	-102.544	-1408.721
10 - 2	6.000	C-13	393.833	114.459	-1080.565	C-14	-267.645	-102.544	-1431.377
3 - 11	0.000	C-13	-517.622	171.064	-1617.345	C-14	259.621	-90.161	-1858.443
* 1	1.500	C-13	-359.326	173.331	-1640.001	C-14	124.379	-90.161	-1981.099
* 2	3.000	C-13	2.370	175.597	-1662.657	C-14	-10.863	-90.161	-2003.755
* 3	4.500	C-13	267.465	177.864	-1685.313	C-14	-146.105	-90.161	-2026.411
11 - 3	6.000	C-13	535.961	180.130	-1707.969	C-14	-281.347	-90.161	-2049.067
4 - 12	0.000	C-13	-553.954	186.303	-1525.248	C-14	213.488	-66.648	-2434.869
* 1	1.500	C-13	-272.901	188.569	-1547.904	C-14	113.516	-66.648	-2457.525
* 2	3.000	C-13	11.753	190.836	-1570.560	C-14	13.543	-66.648	-2480.181
* 3	4.500	C-13	299.706	193.102	-1593.216	C-14	-86.429	-66.648	-2502.837
12 - 4	6.000	C-13	591.059	195.369	-1615.872	C-14	-186.402	-66.648	-2525.493
5 - 13	0.000	C-13	-512.096	171.678	-1568.095	C-12	117.311	-39.603	-1910.063
* 1	1.500	C-13	-352.879	173.945	-1590.751	C-12	57.907	-39.603	-1932.719
* 2	3.000	C-13	9.737	176.211	-1613.407	C-12	-1.498	-39.603	-1955.375
* 3	4.500	C-13	275.754	178.478	-1636.063	C-12	-60.903	-39.603	-1978.031
13 - 5	6.000	C-13	545.170	180.744	-1658.719	C-12	-120.307	-39.603	-2000.687
6 - 14	0.000	C-13	-351.726	118.850	-1697.728	C-12	391.468	-123.493	-2716.466
* 1	1.500	C-13	-171.752	121.116	-1720.384	C-12	206.229	-123.493	-2739.122
* 2	3.000	C-13	11.623	123.383	-1743.040	C-12	20.990	-123.493	-2761.778
* 3	4.500	C-13	198.397	125.649	-1765.696	C-12	-164.250	-123.493	-2784.434
14 - 6	6.000	C-13	388.571	127.916	-1788.352	C-12	-349.489	-123.493	-2807.090
7 - 15	0.000	C-14	-347.618	102.544	-1340.753	C-12	59.585	-52.297	-1848.240
* 1	1.500	C-14	-193.802	102.544	-1363.409	C-12	-18.881	-52.297	-1870.895
* 2	3.000	C-14	-39.986	102.544	-1386.065	C-12	-97.327	-52.297	-1893.552
* 3	4.500	C-14	113.830	102.544	-1408.721	C-12	-175.773	-52.297	-1916.208
15 - 7	6.000	C-13	265.570	104.770	-1162.198	C-12	-254.218	-52.297	-1938.864

N. MAXIMUM

N. MINIMUM

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
1 - 2	0.000	C-11	0.000	0.000	0.000	C-13	0.000	0.000	-848.992
2 - 1	0.860	C-11	-6.982	-16.237	0.000	C-13	-45.785	-16.237	-848.992
2 - 3	0.000	C-12	114.064	1140.217	62.836	C-13	219.941	973.704	-743.599
* 1	0.989	C-12	368.094	246.835	62.836	C-13	402.986	220.122	-743.599
* 2	1.978	C-12	602.783	227.953	62.836	C-13	566.829	201.449	-743.599
* 3	2.967	C-12	-46.282	-665.620	62.836	C-13	-14.621	-552.133	-743.599
3 - 2	3.956	C-12	-713.813	-684.292	62.836	C-13	-614.537	-570.805	-743.599
3 - 4	0.000	C-12	-405.919	1278.590	165.470	C-13	-96.915	1046.540	-572.534
* 1	0.989	C-12	-15.038	385.008	165.470	C-13	158.164	292.957	-572.534
* 2	1.978	C-12	356.501	366.335	165.470	C-13	394.042	274.285	-572.534
* 3	2.967	C-12	-155.713	-527.247	165.470	C-13	-115.373	-479.297	-572.534
4 - 3	3.956	C-12	-686.394	-545.919	165.470	C-13	-643.255	-497.970	-572.534
4 - 5	0.000	C-12	-541.773	1328.106	215.393	C-13	-89.301	1027.279	-386.232
* 1	0.989	C-12	-101.921	434.523	215.393	C-13	146.730	273.697	-386.232
* 2	1.978	C-12	318.589	415.851	215.393	C-13	363.559	255.024	-386.232
* 3	2.967	C-12	-144.654	-477.731	215.393	C-13	-164.905	-498.558	-386.232
5 - 4	3.956	C-12	-627.098	-1231.314	215.393	C-13	-712.571	-1252.140	-386.232
5 - 6	0.000	C-12	-744.410	678.749	175.790	C-13	-200.475	315.954	-214.554
* 1	0.989	C-12	-220.680	520.077	175.790	C-13	58.146	297.282	-214.554
* 2	1.978	C-12	284.442	501.404	175.790	C-13	298.301	278.610	-214.554
* 3	2.967	C-12	-94.188	-392.178	175.790	C-13	-206.838	-474.973	-214.554
6 - 5	3.956	C-12	-492.021	-1145.760	175.790	C-13	-731.178	-1228.955	-214.554
6 - 7	0.000	C-12	-883.489	1570.706	52.297	C-14	-453.388	499.993	-102.544
* 1	0.989	C-12	48.739	932.634	52.297	C-14	31.871	481.320	-102.544
* 2	1.978	C-12	961.881	913.962	52.297	C-14	498.664	462.648	-102.544
* 3	2.967	C-12	517.142	-459.021	52.297	C-14	81.703	-430.934	-102.544
7 - 6	3.956	C-12	52.583	-1832.003	52.297	C-14	-354.599	-1324.517	-102.544
7 - 8	0.000	C-14	-6.982	16.237	0.000	C-11	-6.982	16.237	0.000
8 - 7	0.860	C-14	0.000	0.000	0.000	C-11	0.000	0.000	0.000
9 - 10	0.000	C-13	0.000	90.065	903.388	C-11	0.000	-0.002	0.000
10 - 9	0.860	C-13	203.741	384.679	903.388	C-11	206.603	480.473	0.000
10 - 11	0.000	C-13	597.574	-695.886	788.929	C-12	409.357	-888.606	-62.836
* 1	0.989	C-13	79.675	-350.206	788.929	C-12	-260.480	-463.728	-62.836
* 2	1.978	C-13	-92.709	2.829	788.929	C-12	-503.466	-25.411	-62.836
* 3	2.967	C-13	87.696	363.219	788.929	C-12	-306.312	426.345	-62.836
11 - 10	3.956	C-13	628.163	730.964	788.929	C-12	344.275	891.541	-62.836
11 - 12	0.000	C-13	1164.124	-977.005	608.798	C-12	652.189	-1161.965	-165.470
* 1	0.989	C-13	382.746	-601.906	608.798	C-12	-261.417	-683.330	-165.470
* 2	1.978	C-13	-24.022	-219.453	608.798	C-12	-695.008	-191.256	-165.470
* 3	2.967	C-13	-48.906	170.356	608.798	C-12	-635.291	314.257	-165.470
12 - 11	3.956	C-13	315.366	567.518	608.798	C-12	-68.976	833.210	-165.470

PICK-UP No. 2 *

N. MAXIMUM N. MINIMUM

No.	L (m)	Case	M (tm)	S (t)	N (t)	Case	M (tm)	S (t)	N (t)
12 - 13	0.000	C-13	906.425	-1048.354	413.430	C-12	85.941	-1131.439	-215.393
* 1	0.989	C-13	69.030	-643.837	413.430	C-12	-770.892	-599.047	-215.393
* 2	1.978	C-13	-364.661	-221.966	413.430	C-12	-1094.644	-53.216	-215.393
* 3	2.967	C-13	-387.374	187.261	413.430	C-12	-871.723	506.055	-215.393
13 - 12	3.955	C-13	8.166	613.842	413.430	C-12	-89.138	1078.764	-215.393
13 - 14	0.000	C-13	553.336	-1044.876	232.686	C-12	-209.445	-921.922	-175.790
* 1	0.989	C-13	-266.064	-610.916	232.686	C-12	-832.483	-335.773	-175.790
* 2	1.978	C-13	-652.615	-169.552	232.686	C-12	-869.174	263.815	-175.790
* 3	2.967	C-13	-598.996	279.217	232.686	C-12	-306.227	875.843	-175.790
14 - 13	3.956	C-13	-97.884	735.389	232.686	C-12	869.651	1503.309	-175.790
14 - 15	0.000	C-13	290.687	-1052.963	104.770	C-12	520.162	-1303.781	-52.297
* 1	0.989	C-13	-522.081	-589.436	104.770	C-12	-453.952	-663.875	-52.297
* 2	1.978	C-13	-872.809	-118.604	104.770	C-12	-788.552	-10.529	-52.297
* 3	2.967	C-13	-754.272	359.593	104.770	C-12	-470.347	656.256	-52.297
15 - 14	3.956	C-13	-159.244	844.976	104.770	C-12	513.954	1335.481	-52.297
15 - 16	0.000	C-11	206.603	-480.473	0.000	C-11	206.603	-480.473	0.000
16 - 15	0.860	C-11	0.000	0.002	0.000	C-11	0.000	0.002	0.000
2 - 10	0.000	C-13	-265.726	105.393	-989.941	C-14	347.618	-102.544	-1340.753
* 1	1.500	C-13	-105.936	107.660	-1012.597	C-14	193.802	-102.544	-1363.409
* 2	3.000	C-13	57.254	109.926	-1035.253	C-14	38.986	-102.544	-1386.065
* 3	4.500	C-13	223.843	112.193	-1057.909	C-14	-113.830	-102.544	-1408.721
10 - 2	6.000	C-13	393.833	114.459	-1080.565	C-14	-267.645	-102.544	-1431.377
3 - 11	0.000	C-13	-517.622	171.064	-1617.345	C-11	230.272	-80.369	-1970.195
* 1	1.500	C-13	-259.326	173.331	-1640.001	C-11	109.719	-80.369	-1992.851
* 2	3.000	C-13	2.370	175.597	-1662.657	C-11	-10.834	-80.369	-2015.507
* 3	4.500	C-13	267.465	177.864	-1685.313	C-11	-131.387	-80.369	-2038.163
11 - 3	6.000	C-13	535.961	180.130	-1707.969	C-11	-251.940	-80.369	-2060.819
4 - 12	0.000	C-13	-553.954	186.303	-1525.248	C-11	206.000	-64.089	-2435.688
* 1	1.500	C-13	-272.801	188.569	-1547.904	C-11	109.866	-64.089	-2459.344
* 2	3.000	C-13	11.753	190.836	-1570.560	C-11	13.732	-64.089	-2482.000
* 3	4.500	C-13	299.706	193.102	-1593.216	C-11	-82.402	-64.089	-2504.656
12 - 4	6.000	C-13	591.059	195.369	-1615.872	C-11	-178.535	-64.089	-2527.312
5 - 13	0.000	C-13	-512.096	171.678	-1588.095	C-11	-206.000	64.089	-2436.688
* 1	1.500	C-13	-252.879	173.945	-1590.751	C-11	-109.866	64.089	-2459.344
* 2	3.000	C-13	9.737	176.211	-1613.407	C-11	-13.732	64.089	-2482.000
* 3	4.500	C-13	275.754	178.478	-1636.063	C-11	82.402	64.089	-2504.656
13 - 5	6.000	C-13	545.170	180.744	-1658.719	C-11	178.535	64.089	-2527.312
6 - 14	0.000	C-13	-351.726	118.850	-1697.738	C-12	391.468	-123.493	-2716.466
* 1	1.500	C-13	-171.752	121.116	-1720.384	C-12	206.229	-123.493	-2739.122
* 2	3.000	C-13	11.623	123.383	-1743.040	C-12	20.930	-123.493	-2761.778
* 3	4.500	C-13	198.397	125.649	-1765.696	C-12	-164.250	-123.493	-2784.434
14 - 6	6.000	C-13	388.571	127.915	-1788.352	C-12	-349.489	-123.493	-2807.090
7 - 15	0.000	C-13	-335.843	95.704	-1091.574	C-15	1.421	-31.490	-1861.811
* 1	1.500	C-13	-190.587	97.971	-1114.230	C-15	-45.814	-31.490	-1884.457
* 2	3.000	C-13	-41.932	100.237	-1136.886	C-15	-93.048	-31.490	-1907.123
* 3	4.500	C-13	110.124	102.504	-1159.542	C-15	-140.283	-31.490	-1929.779

UHURU - PIER

Longitudinal direction

Calculation of pillar

action force for bottom of pillar (S.L.S)

		N^{KN}	H^{KN}	y^m	$M = H \cdot y^{KNm}$
Super structure	Rd	8084.0	—	—	—
	R ϕ	2978.2	—	—	—
Braking		—	504.0	6.100	3074.4
Seismic		—	1310.2	6.100	7992.3
beam		$23.6 \times 1.00 \times 0.80$ $\times 21.5 = 406.0$	40.6	5.500	223.3
Pillar		$23.6 \times 0.80 \times 0.80$ $\times 5.00 \times 6 = 453.2$	45.4	2.500	113.5
Braking		11921.4	504.0	—	3074.4
Seismic		8943.2	1396.2	—	8329.1

action force for bottom of pillar (U.L.S)

	N^{KN}	H^{KN}	M^{KNm}
Braking	11921.4×1.2 $\times 1.15 = 16451.6$	$504.0 \times 1.25 \times 1.1$ $= 693.0$	$3074.4 \times 1.25 \times 1.1$ $= 4227.3$
Seismic	$8943.2 \times 1.2 \times 1.15$ $= 12341.7$	$1396.2 \times 1.5 \times 1.1$ $= 2303.8$	$8329.1 \times 1.5 \times 1.1$ $= 13743.1$

Calculation of stress for U.L.S.

for action force of one pillar

$$N = 12341.7/6 = 2057.0 \text{ KN}$$

$$H = 2303.8/6 = 384.0 \text{ KN}$$

$$M = 13743.1/6 = 2290.5 \text{ KNm}$$

$$\text{section } b = 80 \text{ cm} \quad h = 80 \quad d = 67.5 \quad d' = 12.5$$

$$M_a = M + N \left(d - \frac{h}{2} \right) = 2290.5 + 2057.0 \left(67.5 - \frac{8.00}{2} \right) \times 10^{-3} = 2856.2 \text{ KNm}$$

$$A_s = A_s' = Y_{32} - 16^{N0} = 8.042 \times 18^{N0} = 144.76 \text{ cm}^2$$

$$x = \frac{(0.87 - 0.72) \times 41000 \times 144.76}{0.40 \times 2500 \times 80.0} = 11.4 \text{ cm}$$

$$Z = 67.5 - \frac{11.4}{2} = 61.8 \text{ cm} < 0.95 \times 67.5 = 64.1 \text{ cm} \text{ OK}$$

$$M_{RS} = 0.87 \times 41000 \times 144.76 \times 61.8 \times 10^{-5} = 3191.1 \text{ KNm} > M_a = 2856.2 \text{ KNm}$$

$$M_{RC} = (0.72 \times 41000 \times 144.76 \times 55.0 + 0.40 \times 2500 \times 80.0 \times 11.4 \times 61.8) \times 10^{-5} = 2913.9 \text{ KNm} > M_a = 2856.2 \text{ KNm} \text{ OK}$$

$$A_{sn} = A'_{sn} = A_s - \frac{N}{0.87 f_y} = 144.76 - \frac{2057.0 \times 10^3}{0.87 \times 41000} = 87.1 \text{ cm}^2$$

$$< A_{su} = A'_{su} = Y_{32} - 6^{N0} \times 2 = 8.042 \times 12^{N0} = 96.50 \text{ cm}^2 \text{ OK}$$

$$P = \frac{A_{su}}{bd} \times 100 = \frac{96.50}{80 \times 67.5} \times 100 = 1.787 \%$$

$$V_c = \frac{N}{bd} = \frac{384.0 \times 10^3}{80 \times 67.5} = 71.2 \text{ N/cm}^2$$

$$< V_{ca} = 65.0 + 20.0 \left(\frac{1.787 - 1.00}{1.00} \right) = 80.7 \text{ N/cm}^2 \text{ OK}$$

U H U R U - P I E R

Calculation of stability for Foundation

1) action force for bottom of Foundation

(1) Longitudinal direction for S.L.S.

load		N ^{KN}	H ^{KN}	y ^m	M = H · y ^{KNm}
State					
Super structure	Rd	8084.0	—	—	—
	R ϕ	2978.2	—	—	—
beam		$23.6 \times 21.50 \times 1.00$ $\times 0.80 = 406.0$	40.6	6.50	263.9
Pillar		$23.6 \times 0.80^2 \times 5.00$ $\times 6 = 453.2$	45.4	3.500	158.9
footing		$23.6 \times 21.50 \times 4.00$ $\times 1.00 = 2029.6$	203.0	0.500	101.5
surcharge		$18.6 \times 21.50 \times 4.00$ $\times 1.00 = 1599.6$	—	—	—
Braking		—	504.0	7.100	3578.4
Seismic		—	1310.2	7.100	9302.5
Braking		15550.6	504.0	—	3578.4
Seismic		12572.4	1599.2	—	9826.8

(2) Longitudinal load for U.L.S.

load	N ^{KN}	H ^{KN}	M ^{KNm}
Braking	15550.6×1.2 $\times 1.15 = 21460.0$	$504.0 \times 1.25 \times 1.1$ $= 693.0$	$3578.4 \times 1.25 \times 1.1$ $= 4920.3$
Seismic	12572.4×1.2 $\times 1.15 = 17350.0$	$1599.2 \times 1.5 \times 1.1$ $= 2638.7$	$9826.8 \times 1.5 \times 1.1$ $= 16214.3$

2) Stability of Foundation for Longitudinal direction.

(1) For S.L.S

(a) Braking state

$$e = \frac{M}{N} = \frac{3578.4}{15550.6} = 0.231^m < \frac{B}{6} = \frac{4.00}{6} = 0.667^m$$

$$q = \frac{N}{B \cdot L} \left(1 \pm \frac{6e}{B}\right) = \frac{15550.6}{4.00 \times 21.50} \left(1 \pm \frac{6 \times 0.231}{4.00}\right) = \begin{cases} 243.5 \text{ KN/m}^2 \\ 118.2 \text{ KN/m}^2 \end{cases} < q_a = 350 \text{ KN/m}^2$$

$$F = \frac{N \cdot \mu}{H} = \frac{15550.6 \times 0.50}{504.0} = 15.4 > 1.5 \quad \text{OK}$$

(b) Seismic state

$$e = \frac{M}{N} = \frac{9826.8}{12572.4} = 0.782^m > \frac{B}{6} = 0.667^m$$

$$x = \frac{B}{2} - e = \frac{4.00}{2} - 0.782 = 1.218^m$$

$$q_{\max} = \frac{2 \cdot N}{3 \cdot x \cdot L} = \frac{2 \times 12572.4}{3 \times 1.218 \times 21.50} = 320.1 \text{ KN/m}^2 < q_a = 350 \text{ KN/m}^2$$

$$F_s = \frac{N \cdot \mu}{H} = \frac{12572.4 \times 0.50}{1599.2} = 3.9 > 1.5 \quad \text{OK}$$

(2) For U.L.S

a) Braking state

$$e = \frac{M}{N} = \frac{4920.3}{21460.0} = 0.230^m < \frac{B}{6} = 0.667^m$$

$$q = \frac{N}{B \cdot L} \left(1 \pm \frac{6e}{B}\right) = \frac{21460.0}{4.00 \times 21.50} \left(1 \pm \frac{6 \times 0.230}{4.00}\right) = \begin{cases} 335.7 \text{ KN/m}^2 \\ 163.4 \text{ KN/m}^2 \end{cases} < q_a = 525 \text{ KN/m}^2$$

$$F_s = \frac{N \cdot \mu}{H} = \frac{21460.0 \times 0.50}{693.0} = 15.5 > 1.1 \quad \text{OK}$$

b) Seismic state

$$e = \frac{M}{N} = \frac{16214.3}{17350.0} = 0.935^m > \frac{B}{6} = 0.667^m$$

$$x = \frac{B}{2} - e = \frac{4.00}{2} - 0.935 = 1.065^m$$

$$q_{\max} = \frac{2 \cdot N}{3 \cdot x \cdot L} = \frac{2 \times 17350.0}{3 \times 1.065 \times 21.50} = 505.2 \text{ KN/m}^2 < q_a = 525 \text{ KN/m}^2$$

$$F_s = \frac{N \cdot \mu}{H} = \frac{17350 \times 0.50}{2638.7} = 3.3 > 1.1 \quad \text{OK}$$