Wednesday, June 05, 2019

Auric Solar
2310 S 1300 W
West Valley City, UT

RE: ROOF EVALUATION FOR 1915 SOUTHEAST 142ND AVENUE, PORTLAND, OR

As per your request I evaluated the roof for the residence located at 1915 Southeast 142nd Avenue, Portland, Oregon. The existing roof framing consists of 2x4 rafters at 24" o.c. and 2x4 hip beams where the solar panels will be located. The following loads were used in the analysis of the roof framing:

Dead load	12.0 psf
Solar panels	3.0 psf
Snow load	25.0 psf

It was found that the existing rafters and hip beams do not have adequate capacity to support the additional weight of the solar panels. It is my recommendation that reinforcement is added according to details 2 and 3 on sheet S1.0 in order for the roof framing to safely and adequately support the solar panels in the roof sections labelled TL-1 and TL-3 following the reinforcement callouts on sheets SK-5 and SK-3.

The mounting hardware should be installed such that the loads can be evenly distributed along the rafters. The racking should be installed per the manufacturer's specifications directly to the rafters.

I can be reached at 435-654-6600 extension 123 with any questions.

Respectfully,

REGISTERED PROFESSIONAL ENGINEER
92284PE
OREGON
MAY 9, 2017
ADAM J. HUFF

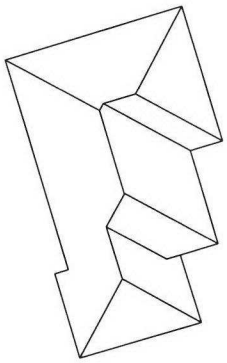
6/5/19

EXPIRES: 6/30/19

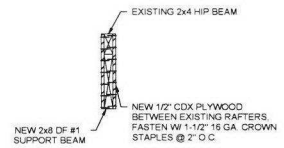
Adam Huff, S.E.

Epic Engineering, P.C.

19.1040 Rev 1 RS



1 ROOF LEGEND
N.T.S.



3 HIP BEAM REINFORCEMENT
N.T.S.

CONSTRUCTION NOTES

DATE

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: EPIC
DESIGNER: EPIC
REVIEWED: EPIC
PROJECT #

SCALES

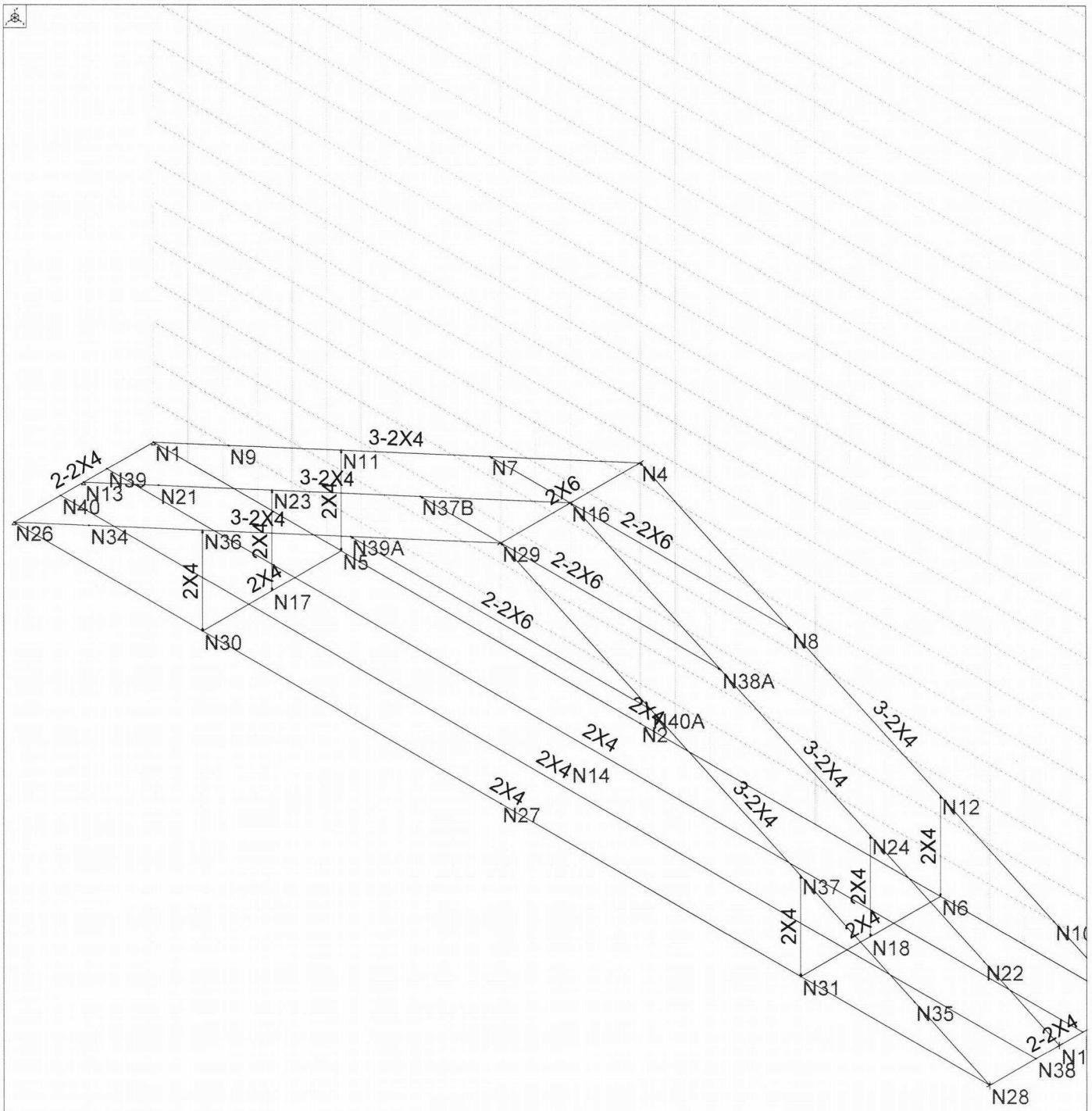
PROJECT NAME:
BRIAN LYNE

PROJECT LOCATION:

SHEET TITLE:
STRUCTURAL DETAILS

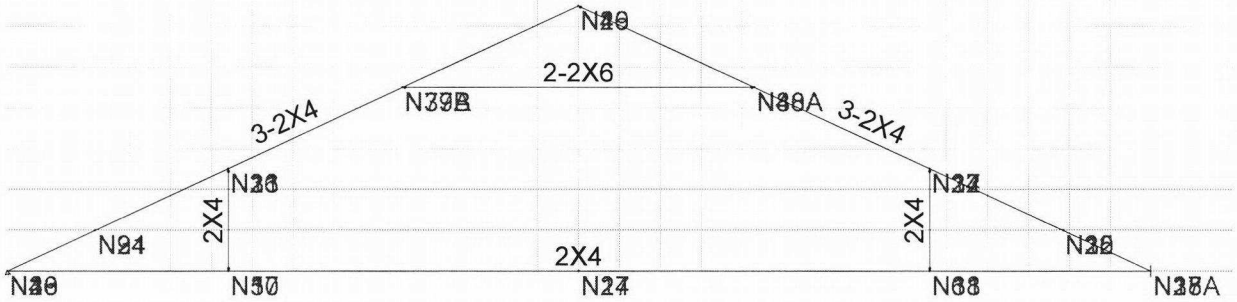
PLAN SET: PERMIT

SHEET S1.0



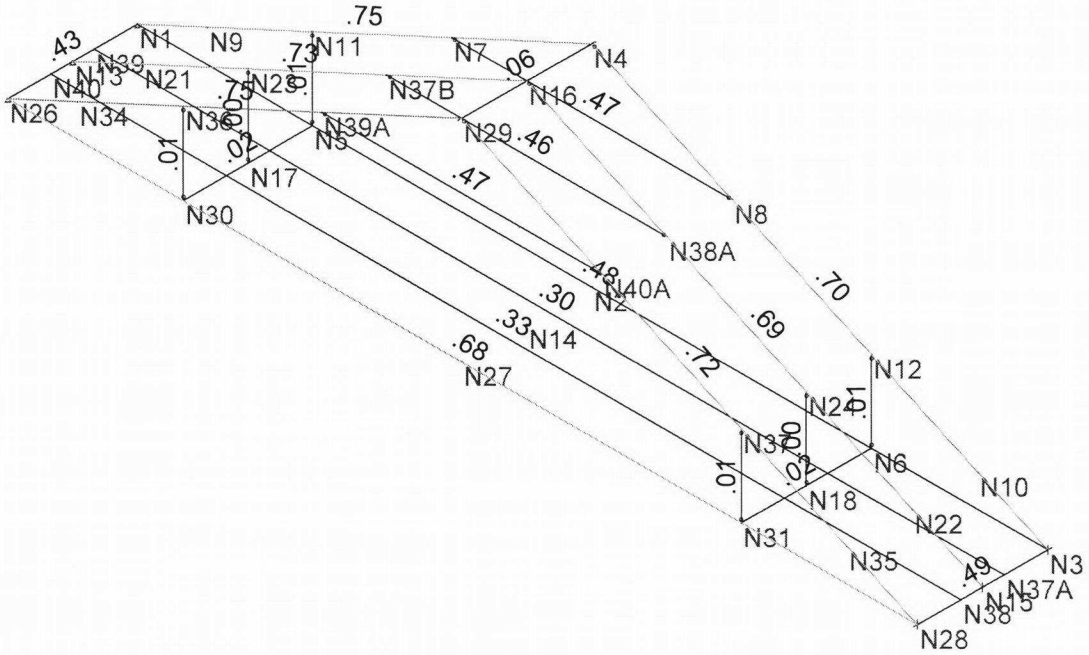
Envelope Only Solution

		SK - 3
		May 29, 2019 at 2:58 PM
	TL-1 Revised Layout	untitled.r3d



Envelope Only Solution

		SK - 5
		May 29, 2019 at 2:59 PM
	TL-1 Revised Reinforcement	untitled.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 1
		May 29, 2019 at 3:37 PM
	TL-1 Revised Unity	Lyne - TL-1 Revised.r3d

Wood Material Properties

	Label	Type	Database	Species	Grade	Cm	Emod	Nu	Therm...	Dens[k/f...
1	DF	Solid Sa...	Visually Graded	Douglas Fir-Larch	No.2		1	.3	.3	.035
2	SP	Solid Sa...	Visually Graded	Southern Pine	No.1		1	.3	.3	.035
3	HF	Solid Sa...	Visually Graded	Hem-Fir	No.1		1	.3	.3	.035
4	SPF	Solid Sa...	Visually Graded	Spruce-Pine-fir	No.1		1	.3	.3	.035
5	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_BAL	na		1	.3	.3	.035
6	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_UNBAL	na		1	.3	.3	.035
7	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_BAL	na		1	.3	.3	.035
8	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_UNBAL	na		1	.3	.3	.035

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2X4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255
4	2x6	2X6	Beam	None	DF	Typical	8.25	1.547	20.797	5.125
5	2x8	2X8	Beam	None	DF	Typical	10.875	2.039	47.635	7.093
6	(3) 2x4	3-2X4	Beam	None	DF	Typical	15.75	26.578	16.078	39.809

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
No Data to Print ...			

Member Distributed Loads (BLC 1 : DEAD)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.024	-.024	0	0
2	M3	Y	-.024	-.024	0	0
3	M8	Y	-.024	-.024	0	0
4	M10	Y	-.024	-.024	0	0
5	M14	Y	-.024	-.024	0	0
6	M16	Y	-.024	-.024	0	0

Member Distributed Loads (BLC 2 : SNOW)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.05	-.05	0	0
2	M3	Y	-.05	-.05	0	0
3	M8	Y	-.05	-.05	0	0
4	M10	Y	-.05	-.05	0	0
5	M14	Y	-.05	-.05	0	0
6	M16	Y	-.05	-.05	0	0

Member Distributed Loads (BLC 3 : SOLAR)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.006	-.006	%4.7	%67.9
2	M8	Y	-.006	-.006	%4.7	%67.9
3	M14	Y	-.006	-.006	%4.7	%67.9

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Pl...
1	DEAD	DL	-1					6		
2	SNOW	SL						6		
3	SOLAR	DL						3		

Load Combinations

	Description	Sol...	P...	SR...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	ASCE ASD 1	Yes			DL	1																		
2	ASCE ASD 2	Yes			DL	1	LL	1	LLS	1														
3	ASCE ASD 3 (a)	Yes			DL	1																		
4	ASCE ASD 3 (b)	Yes			DL	1	SL	1	SLN	1														
5	ASCE ASD 4 (b)	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	.236	1	1.208	4	0	1	0	1	0	1	0	1
2		min	.202	4	.438	1	-.003	4	0	1	0	1	0	1
3	N3	max	0	1	1.142	4	0	4	0	1	0	1	0	1
4		min	0	1	.364	1	0	1	0	1	0	1	0	1
5	N4	max	0	1	0	1	0	4	0	1	0	1	0	1
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	N13	max	.278	4	1.217	4	0	1	0	1	0	1	0	1
8		min	.244	1	.441	1	0	4	0	1	0	1	0	1
9	N15	max	0	1	1.13	4	.002	4	0	1	0	1	0	1
10		min	0	1	.36	1	0	1	0	1	0	1	0	1
11	N16	max	0	1	0	1	0	1	0	1	0	1	0	1
12		min	0	1	0	1	-.001	4	0	1	0	1	0	1
13	N26	max	.215	4	1.206	4	.003	4	0	1	0	1	0	1
14		min	.215	1	.437	1	0	1	0	1	0	1	0	1
15	N28	max	0	1	1.125	4	.005	4	0	1	0	1	0	1
16		min	0	1	.359	1	.002	1	0	1	0	1	0	1
17	N29	max	0	1	0	1	-.002	1	0	1	0	1	0	1
18		min	0	1	0	1	-.006	4	0	1	0	1	0	1
19	Totals:	max	.695	4	7.029	4	0	4						
20		min	.695	1	2.398	1	0	1						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
1	N1	max	0	4	0	1	0	4	8.012e-5	4	4.152e-4	4	-3.563e-3	1
2		min	0	1	0	4	0	1	2.177e-5	1	1.132e-4	1	-1.027e-2	4
3	N2	max	.016	4	-.201	1	.022	4	3.67e-4	4	-6.531e-5	1	-7.601e-5	1
4		min	.004	1	-.579	4	.007	1	1.115e-4	1	-2.824e-4	4	-7.662e-5	4
5	N3	max	.032	4	0	1	0	1	2.203e-5	4	1.698e-4	4	1.032e-2	4
6		min	.009	1	0	4	0	4	7.697e-6	1	4.62e-5	1	3.613e-3	1
7	N4	max	.016	4	-.018	1	0	1	7.112e-4	4	2.163e-4	4	-8.056e-4	1
8		min	.004	1	-.059	4	0	4	2.123e-4	1	6.305e-5	1	-1.578e-3	4
9	N5	max	.006	4	-.135	1	0	1	3.422e-4	4	-2.692e-5	4	-1.175e-3	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
10		min	.002	1	-.394	4	-.002	4	8.296e-5	1	-3.966e-5	1	-3.468e-3	4
11	N6	max	.026	4	-.142	1	.025	4	3.918e-4	4	3.793e-4	4	3.548e-3	4
12		min	.007	1	-.402	4	.007	1	1.401e-4	1	8.357e-5	1	1.255e-3	1
13	N7	max	.014	4	-.01	1	-.002	1	5.282e-4	4	1.213e-4	4	4.642e-3	4
14		min	0	1	-.055	4	-.007	4	1.547e-4	1	3.81e-5	1	1.668e-3	1
15	N8	max	.007	4	-.031	1	.004	4	3.471e-4	4	-6.595e-5	1	-1.652e-3	1
16		min	-.002	1	-.076	4	.001	1	1.049e-4	1	-2.241e-4	4	-4.626e-3	4
17	N9	max	.12	4	-.092	1	-.002	1	2.041e-4	4	2.915e-4	4	-3.007e-3	1
18		min	.042	1	-.265	4	-.007	4	5.718e-5	1	8.123e-5	1	-8.684e-3	4
19	N10	max	-.033	1	-.093	1	.004	4	8.036e-5	4	6.565e-5	4	8.751e-3	4
20		min	-.089	4	-.266	4	0	1	2.561e-5	1	1.649e-5	1	3.072e-3	1
21	N11	max	.176	4	-.134	1	-.003	1	3.641e-4	4	1.638e-4	4	2.799e-3	4
22		min	.06	1	-.394	4	-.011	4	1.039e-4	1	4.762e-5	1	1.093e-3	1
23	N12	max	-.055	1	-.142	1	.006	4	1.813e-4	4	-2.1e-5	1	-8.036e-4	1
24		min	-.148	4	-.402	4	.002	1	5.613e-5	1	-6.428e-5	4	-2.509e-3	4
25	N13	max	0	1	0	1	0	4	1.331e-5	4	1.237e-4	4	-4.018e-3	1
26		min	0	4	0	4	0	1	4.122e-6	1	3.772e-5	1	-1.156e-2	4
27	N14	max	0	1	0	1	0	1	0	1	0	1	0	1
28		min	0	1	0	1	0	1	0	1	0	1	0	1
29	N15	max	.048	4	0	1	0	1	2.056e-6	4	4.33e-4	4	1.158e-2	4
30		min	.014	1	0	4	0	4	4.8e-7	1	1.321e-4	1	4.042e-3	1
31	N16	max	.024	4	-.023	1	0	4	6.077e-4	4	2.451e-4	4	-8.053e-4	1
32		min	.007	1	-.076	4	0	1	1.853e-4	1	7.476e-5	1	-1.545e-3	4
33	N17	max	.007	4	-.137	1	0	1	5.358e-4	4	1.217e-4	4	-1.17e-3	1
34		min	.001	1	-.405	4	-.002	4	1.581e-4	1	3.627e-5	1	-3.475e-3	4
35	N18	max	.036	4	-.147	1	.025	4	5.729e-4	4	4.744e-4	4	3.563e-3	4
36		min	.01	1	-.414	4	.007	1	1.94e-4	1	1.438e-4	1	1.258e-3	1
37	N21	max	.128	4	-.098	1	0	1	1.073e-4	4	1.096e-4	4	-3.037e-3	1
38		min	.044	1	-.281	4	-.002	4	3.277e-5	1	3.342e-5	1	-8.816e-3	4
39	N22	max	-.031	1	-.099	1	.009	4	2.204e-5	4	2.387e-4	4	8.911e-3	4
40		min	-.08	4	-.282	4	.003	1	6.608e-6	1	7.28e-5	1	3.131e-3	1
41	N23	max	.181	4	-.137	1	-.001	1	2.396e-4	4	1.097e-4	4	2.923e-3	4
42		min	.061	1	-.405	4	-.003	4	7.305e-5	1	3.344e-5	1	1.154e-3	1
43	N24	max	-.052	1	-.147	1	.014	4	7.822e-5	4	7.87e-7	4	-8.361e-4	1
44		min	-.138	4	-.414	4	.004	1	2.379e-5	1	2.471e-7	1	-2.602e-3	4
45	N26	max	0	1	0	1	0	1	-8.117e-6	1	-1.62e-4	1	-3.934e-3	1
46		min	0	4	0	4	0	4	-3.442e-5	4	-5.752e-4	4	-1.136e-2	4
47	N27	max	.029	4	-.209	1	.018	4	4.964e-4	4	-1.204e-4	1	-9.037e-5	1
48		min	.009	1	-.605	4	.005	1	1.633e-4	1	-3.554e-4	4	-9.039e-5	4
49	N28	max	.059	4	0	1	0	1	-2.142e-5	1	9.477e-4	4	1.141e-2	4
50		min	.018	1	0	4	0	4	-6.916e-5	4	2.946e-4	1	3.984e-3	1
51	N29	max	.029	4	-.027	1	0	4	4.354e-4	4	3.732e-4	4	-8.119e-4	1
52		min	.008	1	-.088	4	0	1	1.373e-4	1	1.166e-4	1	-1.565e-3	4
53	N30	max	.011	4	-.142	1	0	1	5.115e-4	4	1.97e-4	4	-1.164e-3	1
54		min	.003	1	-.418	4	-.002	4	1.755e-4	1	9.349e-5	1	-3.482e-3	4
55	N31	max	.048	4	-.151	1	.025	4	4.813e-4	4	4.474e-4	4	3.578e-3	4
56		min	.014	1	-.427	4	.007	1	1.511e-4	1	1.707e-4	1	1.261e-3	1
57	N34	max	.129	4	-.098	1	.011	4	-3.52e-6	1	-8.72e-5	1	-3.122e-3	1
58		min	.045	1	-.283	4	.003	1	-2.751e-5	4	-3.111e-4	4	-9.072e-3	4
59	N35	max	-.028	1	-.099	1	.018	4	-3.554e-5	1	5.775e-4	4	9.163e-3	4
60		min	-.07	4	-.284	4	.006	1	-1.145e-4	4	1.796e-4	1	3.213e-3	1
61	N36	max	.187	4	-.142	1	.016	4	1.994e-5	4	8.586e-6	4	2.736e-3	4

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
62		min	.063	1	-.418	4	.005	1	1.313e-5	1	4.948e-6	1	1.09e-3	1
63	N37	max	-.05	1	-.151	1	.029	4	-4.108e-5	1	1.261e-4	4	-7.829e-4	1
64		min	-.133	4	-.427	4	.009	1	-1.327e-4	4	3.982e-5	1	-2.429e-3	4
65	N37A	max	.039	4	0	1	0	1	-2.315e-6	1	1.07e-3	4	1.084e-2	4
66		min	.011	1	0	4	0	4	-6.621e-6	4	3.252e-4	1	3.789e-3	1
67	N38	max	.047	4	0	1	0	1	2.1e-5	4	3.319e-5	4	1.12e-2	4
68		min	.014	1	0	4	0	4	6.495e-6	1	1.125e-5	1	3.909e-3	1
69	N39	max	.004	4	0	1	0	4	-6.47e-6	1	-9.343e-5	1	-3.758e-3	1
70		min	.001	1	0	4	0	1	-2.386e-5	4	-3.418e-4	4	-1.081e-2	4
71	N40	max	.005	4	0	1	0	4	1.084e-5	4	4.356e-4	4	-3.878e-3	1
72		min	.002	1	0	4	0	1	2.592e-6	1	1.221e-4	1	-1.117e-2	4
73	N37B	max	.022	4	-.014	1	0	1	3.95e-4	4	1.481e-4	4	4.515e-3	4
74		min	.003	1	-.071	4	-.002	4	1.204e-4	1	4.516e-5	1	1.62e-3	1
75	N38A	max	.015	4	-.037	1	.01	4	2.101e-4	4	-7.664e-5	1	-1.624e-3	1
76		min	0	1	-.094	4	.003	1	6.404e-5	1	-2.515e-4	4	-4.516e-3	4
77	N39A	max	.028	4	-.018	1	.01	4	1.46e-4	4	2.663e-4	4	4.579e-3	4
78		min	.004	1	-.084	4	.003	1	5.084e-5	1	8.002e-5	1	1.645e-3	1
79	N40A	max	.021	4	-.041	1	.022	4	-1.653e-5	1	-9.321e-5	1	-1.646e-3	1
80		min	.002	1	-.106	4	.007	1	-5.749e-5	4	-2.973e-4	4	-4.579e-3	4

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
1	M1	1	max	2.245	4	.345	4	0	1	-.001	1	.023	4	.227	4
2			min	.819	1	.122	1	-.002	4	-.004	4	.006	1	.082	1
3		2	max	2.103	4	.075	4	0	1	-.001	1	.016	4	-.211	1
4			min	.759	1	.027	1	-.002	4	-.004	4	.004	1	-.59	4
5		3	max	1.942	4	-.084	1	0	1	-.002	1	.008	4	-.102	1
6			min	.689	1	-.233	4	-.002	4	-.005	4	.002	1	-.29	4
7		4	max	.188	4	.248	4	0	1	-.002	1	.002	4	.468	4
8			min	.065	1	.085	1	-.002	4	-.007	4	0	1	.178	1
9		5	max	.055	4	.007	1	0	1	-.002	1	0	1	0	1
10			min	.012	1	-.005	4	-.002	4	-.007	4	-.005	4	0	4
11	M3	1	max	2.074	4	.339	4	0	1	.007	4	.01	4	.221	4
12			min	.644	1	.116	1	0	4	.002	1	.003	1	.075	1
13		2	max	1.968	4	.074	4	0	1	.007	4	.006	4	-.199	1
14			min	.619	1	.026	1	0	4	.002	1	.002	1	-.577	4
15		3	max	1.847	4	-.076	1	0	1	.008	4	.005	4	-.104	1
16			min	.59	1	-.225	4	0	4	.002	1	.001	1	-.293	4
17		4	max	.158	4	.244	4	0	1	.005	4	.003	4	.432	4
18			min	.03	1	.082	1	0	4	.002	1	0	1	.142	1
19		5	max	.052	4	-.008	1	0	1	.005	4	0	1	0	1
20			min	.005	1	-.021	4	0	4	.002	1	0	1	0	1
21	M4	1	max	1.778	4	0	1	0	1	.003	4	0	1	0	1
22			min	.623	1	0	1	0	1	0	1	0	1	0	1
23		2	max	1.77	4	0	1	0	1	.003	4	0	1	0	1
24			min	.614	1	0	1	0	1	0	1	0	1	0	1
25		3	max	1.761	4	0	1	0	1	.003	4	0	1	0	1
26			min	.606	1	0	1	0	1	0	1	0	1	0	1
27		4	max	1.752	4	0	1	0	1	.003	4	0	1	0	1
28			min	.597	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
29		5	max	1.744	4	0	1	0	1	.003	4	0	1	0	1
30			min	.588	1	0	1	0	1	0	1	0	1	0	1
31	M5	1	max	-.012	1	-.002	4	0	1	.002	4	0	1	0	1
32			min	-.036	4	-.002	1	0	1	0	1	0	1	0	1
33		2	max	-.012	1	0	4	0	1	.002	4	0	1	0	1
34			min	-.036	4	0	1	0	1	0	1	0	1	0	4
35		3	max	-.012	1	0	1	0	1	.002	4	0	1	.001	1
36			min	-.036	4	0	1	0	1	0	1	0	1	.001	4
37		4	max	-.012	1	0	4	0	1	.002	4	0	1	0	1
38			min	-.036	4	0	1	0	1	0	1	0	1	0	4
39		5	max	-.012	1	.002	4	0	1	.002	4	0	1	0	1
40			min	-.036	4	.002	1	0	1	0	1	0	1	0	1
41	M6	1	max	-.015	1	-.002	1	0	1	0	1	0	1	0	1
42			min	-.039	4	-.002	4	0	1	0	4	0	1	0	1
43		2	max	-.015	1	0	1	0	1	0	1	0	1	0	4
44			min	-.039	4	0	4	0	1	0	4	0	1	0	1
45		3	max	-.015	1	0	1	0	1	0	1	0	1	.001	4
46			min	-.039	4	0	1	0	1	0	4	0	1	.001	1
47		4	max	-.015	1	0	1	0	1	0	1	0	1	0	4
48			min	-.039	4	0	4	0	1	0	4	0	1	0	1
49		5	max	-.015	1	.002	1	0	1	0	1	0	1	0	1
50			min	-.039	4	.002	4	0	1	0	4	0	1	0	1
51	M7	1	max	-.21	1	-.007	1	0	1	0	1	.003	4	-.046	1
52			min	-.776	4	-.019	4	0	4	0	4	0	1	-.127	4
53		2	max	-.221	1	0	4	0	1	0	4	0	4	-.007	1
54			min	-.787	4	0	1	0	4	0	1	0	1	-.023	4
55		3	max	-.23	1	0	4	0	1	0	4	0	1	-.008	1
56			min	-.796	4	0	1	0	4	0	1	0	4	-.024	4
57		4	max	-.239	1	0	4	0	1	0	4	0	1	-.01	1
58			min	-.805	4	0	1	0	4	0	1	-.001	4	-.026	4
59		5	max	-.25	1	.018	4	0	4	0	4	.002	4	-.042	1
60			min	-.815	4	.006	1	0	1	0	1	0	1	-.123	4
61	M8	1	max	2.166	4	.32	4	0	1	-.002	1	.007	4	.111	4
62			min	.795	1	.112	1	0	4	-.006	4	.002	1	.039	1
63		2	max	2.024	4	.05	4	0	1	-.002	1	.005	4	-.218	1
64			min	.735	1	.018	1	0	4	-.006	4	.001	1	-.61	4
65		3	max	1.879	4	-.081	1	0	1	-.002	1	.002	4	-.095	1
66			min	.671	1	-.224	4	0	4	-.006	4	0	1	-.275	4
67		4	max	.152	4	.245	4	0	1	-.003	1	.001	4	.458	4
68			min	.056	1	.084	1	0	4	-.008	4	0	1	.175	1
69		5	max	.018	4	.006	1	0	1	-.003	1	0	1	0	4
70			min	.003	1	-.008	4	0	4	-.008	4	-.001	4	0	1
71	M10	1	max	1.977	4	.316	4	0	1	.007	4	.023	4	.11	4
72			min	.614	1	.108	1	-.002	4	.002	1	.007	1	.038	1
73		2	max	1.87	4	.051	4	0	1	.007	4	.016	4	-.206	1
74			min	.588	1	.018	1	-.002	4	.002	1	.005	1	-.597	4
75		3	max	1.764	4	-.073	1	0	1	.008	4	.012	4	-.1	1
76			min	.564	1	-.215	4	-.002	4	.002	1	.004	1	-.28	4
77		4	max	.103	4	.241	4	0	1	.005	4	.007	4	.42	4
78			min	.014	1	.081	1	-.002	4	.002	1	.002	1	.138	1
79		5	max	-.004	4	-.009	1	0	1	.005	4	0	1	0	1
80			min	-.012	1	-.024	4	-.002	4	.002	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
81	M12	1	max	0	1	-.002	4	0	1	.002	4	0	1	0	1
82			min	0	4	-.002	1	0	1	0	1	0	1	0	1
83		2	max	0	1	0	4	0	1	.002	4	0	1	0	1
84			min	0	4	0	1	0	1	0	1	0	1	0	4
85		3	max	0	1	0	1	0	1	.002	4	0	1	.001	1
86			min	0	4	0	1	0	1	0	1	0	1	.001	4
87		4	max	0	1	0	4	0	1	.002	4	0	1	0	1
88			min	0	4	0	1	0	1	0	1	0	1	0	4
89		5	max	0	1	.002	4	0	1	.002	4	0	1	0	1
90			min	0	4	.002	1	0	1	0	1	0	1	0	1
91	M13	1	max	0	1	-.002	1	0	1	0	4	0	1	0	1
92			min	-.001	4	-.002	4	0	1	0	1	0	1	0	1
93		2	max	0	1	0	1	0	1	0	4	0	1	0	4
94			min	-.001	4	0	4	0	1	0	1	0	1	0	1
95		3	max	0	1	0	1	0	1	0	4	0	1	.001	4
96			min	-.001	4	0	1	0	1	0	1	0	1	.001	1
97		4	max	0	1	0	1	0	1	0	4	0	1	0	4
98			min	-.001	4	0	4	0	1	0	1	0	1	0	1
99		5	max	0	1	.002	1	0	1	0	4	0	1	0	1
100			min	-.001	4	.002	4	0	1	0	1	0	1	0	1
101	M14	1	max	2.21	4	.333	4	.002	4	-.003	1	-.009	1	.16	4
102			min	.808	1	.117	1	0	1	-.008	4	-.032	4	.057	1
103		2	max	2.069	4	.063	4	.002	4	-.003	1	-.006	1	-.218	1
104			min	.748	1	.022	1	0	1	-.008	4	-.023	4	-.61	4
105		3	max	1.914	4	-.084	1	.002	4	-.002	1	-.004	1	-.1	1
106			min	.681	1	-.231	4	0	1	-.008	4	-.013	4	-.289	4
107		4	max	.169	4	.246	4	.002	4	-.003	1	0	1	.463	4
108			min	.059	1	.085	1	0	1	-.011	4	-.002	4	.177	1
109		5	max	.035	4	.007	1	.002	4	-.003	1	.007	4	0	1
110			min	.006	1	-.006	4	0	1	-.011	4	.002	1	0	4
111	M16	1	max	2.038	4	.328	4	-.001	1	.008	4	.048	4	.156	4
112			min	.633	1	.112	1	-.003	4	.003	1	.015	1	.053	1
113		2	max	1.931	4	.063	4	-.001	1	.008	4	.035	4	-.206	1
114			min	.608	1	.022	1	-.003	4	.003	1	.011	1	-.598	4
115		3	max	1.817	4	-.075	1	-.001	1	.009	4	.024	4	-.104	1
116			min	.581	1	-.222	4	-.003	4	.003	1	.008	1	-.293	4
117		4	max	.137	4	.243	4	-.001	1	.006	4	.013	4	.426	4
118			min	.024	1	.081	1	-.003	4	.002	1	.004	1	.14	1
119		5	max	.03	4	-.009	1	-.001	1	.006	4	0	1	0	1
120			min	-.002	1	-.022	4	-.003	4	.002	1	0	1	0	1
121	M18	1	max	-.007	1	-.002	4	0	1	.002	4	0	1	0	1
122			min	-.021	4	-.002	1	0	1	0	1	0	1	0	1
123		2	max	-.007	1	0	4	0	1	.002	4	0	1	0	1
124			min	-.021	4	0	1	0	1	0	1	0	1	0	4
125		3	max	-.007	1	0	1	0	1	.002	4	0	1	.001	1
126			min	-.021	4	0	1	0	1	0	1	0	1	.001	4
127		4	max	-.007	1	0	4	0	1	.002	4	0	1	0	1
128			min	-.021	4	0	1	0	1	0	1	0	1	0	4
129		5	max	-.007	1	.002	4	0	1	.002	4	0	1	0	1
130			min	-.021	4	.002	1	0	1	0	1	0	1	0	1
131	M19	1	max	-.009	1	-.002	1	0	1	0	4	0	1	0	1
132			min	-.023	4	-.002	4	0	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
133		2	max	-.009	1	0	1	0	1	0	4	0	1	0	4
134			min	-.023	4	0	4	0	1	0	1	0	1	0	1
135		3	max	-.009	1	0	1	0	1	0	4	0	1	.001	4
136			min	-.023	4	0	1	0	1	0	1	0	1	.001	1
137		4	max	-.009	1	0	1	0	1	0	4	0	1	0	4
138			min	-.023	4	0	4	0	1	0	1	0	1	0	1
139		5	max	-.009	1	.002	1	0	1	0	4	0	1	0	1
140			min	-.023	4	.002	4	0	1	0	1	0	1	0	1
141	M20	1	max	0	4	-.035	1	.003	4	-.009	1	-.001	1	.008	4
142			min	0	1	-.109	4	.001	1	-.026	4	-.004	4	.002	1
143		2	max	0	4	-.033	1	.003	4	-.009	1	0	1	.116	4
144			min	0	1	-.107	4	.001	1	-.026	4	0	4	.036	1
145		3	max	0	1	-.264	1	-.003	1	-.025	1	.005	4	-.117	1
146			min	0	4	-.858	4	-.008	4	-.072	4	.002	1	-.381	4
147		4	max	0	1	.199	4	-.003	1	-.004	1	0	1	.148	4
148			min	0	4	.061	1	-.008	4	-.01	4	-.003	4	.046	1
149		5	max	0	1	.202	4	-.003	1	-.004	1	-.004	1	-.016	1
150			min	0	4	.064	1	-.008	4	-.01	4	-.012	4	-.052	4
151	M21	1	max	0	1	.137	4	.012	4	.027	4	-.004	1	.024	4
152			min	0	4	.036	1	.003	1	.01	1	-.015	4	.006	1
153		2	max	0	1	.139	4	.012	4	.027	4	0	1	-.031	1
154			min	0	4	.039	1	.003	1	.01	1	-.003	4	-.114	4
155		3	max	0	4	.823	4	0	1	.073	4	.009	4	.33	4
156			min	0	1	.23	1	-.003	4	.025	1	.002	1	.092	1
157		4	max	0	4	-.055	1	0	1	.009	4	0	1	-.043	1
158			min	0	1	-.192	4	-.003	4	.003	1	-.002	4	-.154	4
159		5	max	0	4	-.052	1	0	1	.009	4	-.001	1	.037	4
160			min	0	1	-.19	4	-.003	4	.003	1	-.005	4	.01	1
161	M22	1	max	0	1	.001	4	0	1	0	4	.004	4	-.005	1
162			min	0	1	0	1	-.002	4	0	1	0	1	-.018	4
163		2	max	0	1	.001	4	-.001	1	0	4	.001	4	-.006	1
164			min	0	1	0	1	-.004	4	0	1	0	1	-.02	4
165		3	max	0	1	-.006	1	.008	4	0	1	-.002	1	-.009	1
166			min	0	1	-.021	4	.004	1	0	4	-.006	4	-.033	4
167		4	max	0	1	-.006	1	.006	4	0	1	0	4	-.003	1
168			min	0	1	-.021	4	.002	1	0	4	0	1	-.012	4
169		5	max	0	1	-.006	1	.004	4	0	1	.005	4	.009	4
170			min	0	1	-.021	4	0	1	0	4	.001	1	.003	1
171	M23	1	max	-.464	1	-.007	1	0	1	.001	4	.005	4	-.05	1
172			min	-1.509	4	-.022	4	-.001	4	0	1	.002	1	-.146	4
173		2	max	-.449	1	0	1	0	1	0	4	.002	4	-.01	1
174			min	-1.492	4	0	4	0	4	0	1	0	1	-.026	4
175		3	max	-.44	1	0	1	0	1	0	4	0	4	-.008	1
176			min	-1.483	4	0	4	0	4	0	1	0	1	-.024	4
177		4	max	-.431	1	0	1	0	1	0	4	0	1	-.007	1
178			min	-1.474	4	0	4	0	4	0	1	-.001	4	-.023	4
179		5	max	-.417	1	.024	4	0	4	0	1	.004	4	-.055	1
180			min	-1.459	4	.009	1	0	1	-.001	4	0	1	-.151	4
181	M24	1	max	-.25	1	-.006	1	0	4	0	4	0	1	-.042	1
182			min	-.815	4	-.018	4	0	1	0	1	-.002	4	-.123	4
183		2	max	-.239	1	0	1	0	1	0	4	.001	4	-.01	1
184			min	-.805	4	0	4	0	4	0	1	0	1	-.026	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
185		3	max	-.23	1	0	1	0	1	0	4	0	4	-.008	1
186			min	-.796	4	0	4	0	4	0	1	0	1	-.024	4
187		4	max	-.221	1	0	1	0	1	0	4	0	1	-.007	1
188			min	-.787	4	0	4	0	4	0	1	0	4	-.023	4
189		5	max	-.21	1	.019	4	0	1	0	1	0	1	-.046	1
190			min	-.776	4	.007	1	0	4	0	4	-.003	4	-.127	4
191	M25	1	max	0	1	.004	4	.001	4	0	4	0	1	.001	4
192			min	-.001	4	.004	1	0	1	0	1	-.001	4	.001	1
193		2	max	0	1	.003	4	.001	4	0	4	0	1	-.002	1
194			min	-.001	4	.002	1	0	1	0	1	0	4	-.002	4
195		3	max	0	1	.002	4	.001	4	0	4	0	4	-.004	1
196			min	-.001	4	.001	1	0	1	0	1	0	1	-.005	4
197		4	max	0	1	0	4	0	4	0	4	.001	4	-.002	1
198			min	-.001	4	-.002	1	0	1	0	1	0	1	-.005	4
199		5	max	0	1	-.002	4	0	4	0	4	.001	4	0	1
200			min	-.001	4	-.003	1	0	1	0	1	0	1	-.003	4
201	M26	1	max	0	1	.006	4	0	4	0	1	0	1	.006	4
202			min	-.001	4	.004	1	0	1	0	4	-.001	4	.003	1
203		2	max	0	1	.005	4	0	4	0	1	0	1	0	4
204			min	-.001	4	.003	1	0	1	0	4	0	4	-.001	1
205		3	max	0	1	.004	4	0	4	0	1	0	4	-.003	1
206			min	-.001	4	.002	1	0	1	0	4	0	1	-.004	4
207		4	max	0	1	0	4	0	4	0	1	0	4	-.002	1
208			min	-.001	4	-.001	1	0	1	0	4	0	1	-.003	4
209		5	max	0	1	0	4	0	4	0	1	.002	4	0	1
210			min	-.001	4	-.003	1	0	1	0	4	0	1	-.003	4
211	M27	1	max	-.242	1	0	4	0	1	0	1	0	4	-.016	1
212			min	-.871	4	0	1	0	4	0	4	0	1	-.046	4
213		2	max	-.251	1	0	4	0	1	0	1	0	1	-.016	1
214			min	-.879	4	0	1	0	4	0	4	0	4	-.046	4
215		3	max	-.26	1	0	4	0	1	0	1	0	1	-.016	1
216			min	-.888	4	0	1	0	4	0	4	0	4	-.046	4
217		4	max	-.269	1	0	4	0	1	0	1	0	1	-.016	1
218			min	-.897	4	0	1	0	4	0	4	0	4	-.046	4
219		5	max	-.278	1	0	4	0	1	0	1	0	1	-.016	1
220			min	-.906	4	0	1	0	4	0	4	-.001	4	-.046	4
221	M28	1	max	-.323	1	0	1	0	1	0	1	0	4	-.017	1
222			min	-1.054	4	0	4	0	4	0	4	0	1	-.048	4
223		2	max	-.314	1	0	1	0	1	0	1	0	4	-.017	1
224			min	-1.045	4	0	4	0	4	0	4	0	1	-.048	4
225		3	max	-.305	1	0	1	0	1	0	1	0	1	-.017	1
226			min	-1.036	4	0	4	0	4	0	4	0	4	-.048	4
227		4	max	-.296	1	0	1	0	1	0	1	0	1	-.016	1
228			min	-1.027	4	0	4	0	4	0	4	0	4	-.047	4
229		5	max	-.287	1	0	1	0	1	0	1	0	1	-.016	1
230			min	-1.018	4	0	4	0	4	0	4	0	4	-.047	4
231	M27A	1	max	1.749	4	0	1	0	1	.003	4	0	1	0	1
232			min	.613	1	0	1	0	1	0	1	0	1	0	1
233		2	max	1.74	4	0	1	0	1	.003	4	0	1	0	1
234			min	.605	1	0	1	0	1	0	1	0	1	0	1
235		3	max	1.732	4	0	1	0	1	.003	4	0	1	0	1
236			min	.596	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
237		4	max	1.723	4	0	1	0	1	.003	4	0	1	0	1
238			min	.587	1	0	1	0	1	0	1	0	1	0	1
239		5	max	1.714	4	0	1	0	1	.003	4	0	1	0	1
240			min	.579	1	0	1	0	1	0	1	0	1	0	1
241	M28A	1	max	1.77	4	0	1	0	1	.003	4	0	1	0	1
242			min	.621	1	0	1	0	1	.001	1	0	1	0	1
243		2	max	1.761	4	0	1	0	1	.003	4	0	1	0	1
244			min	.612	1	0	1	0	1	.001	1	0	1	0	1
245		3	max	1.752	4	0	1	0	1	.003	4	0	1	0	1
246			min	.603	1	0	1	0	1	.001	1	0	1	0	1
247		4	max	1.744	4	0	1	0	1	.003	4	0	1	0	1
248			min	.595	1	0	1	0	1	.001	1	0	1	0	1
249		5	max	1.735	4	0	1	0	1	.003	4	0	1	0	1
250			min	.586	1	0	1	0	1	.001	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	.143	4	.033	4	0	1	-.107	1	.297	4	.023	4	-.006	1
2			min	.052	1	.012	1	0	4	-.297	4	.107	1	.006	1	-.023	4
3		2	max	.134	4	.007	4	0	1	.77	4	-.275	1	.016	4	-.004	1
4			min	.048	1	.003	1	0	4	.275	1	-.77	4	.004	1	-.016	4
5		3	max	.123	4	-.008	1	0	1	.379	4	-.133	1	.008	4	-.002	1
6			min	.044	1	-.022	4	0	4	.133	1	-.379	4	.002	1	-.008	4
7		4	max	.012	4	.024	4	0	1	-.233	1	.611	4	.002	4	0	1
8			min	.004	1	.008	1	0	4	-.611	4	.233	1	0	1	-.002	4
9		5	max	.003	4	0	1	0	1	0	4	0	1	0	1	.005	4
10			min	0	1	0	4	0	4	0	1	0	4	-.005	4	0	1
11	M3	1	max	.132	4	.032	4	0	1	-.098	1	.288	4	.01	4	-.003	1
12			min	.041	1	.011	1	0	4	-.288	4	.098	1	.003	1	-.01	4
13		2	max	.125	4	.007	4	0	1	.754	4	-.259	1	.007	4	-.002	1
14			min	.039	1	.002	1	0	4	.259	1	-.754	4	.002	1	-.007	4
15		3	max	.117	4	-.007	1	0	1	.383	4	-.136	1	.005	4	-.001	1
16			min	.037	1	-.021	4	0	4	.136	1	-.383	4	.001	1	-.005	4
17		4	max	.01	4	.023	4	0	1	-.185	1	.564	4	.003	4	0	1
18			min	.002	1	.008	1	0	4	-.564	4	.185	1	0	1	-.003	4
19		5	max	.003	4	0	1	0	1	0	1	0	1	0	1	0	1
20			min	0	1	-.002	4	0	4	0	1	0	1	0	1	0	1
21	M4	1	max	.108	4	0	1	0	1	0	1	0	1	0	1	0	1
22			min	.038	1	0	1	0	1	0	1	0	1	0	1	0	1
23		2	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1
24			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
25		3	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1
26			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
27		4	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
28			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
29		5	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
30			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
31	M5	1	max	-.002	1	0	4	0	1	0	1	0	1	0	1	0	1
32			min	-.007	4	0	1	0	1	0	1	0	1	0	1	0	1
33		2	max	-.002	1	0	4	0	1	-.003	4	.003	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
34			min	-.007	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
35		3	max	-.002	1	0	1	0	1	-.004	4	.004	1	0	1	0	1
36			min	-.007	4	0	1	0	1	-.004	1	.004	4	0	1	0	1
37		4	max	-.002	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
38			min	-.007	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
39		5	max	-.002	1	0	4	0	1	0	1	0	1	0	1	0	1
40			min	-.007	4	0	1	0	1	0	1	0	1	0	1	0	1
41	M6	1	max	-.003	1	0	1	0	1	0	1	0	1	0	1	0	1
42			min	-.007	4	0	4	0	1	0	1	0	1	0	1	0	1
43		2	max	-.003	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
44			min	-.007	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
45		3	max	-.003	1	0	1	0	1	-.004	1	.004	4	0	1	0	1
46			min	-.007	4	0	1	0	1	-.004	4	.004	1	0	1	0	1
47		4	max	-.003	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
48			min	-.007	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
49		5	max	-.003	1	0	1	0	1	0	1	0	1	0	1	0	1
50			min	-.007	4	0	4	0	1	0	1	0	1	0	1	0	1
51	M7	1	max	-.04	1	-.002	1	0	1	.498	4	-.179	1	.026	4	-.006	1
52			min	-.148	4	-.006	4	0	4	.179	1	-.498	4	.006	1	-.026	4
53		2	max	-.042	1	0	4	0	1	.09	4	-.028	1	.006	4	0	1
54			min	-.15	4	0	1	0	4	.028	1	-.09	4	0	1	-.006	4
55		3	max	-.044	1	0	4	0	1	.095	4	-.033	1	0	1	.002	4
56			min	-.152	4	0	1	0	4	.033	1	-.095	4	-.002	4	0	1
57		4	max	-.046	1	0	4	0	1	.1	4	-.038	1	-.002	1	.011	4
58			min	-.153	4	0	1	0	4	.038	1	-.1	4	-.011	4	.002	1
59		5	max	-.048	1	.005	4	0	4	.482	4	-.164	1	.016	4	-.006	1
60			min	-.155	4	.002	1	0	1	.164	1	-.482	4	.006	1	-.016	4
61	M8	1	max	.138	4	.03	4	0	1	-.051	1	.145	4	.007	4	-.002	1
62			min	.051	1	.011	1	0	4	-.145	4	.051	1	.002	1	-.007	4
63		2	max	.129	4	.005	4	0	1	.797	4	-.285	1	.005	4	-.001	1
64			min	.047	1	.002	1	0	4	.285	1	-.797	4	.001	1	-.005	4
65		3	max	.119	4	-.008	1	0	1	.359	4	-.125	1	.002	4	0	1
66			min	.043	1	-.021	4	0	4	.125	1	-.359	4	0	1	-.002	4
67		4	max	.01	4	.023	4	0	1	-.229	1	.598	4	.001	4	0	1
68			min	.004	1	.008	1	0	4	-.598	4	.229	1	0	1	-.001	4
69		5	max	.001	4	0	1	0	1	0	1	0	4	0	1	.001	4
70			min	0	1	0	4	0	4	0	4	0	1	-.001	4	0	1
71	M10	1	max	.126	4	.03	4	0	1	-.05	1	.143	4	.023	4	-.007	1
72			min	.039	1	.01	1	0	4	-.143	4	.05	1	.007	1	-.023	4
73		2	max	.119	4	.005	4	0	1	.78	4	-.268	1	.017	4	-.005	1
74			min	.037	1	.002	1	0	4	.268	1	-.78	4	.005	1	-.017	4
75		3	max	.112	4	-.007	1	0	1	.365	4	-.131	1	.012	4	-.004	1
76			min	.036	1	-.021	4	0	4	.131	1	-.365	4	.004	1	-.012	4
77		4	max	.007	4	.023	4	0	1	-.18	1	.548	4	.007	4	-.002	1
78			min	0	1	.008	1	0	4	-.548	4	.18	1	.002	1	-.007	4
79		5	max	0	4	0	1	0	1	0	1	0	1	0	1	0	1
80			min	0	1	-.002	4	0	4	0	1	0	1	0	1	0	1
81	M12	1	max	0	1	0	4	0	1	0	1	0	1	0	1	0	1
82			min	0	4	0	1	0	1	0	1	0	1	0	1	0	1
83		2	max	0	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
84			min	0	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
85		3	max	0	1	0	1	0	1	-.004	4	.004	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
86			min	0	4	0	1	0	1	-.004	1	.004	4	0	1	0	1
87		4	max	0	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
88			min	0	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
89		5	max	0	1	0	4	0	1	0	1	0	1	0	1	0	1
90			min	0	4	0	1	0	1	0	1	0	1	0	1	0	1
91	M13	1	max	0	1	0	1	0	1	0	1	0	1	0	1	0	1
92			min	0	4	0	4	0	1	0	1	0	1	0	1	0	1
93		2	max	0	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
94			min	0	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
95		3	max	0	1	0	1	0	1	-.004	1	.004	4	0	1	0	1
96			min	0	4	0	1	0	1	-.004	4	.004	1	0	1	0	1
97		4	max	0	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
98			min	0	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
99		5	max	0	1	0	1	0	1	0	1	0	1	0	1	0	1
100			min	0	4	0	4	0	1	0	1	0	1	0	1	0	1
101	M14	1	max	.14	4	.032	4	0	4	-.075	1	.209	4	-.009	1	.033	4
102			min	.051	1	.011	1	0	1	-.209	4	.075	1	-.033	4	.009	1
103		2	max	.131	4	.006	4	0	4	.796	4	-.284	1	-.007	1	.023	4
104			min	.047	1	.002	1	0	1	.284	1	-.796	4	-.023	4	.007	1
105		3	max	.122	4	-.008	1	0	4	.377	4	-.131	1	-.004	1	.013	4
106			min	.043	1	-.022	4	0	1	.131	1	-.377	4	-.013	4	.004	1
107		4	max	.011	4	.023	4	0	4	-.231	1	.605	4	0	1	.002	4
108			min	.004	1	.008	1	0	1	-.605	4	.231	1	-.002	4	0	1
109		5	max	.002	4	0	1	0	4	0	4	0	1	.007	4	-.002	1
110			min	0	1	0	4	0	1	0	1	0	4	.002	1	-.007	4
111	M16	1	max	.129	4	.031	4	0	1	-.07	1	.204	4	.049	4	-.015	1
112			min	.04	1	.011	1	0	4	-.204	4	.07	1	.015	1	-.049	4
113		2	max	.123	4	.006	4	0	1	.781	4	-.269	1	.036	4	-.011	1
114			min	.039	1	.002	1	0	4	.269	1	-.781	4	.011	1	-.036	4
115		3	max	.115	4	-.007	1	0	1	.383	4	-.136	1	.024	4	-.008	1
116			min	.037	1	-.021	4	0	4	.136	1	-.383	4	.008	1	-.024	4
117		4	max	.009	4	.023	4	0	1	-.183	1	.557	4	.013	4	-.004	1
118			min	.001	1	.008	1	0	4	-.557	4	.183	1	.004	1	-.013	4
119		5	max	.002	4	0	1	0	1	0	1	0	1	0	1	0	1
120			min	0	1	-.002	4	0	4	0	1	0	1	0	1	0	1
121	M18	1	max	-.001	1	0	4	0	1	0	1	0	1	0	1	0	1
122			min	-.004	4	0	1	0	1	0	1	0	1	0	1	0	1
123		2	max	-.001	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
124			min	-.004	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
125		3	max	-.001	1	0	1	0	1	-.004	4	.004	1	0	1	0	1
126			min	-.004	4	0	1	0	1	-.004	1	.004	4	0	1	0	1
127		4	max	-.001	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
128			min	-.004	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
129		5	max	-.001	1	0	4	0	1	0	1	0	1	0	1	0	1
130			min	-.004	4	0	1	0	1	0	1	0	1	0	1	0	1
131	M19	1	max	-.002	1	0	1	0	1	0	1	0	1	0	1	0	1
132			min	-.004	4	0	4	0	1	0	1	0	1	0	1	0	1
133		2	max	-.002	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
134			min	-.004	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
135		3	max	-.002	1	0	1	0	1	-.004	1	.004	4	0	1	0	1
136			min	-.004	4	0	1	0	1	-.004	4	.004	1	0	1	0	1
137		4	max	-.002	1	0	1	0	1	-.003	1	.003	4	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
138			min	-.004	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
139		5	max	-.002	1	0	1	0	1	0	1	0	1	0	1	0	1
140			min	-.004	4	0	4	0	1	0	1	0	1	0	1	0	1
141	M20	1	max	0	4	-.005	1	0	4	-.004	1	.016	4	-.003	1	.009	4
142			min	0	1	-.016	4	0	1	-.016	4	.004	1	-.009	4	.003	1
143		2	max	0	4	-.005	1	0	4	-.071	1	.228	4	0	1	.002	4
144			min	0	1	-.015	4	0	1	-.228	4	.071	1	-.002	4	0	1
145		3	max	0	1	-.038	1	0	1	.746	4	-.229	1	.012	4	-.004	1
146			min	0	4	-.123	4	-.001	4	.229	1	-.746	4	.004	1	-.012	4
147		4	max	0	1	.028	4	0	1	-.09	1	.291	4	-.002	1	.007	4
148			min	0	4	.009	1	-.001	4	-.291	4	.09	1	-.007	4	.002	1
149		5	max	0	1	.029	4	0	1	.102	4	-.032	1	-.008	1	.026	4
150			min	0	4	.009	1	-.001	4	.032	1	-.102	4	-.026	4	.008	1
151	M21	1	max	0	1	.02	4	.002	4	-.012	1	.048	4	-.009	1	.033	4
152			min	0	4	.005	1	0	1	-.048	4	.012	1	-.033	4	.009	1
153		2	max	0	1	.02	4	.002	4	.223	4	-.061	1	-.002	1	.007	4
154			min	0	4	.006	1	0	1	.061	1	-.223	4	-.007	4	.002	1
155		3	max	0	4	.118	4	0	1	-.18	1	.647	4	.02	4	-.006	1
156			min	0	1	.033	1	0	4	-.647	4	.18	1	.006	1	-.02	4
157		4	max	0	4	-.008	1	0	1	.302	4	-.085	1	-.001	1	.005	4
158			min	0	1	-.027	4	0	4	.085	1	-.302	4	-.005	4	.001	1
159		5	max	0	4	-.007	1	0	1	-.02	1	.073	4	-.002	1	.011	4
160			min	0	1	-.027	4	0	4	-.073	4	.02	1	-.011	4	.002	1
161	M22	1	max	0	1	0	4	0	1	.029	4	-.009	1	.026	4	-.005	1
162			min	0	1	0	1	0	4	.009	1	-.029	4	.005	1	-.026	4
163		2	max	0	1	0	4	0	1	.032	4	-.009	1	.008	4	-.004	1
164			min	0	1	0	1	0	4	.009	1	-.032	4	.004	1	-.008	4
165		3	max	0	1	-.001	1	.001	4	.053	4	-.015	1	-.013	1	.036	4
166			min	0	1	-.004	4	0	1	.015	1	-.053	4	-.036	4	.013	1
167		4	max	0	1	-.001	1	.001	4	.019	4	-.005	1	.003	4	-.003	1
168			min	0	1	-.004	4	0	1	.005	1	-.019	4	.003	1	-.003	4
169		5	max	0	1	-.001	1	0	4	-.005	1	.015	4	.031	4	-.007	1
170			min	0	1	-.004	4	0	1	-.015	4	.005	1	.007	1	-.031	4
171	M23	1	max	-.088	1	-.002	1	0	1	.571	4	-.194	1	.044	4	-.016	1
172			min	-.287	4	-.006	4	0	4	.194	1	-.571	4	.016	1	-.044	4
173		2	max	-.085	1	0	1	0	1	.102	4	-.039	1	.014	4	-.005	1
174			min	-.284	4	0	4	0	4	.039	1	-.102	4	.005	1	-.014	4
175		3	max	-.084	1	0	1	0	1	.096	4	-.033	1	.001	4	0	1
176			min	-.283	4	0	4	0	4	.033	1	-.096	4	0	1	-.001	4
177		4	max	-.082	1	0	1	0	1	.09	4	-.027	1	-.004	1	.011	4
178			min	-.281	4	0	4	0	4	.027	1	-.09	4	-.011	4	.004	1
179		5	max	-.079	1	.007	4	0	4	.591	4	-.214	1	.039	4	-.009	1
180			min	-.278	4	.003	1	0	1	.214	1	-.591	4	.009	1	-.039	4
181	M24	1	max	-.048	1	-.002	1	0	4	.482	4	-.164	1	-.006	1	.016	4
182			min	-.155	4	-.005	4	0	1	.164	1	-.482	4	-.016	4	.006	1
183		2	max	-.046	1	0	1	0	1	.1	4	-.038	1	.011	4	-.002	1
184			min	-.153	4	0	4	0	4	.038	1	-.1	4	.002	1	-.011	4
185		3	max	-.044	1	0	1	0	1	.095	4	-.033	1	.002	4	0	1
186			min	-.152	4	0	4	0	4	.033	1	-.095	4	0	1	-.002	4
187		4	max	-.042	1	0	1	0	1	.09	4	-.028	1	0	1	.006	4
188			min	-.15	4	0	4	0	4	.028	1	-.09	4	-.006	4	0	1
189		5	max	-.04	1	.006	4	0	1	.498	4	-.179	1	-.006	1	.026	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
190			min	-.148	4	.002	1	0	4	.179	1	-.498	4	-.026	4	.006	1
191	M25	1	max	0	1	.001	4	0	4	-.004	1	.005	4	-.004	1	.012	4
192			min	0	4	.001	1	0	1	-.005	4	.004	1	-.012	4	.004	1
193		2	max	0	1	0	4	0	4	.01	4	-.008	1	0	1	.001	4
194			min	0	4	0	1	0	1	.008	1	-.01	4	-.001	4	0	1
195		3	max	0	1	0	4	0	4	.02	4	-.014	1	.009	4	-.006	1
196			min	0	4	0	1	0	1	.014	1	-.02	4	.006	1	-.009	4
197		4	max	0	1	0	4	0	4	.018	4	-.01	1	.01	4	-.004	1
198			min	0	4	0	1	0	1	.01	1	-.018	4	.004	1	-.01	4
199		5	max	0	1	0	4	0	4	.012	4	0	1	.01	4	-.002	1
200			min	0	4	0	1	0	1	0	1	-.012	4	.002	1	-.01	4
201	M26	1	max	0	1	.002	4	0	4	-.01	1	.025	4	-.003	1	.011	4
202			min	0	4	.001	1	0	1	-.025	4	.01	1	-.011	4	.003	1
203		2	max	0	1	.001	4	0	4	.004	1	.002	4	-.002	1	.005	4
204			min	0	4	0	1	0	1	-.002	4	-.004	1	-.005	4	.002	1
205		3	max	0	1	.001	4	0	4	.015	4	-.013	1	.002	4	0	1
206			min	0	4	0	1	0	1	.013	1	-.015	4	0	1	-.002	4
207		4	max	0	1	0	4	0	4	.012	4	-.008	1	.009	4	-.003	1
208			min	0	4	0	1	0	1	.008	1	-.012	4	.003	1	-.009	4
209		5	max	0	1	0	4	0	4	.013	4	0	1	.016	4	-.006	1
210			min	0	4	0	1	0	1	0	1	-.013	4	.006	1	-.016	4
211	M27	1	max	-.046	1	0	4	0	1	.18	4	-.062	1	.003	4	0	1
212			min	-.166	4	0	1	0	4	.062	1	-.18	4	0	1	-.003	4
213		2	max	-.048	1	0	4	0	1	.18	4	-.063	1	0	1	.001	4
214			min	-.168	4	0	1	0	4	.063	1	-.18	4	-.001	4	0	1
215		3	max	-.049	1	0	4	0	1	.18	4	-.063	1	-.001	1	.005	4
216			min	-.169	4	0	1	0	4	.063	1	-.18	4	-.005	4	.001	1
217		4	max	-.051	1	0	4	0	1	.181	4	-.063	1	-.003	1	.009	4
218			min	-.171	4	0	1	0	4	.063	1	-.181	4	-.009	4	.003	1
219		5	max	-.053	1	0	4	0	1	.181	4	-.064	1	-.004	1	.013	4
220			min	-.173	4	0	1	0	4	.064	1	-.181	4	-.013	4	.004	1
221	M28	1	max	-.061	1	0	1	0	1	.187	4	-.066	1	.004	4	-.001	1
222			min	-.201	4	0	4	0	4	.066	1	-.187	4	.001	1	-.004	4
223		2	max	-.06	1	0	1	0	1	.187	4	-.065	1	.001	4	0	1
224			min	-.199	4	0	4	0	4	.065	1	-.187	4	0	1	-.001	4
225		3	max	-.058	1	0	1	0	1	.186	4	-.065	1	0	1	.001	4
226			min	-.197	4	0	4	0	4	.065	1	-.186	4	-.001	4	0	1
227		4	max	-.056	1	0	1	0	1	.186	4	-.065	1	-.001	1	.004	4
228			min	-.196	4	0	4	0	4	.065	1	-.186	4	-.004	4	.001	1
229		5	max	-.055	1	0	1	0	1	.186	4	-.064	1	-.002	1	.006	4
230			min	-.194	4	0	4	0	4	.064	1	-.186	4	-.006	4	.002	1
231	M27A	1	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
232			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
233		2	max	.105	4	0	1	0	1	0	1	0	1	0	1	0	1
234			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
235		3	max	.105	4	0	1	0	1	0	1	0	1	0	1	0	1
236			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
237		4	max	.104	4	0	1	0	1	0	1	0	1	0	1	0	1
238			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
239		5	max	.104	4	0	1	0	1	0	1	0	1	0	1	0	1
240			min	.035	1	0	1	0	1	0	1	0	1	0	1	0	1
241	M28A	1	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
242			min	.038	1	0	1	0	1	0	1	0	1	0	1	0	1
243		2	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1
244			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
245		3	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
246			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
247		4	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
248			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
249		5	max	.105	4	0	1	0	1	0	1	0	1	0	1	0	1
250			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Deflections

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
1	M1	1	max	0	1	0	1	0	1	2.475e-4	4	NC	1	NC	1
2			min	0	1	0	1	0	1	6.741e-5	1	NC	1	NC	1
3		2	max	-.001	1	-.142	1	-.003	1	3.457e-4	4	1347.23	1	NC	1
4			min	-.004	4	-.41	4	-.01	4	9.774e-5	1	468.586	4	NC	1
5		3	max	-.003	1	-.105	1	-.003	1	4.479e-4	4	1925.297	1	NC	1
6			min	-.008	4	-.319	4	-.01	4	1.299e-4	1	639.923	4	NC	1
7		4	max	-.004	1	.002	1	-.002	1	5.688e-4	4	NC	1	NC	1
8			min	-.01	4	-.023	4	-.006	4	1.681e-4	1	8545.212	4	NC	1
9		5	max	-.004	1	-.018	1	0	1	7.362e-4	4	NC	1	NC	1
10			min	-.011	4	-.06	4	0	1	2.191e-4	1	NC	1	NC	1
11	M3	1	max	-.008	1	.013	4	0	1	5.15e-5	4	NC	1	NC	1
12			min	-.029	4	.004	1	0	1	1.247e-5	1	NC	1	NC	1
13		2	max	-.01	1	-.141	1	-.001	1	-3.426e-5	1	1318.87	1	NC	1
14			min	-.033	4	-.4	4	-.005	4	-1.057e-4	4	465.033	4	NC	1
15		3	max	-.011	1	-.117	1	-.002	1	-8.321e-5	1	1661.458	1	NC	1
16			min	-.036	4	-.322	4	-.006	4	-2.723e-4	4	607.711	4	NC	1
17		4	max	-.011	1	-.016	1	-.001	1	-1.31e-4	1	NC	1	NC	1
18			min	-.039	4	-.032	4	-.004	4	-4.364e-4	4	NC	1	NC	1
19		5	max	-.011	1	-.015	1	0	1	-1.66e-4	1	NC	1	NC	1
20			min	-.039	4	-.047	4	0	1	-5.54e-4	4	NC	1	NC	1
21	M4	1	max	.014	4	-.01	1	-.002	1	5.282e-4	4	NC	1	NC	1
22			min	0	1	-.055	4	-.007	4	1.547e-4	1	NC	1	NC	1
23		2	max	.012	4	-.015	1	-.001	1	4.83e-4	4	NC	1	NC	1
24			min	0	1	-.06	4	-.004	4	1.423e-4	1	NC	1	NC	1
25		3	max	.011	4	-.021	1	0	1	4.377e-4	4	NC	1	NC	1
26			min	0	1	-.066	4	-.001	4	1.298e-4	1	NC	1	NC	1
27		4	max	.009	4	-.026	1	.002	4	3.924e-4	4	NC	1	NC	1
28			min	-.001	1	-.071	4	0	1	1.174e-4	1	NC	1	NC	1
29		5	max	.007	4	-.031	1	.004	4	3.471e-4	4	NC	1	NC	1
30			min	-.002	1	-.076	4	.001	1	1.049e-4	1	NC	1	NC	1
31	M5	1	max	-.142	1	-.007	1	.025	4	3.793e-4	4	NC	1	NC	1
32			min	-.402	4	-.026	4	.007	1	8.357e-5	1	NC	1	NC	1
33		2	max	-.142	1	.018	4	.02	4	2.684e-4	4	NC	1	NC	1
34			min	-.402	4	.008	1	.006	1	5.743e-5	1	NC	1	NC	1
35		3	max	-.142	1	.062	4	.015	4	1.575e-4	4	NC	1	NC	1
36			min	-.402	4	.024	1	.004	1	3.129e-5	1	NC	1	NC	1
37		4	max	-.142	1	.105	4	.011	4	4.661e-5	4	NC	1	NC	1
38			min	-.402	4	.039	1	.003	1	5.144e-6	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
39		5	max	-.142	1	.148	4	.006	4	-2.1e-5	1	NC	1	NC	1
40			min	-.402	4	.055	1	.002	1	-6.428e-5	4	NC	1	NC	1
41	M6	1	max	-.135	1	-.002	1	0	1	-2.692e-5	4	NC	1	NC	1
42			min	-.394	4	-.006	4	-.002	4	-3.966e-5	1	NC	1	NC	1
43		2	max	-.135	1	-.016	1	0	1	2.076e-5	4	2079.296	1	NC	1
44			min	-.394	4	-.048	4	-.004	4	-1.784e-5	1	709.996	4	NC	1
45		3	max	-.134	1	-.031	1	-.002	1	6.844e-5	4	1037.621	1	NC	1
46			min	-.394	4	-.091	4	-.006	4	3.983e-6	1	354.761	4	NC	1
47		4	max	-.134	1	-.045	1	-.002	1	1.161e-4	4	690.085	1	NC	1
48			min	-.394	4	-.134	4	-.009	4	2.58e-5	1	236.313	4	NC	1
49		5	max	-.134	1	-.06	1	-.003	1	1.638e-4	4	516.441	1	NC	1
50			min	-.394	4	-.176	4	-.011	4	4.762e-5	1	177.103	4	NC	1
51	M7	1	max	0	1	0	1	0	1	8.012e-5	4	NC	1	NC	1
52			min	0	1	0	1	0	1	2.177e-5	1	NC	1	NC	1
53		2	max	.008	4	-.155	1	0	1	3.468e-4	4	2165.091	1	NC	1
54			min	.002	1	-.454	4	0	4	8.825e-5	1	739.369	4	NC	1
55		3	max	.016	4	-.201	1	.022	4	3.67e-4	4	1671.444	1	NC	1
56			min	.004	1	-.579	4	.007	1	1.115e-4	1	580.535	4	NC	1
57		4	max	.024	4	-.164	1	.03	4	3.872e-4	4	2053.09	1	NC	1
58			min	.007	1	-.463	4	.008	1	1.348e-4	1	725.734	4	NC	1
59		5	max	.032	4	0	1	0	1	2.203e-5	4	NC	1	NC	1
60			min	.009	1	0	1	0	1	7.697e-6	1	NC	1	NC	1
61	M8	1	max	0	1	0	1	0	1	6.416e-5	4	NC	1	NC	1
62			min	0	1	0	1	0	1	1.962e-5	1	NC	1	NC	1
63		2	max	-.001	1	-.148	1	0	1	1.931e-4	4	1308.304	1	NC	1
64			min	-.004	4	-.428	4	-.003	4	5.89e-5	1	454.085	4	NC	1
65		3	max	-.003	1	-.108	1	0	1	3.218e-4	4	1924.009	1	NC	1
66			min	-.007	4	-.331	4	-.003	4	9.813e-5	1	633.862	4	NC	1
67		4	max	-.004	1	-.003	1	0	1	4.644e-4	4	NC	1	NC	1
68			min	-.01	4	-.042	4	-.002	4	1.416e-4	1	NC	1	NC	1
69		5	max	-.004	1	-.024	1	0	1	6.543e-4	4	NC	1	NC	1
70			min	-.01	4	-.079	4	0	1	1.995e-4	1	NC	1	NC	1
71	M10	1	max	-.013	1	.02	4	0	1	1.805e-4	4	NC	1	NC	1
72			min	-.044	4	.006	1	0	1	5.518e-5	1	NC	1	NC	1
73		2	max	-.014	1	-.145	1	-.004	1	1.803e-5	4	1274.668	1	NC	1
74			min	-.047	4	-.411	4	-.012	4	5.591e-6	1	449.937	4	NC	1
75		3	max	-.015	1	-.12	1	-.004	1	-4.705e-5	1	1630.164	1	NC	1
76			min	-.051	4	-.329	4	-.014	4	-1.545e-4	4	598.06	4	NC	1
77		4	max	-.016	1	-.021	1	-.003	1	-9.902e-5	1	NC	1	NC	1
78			min	-.053	4	-.046	4	-.009	4	-3.249e-4	4	NC	1	NC	1
79		5	max	-.016	1	-.018	1	0	1	-1.366e-4	1	NC	1	NC	1
80			min	-.053	4	-.059	4	0	1	-4.48e-4	4	NC	1	NC	1
81	M12	1	max	-.147	1	-.01	1	.025	4	4.744e-4	4	NC	1	NC	1
82			min	-.414	4	-.036	4	.007	1	1.438e-4	1	NC	1	NC	1
83		2	max	-.147	1	.008	4	.022	4	3.56e-4	4	NC	1	NC	1
84			min	-.414	4	.006	1	.006	1	1.079e-4	1	NC	1	NC	1
85		3	max	-.147	1	.051	4	.019	4	2.376e-4	4	NC	1	NC	1
86			min	-.414	4	.021	1	.006	1	7.203e-5	1	NC	1	NC	1
87		4	max	-.147	1	.094	4	.017	4	1.192e-4	4	NC	1	NC	1
88			min	-.414	4	.037	1	.005	1	3.614e-5	1	NC	1	NC	1
89		5	max	-.147	1	.138	4	.014	4	7.87e-7	4	NC	1	NC	1
90			min	-.414	4	.052	1	.004	1	2.471e-7	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
91	M13	1	max	-.137	1	-.001	1	0	1	1.217e-4	4	NC	1	NC	1
92			min	-.405	4	-.007	4	-.002	4	3.627e-5	1	NC	1	NC	1
93		2	max	-.137	1	-.016	1	0	1	1.187e-4	4	2021.308	1	NC	1
94			min	-.405	4	-.051	4	-.002	4	3.557e-5	1	692.767	4	NC	1
95		3	max	-.137	1	-.031	1	0	1	1.157e-4	4	1008.738	1	NC	1
96			min	-.405	4	-.094	4	-.003	4	3.486e-5	1	346.158	4	NC	1
97		4	max	-.137	1	-.046	1	0	1	1.127e-4	4	670.921	1	NC	1
98			min	-.405	4	-.138	4	-.003	4	3.415e-5	1	230.587	4	NC	1
99		5	max	-.137	1	-.061	1	-.001	1	1.097e-4	4	502.129	1	NC	1
100			min	-.405	4	-.181	4	-.003	4	3.344e-5	1	172.815	4	NC	1
101	M14	1	max	0	1	0	1	0	1	-7.557e-5	1	NC	1	NC	1
102			min	0	1	0	1	0	1	-2.735e-4	4	NC	1	NC	1
103		2	max	-.001	1	-.15	1	.015	4	-1.763e-5	1	1297.31	1	NC	1
104			min	-.004	4	-.435	4	.004	1	-8.251e-5	4	449.774	4	NC	1
105		3	max	-.003	1	-.114	1	.015	4	1.044e-4	4	1861.742	1	NC	1
106			min	-.008	4	-.348	4	.004	1	3.843e-5	1	613.999	4	NC	1
107		4	max	-.004	1	-.007	1	.008	4	3.022e-4	4	NC	1	NC	1
108			min	-.01	4	-.055	4	.002	1	9.74e-5	1	NC	1	NC	1
109		5	max	-.004	1	-.028	1	0	1	5.521e-4	4	NC	1	NC	1
110			min	-.01	4	-.092	4	0	1	1.736e-4	1	NC	1	NC	1
111	M16	1	max	-.016	1	.025	4	0	1	4.618e-4	4	NC	1	NC	1
112			min	-.054	4	.007	1	0	1	1.435e-4	1	NC	1	NC	1
113		2	max	-.017	1	-.146	1	-.008	1	2.753e-4	4	1262.962	1	NC	1
114			min	-.057	4	-.414	4	-.025	4	8.561e-5	1	445.572	4	7354.91	4
115		3	max	-.018	1	-.123	1	-.009	1	8.196e-5	4	1589.747	1	NC	1
116			min	-.061	4	-.34	4	-.029	4	2.496e-5	1	581.193	4	6409.309	4
117		4	max	-.019	1	-.024	1	-.006	1	-3.385e-5	1	NC	1	NC	1
118			min	-.063	4	-.054	4	-.018	4	-1.04e-4	4	NC	1	NC	1
119		5	max	-.019	1	-.021	1	0	1	-7.542e-5	1	NC	1	NC	1
120			min	-.064	4	-.067	4	0	1	-2.378e-4	4	NC	1	NC	1
121	M18	1	max	-.151	1	-.014	1	.025	4	4.474e-4	4	NC	1	NC	1
122			min	-.427	4	-.048	4	.007	1	1.707e-4	1	NC	1	NC	1
123		2	max	-.151	1	.002	1	.026	4	3.671e-4	4	NC	1	NC	1
124			min	-.427	4	-.002	4	.008	1	1.38e-4	1	NC	1	NC	1
125		3	max	-.151	1	.043	4	.027	4	2.868e-4	4	NC	1	NC	1
126			min	-.427	4	.018	1	.008	1	1.053e-4	1	NC	1	NC	1
127		4	max	-.151	1	.088	4	.028	4	2.064e-4	4	NC	1	NC	1
128			min	-.427	4	.034	1	.009	1	7.253e-5	1	NC	1	NC	1
129		5	max	-.151	1	.133	4	.029	4	1.261e-4	4	NC	1	NC	1
130			min	-.427	4	.05	1	.009	1	3.982e-5	1	NC	1	NC	1
131	M19	1	max	-.142	1	-.003	1	0	1	1.97e-4	4	NC	1	NC	1
132			min	-.418	4	-.011	4	-.002	4	9.349e-5	1	NC	1	NC	1
133		2	max	-.142	1	-.018	1	.003	4	1.499e-4	4	2018.189	1	NC	1
134			min	-.418	4	-.055	4	0	1	7.135e-5	1	685.808	4	NC	1
135		3	max	-.142	1	-.033	1	.007	4	1.028e-4	4	1007.185	1	NC	1
136			min	-.418	4	-.099	4	.002	1	4.922e-5	1	342.683	4	NC	1
137		4	max	-.142	1	-.048	1	.012	4	5.568e-5	4	669.89	1	NC	1
138			min	-.418	4	-.143	4	.003	1	2.708e-5	1	228.274	4	NC	1
139		5	max	-.142	1	-.063	1	.016	4	8.586e-6	4	501.36	1	NC	1
140			min	-.418	4	-.187	4	.005	1	4.948e-6	1	171.082	4	NC	1
141	M20	1	max	0	1	-.009	1	0	1	1.032e-2	4	NC	1	NC	1
142			min	0	1	-.032	4	0	1	3.613e-3	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
143		2	max	0	1	-.01	1	0	4	1.071e-2	4	NC	1	NC	1
144			min	0	1	-.036	4	0	1	3.745e-3	1	NC	1	NC	1
145		3	max	0	1	-.014	1	0	1	1.158e-2	4	NC	1	NC	1
146			min	0	1	-.048	4	0	1	4.042e-3	1	NC	1	NC	1
147		4	max	0	1	-.014	1	0	4	1.125e-2	4	NC	1	NC	1
148			min	0	1	-.048	4	0	1	3.927e-3	1	NC	1	NC	1
149		5	max	0	1	-.018	1	0	1	1.141e-2	4	NC	1	NC	1
150			min	0	1	-.059	4	0	1	3.984e-3	1	NC	1	NC	1
151	M21	1	max	0	1	0	1	0	1	-3.563e-3	1	NC	1	NC	1
152			min	0	1	0	1	0	1	-1.027e-2	4	NC	1	NC	1
153		2	max	0	1	-.001	1	0	4	-3.709e-3	1	NC	1	NC	1
154			min	0	1	-.004	4	0	1	-1.068e-2	4	NC	1	NC	1
155		3	max	0	1	0	1	0	1	-4.018e-3	1	NC	1	NC	1
156			min	0	1	0	1	0	1	-1.156e-2	4	NC	1	NC	1
157		4	max	0	1	-.002	1	0	4	-3.892e-3	1	NC	1	NC	1
158			min	0	1	-.006	4	0	1	-1.121e-2	4	8013.916	4	NC	1
159		5	max	0	1	0	1	0	1	-3.934e-3	1	NC	1	NC	1
160			min	0	1	0	1	0	1	-1.136e-2	4	NC	1	NC	1
161	M22	1	max	0	1	-.027	1	.029	4	1.565e-3	4	NC	1	NC	1
162			min	0	1	-.088	4	.008	1	8.119e-4	1	NC	1	NC	1
163		2	max	0	1	-.025	1	.026	4	1.555e-3	4	NC	1	NC	1
164			min	0	1	-.082	4	.007	1	8.086e-4	1	NC	1	NC	1
165		3	max	0	1	-.023	1	.024	4	1.545e-3	4	NC	1	NC	1
166			min	0	1	-.076	4	.007	1	8.053e-4	1	NC	1	NC	1
167		4	max	0	1	-.021	1	.02	4	1.561e-3	4	NC	1	NC	1
168			min	0	1	-.068	4	.005	1	8.054e-4	1	NC	1	NC	1
169		5	max	0	1	-.018	1	.016	4	1.578e-3	4	NC	1	NC	1
170			min	0	1	-.059	4	.004	1	8.056e-4	1	NC	1	NC	1
171	M23	1	max	-.018	1	0	1	0	1	6.916e-5	4	NC	1	NC	1
172			min	-.059	4	0	1	0	1	2.142e-5	1	NC	1	NC	1
173		2	max	-.013	1	-.172	1	-.01	1	-1.533e-4	1	1950.88	1	NC	1
174			min	-.044	4	-.489	4	-.031	4	-4.841e-4	4	687.436	4	NC	1
175		3	max	-.009	1	-.209	1	-.005	1	-1.633e-4	1	1609.862	1	NC	1
176			min	-.029	4	-.605	4	-.018	4	-4.964e-4	4	555.762	4	NC	1
177		4	max	-.004	1	-.162	1	.004	4	-1.732e-4	1	2071.665	1	NC	1
178			min	-.015	4	-.479	4	.001	1	-5.087e-4	4	701.858	4	NC	1
179		5	max	0	1	0	1	0	1	3.442e-5	4	NC	1	NC	1
180			min	0	1	0	1	0	1	8.117e-6	1	NC	1	NC	1
181	M24	1	max	-.009	1	0	1	0	1	-7.697e-6	1	NC	1	NC	1
182			min	-.032	4	0	1	0	1	-2.203e-5	4	NC	1	NC	1
183		2	max	-.007	1	-.164	1	-.008	1	-1.348e-4	1	2053.09	1	NC	1
184			min	-.024	4	-.463	4	-.03	4	-3.872e-4	4	725.734	4	NC	1
185		3	max	-.004	1	-.201	1	-.007	1	-1.115e-4	1	1671.444	1	NC	1
186			min	-.016	4	-.579	4	-.022	4	-3.67e-4	4	580.535	4	NC	1
187		4	max	-.002	1	-.155	1	0	4	-8.825e-5	1	2165.091	1	NC	1
188			min	-.008	4	-.454	4	0	1	-3.468e-4	4	739.369	4	NC	1
189		5	max	0	1	0	1	0	1	-2.177e-5	1	NC	1	NC	1
190			min	0	1	0	1	0	1	-8.012e-5	4	NC	1	NC	1
191	M25	1	max	.002	4	.011	4	.418	4	3.482e-3	4	NC	1	6733.187	1
192			min	0	1	.003	1	.142	1	1.164e-3	1	9087.322	4	2001.204	4
193		2	max	.002	4	.009	4	.411	4	3.478e-3	4	NC	1	9837.895	1
194			min	0	1	.002	1	.139	1	1.167e-3	1	NC	1	2765.554	4

Envelope Member Section Deflections (Continued)

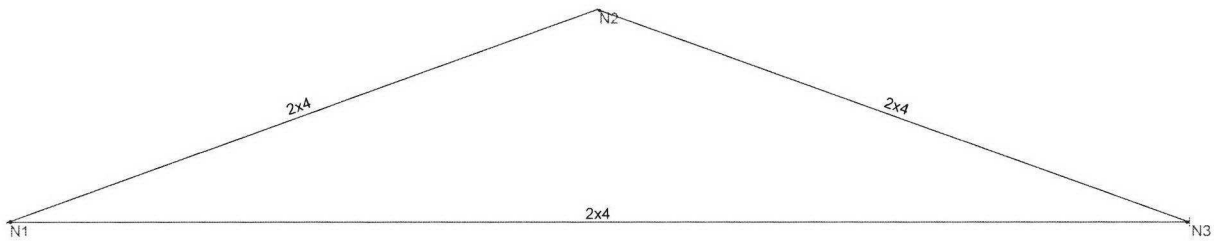
	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
195		3	max	.002	4	.007	4	.405	4	3.475e-3	4	NC	1	NC	1
196			min	0	1	.001	1	.137	1	1.17e-3	1	NC	1	4536.187	4
197		4	max	.002	4	.006	4	.399	4	3.471e-3	4	NC	1	NC	1
198			min	0	1	.001	1	.136	1	1.173e-3	1	NC	1	NC	1
199		5	max	.002	4	.006	4	.394	4	3.468e-3	4	NC	1	NC	1
200			min	0	1	.002	1	.135	1	1.175e-3	1	NC	1	NC	1
201	M26	1	max	-.007	1	.048	4	.427	4	-1.261e-3	1	7116.271	1	NC	1
202			min	-.025	4	.014	1	.151	1	-3.578e-3	4	2166.265	4	1894.96	4
203		2	max	-.007	1	.042	4	.421	4	-1.26e-3	1	NC	1	NC	1
204			min	-.025	4	.012	1	.149	1	-3.571e-3	4	2938.3	4	2524.989	4
205		3	max	-.007	1	.036	4	.414	4	-1.258e-3	1	NC	1	NC	1
206			min	-.025	4	.01	1	.147	1	-3.563e-3	4	4627.342	4	3953.768	4
207		4	max	-.007	1	.03	4	.407	4	-1.257e-3	1	NC	1	NC	1
208			min	-.025	4	.008	1	.144	1	-3.556e-3	4	9815.171	4	8684.655	4
209		5	max	-.007	1	.026	4	.402	4	-1.255e-3	1	NC	1	NC	1
210			min	-.025	4	.007	1	.142	1	-3.548e-3	4	NC	1	NC	1
211	M27	1	max	.004	4	0	1	0	1	-6.47e-6	1	NC	1	NC	1
212			min	.001	1	0	4	0	1	-2.386e-5	4	NC	1	NC	1
213		2	max	.013	4	-.237	1	.033	4	-5.431e-6	1	1416.269	1	NC	1
214			min	.004	1	-.682	4	.01	1	-1.955e-5	4	492.867	4	NC	1
215		3	max	.022	4	-.317	1	.059	4	-4.393e-6	1	1060.07	1	NC	1
216			min	.006	1	-.91	4	.018	1	-1.524e-5	4	369.388	4	5666.793	4
217		4	max	.03	4	-.238	1	.056	4	-3.354e-6	1	1410.597	1	NC	1
218			min	.009	1	-.683	4	.017	1	-1.093e-5	4	492.169	4	6006.602	4
219		5	max	.039	4	0	1	0	1	-2.315e-6	1	NC	1	NC	1
220			min	.011	1	0	4	0	1	-6.621e-6	4	NC	1	NC	1
221	M28	1	max	-.014	1	0	1	0	1	-6.495e-6	1	NC	1	NC	1
222			min	-.047	4	0	4	0	1	-2.1e-5	4	NC	1	NC	1
223		2	max	-.011	1	-.246	1	.005	4	-5.52e-6	1	1367.136	1	NC	1
224			min	-.037	4	-.705	4	.001	1	-1.846e-5	4	476.661	4	NC	1
225		3	max	-.008	1	-.327	1	.017	4	-4.544e-6	1	1027.36	1	NC	1
226			min	-.026	4	-.939	4	.005	1	-1.592e-5	4	357.742	4	NC	1
227		4	max	-.005	1	-.245	1	.02	4	-3.568e-6	1	1372.502	1	NC	1
228			min	-.016	4	-.704	4	.006	1	-1.338e-5	4	477.319	4	NC	1
229		5	max	-.002	1	0	1	0	1	-2.592e-6	1	NC	1	NC	1
230			min	-.005	4	0	4	0	1	-1.084e-5	4	NC	1	NC	1
231	M27A	1	max	.022	4	-.014	1	0	1	3.95e-4	4	NC	1	NC	1
232			min	.003	1	-.071	4	-.002	4	1.204e-4	1	NC	1	NC	1
233		2	max	.02	4	-.02	1	.001	4	3.488e-4	4	NC	1	NC	1
234			min	.002	1	-.077	4	0	1	1.063e-4	1	NC	1	NC	1
235		3	max	.019	4	-.026	1	.004	4	3.026e-4	4	NC	1	NC	1
236			min	.001	1	-.082	4	.001	1	9.223e-5	1	NC	1	NC	1
237		4	max	.017	4	-.031	1	.007	4	2.563e-4	4	NC	1	NC	1
238			min	0	1	-.088	4	.002	1	7.814e-5	1	NC	1	NC	1
239		5	max	.015	4	-.037	1	.01	4	2.101e-4	4	NC	1	NC	1
240			min	0	1	-.094	4	.003	1	6.404e-5	1	NC	1	NC	1
241	M28A	1	max	.028	4	-.018	1	.01	4	1.46e-4	4	NC	1	NC	1
242			min	.004	1	-.084	4	.003	1	5.084e-5	1	NC	1	NC	1
243		2	max	.026	4	-.024	1	.013	4	9.51e-5	4	NC	1	NC	1
244			min	.004	1	-.089	4	.004	1	3.4e-5	1	NC	1	NC	1
245		3	max	.024	4	-.029	1	.016	4	4.424e-5	4	NC	1	NC	1
246			min	.003	1	-.095	4	.005	1	1.716e-5	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
247		4	max	.022	4	-.035	1	.019	4	3.135e-7	1	NC	1	NC	1
248			min	.003	1	-.1	4	.006	1	-6.625e-6	4	NC	1	NC	1
249		5	max	.021	4	-.041	1	.022	4	-1.653e-5	1	NC	1	NC	1
250			min	.002	1	-.106	4	.007	1	-5.749e-5	4	NC	1	NC	1

Envelope Wood Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Fc' [ksi]	Ft' [ksi]	Fb1' [ksi]	Fb2' [ksi]	Fv' [ksi]	Eqn
1	M1	3-2X4	.748	10.612	4	.224	10.612	y	4	.429	.992	1.778	1.964	.207	3.9-3
2	M3	3-2X4	.704	4.824	4	.232	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
3	M4	2-2X6	.470	0	4	.014	0	z	4	.229	.86	1.336	1.547	.207	3.6.3
4	M5	2X4	.010	1.256	4	.065	2.512	y	4	.964	.992	1.544	1.708	.207	3.9-1
5	M6	2X4	.010	1.256	4	.029	0	y	4	.964	.992	1.544	1.708	.207	3.9-1
6	M7	2X4	.485	0	4	.049	22.75	y	4	.01	.992	1.166	1.708	.207	3.9-1
7	M8	3-2X4	.727	4.502	4	.224	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
8	M10	3-2X4	.690	4.502	4	.229	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
9	M12	2X4	.003	1.256	1	.069	2.512	y	4	.885	.776	1.21	1.337	.207	3.9-3
10	M13	2X4	.003	1.256	1	.004	0	y	4	.885	.776	1.21	1.337	.207	3.9-1
11	M14	3-2X4	.753	4.663	4	.238	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
12	M16	3-2X4	.721	4.663	4	.236	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
13	M18	2X4	.007	1.256	4	.048	2.512	y	4	.964	.992	1.544	1.708	.207	3.9-1
14	M19	2X4	.007	1.256	4	.029	0	y	4	.964	.992	1.544	1.708	.207	3.9-1
15	M20	2-2X4	.489	2	4	1.200	2	y	4	.758	.992	1.549	1.708	.207	3.9-3
16	M21	2-2X4	.430	2	4	1.181	2	y	4	.758	.992	1.549	1.708	.207	3.9-3
17	M22	2X6	.063	2	4	.025	2	y	4	.439	.86	1.327	1.547	.207	3.9-3
18	M23	2X4	.684	0	4	.069	22.75	y	4	.01	.992	1.166	1.708	.207	3.9-1
19	M24	2X4	.485	28	4	.049	0	y	4	.01	.992	1.166	1.708	.207	3.9-1
20	M25	2X4	.018	2.333	4	.008	0	y	1	.44	.992	1.537	1.708	.162	3.9-1
21	M26	2X4	.023	0	4	.011	0	y	4	.44	.992	1.537	1.708	.207	3.9-1
22	M27	2X4	.298	28	4	.000	0	z	4	.01	.992	1.166	1.708	.207	3.9-1
23	M28	2X4	.325	0	4	.000	0	z	4	.01	.992	1.166	1.708	.207	3.9-1
24	M27A	2-2X6	.462	0	4	.015	0	z	4	.229	.86	1.336	1.547	.207	3.6.3
25	M28A	2-2X6	.467	0	4	.016	0	z	4	.229	.86	1.336	1.547	.207	3.6.3



Envelope Only Solution

Epic Engineering	TL-2	SK - 2
ALR		Jan 15, 2019 at 10:34 AM
		Line RISA Model TL 2.r3d

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2x4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255

Wood Design Parameters

	Label	Shape	Length[ft]	le2[ft]	le1[ft]	le-bend to...	le-bend bo...	Kyy	Kzz	CV	Cr	y sway	z sway
1	M1	2x4	12.5	0	0	Lbyy					Yes		
2	M2	2x4	6.643	0	0	Lbyy					Yes		
3	M3	2x4	6.643	0	0	Lbyy					Yes		

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N3			2x4	Beam	None	DF	Typical
2	M2	N3	N2			2x4	Beam	None	DF	Typical
3	M3	N2	N1			2x4	Beam	None	DF	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL		-1				2		
2	Snow	SL						2		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Deflection 1	Yes	Y		DL	1																		
2	Deflection 2	Yes	Y		LL	1																		
3	Deflection 3	Yes	Y		DL	1	LL	1																
4	IBC 16-8	Yes			DL	1																		
5	IBC 16-9	Yes			DL	1	LL	1	LLS	1														
6	IBC 16-10 ...	Yes			DL	1	RLL	1																
7	IBC 16-10 ...	Yes			DL	1	SL	1	SLN	1														
8	IBC 16-10 ...	Yes			DL	1	RL	1																
9	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RLL	.75												
10	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
11	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RL	.75												

Load Combination Design

	Description	ASIF	CD	Service	Hot Rol...	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-8		.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-10 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-10 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-10 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-11 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-11 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-11 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Member Distributed Loads (BLC 1 : Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.03	-.03	0	0
2	M2	Y	-.03	-.03	0	0

Member Distributed Loads (BLC 2 : Snow)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.05	-.05	0	0
2	M2	Y	-.05	-.05	0	0

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	0	11	.548	7	0	11	0	11	0	11	0	11
2		min	0	1	0	2	0	1	0	1	0	1	0	1
3	N3	max	0	11	.548	7	0	11	0	11	0	11	0	11
4		min	0	1	0	2	0	1	0	1	0	1	0	1
5	N2	max	0	11	0	11	0	11	0	11	0	11	0	11
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	Totals:	max	0	11	1.096	7	0	11						
8		min	0	1	0	2	0	1						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z She...	LC	Torque[k-ft]	LC	y-y Moment[k-..	LC	z-z Moment[k-ft]	LC
1	M1	1	m...	0	2	.008	11	0	11	0	11	0	11	0	11
2			min	-.75	7	0	2	0	1	0	1	0	1	0	1
3		2	m...	0	2	.004	11	0	11	0	11	0	11	0	2
4			min	-.75	7	0	2	0	1	0	1	0	1	-.019	1
5		3	m...	0	2	0	11	0	11	0	11	0	11	0	2
6			min	-.75	7	0	1	0	1	0	1	0	1	-.025	1
7		4	m...	0	2	0	2	0	11	0	11	0	11	0	2
8			min	-.75	7	-.004	1	0	1	0	1	0	1	-.019	1
9		5	m...	0	2	0	2	0	11	0	11	0	11	0	11
10			min	-.75	7	-.008	1	0	1	0	1	0	1	0	1
11	M2	1	m...	.888	7	.254	7	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1
13		2	m...	.843	7	.127	7	0	11	0	11	0	11	0	2
14			min	0	2	0	2	0	1	0	1	0	1	-.316	7
15		3	m...	.797	7	0	11	0	11	0	11	0	11	0	2
16			min	0	2	0	1	0	1	0	1	0	1	-.422	7
17		4	m...	.751	7	0	2	0	11	0	11	0	11	0	2
18			min	0	2	-.127	7	0	1	0	1	0	1	-.316	7
19		5	m...	.706	7	0	2	0	11	0	11	0	11	0	11
20			min	0	2	-.254	7	0	1	0	1	0	1	0	1
21	M3	1	m...	.706	7	.254	7	0	11	0	11	0	11	0	11
22			min	0	2	0	2	0	1	0	1	0	1	0	1
23		2	m...	.751	7	.127	7	0	11	0	11	0	11	0	2
24			min	0	2	0	2	0	1	0	1	0	1	-.316	7
25		3	m...	.797	7	0	11	0	11	0	11	0	11	0	2
26			min	0	2	0	1	0	1	0	1	0	1	-.422	7
27		4	m...	.843	7	0	2	0	11	0	11	0	11	0	2
28			min	0	2	-.127	7	0	1	0	1	0	1	-.316	7
29		5	m...	.888	7	0	2	0	11	0	11	0	11	0	11
30			min	0	2	-.254	7	0	1	0	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top...	LC	z-Bot[..	LC
1	M1	1	max	0	2	.002	11	0	11	0	11	0	11	0	11	0	11
2			min	-.143	7	0	2	0	1	0	1	0	1	0	1	0	1
3		2	max	0	2	.001	11	0	11	.073	11	0	2	0	11	0	11
4			min	-.143	7	0	2	0	1	0	2	-.073	1	0	1	0	1
5		3	max	0	2	0	11	0	11	.098	11	0	2	0	11	0	11
6			min	-.143	7	0	1	0	1	0	2	-.098	1	0	1	0	1
7		4	max	0	2	0	2	0	11	.073	11	0	2	0	11	0	11
8			min	-.143	7	-.001	1	0	1	0	2	-.073	1	0	1	0	1
9		5	max	0	2	0	2	0	11	0	11	0	11	0	11	0	11
10			min	-.143	7	-.002	1	0	1	0	1	0	1	0	1	0	1
11	M2	1	max	.169	7	.073	7	0	11	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
13		2	max	.161	7	.036	7	0	11	1.24	7	0	2	0	11	0	11
14			min	0	2	0	2	0	1	0	2	-1.24	7	0	1	0	1
15		3	max	.152	7	0	11	0	11	1.653	7	0	2	0	11	0	11
16			min	0	2	0	1	0	1	0	2	-1.653	7	0	1	0	1
17		4	max	.143	7	0	2	0	11	1.24	7	0	2	0	11	0	11
18			min	0	2	-.036	7	0	1	0	2	-1.24	7	0	1	0	1
19		5	max	.134	7	0	2	0	11	0	11	0	11	0	11	0	11
20			min	0	2	-.073	7	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	.134	7	.073	7	0	11	0	11	0	11	0	11	0	11
22			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
23		2	max	.143	7	.036	7	0	11	1.24	7	0	2	0	11	0	11
24			min	0	2	0	2	0	1	0	2	-1.24	7	0	1	0	1
25		3	max	.152	7	0	11	0	11	1.653	7	0	2	0	11	0	11
26			min	0	2	0	1	0	1	0	2	-1.653	7	0	1	0	1
27		4	max	.161	7	0	2	0	11	1.24	7	0	2	0	11	0	11
28			min	0	2	-.036	7	0	1	0	2	-1.24	7	0	1	0	1
29		5	max	.169	7	0	2	0	11	0	11	0	11	0	11	0	11
30			min	0	2	-.073	7	0	1	0	1	0	1	0	1	0	1

Envelope Wood Code Checks

	Memb...	Shape	Cod...	Loc[ft]	LC	Shear Ch...	Loc...	Dir	LC	Fc' [...	Ft' [k...	Fb1' [ksi]	Fb2' [ksi]	Fv' [...	RB	CL	CP	Eqn
1	M1	2X4	.172	6.25	7	.014	0	y	4	1.984	1.164	1.984	2.182	.162	0	1	1	3.9-1
2	M2	2X4	.839	3.321	7	.351	0	y	7	1.984	1.164	1.984	2.182	.207	0	1	1	3.9-3
3	M3	2X4	.839	3.321	7	.351	6.6...	y	7	1.984	1.164	1.984	2.182	.207	0	1	1	3.9-3

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2x4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255
4	2x4 Column	2X4	Column	Rectangular	DF	Typical	5.25	.984	5.359	2.877

Wood Design Parameters

	Label	Shape	Length[ft]	le2[ft]	le1[ft]	le-bend to...	le-bend bo...	Kyy	Kzz	CV	Cr	y sway	z sway
1	M1	2x4	21	0	0	Lbyy					Yes		
2	M2	(2) 2x4	11.424	0	0	Lbyy					Yes		
3	M3	(2) 2x4	11.424	0	0	Lbyy					Yes		
4	M4	2x4	2.333			Lbyy					Yes		
5	M5	2x4 Column	2.25			Lbyy							
6	M6	2x4 Column	2.25			Lbyy							

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N3			2x4	Beam	None	DF	Typical
2	M2	N3	N2			(2) 2x4	Beam	None	DF	Typical
3	M3	N2	N1			(2) 2x4	Beam	None	DF	Typical
4	M4	N7	N6			2x4	Beam	None	DF	Typical
5	M5	N6A	N11			2x4 Column	Column	Rectangular	DF	Typical
6	M6	N8	N10			2x4 Column	Column	Rectangular	DF	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL		-1				2		
2	Snow	SL						2		

Load Combinations

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Deflection 1	Yes	Y		DL	1																		
2	Deflection 2	Yes	Y		LL	1																		
3	Deflection 3	Yes	Y		DL	1	LL	1																
4	IBC 16-8	Yes			DL	1																		
5	IBC 16-9	Yes			DL	1	LL	1	LLS	1														
6	IBC 16-10 ...	Yes			DL	1	RLL	1																
7	IBC 16-10 ...	Yes			DL	1	SL	1	SLN	1														
8	IBC 16-10 ...	Yes			DL	1	RL	1																
9	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RLL	.75												
10	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
11	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RL	.75												

Load Combination Design

	Description	ASIF	CD	Service	Hot Rol..	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-8		.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	ASIF	CD	Service	Hot Rol..	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
5	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-10 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-10 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-10 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-11 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-11 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-11 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Member Distributed Loads (BLC 1 : Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.03	-.03	0	0
2	M2	Y	-.03	-.03	0	0

Member Distributed Loads (BLC 2 : Snow)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.05	-.05	0	0
2	M2	Y	-.05	-.05	0	0

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	0	11	.961	7	0	11	0	11	0	11	0	11
2		min	0	1	0	2	0	1	0	1	0	1	0	1
3	N3	max	0	11	.961	7	0	11	0	11	0	11	0	11
4		min	0	1	0	2	0	1	0	1	0	1	0	1
5	Totals:	max	0	11	1.922	7	0	11						
6		min	0	1	0	2	0	1						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z She...	LC	Torque[k-ft]	LC	y-y Moment[k-..	LC	z-z Moment[k-ft]	LC
1	M1	1	m...	0	2	.015	7	0	11	0	11	0	11	0	11
2			min	-1.432	7	0	2	0	1	0	1	0	1	0	1
3		2	m...	0	2	.008	7	0	11	0	11	0	11	0	2
4			min	-1.432	7	0	2	0	1	0	1	0	1	-.059	7
5		3	m...	0	2	0	2	0	11	0	11	0	11	0	2
6			min	-1.432	7	0	7	0	1	0	1	0	1	-.077	7
7		4	m...	0	2	0	2	0	11	0	11	0	11	0	2
8			min	-1.432	7	-.008	7	0	1	0	1	0	1	-.059	7
9		5	m...	0	2	0	2	0	11	0	11	0	11	0	11
10			min	-1.432	7	-.015	7	0	1	0	1	0	1	0	1
11	M2	1	m...	1.689	7	.306	7	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1
13		2	m...	1.596	7	.089	7	0	11	0	11	0	11	0	2
14			min	0	2	0	2	0	1	0	1	0	1	-.564	7
15		3	m...	1.503	7	0	2	0	11	0	11	0	11	0	2
16			min	0	2	-.129	7	0	1	0	1	0	1	-.508	7
17		4	m...	1.409	7	0	2	0	11	0	11	0	11	.17	7
18			min	0	2	-.346	7	0	1	0	1	0	1	0	2
19		5	m...	0	2	.593	7	0	11	0	11	0	11	0	11
20			min	-1.385	7	0	2	0	1	0	1	0	1	0	1
21	M3	1	m...	0	2	0	2	0	11	0	11	0	11	0	11
22			min	-1.385	7	-.593	7	0	1	0	1	0	1	0	1
23		2	m...	1.409	7	.346	7	0	11	0	11	0	11	.17	7

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z She...	LC	Torque[k-ft]	LC	y-y Moment[k-..	LC	z-z Moment[k-ft]	LC
24			min	0	2	0	2	0	1	0	1	0	1	0	2
25		3	m...	1.503	7	.129	7	0	11	0	11	0	11	0	2
26			min	0	2	0	2	0	1	0	1	0	1	-.508	7
27		4	m...	1.596	7	0	2	0	11	0	11	0	11	0	2
28			min	0	2	-.089	7	0	1	0	1	0	1	-.564	7
29		5	m...	1.689	7	0	2	0	11	0	11	0	11	0	11
30			min	0	2	-.306	7	0	1	0	1	0	1	0	1
31	M4	1	m...	2.938	7	.001	11	0	11	0	11	0	11	0	11
32			min	0	2	0	2	0	1	0	1	0	1	0	1
33		2	m...	2.938	7	0	11	0	11	0	11	0	11	0	2
34			min	0	2	0	2	0	1	0	1	0	1	0	1
35		3	m...	2.938	7	0	11	0	11	0	11	0	11	0	2
36			min	0	2	0	1	0	1	0	1	0	1	0	1
37		4	m...	2.938	7	0	2	0	11	0	11	0	11	0	2
38			min	0	2	0	1	0	1	0	1	0	1	0	1
39		5	m...	2.938	7	0	2	0	11	0	11	0	11	0	11
40			min	0	2	-.001	1	0	1	0	1	0	1	0	1
41	M5	1	m...	.001	7	0	11	0	11	0	11	0	11	0	11
42			min	-.007	4	0	1	0	1	0	1	0	1	0	1
43		2	m...	0	7	0	11	0	11	0	11	0	11	0	11
44			min	-.007	4	0	1	0	1	0	1	0	1	0	1
45		3	m...	0	2	0	11	0	11	0	11	0	11	0	11
46			min	-.008	4	0	1	0	1	0	1	0	1	0	1
47		4	m...	0	2	0	11	0	11	0	11	0	11	0	11
48			min	-.009	4	0	1	0	1	0	1	0	1	0	1
49		5	m...	0	2	0	11	0	11	0	11	0	11	0	11
50			min	-.009	4	0	1	0	1	0	1	0	1	0	1
51	M6	1	m...	.001	7	0	11	0	11	0	11	0	11	0	11
52			min	-.007	4	0	1	0	1	0	1	0	1	0	1
53		2	m...	0	7	0	11	0	11	0	11	0	11	0	11
54			min	-.007	4	0	1	0	1	0	1	0	1	0	1
55		3	m...	0	2	0	11	0	11	0	11	0	11	0	11
56			min	-.008	4	0	1	0	1	0	1	0	1	0	1
57		4	m...	0	2	0	11	0	11	0	11	0	11	0	11
58			min	-.009	4	0	1	0	1	0	1	0	1	0	1
59		5	m...	0	2	0	11	0	11	0	11	0	11	0	11
60			min	-.009	4	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses

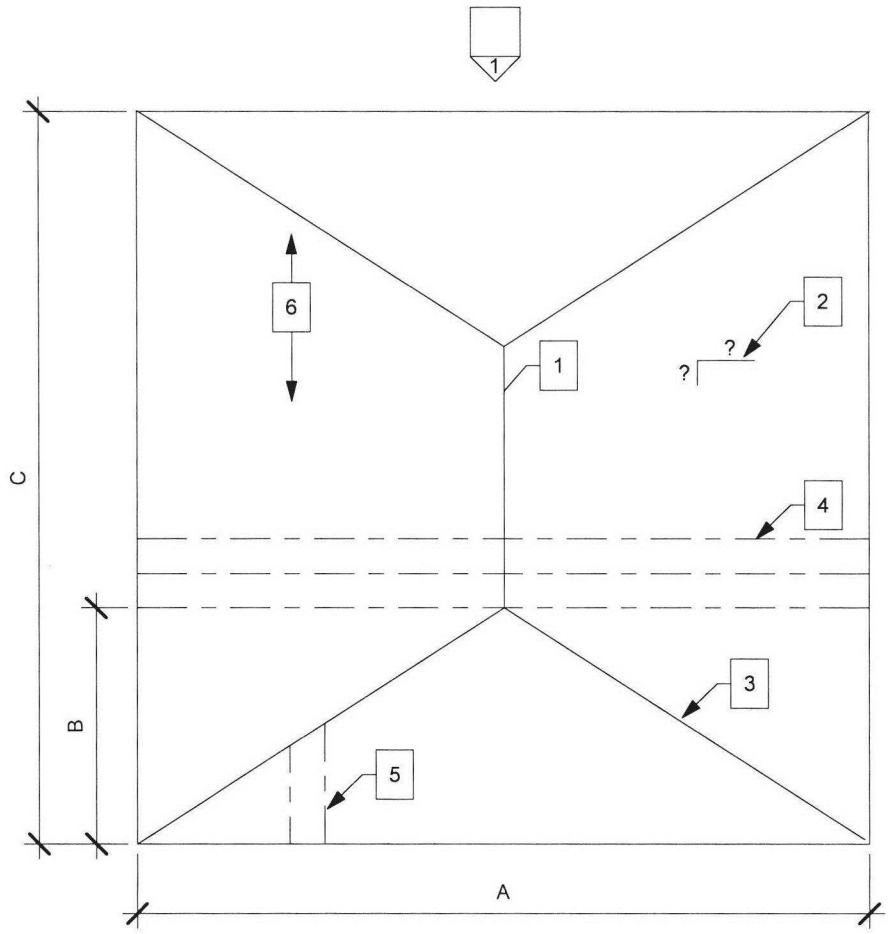
	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top...	LC	z-Bot[..	LC
1	M1	1	max	0	2	.004	7	0	11	0	11	0	11	0	11	0	11
2			min	-.273	7	0	2	0	1	0	1	0	1	0	1	0	1
3		2	max	0	2	.002	7	0	11	.232	7	0	2	0	11	0	11
4			min	-.273	7	0	2	0	1	0	2	-.232	7	0	1	0	1
5		3	max	0	2	0	2	0	11	.301	7	0	2	0	11	0	11
6			min	-.273	7	0	7	0	1	0	2	-.301	7	0	1	0	1
7		4	max	0	2	0	2	0	11	.232	7	0	2	0	11	0	11
8			min	-.273	7	-.002	7	0	1	0	2	-.232	7	0	1	0	1
9		5	max	0	2	0	2	0	11	0	11	0	11	0	11	0	11
10			min	-.273	7	-.004	7	0	1	0	1	0	1	0	1	0	1
11	M2	1	max	.161	7	.044	7	0	11	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
13		2	max	.152	7	.013	7	0	11	1.104	7	0	2	0	11	0	11
14			min	0	2	0	2	0	1	0	2	-1.104	7	0	1	0	1
15		3	max	.143	7	0	2	0	11	.996	7	0	2	0	11	0	11

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top...	LC	z-Bot[...	LC
16			min	0	2	-.018	7	0	1	0	2	-.996	7	0	1	0	1
17		4	max	.134	7	0	2	0	11	0	2	.333	7	0	11	0	11
18			min	0	2	-.049	7	0	1	-.333	7	0	2	0	1	0	1
19		5	max	0	2	.085	7	0	11	0	11	0	11	0	11	0	11
20			min	-.132	7	0	2	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	0	2	0	2	0	11	0	11	0	11	0	11	0	11
22			min	-.132	7	-.085	7	0	1	0	1	0	1	0	1	0	1
23		2	max	.134	7	.049	7	0	11	0	2	.333	7	0	11	0	11
24			min	0	2	0	2	0	1	-.333	7	0	2	0	1	0	1
25		3	max	.143	7	.018	7	0	11	.996	7	0	2	0	11	0	11
26			min	0	2	0	2	0	1	0	2	-.996	7	0	1	0	1
27		4	max	.152	7	0	2	0	11	1.104	7	0	2	0	11	0	11
28			min	0	2	-.013	7	0	1	0	2	-1.104	7	0	1	0	1
29		5	max	.161	7	0	2	0	11	0	11	0	11	0	11	0	11
30			min	0	2	-.044	7	0	1	0	1	0	1	0	1	0	1
31	M4	1	max	.56	7	0	11	0	11	0	11	0	11	0	11	0	11
32			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
33		2	max	.56	7	0	11	0	11	.003	11	0	2	0	11	0	11
34			min	0	2	0	2	0	1	0	2	-.003	1	0	1	0	1
35		3	max	.56	7	0	11	0	11	.003	11	0	2	0	11	0	11
36			min	0	2	0	1	0	1	0	2	-.003	1	0	1	0	1
37		4	max	.56	7	0	2	0	11	.003	11	0	2	0	11	0	11
38			min	0	2	0	1	0	1	0	2	-.003	1	0	1	0	1
39		5	max	.56	7	0	2	0	11	0	11	0	11	0	11	0	11
40			min	0	2	0	1	0	1	0	1	0	1	0	1	0	1
41	M5	1	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
42			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
43		2	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
44			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
45		3	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
46			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
47		4	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
48			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
49		5	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
50			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
51	M6	1	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
52			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
53		2	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
54			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
55		3	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
56			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
57		4	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
58			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
59		5	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
60			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Wood Code Checks

	Memb...	Shape	Cod...	Loc[ft]	LC	Shear Ch...	Loc...	Dir	LC	Fc' [...	Ft' [k...	Fb1' [ksi]	Fb2' [ksi]	Fv' [...	RB	CL	CP	Eqn
1	M1	2X4	.386	10.5	7	.020	0	y	7	1.984	1.164	1.984	2.182	.207	0	1	1	3.9-1
2	M2	2-2X4	.861	10.234	7	.472	10....	y	7	1.984	1.164	1.968	2.182	.207	7.301	.992	1	3.9-1
3	M3	2-2X4	.861	1.19	7	.472	1.19	y	7	1.984	1.164	1.968	2.182	.207	7.301	.992	1	3.9-1
4	M4	2X4	.487	0	7	.003	2.3...	y	4	1.149	1.164	1.971	2.182	.162	6.6	.994	.579	3.6.3
5	M5	2X4	.002	2.25	4	.000	0	z	11	1.081	.911	1.344	1.485	.207	6.481	.996	.696	3.9-1
6	M6	2X4	.002	2.25	4	.000	0	z	11	1.081	.911	1.344	1.485	.207	6.481	.996	.696	3.9-1



A	ROOF WIDTH	28 FT	0 IN	4	RAFTER SIZE & SPACING: 2x4 @ 24" O.C.
B	HIP LENGTH	14 FT	3 IN	5	HIP RAFTER SIZE & SPACING: 2x4 @ 24" O.C.
C	ROOF LENGTH	28 FT	9 IN	6	ROOF COMPOSITION
1	RIDGE BEAM SIZE: 1x8				1x SLEEPERS: [Y] / N
2	ROOF PITCH: 5 /12				SHEATHING: Y / N
3	HIP RAFTER SIZE: 2x4				SHINGLES: [Y] / N
					METAL ROOF: Y / [N]

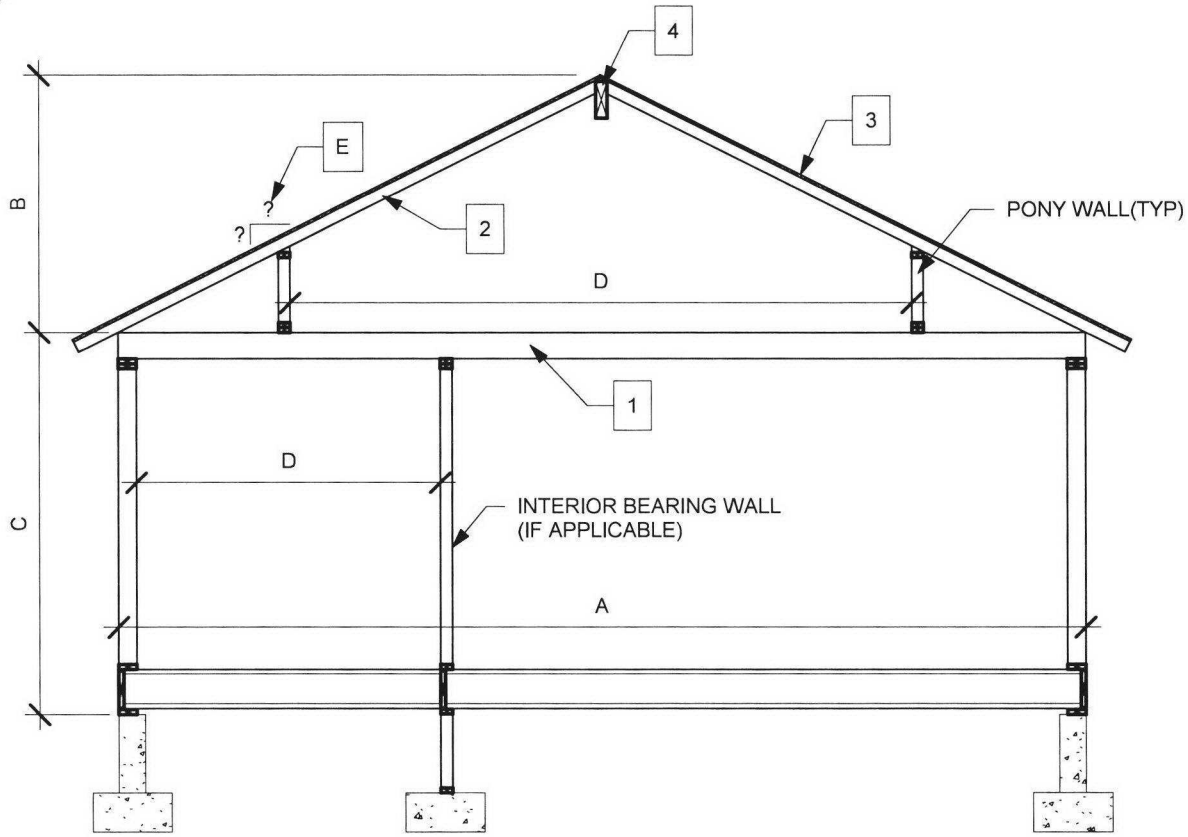
1 INCLUDE PICTURE IN ATTIC SHOWING FRAMING

epic ENGINEERING

HOUSE DIMENSIONS

SEC. 1 HIPPED ROOF

BRYAN LYNE



1 CEILING JOIST SIZE & SPACING: 2x4 @ 16" O.C.

2 ROOF RAFTER SIZE & SPACING: 2x4 @ 24" O.C.

3 ROOF COMPOSITION:

ASPHALT SHINGLE: [Y] / N

METAL ROOFING: Y / N

SHEATHING: _____

SLEEPER SIZE & SPACING:

1x6 @ 0" O.C.

4 RIDGE PLATE: _____

5 BRACE SIZE AND SPACING: 2x4 @ 24" O.C.

6 FLOOR JOIST SIZE AND SPACING: 2x8 @ 16" O.C.

A DIMENSION: 28 FT. 0 IN.

B DIMENSION: 6 FT. 6 IN.

C DIMENSION: 9 FT. 10 IN.

D DIMENSION: 11 FT. 11 IN.

E ROOF SLOPE: 5:12

epic ENGINEERING

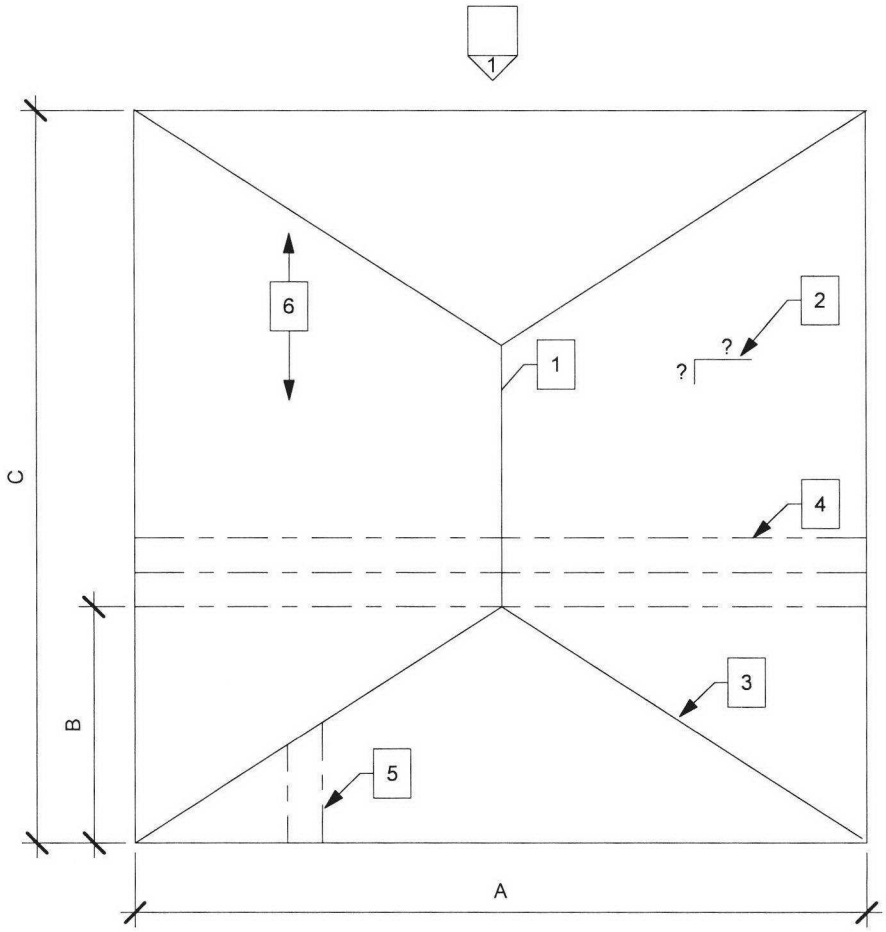
HOUSE DIMENSIONS

SEC. 1

BRYAN LYNE

Designer	Drawn By:
EPIC	EPIC
Reviewed	Project
EPIC	#:

Sheet Number: A1.5



A	ROOF WIDTH	23 FT	9 IN		4	RAFTER SIZE & SPACING:	2x4 @ 24" O.C.
B	HIP LENGTH	11 FT	8 IN		5	HIP RAFTER SIZE & SPACING:	2x4 @ 24" O.C.
C	ROOF LENGTH	15 FT	5 IN		6	ROOF COMPOSITION	
1	RIDGE BEAM SIZE: 1x6					1x SLEEPERS: [Y] / N	
2	ROOF PITCH: 5 /12					SHEATHING: Y / N	
3	HIP RAFTER SIZE: 2x4					SHINGLES: [Y] / N	
						METAL ROOF: Y / [N]	

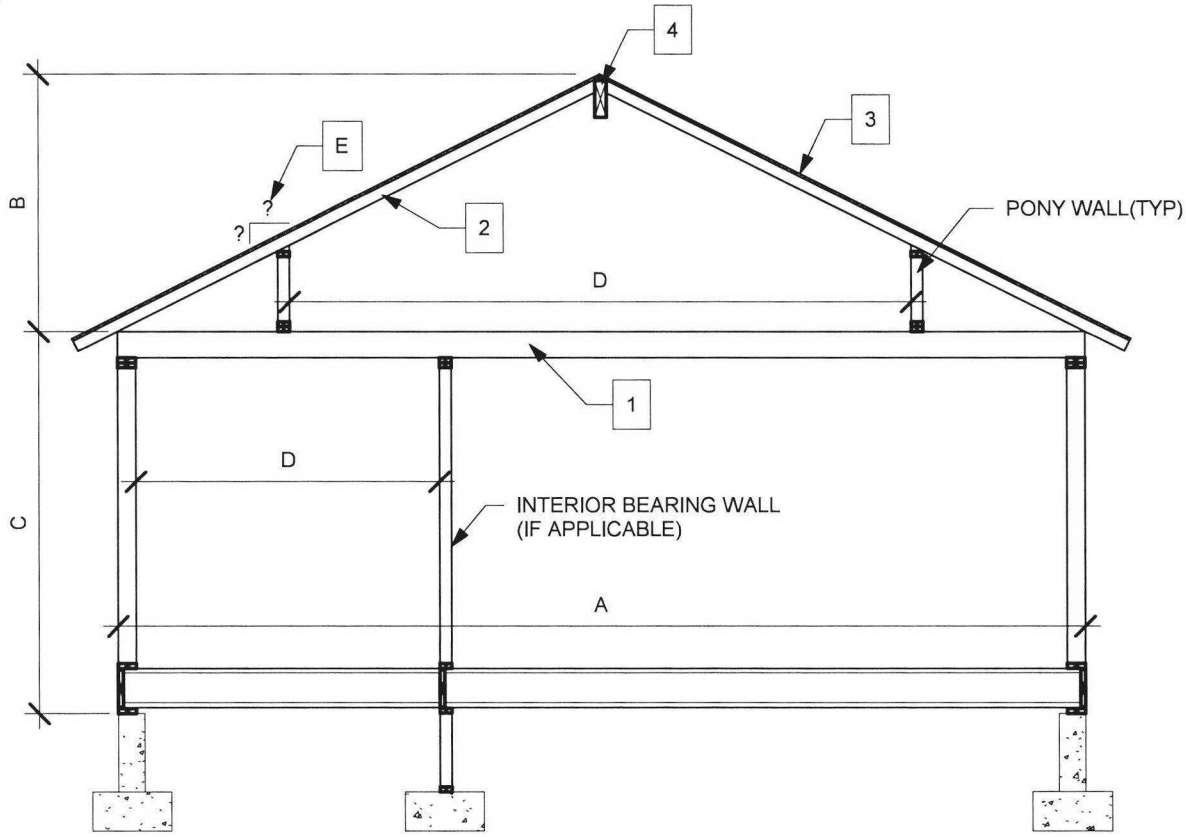
1 INCLUDE PICTURE IN ATTIC SHOWING FRAMING

epic ENGINEERING

HOUSE DIMENSIONS

SEC. 2 HIPPED ROOF

BRYAN LYNE



1 CEILING JOIST SIZE & SPACING: 2x4 @ 16" O.C.

2 ROOF RAFTER SIZE & SPACING: 2x4 @ 24" O.C.

3 ROOF COMPOSITION:

ASPHALT SHINGLE: [Y] / N

METAL ROOFING: Y / N

SHEATHING: _____

SLEEPER SIZE & SPACING:

1x6 @ 0" O.C.

4 RIDGE PLATE: _____

5 BRACE SIZE AND SPACING: 2x4 @ 24" O.C.

6 FLOOR JOIST SIZE AND SPACING: 2x8 @ 16" O.C.

A DIMENSION: 23 FT. 9 IN.

B DIMENSION: 5 FT. 8 IN.

C DIMENSION: 8 FT. 0 IN.

D DIMENSION: N/A FT. N/A IN.

E ROOF SLOPE: 5:12

epic ENGINEERING

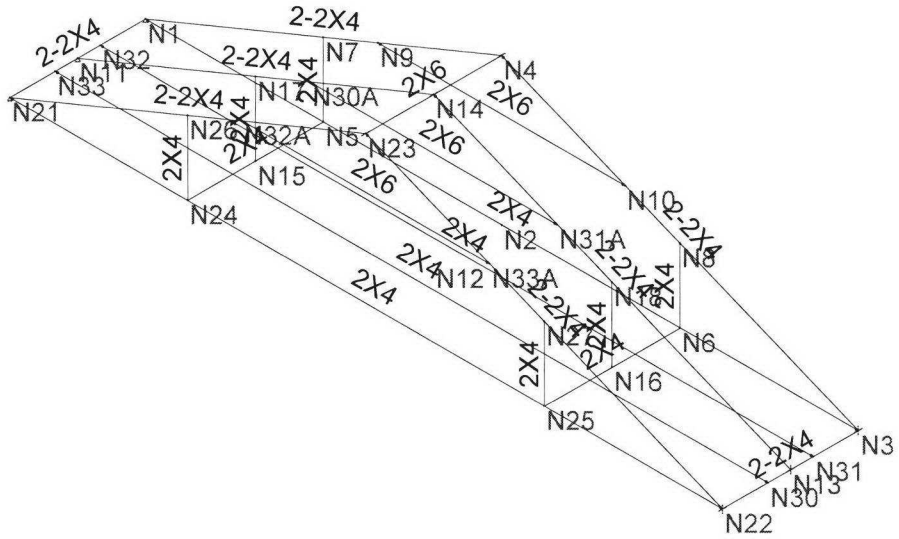
HOUSE DIMENSIONS

SEC. 2

BRYAN LYNE

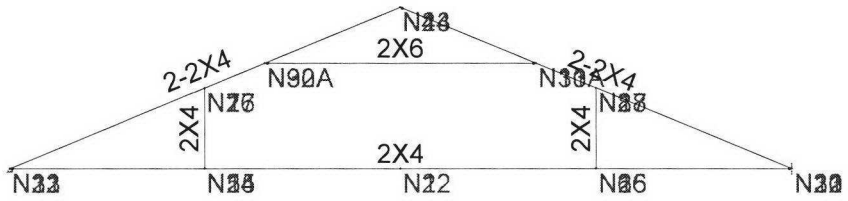
Designer	Drawn By:
EPIC	EPIC
Reviewed	Project
EPIC	#:

Sheet Number: A1.5



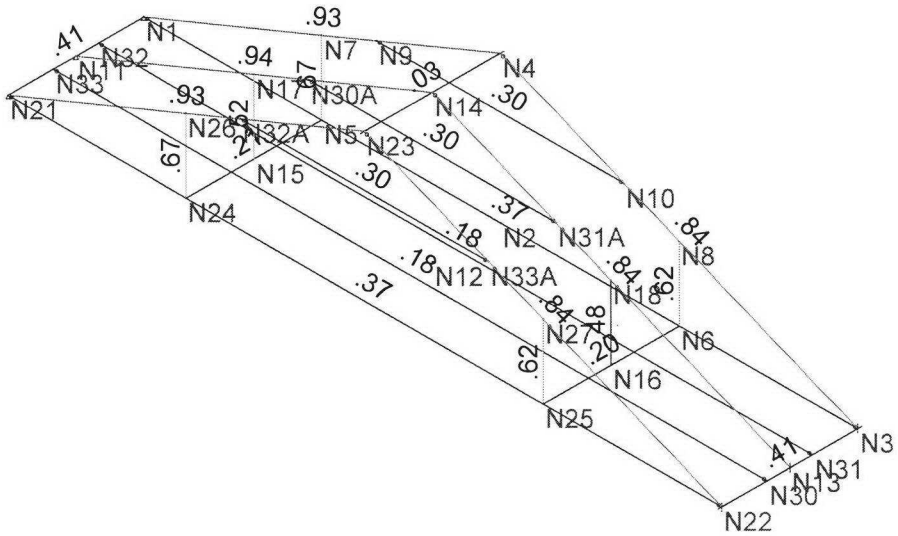
Envelope Only Solution

		SK - 2
		May 29, 2019 at 3:42 PM
	TL-3 Revised Layout	Lyne - TL-3 Revised.r3d



Envelope Only Solution

		SK - 3
		May 29, 2019 at 3:43 PM
	TL-3 Revised Reinforcement	Lyne - TL-3 Revised.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 1
		May 29, 2019 at 3:42 PM
	TL-3 Revised Unity	Lyne - TL-3 Revised.r3d

Wood Material Properties

	Label	Type	Database	Species	Grade	Cm	Emod	Nu	Therm...	Dens[k/f...
1	DF	Solid Sa...	Visually Graded	Douglas Fir-Larch	No.2		1	.3	.3	.035
2	SP	Solid Sa...	Visually Graded	Southern Pine	No.1		1	.3	.3	.035
3	HF	Solid Sa...	Visually Graded	Hem-Fir	No.1		1	.3	.3	.035
4	SPF	Solid Sa...	Visually Graded	Spruce-Pine-fir	No.1		1	.3	.3	.035
5	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_BAL	na		1	.3	.3	.035
6	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_UNBAL	na		1	.3	.3	.035
7	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_BAL	na		1	.3	.3	.035
8	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_UNBAL	na		1	.3	.3	.035

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2X4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255
4	2x6	2X6	Beam	None	DF	Typical	8.25	1.547	20.797	5.125
5	2x8	2X8	Beam	None	DF	Typical	10.875	2.039	47.635	7.093
6	(3) 2x4	3-2X4	Beam	None	DF	Typical	15.75	26.578	16.078	39.809

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
No Data to Print ...			

Member Distributed Loads (BLC 1 : DEAD)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.024	-.024	0	0
2	M2	Y	-.024	-.024	0	0
3	M6	Y	-.024	-.024	0	0
4	M7	Y	-.024	-.024	0	0
5	M11	Y	-.024	-.024	0	0
6	M12	Y	-.024	-.024	0	0

Member Distributed Loads (BLC 2 : SNOW)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.05	-.05	0	0
2	M2	Y	-.05	-.05	0	0
3	M6	Y	-.05	-.05	0	0
4	M7	Y	-.05	-.05	0	0
5	M11	Y	-.05	-.05	0	0
6	M12	Y	-.05	-.05	0	0

Member Distributed Loads (BLC 3 : SOLAR)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.006	-.006	%4	%68
2	M6	Y	-.006	-.006	%4	%68
3	M11	Y	-.006	-.006	%4	%68

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Pl...
1	DEAD	DL	-1					6		
2	SNOW	SL						6		
3	SOLAR	DL						3		

Load Combinations

	Description	Sol...	P...	SR...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	ASCE ASD 1	Yes			DL	1																		
2	ASCE ASD 2	Yes			DL	1	LL	1	LLS	1														
3	ASCE ASD 3 (a)	Yes			DL	1																		
4	ASCE ASD 3 (b)	Yes			DL	1	SL	1	SLN	1														
5	ASCE ASD 4 (b)	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	.126	4	.878	4	-.002	1	0	1	0	1	0	1
2		min	.12	1	.315	1	-.006	4	0	1	0	1	0	1
3	N3	max	0	1	.832	4	-.002	1	0	1	0	1	0	1
4		min	0	1	.269	1	-.007	4	0	1	0	1	0	1
5	N4	max	0	1	0	1	0	4	0	1	0	1	0	1
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	N11	max	.139	1	.899	4	0	4	0	1	0	1	0	1
8		min	.127	4	.322	1	0	1	0	1	0	1	0	1
9	N13	max	0	1	.854	4	0	1	0	1	0	1	0	1
10		min	0	1	.277	1	0	5	0	1	0	1	0	1
11	N14	max	0	1	0	1	0	1	0	1	0	1	0	1
12		min	0	1	0	1	0	4	0	1	0	1	0	1
13	N21	max	.126	4	.878	4	.006	4	0	1	0	1	0	1
14		min	.12	1	.315	1	.002	1	0	1	0	1	0	1
15	N22	max	0	1	.832	4	.007	4	0	1	0	1	0	1
16		min	0	1	.269	1	.002	1	0	1	0	1	0	1
17	N23	max	0	1	0	1	0	1	0	1	0	1	0	1
18		min	0	1	0	1	0	4	0	1	0	1	0	1
19	Totals:	max	.38	4	5.174	4	0	4						
20		min	.38	1	1.766	1	0	1						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
1	N1	max	0	1	0	1	0	4	3.1e-5	4	5.175e-4	4	-2.223e-3	1
2		min	0	4	0	4	0	1	9.799e-6	1	1.519e-4	1	-6.068e-3	4
3	N2	max	.019	4	-.064	1	-.011	1	-2.362e-5	1	4.648e-6	4	1.774e-4	1
4		min	.006	1	-.187	4	-.032	4	-8.08e-5	4	2.11e-6	1	1.767e-4	4
5	N3	max	.039	4	0	1	0	4	3.445e-5	4	-2.134e-4	1	5.67e-3	4
6		min	.012	1	0	4	0	1	1.096e-5	1	-6.424e-4	4	1.829e-3	1
7	N4	max	.019	4	-.023	1	0	1	-3.844e-5	1	-3.895e-5	1	4.737e-4	4
8		min	.006	1	-.072	4	0	4	-1.025e-4	4	-1.021e-4	4	2.036e-4	1
9	N5	max	.01	4	-.046	1	0	1	1.81e-5	1	1.002e-3	4	-8.307e-4	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
10		min	.003	1	-.124	4	0	4	-1.616e-5	4	3.553e-4	1	-2.252e-3	4
11	N6	max	.028	4	-.034	1	0	1	-6.533e-5	1	-3.638e-4	1	2.097e-3	4
12		min	.009	1	-.113	4	0	4	-1.454e-4	4	-1.021e-3	4	6.754e-4	1
13	N7	max	.044	4	-.046	1	-.001	1	-8.108e-6	1	-1.266e-5	1	1.583e-3	4
14		min	.016	1	-.124	4	-.004	4	-1.75e-5	4	-5.366e-5	4	5.732e-4	1
15	N8	max	0	1	-.034	1	-.002	1	-4.882e-6	1	5.801e-5	4	-5.727e-4	1
16		min	0	4	-.113	4	-.007	4	-1.337e-5	4	1.723e-5	1	-1.58e-3	4
17	N9	max	.025	4	-.031	1	0	1	-1.545e-5	1	-2.369e-5	1	1.458e-3	4
18		min	.009	1	-.085	4	-.003	4	-3.449e-5	4	-8.678e-5	4	6.006e-4	1
19	N10	max	.017	4	-.021	1	-.002	1	-2.005e-6	1	9.73e-5	4	-4.11e-4	1
20		min	.006	1	-.076	4	-.005	4	-5.852e-6	4	3.376e-5	1	-1.265e-3	4
21	N11	max	0	4	0	1	0	1	0	5	0	4	-2.27e-3	1
22		min	0	1	0	4	0	4	0	1	0	1	-6.181e-3	4
23	N12	max	0	1	0	1	0	1	0	1	0	1	0	1
24		min	0	1	0	1	0	1	0	1	0	1	0	1
25	N13	max	.037	4	0	1	0	5	0	1	0	4	5.752e-3	4
26		min	.011	1	0	4	0	1	0	4	0	1	1.853e-3	1
27	N14	max	.018	4	-.022	1	0	4	0	4	0	4	4.408e-4	4
28		min	.005	1	-.07	4	0	1	0	1	0	1	1.988e-4	1
29	N15	max	.029	4	-.047	1	0	4	0	1	0	4	-7.405e-4	1
30		min	.01	1	-.128	4	0	1	0	4	0	1	-1.884e-3	4
31	N16	max	.01	4	-.034	1	0	1	0	4	0	4	1.667e-3	4
32		min	.002	1	-.113	4	0	4	0	1	0	1	4.901e-4	1
33	N17	max	.045	4	-.047	1	0	1	0	4	0	4	1.925e-3	4
34		min	.017	1	-.128	4	0	4	0	1	0	1	6.988e-4	1
35	N18	max	0	1	-.034	1	0	4	0	4	0	1	-6.852e-4	1
36		min	-.003	4	-.113	4	0	1	0	1	0	4	-1.901e-3	4
37	N21	max	0	1	0	1	0	1	-9.799e-6	1	-1.519e-4	1	-2.223e-3	1
38		min	0	4	0	4	0	4	-3.1e-5	4	-5.175e-4	4	-6.068e-3	4
39	N22	max	.039	4	0	1	0	1	-1.096e-5	1	6.424e-4	4	5.67e-3	4
40		min	.012	1	0	4	0	4	-3.445e-5	4	2.134e-4	1	1.829e-3	1
41	N23	max	.019	4	-.023	1	0	4	1.025e-4	4	1.021e-4	4	4.737e-4	4
42		min	.006	1	-.072	4	0	1	3.844e-5	1	3.895e-5	1	2.036e-4	1
43	N24	max	.01	4	-.046	1	0	4	1.616e-5	4	-3.553e-4	1	-8.307e-4	1
44		min	.003	1	-.124	4	0	1	-1.81e-5	1	-1.002e-3	4	-2.252e-3	4
45	N25	max	.028	4	-.034	1	0	4	1.454e-4	4	1.021e-3	4	2.097e-3	4
46		min	.009	1	-.113	4	0	1	6.533e-5	1	3.638e-4	1	6.754e-4	1
47	N26	max	.044	4	-.046	1	.004	4	1.75e-5	4	5.366e-5	4	1.583e-3	4
48		min	.016	1	-.124	4	.001	1	8.108e-6	1	1.266e-5	1	5.732e-4	1
49	N27	max	0	1	-.034	1	.007	4	1.337e-5	4	-1.723e-5	1	-5.727e-4	1
50		min	0	4	-.113	4	.002	1	4.882e-6	1	-5.801e-5	4	-1.58e-3	4
51	N30	max	.032	4	0	1	0	1	1.043e-5	4	-1.046e-4	1	5.725e-3	4
52		min	.01	1	0	4	0	4	3.318e-6	1	-3.35e-4	4	1.845e-3	1
53	N31	max	.032	4	0	1	0	4	-3.318e-6	1	3.35e-4	4	5.725e-3	4
54		min	.01	1	0	4	0	1	-1.043e-5	4	1.046e-4	1	1.845e-3	1
55	N32	max	.005	4	0	1	0	4	-2.968e-6	1	-1.143e-4	1	-2.254e-3	1
56		min	.001	1	0	4	0	1	-9.392e-6	4	-3.873e-4	4	-6.143e-3	4
57	N33	max	.005	4	0	1	0	1	9.392e-6	4	3.873e-4	4	-2.254e-3	1
58		min	.001	1	0	4	0	4	2.968e-6	1	1.143e-4	1	-6.143e-3	4
59	N30A	max	.025	4	-.031	1	0	1	0	4	0	5	1.59e-3	4
60		min	.009	1	-.084	4	0	4	0	1	0	1	6.558e-4	1
61	N31A	max	.016	4	-.02	1	0	4	0	4	0	1	-4.413e-4	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
62		min	.006	1	-.072	4	0	1	0	1	0	4	-1.366e-3	4
63	N32A	max	.025	4	-.031	1	.003	4	3.449e-5	4	8.678e-5	4	1.458e-3	4
64		min	.009	1	-.085	4	0	1	1.545e-5	1	2.369e-5	1	6.006e-4	1
65	N33A	max	.017	4	-.021	1	.005	4	5.852e-6	4	-3.376e-5	1	-4.11e-4	1
66		min	.006	1	-.076	4	.002	1	2.005e-6	1	-9.73e-5	4	-1.265e-3	4

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
1	M1	1	max	1.855	4	.191	4	-.002	1	.003	4	.021	4	-.002	1
2			min	.665	1	.068	1	-.005	4	0	1	.006	1	-.004	4
3		2	max	1.763	4	-.005	1	-.002	1	.003	4	.008	4	-.095	1
4			min	.627	1	-.014	4	-.005	4	0	1	.002	1	-.259	4
5		3	max	1.67	4	-.081	1	-.002	1	.003	4	-.002	1	-.069	1
6			min	.587	1	-.221	4	-.005	4	0	1	-.006	4	-.179	4
7		4	max	.251	4	.118	4	0	1	.001	4	0	1	.064	4
8			min	.083	1	.038	1	0	4	0	1	0	4	.024	1
9		5	max	.164	4	-.022	1	0	1	.001	4	0	1	0	4
10			min	.05	1	-.073	4	0	4	0	1	-.001	4	0	1
11	M2	1	max	1.754	4	.184	4	.005	4	-.001	1	-.008	1	0	1
12			min	.563	1	.061	1	.002	1	-.004	4	-.025	4	-.003	4
13		2	max	1.681	4	-.004	1	.005	4	-.001	1	-.003	1	-.081	1
14			min	.544	1	-.013	4	.002	1	-.004	4	-.01	4	-.245	4
15		3	max	1.607	4	-.07	1	.005	4	-.001	1	.006	4	-.052	1
16			min	.525	1	-.21	4	.002	1	-.004	4	.002	1	-.162	4
17		4	max	.235	4	.122	4	0	4	0	1	0	1	.065	4
18			min	.067	1	.042	1	0	1	0	4	-.001	4	.026	1
19		5	max	.162	4	-.024	1	0	4	0	1	0	1	0	1
20			min	.047	1	-.076	4	0	1	0	4	0	1	0	1
21	M3	1	max	-.001	1	.135	4	.004	4	.006	4	-.002	1	.042	4
22			min	-.005	4	.052	1	.001	1	.002	1	-.005	4	.018	1
23		2	max	-.001	1	.136	4	.004	4	.006	4	0	1	-.01	1
24			min	-.005	4	.052	1	.001	1	.002	1	-.002	4	-.031	4
25		3	max	-.001	1	.137	4	.004	4	.006	4	0	4	-.038	1
26			min	-.005	4	.053	1	.001	1	.002	1	0	1	-.105	4
27		4	max	-.001	1	.137	4	.004	4	.006	4	.002	4	-.067	1
28			min	-.005	4	.054	1	.001	1	.002	1	0	1	-.179	4
29		5	max	-.001	1	.138	4	.004	4	.006	4	.005	4	-.097	1
30			min	-.005	4	.055	1	.001	1	.002	1	.001	1	-.254	4
31	M4	1	max	-.003	1	-.04	1	.005	4	-.002	1	-.001	1	-.008	1
32			min	-.006	4	-.124	4	.002	1	-.006	4	-.005	4	-.032	4
33		2	max	-.003	1	-.04	1	.005	4	-.002	1	0	1	.035	4
34			min	-.006	4	-.123	4	.002	1	-.006	4	-.002	4	.013	1
35		3	max	-.003	1	-.039	1	.005	4	-.002	1	0	4	.101	4
36			min	-.006	4	-.123	4	.002	1	-.006	4	0	1	.035	1
37		4	max	-.003	1	-.038	1	.005	4	-.002	1	.003	4	.168	4
38			min	-.006	4	-.122	4	.002	1	-.006	4	.001	1	.056	1
39		5	max	-.003	1	-.038	1	.005	4	-.002	1	.006	4	.233	4
40			min	-.006	4	-.121	4	.002	1	-.006	4	.002	1	.076	1
41	M5	1	max	1.296	4	0	1	0	1	0	1	0	1	0	1
42			min	.45	1	0	1	0	1	0	4	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
43		2	max	1.292	4	0	1	0	1	0	1	0	1	0	1
44			min	.447	1	0	1	0	1	0	4	0	1	0	1
45		3	max	1.288	4	0	1	0	1	0	1	0	1	0	1
46			min	.443	1	0	1	0	1	0	4	0	1	0	1
47		4	max	1.285	4	0	1	0	1	0	1	0	1	0	1
48			min	.439	1	0	1	0	1	0	4	0	1	0	1
49		5	max	1.281	4	0	1	0	1	0	1	0	1	0	1
50			min	.436	1	0	1	0	1	0	4	0	1	0	1
51	M6	1	max	1.856	4	.198	4	0	1	0	1	0	1	.007	4
52			min	.665	1	.071	1	0	1	0	1	0	1	.003	1
53		2	max	1.763	4	-.002	1	0	1	0	1	0	1	-.098	1
54			min	.627	1	-.006	4	0	1	0	1	0	1	-.268	4
55		3	max	1.67	4	-.078	1	0	1	0	1	0	1	-.063	1
56			min	.587	1	-.214	4	0	1	0	1	0	1	-.162	4
57		4	max	.299	4	.121	4	0	1	0	1	0	1	.071	4
58			min	.101	1	.039	1	0	1	0	1	0	1	.027	1
59		5	max	.212	4	-.021	1	0	1	0	1	0	1	0	1
60			min	.069	1	-.07	4	0	1	0	1	0	1	0	4
61	M7	1	max	1.757	4	.19	4	0	1	0	1	0	1	.005	4
62			min	.566	1	.063	1	0	1	0	1	0	1	.002	1
63		2	max	1.683	4	-.003	1	0	1	0	1	0	1	-.084	1
64			min	.546	1	-.007	4	0	1	0	1	0	1	-.254	4
65		3	max	1.61	4	-.068	1	0	1	0	1	0	1	-.045	1
66			min	.527	1	-.204	4	0	1	0	1	0	1	-.143	4
67		4	max	.279	4	.124	4	0	1	0	1	0	1	.074	4
68			min	.082	1	.043	1	0	1	0	1	0	1	.029	1
69		5	max	.206	4	-.023	1	0	1	0	1	0	1	0	1
70			min	.063	1	-.073	4	0	1	0	1	0	1	0	1
71	M8	1	max	.009	4	.092	4	0	1	0	1	0	1	-.001	1
72			min	.004	1	.035	1	0	1	0	1	0	1	-.005	4
73		2	max	.009	4	.092	4	0	1	0	1	0	1	-.02	1
74			min	.004	1	.035	1	0	1	0	1	0	1	-.054	4
75		3	max	.009	4	.093	4	0	1	0	1	0	1	-.039	1
76			min	.004	1	.036	1	0	1	0	1	0	1	-.105	4
77		4	max	.009	4	.094	4	0	1	0	1	0	1	-.059	1
78			min	.004	1	.037	1	0	1	0	1	0	1	-.155	4
79		5	max	.009	4	.094	4	0	1	0	1	0	1	-.079	1
80			min	.004	1	.037	1	0	1	0	1	0	1	-.206	4
81	M9	1	max	.007	4	-.029	1	0	1	0	1	0	1	.005	4
82			min	.002	1	-.087	4	0	1	0	1	0	1	.002	1
83		2	max	.007	4	-.028	1	0	1	0	1	0	1	.052	4
84			min	.002	1	-.086	4	0	1	0	1	0	1	.018	1
85		3	max	.007	4	-.027	1	0	1	0	1	0	1	.098	4
86			min	.002	1	-.085	4	0	1	0	1	0	1	.033	1
87		4	max	.007	4	-.027	1	0	1	0	1	0	1	.144	4
88			min	.002	1	-.085	4	0	1	0	1	0	1	.047	1
89		5	max	.007	4	-.026	1	0	1	0	1	0	1	.19	4
90			min	.002	1	-.084	4	0	1	0	1	0	1	.061	1
91	M11	1	max	1.855	4	.191	4	.005	4	0	1	-.006	1	-.002	1
92			min	.665	1	.068	1	.002	1	-.003	4	-.021	4	-.004	4
93		2	max	1.763	4	-.005	1	.005	4	0	1	-.002	1	-.095	1
94			min	.627	1	-.014	4	.002	1	-.003	4	-.008	4	-.259	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
95		3	max	1.67	4	-.081	1	.005	4	0	1	.006	4	-.069	1
96			min	.587	1	-.221	4	.002	1	-.003	4	.002	1	-.179	4
97		4	max	.251	4	.118	4	0	4	0	1	0	4	.064	4
98			min	.083	1	.038	1	0	1	-.001	4	0	1	.024	1
99		5	max	.164	4	-.022	1	0	4	0	1	.001	4	0	4
100			min	.05	1	-.073	4	0	1	-.001	4	0	1	0	1
101	M12	1	max	1.754	4	.184	4	-.002	1	.004	4	.025	4	0	1
102			min	.563	1	.061	1	-.005	4	.001	1	.008	1	-.003	4
103		2	max	1.681	4	-.004	1	-.002	1	.004	4	.01	4	-.081	1
104			min	.544	1	-.013	4	-.005	4	.001	1	.003	1	-.245	4
105		3	max	1.607	4	-.07	1	-.002	1	.004	4	-.002	1	-.052	1
106			min	.525	1	-.21	4	-.005	4	.001	1	-.006	4	-.162	4
107		4	max	.235	4	.122	4	0	1	0	4	.001	4	.065	4
108			min	.067	1	.042	1	0	4	0	1	0	1	.026	1
109		5	max	.162	4	-.024	1	0	1	0	4	0	1	0	1
110			min	.047	1	-.076	4	0	4	0	1	0	1	0	1
111	M13	1	max	-.001	1	.135	4	-.001	1	-.002	1	.005	4	.042	4
112			min	-.005	4	.052	1	-.004	4	-.006	4	.002	1	.018	1
113		2	max	-.001	1	.136	4	-.001	1	-.002	1	.002	4	-.01	1
114			min	-.005	4	.052	1	-.004	4	-.006	4	0	1	-.031	4
115		3	max	-.001	1	.137	4	-.001	1	-.002	1	0	1	-.038	1
116			min	-.005	4	.053	1	-.004	4	-.006	4	0	4	-.105	4
117		4	max	-.001	1	.137	4	-.001	1	-.002	1	0	1	-.067	1
118			min	-.005	4	.054	1	-.004	4	-.006	4	-.002	4	-.179	4
119		5	max	-.001	1	.138	4	-.001	1	-.002	1	-.001	1	-.097	1
120			min	-.005	4	.055	1	-.004	4	-.006	4	-.005	4	-.254	4
121	M14	1	max	-.003	1	-.04	1	-.002	1	.006	4	.005	4	-.008	1
122			min	-.006	4	-.124	4	-.005	4	.002	1	.001	1	-.032	4
123		2	max	-.003	1	-.04	1	-.002	1	.006	4	.002	4	.035	4
124			min	-.006	4	-.123	4	-.005	4	.002	1	0	1	.013	1
125		3	max	-.003	1	-.039	1	-.002	1	.006	4	0	1	.101	4
126			min	-.006	4	-.123	4	-.005	4	.002	1	0	4	.035	1
127		4	max	-.003	1	-.038	1	-.002	1	.006	4	-.001	1	.168	4
128			min	-.006	4	-.122	4	-.005	4	.002	1	-.003	4	.056	1
129		5	max	-.003	1	-.038	1	-.002	1	.006	4	-.002	1	.233	4
130			min	-.006	4	-.121	4	-.005	4	.002	1	-.006	4	.076	1
131	M16	1	max	0	1	-.005	1	-.001	4	0	4	0	1	0	1
132			min	0	1	-.014	4	-.002	1	0	1	0	4	-.002	4
133		2	max	0	1	-.005	1	0	4	0	4	0	1	.012	4
134			min	0	1	-.014	4	0	1	0	1	-.001	4	.004	1
135		3	max	0	1	.011	5	.003	4	0	4	0	1	.025	4
136			min	0	1	-.014	4	-.003	5	0	1	0	4	.009	1
137		4	max	0	1	.014	4	0	1	0	1	0	1	.012	4
138			min	0	1	.005	1	0	4	0	4	-.001	4	.004	1
139		5	max	0	1	.014	4	.002	1	0	1	0	1	0	1
140			min	0	1	.005	1	.001	4	0	4	0	4	-.002	4
141	M17	1	max	0	1	.169	4	.004	4	.003	4	-.002	1	.025	4
142			min	0	1	.056	1	.001	1	0	1	-.006	4	.008	1
143		2	max	0	1	.166	4	.004	4	.003	4	0	1	-.046	1
144			min	0	1	.053	1	.001	1	0	1	-.002	4	-.143	4
145		3	max	0	1	.776	4	.001	1	0	1	.003	4	.318	4
146			min	0	1	-.249	1	-.004	4	-.003	4	0	1	.102	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
147		4	max	0	1	-.053	1	-.001	1	0	1	0	1	-.046	1
148			min	0	1	-.166	4	-.004	4	-.003	4	-.002	4	-.143	4
149		5	max	0	1	-.056	1	-.001	1	0	1	-.002	1	.025	4
150			min	0	1	-.169	4	-.004	4	-.003	4	-.006	4	.008	1
151	M18	1	max	0	1	.151	4	.004	4	.004	4	-.002	1	.021	4
152			min	0	1	.044	1	.001	1	.002	1	-.005	4	.006	1
153		2	max	0	1	.154	4	.004	4	.004	4	0	1	-.039	1
154			min	0	1	.047	1	.001	1	.002	1	-.001	4	-.132	4
155		3	max	0	1	.756	4	-.001	1	.004	4	.003	4	.321	4
156			min	0	1	.224	1	-.004	4	.002	1	0	1	.095	1
157		4	max	0	1	-.047	1	-.001	1	-.002	1	0	1	-.039	1
158			min	0	1	-.154	4	-.004	4	-.004	4	-.001	4	-.132	4
159		5	max	0	1	-.044	1	-.001	1	-.002	1	-.002	1	.021	4
160			min	0	1	-.151	4	-.004	4	-.004	4	-.005	4	.006	1
161	M19	1	max	-.441	1	0	1	.001	4	0	1	0	1	0	1
162			min	-1.383	4	-.002	4	0	1	0	4	0	1	0	1
163		2	max	-.435	1	.001	1	.001	4	0	1	.006	4	.005	1
164			min	-1.376	4	-.002	4	0	1	0	4	.002	1	-.019	4
165		3	max	-.371	1	.001	1	0	4	0	4	0	1	-.009	1
166			min	-1.199	4	.001	4	0	1	0	1	-.002	4	-.025	4
167		4	max	-.431	1	.002	4	0	1	0	4	.006	4	-.014	1
168			min	-1.371	4	.001	1	-.001	4	0	1	.002	1	-.03	4
169		5	max	-.424	1	.002	4	0	1	0	4	0	1	0	1
170			min	-1.365	4	0	1	-.001	4	0	1	0	1	0	1
171	M20	1	max	-.273	1	0	1	0	1	0	4	0	1	0	1
172			min	-.913	4	0	1	0	1	0	1	0	1	0	1
173		2	max	-.28	1	0	1	0	1	0	4	0	1	0	1
174			min	-.919	4	0	1	0	1	0	1	0	1	0	1
175		3	max	-.287	1	0	1	0	1	0	4	0	1	0	1
176			min	-.926	4	0	1	0	1	0	1	0	1	0	1
177		4	max	-.293	1	0	1	0	1	0	4	0	1	0	1
178			min	-.933	4	0	1	0	1	0	1	0	1	0	1
179		5	max	-.3	1	0	1	0	1	0	4	0	1	0	1
180			min	-.94	4	0	1	0	1	0	1	0	1	0	1
181	M21	1	max	-.3	1	0	1	0	1	0	1	0	1	0	1
182			min	-.94	4	0	1	0	1	0	4	0	1	0	1
183		2	max	-.293	1	0	1	0	1	0	1	0	1	0	1
184			min	-.933	4	0	1	0	1	0	4	0	1	0	1
185		3	max	-.287	1	0	1	0	1	0	1	0	1	0	1
186			min	-.926	4	0	1	0	1	0	4	0	1	0	1
187		4	max	-.28	1	0	1	0	1	0	1	0	1	0	1
188			min	-.919	4	0	1	0	1	0	4	0	1	0	1
189		5	max	-.273	1	0	1	0	1	0	1	0	1	0	1
190			min	-.913	4	0	1	0	1	0	4	0	1	0	1
191	M22	1	max	-.424	1	0	1	.001	4	0	1	0	1	0	1
192			min	-1.365	4	-.002	4	0	1	0	4	0	1	0	1
193		2	max	-.431	1	-.001	1	.001	4	0	1	.006	4	-.014	1
194			min	-1.371	4	-.002	4	0	1	0	4	.002	1	-.03	4
195		3	max	-.371	1	-.001	4	0	1	0	1	0	1	-.009	1
196			min	-1.199	4	-.001	1	0	4	0	4	-.002	4	-.025	4
197		4	max	-.435	1	.002	4	0	1	0	4	.006	4	.005	1
198			min	-1.376	4	-.001	1	-.001	4	0	1	.002	1	-.019	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
199		5	max	-.441	1	.002	4	0	1	0	4	0	1	0	1
200			min	-1.383	4	0	1	-.001	4	0	1	0	1	0	1
201	M23	1	max	-.002	1	-.017	1	0	1	.003	4	.004	4	-.005	1
202			min	-.006	4	-.046	4	-.003	4	.001	1	.001	1	-.015	4
203		2	max	-.002	1	-.016	1	0	1	.003	4	0	4	.031	4
204			min	-.006	4	-.045	4	-.003	4	.001	1	0	1	.011	1
205		3	max	-.002	1	.043	4	.003	4	-.001	1	0	1	.075	4
206			min	-.006	4	.014	1	0	1	-.003	4	-.003	4	.026	1
207		4	max	-.002	1	.045	4	.003	4	-.001	1	0	4	.031	4
208			min	-.006	4	.016	1	0	1	-.003	4	0	1	.011	1
209		5	max	-.002	1	.046	4	.003	4	-.001	1	.004	4	-.005	1
210			min	-.006	4	.017	1	0	1	-.003	4	.001	1	-.015	4
211	M24	1	max	-.002	1	-.015	1	-.002	1	.002	4	.005	4	-.005	1
212			min	-.005	4	-.043	4	-.005	4	0	1	.002	1	-.014	4
213		2	max	-.002	1	-.016	1	-.002	1	.002	4	0	4	.03	4
214			min	-.005	4	-.045	4	-.005	4	0	1	0	1	.01	1
215		3	max	-.002	1	-.017	1	-.002	1	.002	5	-.002	1	.075	4
216			min	-.005	4	-.046	4	-.005	4	-.002	4	-.004	4	.027	1
217		4	max	-.002	1	.045	4	.005	4	0	1	0	4	.03	4
218			min	-.005	4	.016	1	.002	1	-.002	4	0	1	.01	1
219		5	max	-.002	1	.043	4	.005	4	0	1	.005	4	-.005	1
220			min	-.005	4	.015	1	.002	1	-.002	4	.002	1	-.014	4
221	M23A	1	max	1.293	4	0	1	0	1	0	1	0	1	0	1
222			min	.45	1	0	1	0	1	0	1	0	1	0	1
223		2	max	1.29	4	0	1	0	1	0	1	0	1	0	1
224			min	.446	1	0	1	0	1	0	1	0	1	0	1
225		3	max	1.286	4	0	1	0	1	0	1	0	1	0	1
226			min	.442	1	0	1	0	1	0	1	0	1	0	1
227		4	max	1.283	4	0	1	0	1	0	1	0	1	0	1
228			min	.439	1	0	1	0	1	0	1	0	1	0	1
229		5	max	1.279	4	0	1	0	1	0	1	0	1	0	1
230			min	.435	1	0	1	0	1	0	1	0	1	0	1
231	M24A	1	max	1.296	4	0	1	0	1	0	4	0	1	0	1
232			min	.45	1	0	1	0	1	0	1	0	1	0	1
233		2	max	1.292	4	0	1	0	1	0	4	0	1	0	1
234			min	.447	1	0	1	0	1	0	1	0	1	0	1
235		3	max	1.288	4	0	1	0	1	0	4	0	1	0	1
236			min	.443	1	0	1	0	1	0	1	0	1	0	1
237		4	max	1.285	4	0	1	0	1	0	4	0	1	0	1
238			min	.439	1	0	1	0	1	0	1	0	1	0	1
239		5	max	1.281	4	0	1	0	1	0	4	0	1	0	1
240			min	.436	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	.177	4	.027	4	0	1	.007	4	-.003	1	.049	4	-.015	1
2			min	.063	1	.01	1	0	4	.003	1	-.007	4	.015	1	-.049	4
3		2	max	.168	4	0	1	0	1	.506	4	-.185	1	.018	4	-.005	1
4			min	.06	1	-.002	4	0	4	.185	1	-.506	4	.005	1	-.018	4
5		3	max	.159	4	-.012	1	0	1	.352	4	-.135	1	-.005	1	.013	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
6			min	.056	1	-.032	4	0	4	.135	1	-.352	4	-.013	4	.005	1
7		4	max	.024	4	.017	4	0	1	-.047	1	.125	4	0	1	0	4
8			min	.008	1	.005	1	0	4	-.125	4	.047	1	0	4	0	1
9		5	max	.016	4	-.003	1	0	1	0	1	0	4	0	1	.003	4
10			min	.005	1	-.01	4	0	4	0	4	0	1	-.003	4	0	1
11	M2	1	max	.167	4	.026	4	0	4	.005	4	-.002	1	-.019	1	.057	4
12			min	.054	1	.009	1	0	1	.002	1	-.005	4	-.057	4	.019	1
13		2	max	.16	4	0	1	0	4	.481	4	-.16	1	-.007	1	.022	4
14			min	.052	1	-.002	4	0	1	.16	1	-.481	4	-.022	4	.007	1
15		3	max	.153	4	-.01	1	0	4	.317	4	-.101	1	.013	4	-.004	1
16			min	.05	1	-.03	4	0	1	.101	1	-.317	4	.004	1	-.013	4
17		4	max	.022	4	.017	4	0	4	-.05	1	.128	4	-.001	1	.003	4
18			min	.006	1	.006	1	0	1	-.128	4	.05	1	-.003	4	.001	1
19		5	max	.015	4	-.003	1	0	4	0	1	0	1	0	1	0	1
20			min	.005	1	-.011	4	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	0	1	.039	4	.001	4	-.072	1	.165	4	-.015	1	.042	4
22			min	-.001	4	.015	1	0	1	-.165	4	.072	1	-.042	4	.015	1
23		2	max	0	1	.039	4	.001	4	.123	4	-.038	1	-.008	1	.021	4
24			min	-.001	4	.015	1	0	1	.038	1	-.123	4	-.021	4	.008	1
25		3	max	0	1	.039	4	.001	4	.412	4	-.15	1	0	4	.001	1
26			min	-.001	4	.015	1	0	1	.15	1	-.412	4	-.001	1	0	4
27		4	max	0	1	.039	4	.001	4	.703	4	-.264	1	.021	4	-.006	1
28			min	-.001	4	.015	1	0	1	.264	1	-.703	4	.006	1	-.021	4
29		5	max	0	1	.039	4	.001	4	.995	4	-.379	1	.042	4	-.013	1
30			min	-.001	4	.016	1	0	1	.379	1	-.995	4	.013	1	-.042	4
31	M4	1	max	0	1	-.012	1	.001	4	.125	4	-.033	1	-.013	1	.043	4
32			min	-.001	4	-.035	4	0	1	.033	1	-.125	4	-.043	4	.013	1
33		2	max	0	1	-.011	1	.001	4	-.052	1	.137	4	-.005	1	.019	4
34			min	-.001	4	-.035	4	0	1	-.137	4	.052	1	-.019	4	.005	1
35		3	max	0	1	-.011	1	.001	4	-.135	1	.397	4	.006	4	-.003	1
36			min	-.001	4	-.035	4	0	1	-.397	4	.135	1	.003	1	-.006	4
37		4	max	0	1	-.011	1	.001	4	-.218	1	.657	4	.031	4	-.011	1
38			min	-.001	4	-.035	4	0	1	-.657	4	.218	1	.011	1	-.031	4
39		5	max	0	1	-.011	1	.001	4	-.298	1	.914	4	.055	4	-.018	1
40			min	-.001	4	-.035	4	0	1	-.914	4	.298	1	.018	1	-.055	4
41	M5	1	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
42			min	.055	1	0	1	0	1	0	1	0	1	0	1	0	1
43		2	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
44			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
45		3	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
46			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
47		4	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
48			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
49		5	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
50			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
51	M6	1	max	.177	4	.028	4	0	1	-.006	1	.014	4	0	1	0	1
52			min	.063	1	.01	1	0	1	-.014	4	.006	1	0	1	0	1
53		2	max	.168	4	0	1	0	1	.525	4	-.192	1	0	1	0	1
54			min	.06	1	0	4	0	1	.192	1	-.525	4	0	1	0	1
55		3	max	.159	4	-.011	1	0	1	.317	4	-.124	1	0	1	0	1
56			min	.056	1	-.031	4	0	1	.124	1	-.317	4	0	1	0	1
57		4	max	.028	4	.017	4	0	1	-.052	1	.14	4	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
58			min	.01	1	.006	1	0	1	-.14	4	.052	1	0	1	0	1
59		5	max	.02	4	-.003	1	0	1	.001	4	0	1	0	1	0	1
60			min	.007	1	-.01	4	0	1	0	1	-.001	4	0	1	0	1
61	M7	1	max	.167	4	.027	4	0	1	-.003	1	.01	4	0	1	0	1
62			min	.054	1	.009	1	0	1	-.01	4	.003	1	0	1	0	1
63		2	max	.16	4	0	1	0	1	.497	4	-.165	1	0	1	0	1
64			min	.052	1	-.001	4	0	1	.165	1	-.497	4	0	1	0	1
65		3	max	.153	4	-.01	1	0	1	.281	4	-.088	1	0	1	0	1
66			min	.05	1	-.029	4	0	1	.088	1	-.281	4	0	1	0	1
67		4	max	.027	4	.018	4	0	1	-.057	1	.145	4	0	1	0	1
68			min	.008	1	.006	1	0	1	-.145	4	.057	1	0	1	0	1
69		5	max	.02	4	-.003	1	0	1	0	1	0	1	0	1	0	1
70			min	.006	1	-.01	4	0	1	0	1	0	1	0	1	0	1
71	M8	1	max	.002	4	.026	4	0	1	.018	4	-.004	1	0	1	0	1
72			min	0	1	.01	1	0	1	.004	1	-.018	4	0	1	0	1
73		2	max	.002	4	.026	4	0	1	.213	4	-.079	1	0	1	0	1
74			min	0	1	.01	1	0	1	.079	1	-.213	4	0	1	0	1
75		3	max	.002	4	.027	4	0	1	.41	4	-.154	1	0	1	0	1
76			min	0	1	.01	1	0	1	.154	1	-.41	4	0	1	0	1
77		4	max	.002	4	.027	4	0	1	.608	4	-.231	1	0	1	0	1
78			min	0	1	.01	1	0	1	.231	1	-.608	4	0	1	0	1
79		5	max	.002	4	.027	4	0	1	.807	4	-.31	1	0	1	0	1
80			min	0	1	.011	1	0	1	.31	1	-.807	4	0	1	0	1
81	M9	1	max	.001	4	-.008	1	0	1	-.009	1	.021	4	0	1	0	1
82			min	0	1	-.025	4	0	1	-.021	4	.009	1	0	1	0	1
83		2	max	.001	4	-.008	1	0	1	-.069	1	.204	4	0	1	0	1
84			min	0	1	-.025	4	0	1	-.204	4	.069	1	0	1	0	1
85		3	max	.001	4	-.008	1	0	1	-.128	1	.386	4	0	1	0	1
86			min	0	1	-.024	4	0	1	-.386	4	.128	1	0	1	0	1
87		4	max	.001	4	-.008	1	0	1	-.185	1	.566	4	0	1	0	1
88			min	0	1	-.024	4	0	1	-.566	4	.185	1	0	1	0	1
89		5	max	.001	4	-.007	1	0	1	-.241	1	.745	4	0	1	0	1
90			min	0	1	-.024	4	0	1	-.745	4	.241	1	0	1	0	1
91	M11	1	max	.177	4	.027	4	0	4	.007	4	-.003	1	-.015	1	.049	4
92			min	.063	1	.01	1	0	1	.003	1	-.007	4	-.049	4	.015	1
93		2	max	.168	4	0	1	0	4	.506	4	-.185	1	-.005	1	.018	4
94			min	.06	1	-.002	4	0	1	.185	1	-.506	4	-.018	4	.005	1
95		3	max	.159	4	-.012	1	0	4	.352	4	-.135	1	.013	4	-.005	1
96			min	.056	1	-.032	4	0	1	.135	1	-.352	4	.005	1	-.013	4
97		4	max	.024	4	.017	4	0	4	-.047	1	.125	4	0	4	0	1
98			min	.008	1	.005	1	0	1	-.125	4	.047	1	0	1	0	4
99		5	max	.016	4	-.003	1	0	4	0	1	0	4	.003	4	0	1
100			min	.005	1	-.01	4	0	1	0	4	0	1	0	1	-.003	4
101	M12	1	max	.167	4	.026	4	0	1	.005	4	-.002	1	.057	4	-.019	1
102			min	.054	1	.009	1	0	4	.002	1	-.005	4	.019	1	-.057	4
103		2	max	.16	4	0	1	0	1	.481	4	-.16	1	.022	4	-.007	1
104			min	.052	1	-.002	4	0	4	.16	1	-.481	4	.007	1	-.022	4
105		3	max	.153	4	-.01	1	0	1	.317	4	-.101	1	-.004	1	.013	4
106			min	.05	1	-.03	4	0	4	.101	1	-.317	4	-.013	4	.004	1
107		4	max	.022	4	.017	4	0	1	-.05	1	.128	4	.003	4	-.001	1
108			min	.006	1	.006	1	0	4	-.128	4	.05	1	.001	1	-.003	4
109		5	max	.015	4	-.003	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
110			min	.005	1	-.011	4	0	4	0	1	0	1	0	1	0	1
111	M13	1	max	0	1	.039	4	0	1	-.072	1	.165	4	.042	4	-.015	1
112			min	-.001	4	.015	1	-.001	4	-.165	4	.072	1	.015	1	-.042	4
113		2	max	0	1	.039	4	0	1	.123	4	-.038	1	.021	4	-.008	1
114			min	-.001	4	.015	1	-.001	4	.038	1	-.123	4	.008	1	-.021	4
115		3	max	0	1	.039	4	0	1	.412	4	-.15	1	.001	1	0	4
116			min	-.001	4	.015	1	-.001	4	.15	1	-.412	4	0	4	-.001	1
117		4	max	0	1	.039	4	0	1	.703	4	-.264	1	-.006	1	.021	4
118			min	-.001	4	.015	1	-.001	4	.264	1	-.703	4	-.021	4	.006	1
119		5	max	0	1	.039	4	0	1	.995	4	-.379	1	-.013	1	.042	4
120			min	-.001	4	.016	1	-.001	4	.379	1	-.995	4	-.042	4	.013	1
121	M14	1	max	0	1	-.012	1	0	1	.125	4	-.033	1	.043	4	-.013	1
122			min	-.001	4	-.035	4	-.001	4	.033	1	-.125	4	.013	1	-.043	4
123		2	max	0	1	-.011	1	0	1	-.052	1	.137	4	.019	4	-.005	1
124			min	-.001	4	-.035	4	-.001	4	-.137	4	.052	1	.005	1	-.019	4
125		3	max	0	1	-.011	1	0	1	-.135	1	.397	4	-.003	1	.006	4
126			min	-.001	4	-.035	4	-.001	4	-.397	4	.135	1	-.006	4	.003	1
127		4	max	0	1	-.011	1	0	1	-.218	1	.657	4	-.011	1	.031	4
128			min	-.001	4	-.035	4	-.001	4	-.657	4	.218	1	-.031	4	.011	1
129		5	max	0	1	-.011	1	0	1	-.298	1	.914	4	-.018	1	.055	4
130			min	-.001	4	-.035	4	-.001	4	-.914	4	.298	1	-.055	4	.018	1
131	M16	1	max	0	1	0	1	0	4	.003	4	0	1	0	1	.005	4
132			min	0	1	-.002	4	0	1	0	1	-.003	4	-.005	4	0	1
133		2	max	0	1	0	1	0	4	-.007	1	.019	4	-.004	1	.007	4
134			min	0	1	-.002	4	0	1	-.019	4	.007	1	-.007	4	.004	1
135		3	max	0	1	.002	5	0	4	-.015	1	.04	4	.003	1	-.002	4
136			min	0	1	-.002	4	0	5	-.04	4	.015	1	.002	4	-.003	1
137		4	max	0	1	.002	4	0	1	-.007	1	.019	4	-.004	1	.007	4
138			min	0	1	0	1	0	4	-.019	4	.007	1	-.007	4	.004	1
139		5	max	0	1	.002	4	0	1	.003	4	0	1	0	1	.005	4
140			min	0	1	0	1	0	4	0	1	-.003	4	-.005	4	0	1
141	M17	1	max	0	1	.024	4	0	4	-.016	1	.048	4	-.004	1	.013	4
142			min	0	1	.008	1	0	1	-.048	4	.016	1	-.013	4	.004	1
143		2	max	0	1	.024	4	0	4	.28	4	-.091	1	-.001	1	.003	4
144			min	0	1	.008	1	0	1	.091	1	-.28	4	-.003	4	.001	1
145		3	max	0	1	.111	4	0	1	-.199	1	.624	4	.006	4	-.002	1
146			min	0	1	-.036	1	0	4	-.624	4	.199	1	.002	1	-.006	4
147		4	max	0	1	-.008	1	0	1	.28	4	-.091	1	-.001	1	.003	4
148			min	0	1	-.024	4	0	4	.091	1	-.28	4	-.003	4	.001	1
149		5	max	0	1	-.008	1	0	1	-.016	1	.048	4	-.004	1	.013	4
150			min	0	1	-.024	4	0	4	-.048	4	.016	1	-.013	4	.004	1
151	M18	1	max	0	1	.022	4	0	4	-.012	1	.041	4	-.004	1	.012	4
152			min	0	1	.006	1	0	1	-.041	4	.012	1	-.012	4	.004	1
153		2	max	0	1	.022	4	0	4	.258	4	-.076	1	0	1	.003	4
154			min	0	1	.007	1	0	1	.076	1	-.258	4	-.003	4	0	1
155		3	max	0	1	.108	4	0	1	-.187	1	.63	4	.006	4	-.002	1
156			min	0	1	.032	1	0	4	-.63	4	.187	1	.002	1	-.006	4
157		4	max	0	1	-.007	1	0	1	.258	4	-.076	1	0	1	.003	4
158			min	0	1	-.022	4	0	4	.076	1	-.258	4	-.003	4	0	1
159		5	max	0	1	-.006	1	0	1	-.012	1	.041	4	-.004	1	.012	4
160			min	0	1	-.022	4	0	4	-.041	4	.012	1	-.012	4	.004	1
161	M19	1	max	-.084	1	0	1	0	4	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
162			min	-.263	4	0	4	0	1	0	1	0	1	0	1	0	1
163		2	max	-.083	1	0	1	0	4	.074	4	.018	1	.058	4	-.021	1
164			min	-.262	4	0	4	0	1	-.018	1	-.074	4	.021	1	-.058	4
165		3	max	-.071	1	0	1	0	4	.097	4	-.033	1	-.007	1	.019	4
166			min	-.228	4	0	4	0	1	.033	1	-.097	4	-.019	4	.007	1
167		4	max	-.082	1	0	4	0	1	.119	4	-.056	1	.057	4	-.02	1
168			min	-.261	4	0	1	0	4	.056	1	-.119	4	.02	1	-.057	4
169		5	max	-.081	1	0	4	0	1	0	1	0	1	0	1	0	1
170			min	-.26	4	0	1	0	4	0	1	0	1	0	1	0	1
171	M20	1	max	-.052	1	0	1	0	1	0	1	0	1	0	1	0	1
172			min	-.174	4	0	1	0	1	0	1	0	1	0	1	0	1
173		2	max	-.053	1	0	1	0	1	0	1	0	1	0	1	0	1
174			min	-.175	4	0	1	0	1	0	1	0	1	0	1	0	1
175		3	max	-.055	1	0	1	0	1	0	1	0	1	0	1	0	1
176			min	-.176	4	0	1	0	1	0	1	0	1	0	1	0	1
177		4	max	-.056	1	0	1	0	1	0	1	0	1	0	1	0	1
178			min	-.178	4	0	1	0	1	0	1	0	1	0	1	0	1
179		5	max	-.057	1	0	1	0	1	0	1	0	1	0	1	0	1
180			min	-.179	4	0	1	0	1	0	1	0	1	0	1	0	1
181	M21	1	max	-.057	1	0	1	0	1	0	1	0	1	0	1	0	1
182			min	-.179	4	0	1	0	1	0	1	0	1	0	1	0	1
183		2	max	-.056	1	0	1	0	1	0	1	0	1	0	1	0	1
184			min	-.178	4	0	1	0	1	0	1	0	1	0	1	0	1
185		3	max	-.055	1	0	1	0	1	0	1	0	1	0	1	0	1
186			min	-.176	4	0	1	0	1	0	1	0	1	0	1	0	1
187		4	max	-.053	1	0	1	0	1	0	1	0	1	0	1	0	1
188			min	-.175	4	0	1	0	1	0	1	0	1	0	1	0	1
189		5	max	-.052	1	0	1	0	1	0	1	0	1	0	1	0	1
190			min	-.174	4	0	1	0	1	0	1	0	1	0	1	0	1
191	M22	1	max	-.081	1	0	1	0	4	0	1	0	1	0	1	0	1
192			min	-.26	4	0	4	0	1	0	1	0	1	0	1	0	1
193		2	max	-.082	1	0	1	0	4	.119	4	-.056	1	.057	4	-.02	1
194			min	-.261	4	0	4	0	1	.056	1	-.119	4	.02	1	-.057	4
195		3	max	-.071	1	0	4	0	1	.097	4	-.033	1	-.007	1	.019	4
196			min	-.228	4	0	1	0	4	.033	1	-.097	4	-.019	4	.007	1
197		4	max	-.083	1	0	4	0	1	.074	4	.018	1	.058	4	-.021	1
198			min	-.262	4	0	1	0	4	-.018	1	-.074	4	.021	1	-.058	4
199		5	max	-.084	1	0	4	0	1	0	1	0	1	0	1	0	1
200			min	-.263	4	0	1	0	4	0	1	0	1	0	1	0	1
201	M23	1	max	0	1	-.005	1	0	1	.057	4	-.02	1	.038	4	-.01	1
202			min	-.001	4	-.013	4	0	4	.02	1	-.057	4	.01	1	-.038	4
203		2	max	0	1	-.004	1	0	1	-.043	1	.12	4	.007	4	-.003	1
204			min	-.001	4	-.013	4	0	4	-.12	4	.043	1	.003	1	-.007	4
205		3	max	0	1	.012	4	0	4	-.102	1	.292	4	-.004	1	.023	4
206			min	-.001	4	.004	1	0	1	-.292	4	.102	1	-.023	4	.004	1
207		4	max	0	1	.013	4	0	4	-.043	1	.12	4	.007	4	-.003	1
208			min	-.001	4	.004	1	0	1	-.12	4	.043	1	.003	1	-.007	4
209		5	max	0	1	.013	4	0	4	.057	4	-.02	1	.038	4	-.01	1
210			min	-.001	4	.005	1	0	1	.02	1	-.057	4	.01	1	-.038	4
211	M24	1	max	0	1	-.004	1	0	1	.056	4	-.02	1	.042	4	-.016	1
212			min	-.001	4	-.012	4	-.001	4	.02	1	-.056	4	.016	1	-.042	4
213		2	max	0	1	-.005	1	0	1	-.041	1	.116	4	0	4	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
214			min	-.001	4	-.013	4	-.001	4	-.116	4	.041	1	0	1	0	4
215		3	max	0	1	-.005	1	0	1	-.106	1	.293	4	-.018	1	.041	4
216			min	-.001	4	-.013	4	-.001	4	-.293	4	.106	1	-.041	4	.018	1
217		4	max	0	1	.013	4	.001	4	-.041	1	.116	4	0	4	0	1
218			min	-.001	4	.005	1	0	1	-.116	4	.041	1	0	1	0	4
219		5	max	0	1	.012	4	.001	4	.056	4	-.02	1	.042	4	-.016	1
220			min	-.001	4	.004	1	0	1	.02	1	-.056	4	.016	1	-.042	4
221	M23A	1	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
222			min	.055	1	0	1	0	1	0	1	0	1	0	1	0	1
223		2	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
224			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
225		3	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
226			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
227		4	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
228			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
229		5	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
230			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
231	M24A	1	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
232			min	.055	1	0	1	0	1	0	1	0	1	0	1	0	1
233		2	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
234			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
235		3	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
236			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
237		4	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
238			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
239		5	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
240			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Deflections

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
1	M1	1	max	0	1	0	1	0	1	2.26e-4	4	NC	1	NC	1
2			min	0	1	0	1	0	1	6.696e-5	1	NC	1	NC	1
3		2	max	-.001	1	-.055	1	-.002	1	9.466e-5	4	2755.244	1	NC	1
4			min	-.004	4	-.151	4	-.007	4	2.732e-5	1	1028.597	4	NC	1
5		3	max	-.003	1	-.048	1	-.001	1	-1.232e-5	1	3713.762	1	NC	1
6			min	-.007	4	-.132	4	-.004	4	-3.664e-5	4	1437.011	4	NC	1
7		4	max	-.003	1	-.028	1	0	1	-3.085e-5	1	NC	1	NC	1
8			min	-.009	4	-.08	4	-.002	4	-8.409e-5	4	5576.276	4	NC	1
9		5	max	-.003	1	-.023	1	0	1	-5.038e-5	1	NC	1	NC	1
10			min	-.01	4	-.073	4	0	1	-1.337e-4	4	NC	1	NC	1
11	M2	1	max	-.011	1	.015	4	0	1	-9.149e-5	1	NC	1	NC	1
12			min	-.036	4	.005	1	0	1	-2.768e-4	4	NC	1	NC	1
13		2	max	-.012	1	-.04	1	.009	4	-4.02e-5	1	3510.223	1	NC	1
14			min	-.039	4	-.126	4	.003	1	-1.211e-4	4	1118.631	4	NC	1
15		3	max	-.013	1	-.031	1	.007	4	3.448e-5	4	5656.182	1	NC	1
16			min	-.042	4	-.104	4	.002	1	1.108e-5	1	1656.324	4	NC	1
17		4	max	-.014	1	-.016	1	.004	4	4.62e-5	4	NC	1	NC	1
18			min	-.044	4	-.057	4	.001	1	1.638e-5	1	8041.242	4	NC	1
19		5	max	-.014	1	-.019	1	0	1	5.579e-5	4	NC	1	NC	1
20			min	-.045	4	-.059	4	0	1	2.068e-5	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
21	M3	1	max	-.046	1	-.003	1	0	1	1.002e-3	4	NC	1	NC	1
22			min	-.124	4	-.01	4	0	4	3.553e-4	1	NC	1	NC	1
23		2	max	-.046	1	-.009	1	0	1	7.383e-4	4	NC	1	NC	1
24			min	-.124	4	-.026	4	0	4	2.633e-4	1	3635.519	4	NC	1
25		3	max	-.046	1	-.014	1	0	1	4.743e-4	4	5717.076	1	NC	1
26			min	-.124	4	-.039	4	-.002	4	1.713e-4	1	2088.722	4	NC	1
27		4	max	-.046	1	-.017	1	0	1	2.103e-4	4	6098.187	1	NC	1
28			min	-.124	4	-.047	4	-.004	4	7.934e-5	1	2255.855	4	7063.436	4
29		5	max	-.046	1	-.016	1	-.001	1	-1.266e-5	1	NC	1	NC	1
30			min	-.124	4	-.044	4	-.004	4	-5.366e-5	4	NC	1	5882.976	4
31	M4	1	max	-.034	1	-.009	1	0	1	-3.638e-4	1	3106.057	1	NC	1
32			min	-.113	4	-.028	4	0	4	-1.021e-3	4	903.345	4	NC	1
33		2	max	-.034	1	-.004	1	0	1	-2.685e-4	1	6748.99	1	NC	1
34			min	-.113	4	-.014	4	-.002	4	-7.511e-4	4	1784.097	4	NC	1
35		3	max	-.034	1	0	1	-.001	1	-1.733e-4	1	NC	1	NC	1
36			min	-.113	4	-.002	4	-.004	4	-4.814e-4	4	NC	1	NC	1
37		4	max	-.034	1	.004	4	-.002	1	-7.802e-5	1	NC	1	NC	1
38			min	-.113	4	.001	1	-.006	4	-2.117e-4	4	6958.221	4	NC	1
39		5	max	-.034	1	0	4	-.002	1	5.801e-5	4	NC	1	NC	1
40			min	-.113	4	0	1	-.007	4	1.723e-5	1	NC	1	NC	1
41	M5	1	max	.025	4	-.031	1	0	1	-1.545e-5	1	NC	1	NC	1
42			min	.009	1	-.085	4	-.003	4	-3.449e-5	4	NC	1	NC	1
43		2	max	.023	4	-.028	1	-.001	1	-1.209e-5	1	NC	1	NC	1
44			min	.009	1	-.083	4	-.004	4	-2.733e-5	4	NC	1	NC	1
45		3	max	.021	4	-.026	1	-.001	1	-8.729e-6	1	NC	1	NC	1
46			min	.008	1	-.08	4	-.004	4	-2.017e-5	4	NC	1	NC	1
47		4	max	.019	4	-.024	1	-.002	1	-5.367e-6	1	NC	1	NC	1
48			min	.007	1	-.078	4	-.005	4	-1.301e-5	4	NC	1	NC	1
49		5	max	.017	4	-.021	1	-.002	1	-2.005e-6	1	NC	1	NC	1
50			min	.006	1	-.076	4	-.005	4	-5.852e-6	4	NC	1	NC	1
51	M6	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
52			min	0	1	0	1	0	1	0	1	NC	1	NC	1
53		2	max	-.001	1	-.058	1	0	1	0	1	2621.048	1	NC	1
54			min	-.004	4	-.156	4	0	1	0	1	983.163	4	NC	1
55		3	max	-.003	1	-.05	1	0	1	0	1	3509.84	1	NC	1
56			min	-.007	4	-.135	4	0	1	0	1	1372.132	4	NC	1
57		4	max	-.003	1	-.027	1	0	1	0	1	NC	1	NC	1
58			min	-.009	4	-.077	4	0	1	0	1	5789.102	4	NC	1
59		5	max	-.003	1	-.023	1	0	1	0	1	NC	1	NC	1
60			min	-.01	4	-.071	4	0	1	0	1	NC	1	NC	1
61	M7	1	max	-.01	1	.014	4	0	1	0	1	NC	1	NC	1
62			min	-.034	4	.004	1	0	1	0	1	NC	1	NC	1
63		2	max	-.012	1	-.041	1	0	1	0	1	3401.888	1	NC	1
64			min	-.037	4	-.13	4	0	1	0	1	1080.032	4	NC	1
65		3	max	-.013	1	-.031	1	0	1	0	1	5620.184	1	NC	1
66			min	-.041	4	-.106	4	0	1	0	1	1620.017	4	NC	1
67		4	max	-.013	1	-.014	1	0	1	0	1	NC	1	NC	1
68			min	-.043	4	-.054	4	0	1	0	1	9467.844	4	NC	1
69		5	max	-.014	1	-.019	1	0	1	0	1	NC	1	NC	1
70			min	-.043	4	-.058	4	0	1	0	1	NC	1	NC	1
71	M8	1	max	-.047	1	-.01	1	0	1	0	1	NC	1	NC	1
72			min	-.128	4	-.029	4	0	1	0	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
73		2	max	-.047	1	-.014	1	0	1	0	1	8890.8	1	NC	1
74			min	-.128	4	-.041	4	0	1	0	1	3338.096	4	NC	1
75		3	max	-.047	1	-.018	1	0	1	0	1	5575.687	1	NC	1
76			min	-.128	4	-.049	4	0	1	0	1	2102.582	4	NC	1
77		4	max	-.047	1	-.019	1	0	1	0	1	6379.109	1	NC	1
78			min	-.128	4	-.052	4	0	1	0	1	2415.174	4	NC	1
79		5	max	-.047	1	-.017	1	0	1	0	1	NC	1	NC	1
80			min	-.128	4	-.045	4	0	1	0	1	NC	1	NC	1
81	M9	1	max	-.034	1	-.002	1	0	1	0	1	NC	1	NC	1
82			min	-.113	4	-.01	4	0	1	0	1	NC	1	NC	1
83		2	max	-.034	1	0	1	0	1	0	1	NC	1	NC	1
84			min	-.113	4	0	4	0	1	0	1	3540.862	4	NC	1
85		3	max	-.034	1	.008	4	0	1	0	1	6780.16	1	NC	1
86			min	-.113	4	.003	1	0	1	0	1	2238.806	4	NC	1
87		4	max	-.034	1	.01	4	0	1	0	1	7855.535	1	NC	1
88			min	-.113	4	.003	1	0	1	0	1	2581.507	4	NC	1
89		5	max	-.034	1	.003	4	0	1	0	1	NC	1	NC	1
90			min	-.113	4	0	1	0	1	0	1	NC	1	NC	1
91	M11	1	max	0	1	0	1	0	1	-6.696e-5	1	NC	1	NC	1
92			min	0	1	0	1	0	1	-2.26e-4	4	NC	1	NC	1
93		2	max	-.001	1	-.055	1	.007	4	-2.732e-5	1	2755.244	1	NC	1
94			min	-.004	4	-.151	4	.002	1	-9.466e-5	4	1028.597	4	NC	1
95		3	max	-.003	1	-.048	1	.004	4	3.664e-5	4	3713.762	1	NC	1
96			min	-.007	4	-.132	4	.001	1	1.232e-5	1	1437.011	4	NC	1
97		4	max	-.003	1	-.028	1	.002	4	8.409e-5	4	NC	1	NC	1
98			min	-.009	4	-.08	4	0	1	3.085e-5	1	5576.276	4	NC	1
99		5	max	-.003	1	-.023	1	0	1	1.337e-4	4	NC	1	NC	1
100			min	-.01	4	-.073	4	0	1	5.038e-5	1	NC	1	NC	1
101	M12	1	max	-.011	1	.015	4	0	1	2.768e-4	4	NC	1	NC	1
102			min	-.036	4	.005	1	0	1	9.149e-5	1	NC	1	NC	1
103		2	max	-.012	1	-.04	1	-.003	1	1.211e-4	4	3510.223	1	NC	1
104			min	-.039	4	-.126	4	-.009	4	4.02e-5	1	1118.631	4	NC	1
105		3	max	-.013	1	-.031	1	-.002	1	-1.108e-5	1	5656.182	1	NC	1
106			min	-.042	4	-.104	4	-.007	4	-3.448e-5	4	1656.324	4	NC	1
107		4	max	-.014	1	-.016	1	-.001	1	-1.638e-5	1	NC	1	NC	1
108			min	-.044	4	-.057	4	-.004	4	-4.62e-5	4	8041.242	4	NC	1
109		5	max	-.014	1	-.019	1	0	1	-2.068e-5	1	NC	1	NC	1
110			min	-.045	4	-.059	4	0	1	-5.579e-5	4	NC	1	NC	1
111	M13	1	max	-.046	1	-.003	1	0	4	-3.553e-4	1	NC	1	NC	1
112			min	-.124	4	-.01	4	0	1	-1.002e-3	4	NC	1	NC	1
113		2	max	-.046	1	-.009	1	0	4	-2.633e-4	1	NC	1	NC	1
114			min	-.124	4	-.026	4	0	1	-7.383e-4	4	3635.519	4	NC	1
115		3	max	-.046	1	-.014	1	.002	4	-1.713e-4	1	5717.076	1	NC	1
116			min	-.124	4	-.039	4	0	1	-4.743e-4	4	2088.722	4	NC	1
117		4	max	-.046	1	-.017	1	.004	4	-7.934e-5	1	6098.187	1	NC	1
118			min	-.124	4	-.047	4	0	1	-2.103e-4	4	2255.855	4	7063.436	4
119		5	max	-.046	1	-.016	1	.004	4	5.366e-5	4	NC	1	NC	1
120			min	-.124	4	-.044	4	.001	1	1.266e-5	1	NC	1	5882.976	4
121	M14	1	max	-.034	1	-.009	1	0	4	1.021e-3	4	3106.057	1	NC	1
122			min	-.113	4	-.028	4	0	1	3.638e-4	1	903.345	4	NC	1
123		2	max	-.034	1	-.004	1	.002	4	7.511e-4	4	6748.99	1	NC	1
124			min	-.113	4	-.014	4	0	1	2.685e-4	1	1784.097	4	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
125		3	max	-.034	1	0	1	.004	4	4.814e-4	4	NC	1	NC	1
126			min	-.113	4	-.002	4	.001	1	1.733e-4	1	NC	1	NC	1
127		4	max	-.034	1	.004	4	.006	4	2.117e-4	4	NC	1	NC	1
128			min	-.113	4	.001	1	.002	1	7.802e-5	1	6958.221	4	NC	1
129		5	max	-.034	1	0	4	.007	4	-1.723e-5	1	NC	1	NC	1
130			min	-.113	4	0	1	.002	1	-5.801e-5	4	NC	1	NC	1
131	M16	1	max	0	1	-.023	1	-.006	1	4.737e-4	4	NC	1	NC	1
132			min	0	1	-.072	4	-.019	4	2.036e-4	1	NC	1	NC	1
133		2	max	0	1	-.023	1	-.005	1	4.573e-4	4	NC	1	NC	1
134			min	0	1	-.07	4	-.018	4	2.012e-4	1	NC	1	NC	1
135		3	max	0	1	-.022	1	-.005	1	4.408e-4	4	NC	1	NC	1
136			min	0	1	-.07	4	-.018	4	1.988e-4	1	NC	1	NC	1
137		4	max	0	1	-.023	1	-.005	1	4.573e-4	4	NC	1	NC	1
138			min	0	1	-.07	4	-.018	4	2.012e-4	1	NC	1	NC	1
139		5	max	0	1	-.023	1	-.006	1	4.737e-4	4	NC	1	NC	1
140			min	0	1	-.072	4	-.019	4	2.036e-4	1	NC	1	NC	1
141	M17	1	max	0	1	.039	4	0	1	-1.829e-3	1	NC	1	NC	1
142			min	0	1	.012	1	0	1	-5.67e-3	4	NC	1	NC	1
143		2	max	0	1	.032	4	0	4	-1.841e-3	1	NC	1	NC	1
144			min	0	1	.01	1	0	1	-5.711e-3	4	7402.778	4	NC	1
145		3	max	0	1	.037	4	0	1	-1.853e-3	1	NC	1	NC	1
146			min	0	1	.011	1	0	1	-5.752e-3	4	NC	1	NC	1
147		4	max	0	1	.032	4	0	4	-1.841e-3	1	NC	1	NC	1
148			min	0	1	.01	1	0	1	-5.711e-3	4	7402.778	4	NC	1
149		5	max	0	1	.039	4	0	1	-1.829e-3	1	NC	1	NC	1
150			min	0	1	.012	1	0	1	-5.67e-3	4	NC	1	NC	1
151	M18	1	max	0	1	0	1	0	1	-2.223e-3	1	NC	1	NC	1
152			min	0	1	0	1	0	1	-6.068e-3	4	NC	1	NC	1
153		2	max	0	1	-.001	1	0	4	-2.246e-3	1	NC	1	NC	1
154			min	0	1	-.005	4	0	1	-6.124e-3	4	9517.069	4	NC	1
155		3	max	0	1	0	1	0	1	-2.27e-3	1	NC	1	NC	1
156			min	0	1	0	1	0	1	-6.181e-3	4	NC	1	NC	1
157		4	max	0	1	-.001	1	0	4	-2.246e-3	1	NC	1	NC	1
158			min	0	1	-.005	4	0	1	-6.124e-3	4	9517.069	4	NC	1
159		5	max	0	1	0	1	0	1	-2.223e-3	1	NC	1	NC	1
160			min	0	1	0	1	0	1	-6.068e-3	4	NC	1	NC	1
161	M19	1	max	-.012	1	0	1	0	1	-1.096e-5	1	NC	1	NC	1
162			min	-.039	4	0	1	0	1	-3.445e-5	4	NC	1	NC	1
163		2	max	-.009	1	-.034	1	0	4	1.454e-4	4	7401.943	1	NC	1
164			min	-.028	4	-.113	4	0	1	6.533e-5	1	2235.501	4	NC	1
165		3	max	-.006	1	-.064	1	.032	4	8.08e-5	4	3961.422	1	NC	1
166			min	-.019	4	-.187	4	.011	1	2.362e-5	1	1347.235	4	7904.87	4
167		4	max	-.003	1	-.046	1	0	4	1.616e-5	4	5509.398	1	NC	1
168			min	-.01	4	-.124	4	0	1	-1.81e-5	1	2026.044	4	NC	1
169		5	max	0	1	0	1	0	1	-9.799e-6	1	NC	1	NC	1
170			min	0	1	0	1	0	1	-3.1e-5	4	NC	1	NC	1
171	M20	1	max	.005	4	0	1	0	1	-2.968e-6	1	NC	1	NC	1
172			min	.001	1	0	4	0	1	-9.392e-6	4	NC	1	NC	1
173		2	max	.011	4	0	1	0	1	-3.056e-6	1	NC	1	NC	1
174			min	.003	1	0	4	0	1	-9.653e-6	4	NC	1	NC	1
175		3	max	.018	4	0	1	0	1	-3.143e-6	1	NC	1	NC	1
176			min	.006	1	0	4	0	1	-9.913e-6	4	NC	1	NC	1

Envelope Member Section Deflections (Continued)

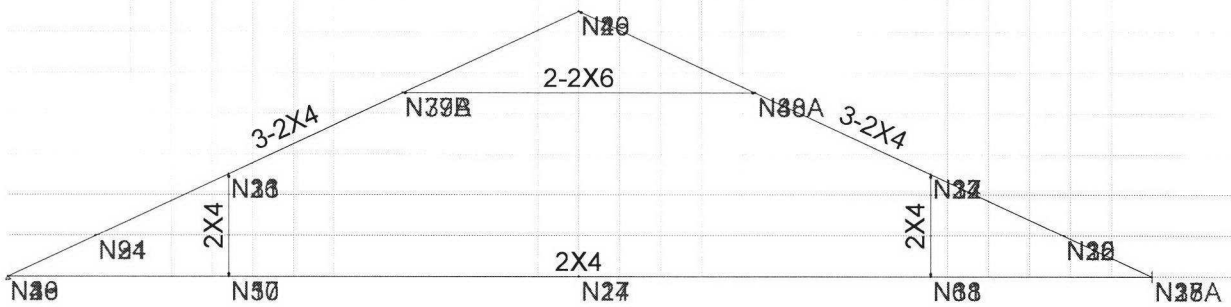
	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
177		4	max	.025	4	0	1	0	1	-3.231e-6	1	NC	1	NC	1
178			min	.008	1	0	4	0	1	-1.017e-5	4	NC	1	NC	1
179		5	max	.032	4	0	1	0	1	-3.318e-6	1	NC	1	NC	1
180			min	.01	1	0	4	0	1	-1.043e-5	4	NC	1	NC	1
181	M21	1	max	-.01	1	0	1	0	1	-3.318e-6	1	NC	1	NC	1
182			min	-.032	4	0	4	0	1	-1.043e-5	4	NC	1	NC	1
183		2	max	-.008	1	0	1	0	1	-3.231e-6	1	NC	1	NC	1
184			min	-.025	4	0	4	0	1	-1.017e-5	4	NC	1	NC	1
185		3	max	-.006	1	0	1	0	1	-3.143e-6	1	NC	1	NC	1
186			min	-.018	4	0	4	0	1	-9.913e-6	4	NC	1	NC	1
187		4	max	-.003	1	0	1	0	1	-3.056e-6	1	NC	1	NC	1
188			min	-.011	4	0	4	0	1	-9.653e-6	4	NC	1	NC	1
189		5	max	-.001	1	0	1	0	1	-2.968e-6	1	NC	1	NC	1
190			min	-.005	4	0	4	0	1	-9.392e-6	4	NC	1	NC	1
191	M22	1	max	0	1	0	1	0	1	-9.799e-6	1	NC	1	NC	1
192			min	0	1	0	1	0	1	-3.1e-5	4	NC	1	NC	1
193		2	max	.01	4	-.046	1	0	4	1.616e-5	4	5509.398	1	NC	1
194			min	.003	1	-.124	4	0	1	-1.81e-5	1	2026.044	4	NC	1
195		3	max	.019	4	-.064	1	.032	4	8.08e-5	4	3961.422	1	NC	1
196			min	.006	1	-.187	4	.011	1	2.362e-5	1	1347.235	4	7904.87	4
197		4	max	.028	4	-.034	1	0	4	1.454e-4	4	7401.943	1	NC	1
198			min	.009	1	-.113	4	0	1	6.533e-5	1	2235.501	4	NC	1
199		5	max	.039	4	0	1	0	1	-1.096e-5	1	NC	1	NC	1
200			min	.012	1	0	1	0	1	-3.445e-5	4	NC	1	NC	1
201	M23	1	max	0	1	-.009	1	.113	4	2.097e-3	4	NC	1	NC	1
202			min	0	4	-.028	4	.034	1	6.754e-4	1	NC	1	NC	1
203		2	max	0	1	-.004	1	.113	4	1.882e-3	4	NC	1	NC	1
204			min	0	4	-.016	4	.034	1	5.828e-4	1	3873.808	4	NC	1
205		3	max	0	1	-.002	1	.113	4	1.667e-3	4	7273.004	1	NC	1
206			min	0	1	-.01	4	.034	1	4.901e-4	1	2575.687	4	NC	1
207		4	max	0	4	-.004	1	.113	4	1.882e-3	4	NC	1	NC	1
208			min	0	1	-.016	4	.034	1	5.828e-4	1	3873.808	4	NC	1
209		5	max	0	4	-.009	1	.113	4	2.097e-3	4	NC	1	NC	1
210			min	0	1	-.028	4	.034	1	6.754e-4	1	NC	1	NC	1
211	M24	1	max	0	1	.01	4	.124	4	2.252e-3	4	NC	1	NC	1
212			min	0	4	.003	1	.046	1	8.307e-4	1	NC	1	NC	1
213		2	max	0	1	.022	4	.126	4	2.068e-3	4	NC	1	NC	1
214			min	0	4	.008	1	.047	1	7.856e-4	1	3934.93	4	NC	1
215		3	max	0	1	.029	4	.128	4	1.884e-3	4	7318.438	1	NC	1
216			min	0	1	.01	1	.047	1	7.405e-4	1	2608.014	4	NC	1
217		4	max	0	4	.022	4	.126	4	2.068e-3	4	NC	1	NC	1
218			min	0	1	.008	1	.047	1	7.856e-4	1	3934.93	4	NC	1
219		5	max	0	4	.01	4	.124	4	2.252e-3	4	NC	1	NC	1
220			min	0	1	.003	1	.046	1	8.307e-4	1	NC	1	NC	1
221	M23A	1	max	.025	4	-.031	1	0	1	0	1	NC	1	NC	1
222			min	.009	1	-.084	4	0	1	0	1	NC	1	NC	1
223		2	max	.023	4	-.028	1	0	1	0	1	NC	1	NC	1
224			min	.008	1	-.081	4	0	1	0	1	NC	1	NC	1
225		3	max	.021	4	-.025	1	0	1	0	1	NC	1	NC	1
226			min	.008	1	-.078	4	0	1	0	1	NC	1	NC	1
227		4	max	.018	4	-.022	1	0	1	0	1	NC	1	NC	1
228			min	.007	1	-.075	4	0	1	0	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
229		5	max	.016	4	-.02	1	0	1	0	1	NC	1	NC	1
230			min	.006	1	-.072	4	0	1	0	1	NC	1	NC	1
231	M24A	1	max	.025	4	-.031	1	.003	4	3.449e-5	4	NC	1	NC	1
232			min	.009	1	-.085	4	0	1	1.545e-5	1	NC	1	NC	1
233		2	max	.023	4	-.028	1	.004	4	2.733e-5	4	NC	1	NC	1
234			min	.009	1	-.083	4	.001	1	1.209e-5	1	NC	1	NC	1
235		3	max	.021	4	-.026	1	.004	4	2.017e-5	4	NC	1	NC	1
236			min	.008	1	-.08	4	.001	1	8.729e-6	1	NC	1	NC	1
237		4	max	.019	4	-.024	1	.005	4	1.301e-5	4	NC	1	NC	1
238			min	.007	1	-.078	4	.002	1	5.367e-6	1	NC	1	NC	1
239		5	max	.017	4	-.021	1	.005	4	5.852e-6	4	NC	1	NC	1
240			min	.006	1	-.076	4	.002	1	2.005e-6	1	NC	1	NC	1

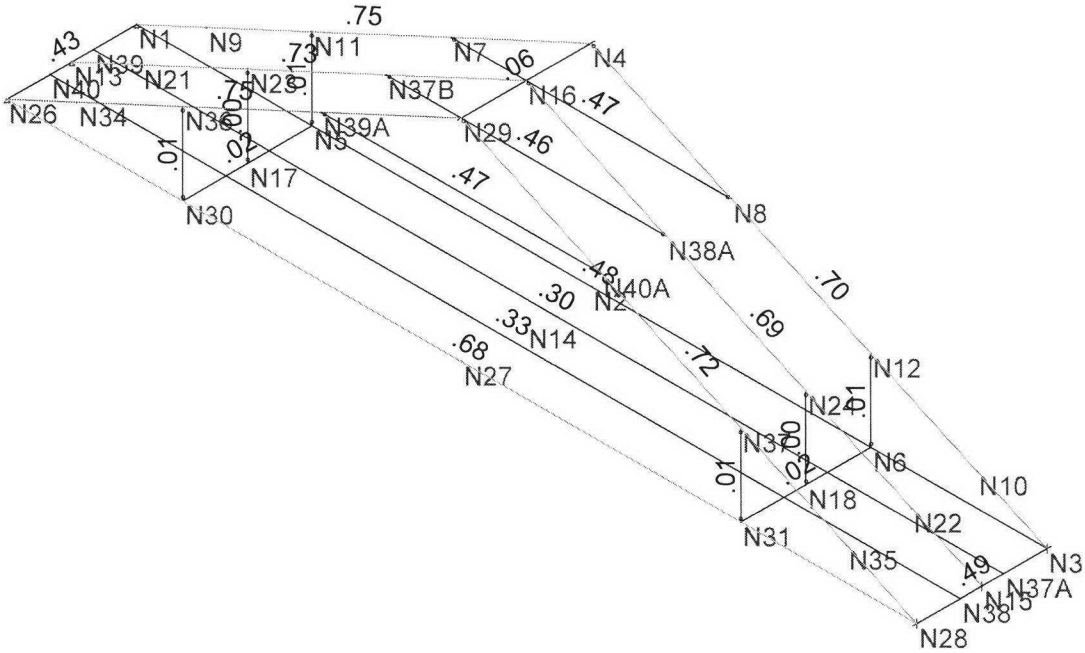
Envelope Wood Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Fc' [ksi]	Ft' [ksi]	Fb1' [ksi]	Fb2' [ksi]	Fv' [ksi]	Eqn
1	M1	2-2X4	.928	2.485	4	.212	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
2	M2	2-2X4	.841	2.485	4	.199	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
3	M3	2X4	.669	2.165	4	.365	2.165	y	4	1.165	.992	1.545	1.708	.207	3.9-3
4	M4	2X4	.624	2.165	4	.349	0	y	4	1.165	.992	1.545	1.708	.207	3.9-3
5	M5	2X6	.301	0	4	.001	0	z	4	.521	.86	1.303	1.547	.207	3.6.3
6	M6	2-2X4	.935	2.603	4	.200	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
7	M7	2-2X4	.845	2.603	4	.194	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
8	M8	2X4	.523	2.165	4	.130	2.165	y	4	1.165	.992	1.545	1.708	.207	3.9-3
9	M9	2X4	.482	2.165	4	.120	0	y	4	1.165	.992	1.545	1.708	.207	3.9-3
10	M11	2-2X4	.928	2.485	4	.212	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
11	M12	2-2X4	.841	2.485	4	.199	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
12	M13	2X4	.669	2.165	4	.365	2.165	y	4	1.165	.992	1.545	1.708	.207	3.9-3
13	M14	2X4	.624	2.165	4	.349	0	y	4	1.165	.992	1.545	1.708	.207	3.9-3
14	M16	2X6	.032	2	4	.018	0	y	4	.439	.86	1.327	1.547	.207	3.9-3
15	M17	2-2X4	.406	2	4	.558	2	y	4	.758	.992	1.549	1.708	.207	3.9-3
16	M18	2-2X4	.410	2	4	.554	1.333	y	4	.758	.992	1.549	1.708	.207	3.9-3
17	M19	2X4	.374	15.75	4	.015	0	y	4	.017	.992	1.347	1.708	.207	3.9-1
18	M20	2X4	.180	21	4	.000	0	z	4	.017	.992	1.347	1.708	.207	3.9-1
19	M21	2X4	.180	0	4	.000	0	z	4	.017	.992	1.347	1.708	.207	3.9-1
20	M22	2X4	.374	5.25	4	.015	15.75	y	4	.017	.992	1.347	1.708	.207	3.9-1
21	M23	2X4	.204	2	4	.140	4	y	4	.44	.992	1.537	1.708	.207	3.9-3
22	M24	2X4	.215	2	4	.129	2	y	4	.44	.992	1.537	1.708	.207	3.9-3
23	M23A	2X6	.301	0	4	.000	0	z	1	.521	.86	1.303	1.547	.162	3.6.3
24	M24A	2X6	.301	0	4	.001	0	z	4	.521	.86	1.303	1.547	.207	3.6.3



Envelope Only Solution

		SK - 5
		May 29, 2019 at 2:59 PM
	TL-1 Revised Reinforcement	untitled.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 1
		May 29, 2019 at 3:37 PM
	TL-1 Revised Unity	Lyne - TL-1 Revised.r3d

Wood Material Properties

	Label	Type	Database	Species	Grade	Cm	Emod	Nu	Therm...	Dens[k/f...
1	DF	Solid Sa...	Visually Graded	Douglas Fir-Larch	No.2		1	.3	.3	.035
2	SP	Solid Sa...	Visually Graded	Southern Pine	No.1		1	.3	.3	.035
3	HF	Solid Sa...	Visually Graded	Hem-Fir	No.1		1	.3	.3	.035
4	SPF	Solid Sa...	Visually Graded	Spruce-Pine-fir	No.1		1	.3	.3	.035
5	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_BAL	na		1	.3	.3	.035
6	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_UNBAL	na		1	.3	.3	.035
7	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_BAL	na		1	.3	.3	.035
8	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_UNBAL	na		1	.3	.3	.035

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2X4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255
4	2x6	2X6	Beam	None	DF	Typical	8.25	1.547	20.797	5.125
5	2x8	2X8	Beam	None	DF	Typical	10.875	2.039	47.635	7.093
6	(3) 2x4	3-2X4	Beam	None	DF	Typical	15.75	26.578	16.078	39.809

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
No Data to Print ...			

Member Distributed Loads (BLC 1 : DEAD)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.024	-.024	0	0
2	M3	Y	-.024	-.024	0	0
3	M8	Y	-.024	-.024	0	0
4	M10	Y	-.024	-.024	0	0
5	M14	Y	-.024	-.024	0	0
6	M16	Y	-.024	-.024	0	0

Member Distributed Loads (BLC 2 : SNOW)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.05	-.05	0	0
2	M3	Y	-.05	-.05	0	0
3	M8	Y	-.05	-.05	0	0
4	M10	Y	-.05	-.05	0	0
5	M14	Y	-.05	-.05	0	0
6	M16	Y	-.05	-.05	0	0

Member Distributed Loads (BLC 3 : SOLAR)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.006	-.006	%4.7	%67.9
2	M8	Y	-.006	-.006	%4.7	%67.9
3	M14	Y	-.006	-.006	%4.7	%67.9

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Pl...
1	DEAD	DL	-1					6		
2	SNOW	SL						6		
3	SOLAR	DL						3		

Load Combinations

	Description	Sol...	P...	SR...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	ASCE ASD 1	Yes			DL	1																		
2	ASCE ASD 2	Yes			DL	1	LL	1	LLS	1														
3	ASCE ASD 3 (a)	Yes			DL	1																		
4	ASCE ASD 3 (b)	Yes			DL	1	SL	1	SLN	1														
5	ASCE ASD 4 (b)	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	.236	1	1.208	4	0	1	0	1	0	1	0	1
2		min	.202	4	.438	1	-.003	4	0	1	0	1	0	1
3	N3	max	0	1	1.142	4	0	4	0	1	0	1	0	1
4		min	0	1	.364	1	0	1	0	1	0	1	0	1
5	N4	max	0	1	0	1	0	4	0	1	0	1	0	1
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	N13	max	.278	4	1.217	4	0	1	0	1	0	1	0	1
8		min	.244	1	.441	1	0	4	0	1	0	1	0	1
9	N15	max	0	1	1.13	4	.002	4	0	1	0	1	0	1
10		min	0	1	.36	1	0	1	0	1	0	1	0	1
11	N16	max	0	1	0	1	0	1	0	1	0	1	0	1
12		min	0	1	0	1	-.001	4	0	1	0	1	0	1
13	N26	max	.215	4	1.206	4	.003	4	0	1	0	1	0	1
14		min	.215	1	.437	1	0	1	0	1	0	1	0	1
15	N28	max	0	1	1.125	4	.005	4	0	1	0	1	0	1
16		min	0	1	.359	1	.002	1	0	1	0	1	0	1
17	N29	max	0	1	0	1	-.002	1	0	1	0	1	0	1
18		min	0	1	0	1	-.006	4	0	1	0	1	0	1
19	Totals:	max	.695	4	7.029	4	0	4						
20		min	.695	1	2.398	1	0	1						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
1	N1	max	0	4	0	1	0	4	8.012e-5	4	4.152e-4	4	-3.563e-3	1
2		min	0	1	0	4	0	1	2.177e-5	1	1.132e-4	1	-1.027e-2	4
3	N2	max	.016	4	-.201	1	.022	4	3.67e-4	4	-6.531e-5	1	-7.601e-5	1
4		min	.004	1	-.579	4	.007	1	1.115e-4	1	-2.824e-4	4	-7.662e-5	4
5	N3	max	.032	4	0	1	0	1	2.203e-5	4	1.698e-4	4	1.032e-2	4
6		min	.009	1	0	4	0	4	7.697e-6	1	4.62e-5	1	3.613e-3	1
7	N4	max	.016	4	-.018	1	0	1	7.112e-4	4	2.163e-4	4	-8.056e-4	1
8		min	.004	1	-.059	4	0	4	2.123e-4	1	6.305e-5	1	-1.578e-3	4
9	N5	max	.006	4	-.135	1	0	1	3.422e-4	4	-2.692e-5	4	-1.175e-3	1

Wednesday, June 05, 2019

Auric Solar
2310 S 1300 W
West Valley City, UT

RE: ROOF EVALUATION FOR 1915 SOUTHEAST 142ND AVENUE, PORTLAND, OR

As per your request I evaluated the roof for the residence located at 1915 Southeast 142nd Avenue, Portland, Oregon. The existing roof framing consists of 2x4 rafters at 24" o.c. and 2x4 hip beams where the solar panels will be located. The following loads were used in the analysis of the roof framing:

Dead load	12.0 psf
Solar panels	3.0 psf
Snow load	25.0 psf

It was found that the existing rafters and hip beams do not have adequate capacity to support the additional weight of the solar panels. It is my recommendation that reinforcement is added according to details 2 and 3 on sheet S1.0 in order for the roof framing to safely and adequately support the solar panels in the roof sections labelled TL-1 and TL-3 following the reinforcement callouts on sheets SK-5 and SK-3.

The mounting hardware should be installed such that the loads can be evenly distributed along the rafters. The racking should be installed per the manufacturer's specifications directly to the rafters.

I can be reached at 435-654-6600 extension 123 with any questions.

Respectfully,

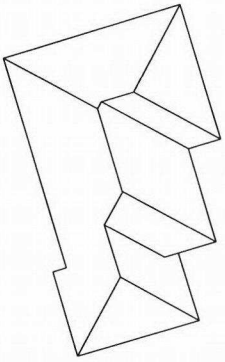
REGISTERED PROFESSIONAL ENGINEER
92284PE
OREGON
MAY 9, 2017
ADAM J. HUFF

6/5/19

EXPIRES: 6/30/19

Adam Huff, S.E.

Epic Engineering, P.C.



1 ROOF LEGEND
N.T.S.

3 HIP BEAM REINFORCEMENT
N.T.S.

CONSTRUCTION NOTES

DATE

epic ENGINEERING

REVISIONS

NAME	DATE	DETAIL/ITEM

DRAWN: EPIC
DESIGNER: EPIC
REVIEWED: EPIC
PROJECT #

SCALES

1" = 1'-0"

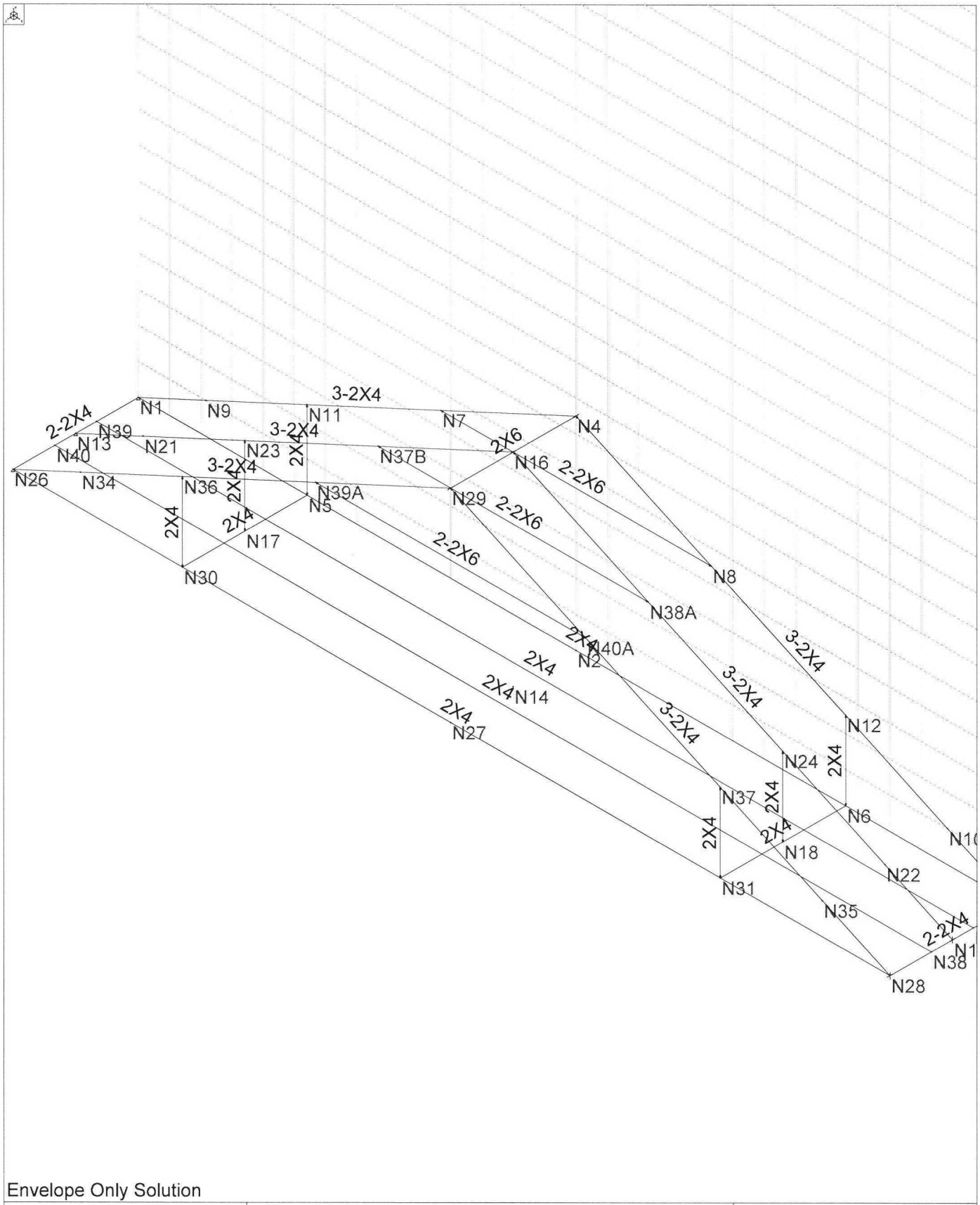
PROJECT NAME:
BRIAN LYNE

PROJECT LOCATION:

SHEET TITLE:
STRUCTURAL DETAILS

PLAN SET: PERMIT

SHEET S1.0



Envelope Only Solution

		SK - 3
		May 29, 2019 at 2:58 PM
	TL-1 Revised Layout	untitled.r3d

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
10		min	.002	1	-.394	4	-.002	4	8.296e-5	1	-3.966e-5	1	-3.468e-3	4
11	N6	max	.026	4	-.142	1	.025	4	3.918e-4	4	3.793e-4	4	3.548e-3	4
12		min	.007	1	-.402	4	.007	1	1.401e-4	1	8.357e-5	1	1.255e-3	1
13	N7	max	.014	4	-.01	1	-.002	1	5.282e-4	4	1.213e-4	4	4.642e-3	4
14		min	0	1	-.055	4	-.007	4	1.547e-4	1	3.81e-5	1	1.668e-3	1
15	N8	max	.007	4	-.031	1	.004	4	3.471e-4	4	-6.595e-5	1	-1.652e-3	1
16		min	-.002	1	-.076	4	.001	1	1.049e-4	1	-2.241e-4	4	-4.626e-3	4
17	N9	max	.12	4	-.092	1	-.002	1	2.041e-4	4	2.915e-4	4	-3.007e-3	1
18		min	.042	1	-.265	4	-.007	4	5.718e-5	1	8.123e-5	1	-8.684e-3	4
19	N10	max	-.033	1	-.093	1	.004	4	8.036e-5	4	6.565e-5	4	8.751e-3	4
20		min	-.089	4	-.266	4	0	1	2.561e-5	1	1.649e-5	1	3.072e-3	1
21	N11	max	.176	4	-.134	1	-.003	1	3.641e-4	4	1.638e-4	4	2.799e-3	4
22		min	.06	1	-.394	4	-.011	4	1.039e-4	1	4.762e-5	1	1.093e-3	1
23	N12	max	-.055	1	-.142	1	.006	4	1.813e-4	4	-2.1e-5	1	-8.036e-4	1
24		min	-.148	4	-.402	4	.002	1	5.613e-5	1	-6.428e-5	4	-2.509e-3	4
25	N13	max	0	1	0	1	0	4	1.331e-5	4	1.237e-4	4	-4.018e-3	1
26		min	0	4	0	4	0	1	4.122e-6	1	3.772e-5	1	-1.156e-2	4
27	N14	max	0	1	0	1	0	1	0	1	0	1	0	1
28		min	0	1	0	1	0	1	0	1	0	1	0	1
29	N15	max	.048	4	0	1	0	1	2.056e-6	4	4.33e-4	4	1.158e-2	4
30		min	.014	1	0	4	0	4	4.8e-7	1	1.321e-4	1	4.042e-3	1
31	N16	max	.024	4	-.023	1	0	4	6.077e-4	4	2.451e-4	4	-8.053e-4	1
32		min	.007	1	-.076	4	0	1	1.853e-4	1	7.476e-5	1	-1.545e-3	4
33	N17	max	.007	4	-.137	1	0	1	5.358e-4	4	1.217e-4	4	-1.17e-3	1
34		min	.001	1	-.405	4	-.002	4	1.581e-4	1	3.627e-5	1	-3.475e-3	4
35	N18	max	.036	4	-.147	1	.025	4	5.729e-4	4	4.744e-4	4	3.563e-3	4
36		min	.01	1	-.414	4	.007	1	1.94e-4	1	1.438e-4	1	1.258e-3	1
37	N21	max	.128	4	-.098	1	0	1	1.073e-4	4	1.096e-4	4	-3.037e-3	1
38		min	.044	1	-.281	4	-.002	4	3.277e-5	1	3.342e-5	1	-8.816e-3	4
39	N22	max	-.031	1	-.099	1	.009	4	2.204e-5	4	2.387e-4	4	8.911e-3	4
40		min	-.08	4	-.282	4	.003	1	6.608e-6	1	7.28e-5	1	3.131e-3	1
41	N23	max	.181	4	-.137	1	-.001	1	2.396e-4	4	1.097e-4	4	2.923e-3	4
42		min	.061	1	-.405	4	-.003	4	7.305e-5	1	3.344e-5	1	1.154e-3	1
43	N24	max	-.052	1	-.147	1	.014	4	7.822e-5	4	7.87e-7	4	-8.361e-4	1
44		min	-.138	4	-.414	4	.004	1	2.379e-5	1	2.471e-7	1	-2.602e-3	4
45	N26	max	0	1	0	1	0	1	-8.117e-6	1	-1.62e-4	1	-3.934e-3	1
46		min	0	4	0	4	0	4	-3.442e-5	4	-5.752e-4	4	-1.136e-2	4
47	N27	max	.029	4	-.209	1	.018	4	4.964e-4	4	-1.204e-4	1	-9.037e-5	1
48		min	.009	1	-.605	4	.005	1	1.633e-4	1	-3.554e-4	4	-9.039e-5	4
49	N28	max	.059	4	0	1	0	1	-2.142e-5	1	9.477e-4	4	1.141e-2	4
50		min	.018	1	0	4	0	4	-6.916e-5	4	2.946e-4	1	3.984e-3	1
51	N29	max	.029	4	-.027	1	0	4	4.354e-4	4	3.732e-4	4	-8.119e-4	1
52		min	.008	1	-.088	4	0	1	1.373e-4	1	1.166e-4	1	-1.565e-3	4
53	N30	max	.011	4	-.142	1	0	1	5.115e-4	4	1.97e-4	4	-1.164e-3	1
54		min	.003	1	-.418	4	-.002	4	1.755e-4	1	9.349e-5	1	-3.482e-3	4
55	N31	max	.048	4	-.151	1	.025	4	4.813e-4	4	4.474e-4	4	3.578e-3	4
56		min	.014	1	-.427	4	.007	1	1.511e-4	1	1.707e-4	1	1.261e-3	1
57	N34	max	.129	4	-.098	1	.011	4	-3.52e-6	1	-8.72e-5	1	-3.122e-3	1
58		min	.045	1	-.283	4	.003	1	-2.751e-5	4	-3.111e-4	4	-9.072e-3	4
59	N35	max	-.028	1	-.099	1	.018	4	-3.554e-5	1	5.775e-4	4	9.163e-3	4
60		min	-.07	4	-.284	4	.006	1	-1.145e-4	4	1.796e-4	1	3.213e-3	1
61	N36	max	.187	4	-.142	1	.016	4	1.994e-5	4	8.586e-6	4	2.736e-3	4

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
62		min	.063	1	-.418	4	.005	1	1.313e-5	1	4.948e-6	1	1.09e-3	1
63	N37	max	-.05	1	-.151	1	.029	4	-4.108e-5	1	1.261e-4	4	-7.829e-4	1
64		min	-.133	4	-.427	4	.009	1	-1.327e-4	4	3.982e-5	1	-2.429e-3	4
65	N37A	max	.039	4	0	1	0	1	-2.315e-6	1	1.07e-3	4	1.084e-2	4
66		min	.011	1	0	4	0	4	-6.621e-6	4	3.252e-4	1	3.789e-3	1
67	N38	max	.047	4	0	1	0	1	2.1e-5	4	3.319e-5	4	1.12e-2	4
68		min	.014	1	0	4	0	4	6.495e-6	1	1.125e-5	1	3.909e-3	1
69	N39	max	.004	4	0	1	0	4	-6.47e-6	1	-9.343e-5	1	-3.758e-3	1
70		min	.001	1	0	4	0	1	-2.386e-5	4	-3.418e-4	4	-1.081e-2	4
71	N40	max	.005	4	0	1	0	4	1.084e-5	4	4.356e-4	4	-3.878e-3	1
72		min	.002	1	0	4	0	1	2.592e-6	1	1.221e-4	1	-1.117e-2	4
73	N37B	max	.022	4	-.014	1	0	1	3.95e-4	4	1.481e-4	4	4.515e-3	4
74		min	.003	1	-.071	4	-.002	4	1.204e-4	1	4.516e-5	1	1.62e-3	1
75	N38A	max	.015	4	-.037	1	.01	4	2.101e-4	4	-7.664e-5	1	-1.624e-3	1
76		min	0	1	-.094	4	.003	1	6.404e-5	1	-2.515e-4	4	-4.516e-3	4
77	N39A	max	.028	4	-.018	1	.01	4	1.46e-4	4	2.663e-4	4	4.579e-3	4
78		min	.004	1	-.084	4	.003	1	5.084e-5	1	8.002e-5	1	1.645e-3	1
79	N40A	max	.021	4	-.041	1	.022	4	-1.653e-5	1	-9.321e-5	1	-1.646e-3	1
80		min	.002	1	-.106	4	.007	1	-5.749e-5	4	-2.973e-4	4	-4.579e-3	4

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
1	M1	1	max	2.245	4	.345	4	0	1	-.001	1	.023	4	.227	4
2			min	.819	1	.122	1	-.002	4	-.004	4	.006	1	.082	1
3		2	max	2.103	4	.075	4	0	1	-.001	1	.016	4	-.211	1
4			min	.759	1	.027	1	-.002	4	-.004	4	.004	1	-.59	4
5		3	max	1.942	4	-.084	1	0	1	-.002	1	.008	4	-.102	1
6			min	.689	1	-.233	4	-.002	4	-.005	4	.002	1	-.29	4
7		4	max	.188	4	.248	4	0	1	-.002	1	.002	4	.468	4
8			min	.065	1	.085	1	-.002	4	-.007	4	0	1	.178	1
9		5	max	.055	4	.007	1	0	1	-.002	1	0	1	0	1
10			min	.012	1	-.005	4	-.002	4	-.007	4	-.005	4	0	4
11	M3	1	max	2.074	4	.339	4	0	1	.007	4	.01	4	.221	4
12			min	.644	1	.116	1	0	4	.002	1	.003	1	.075	1
13		2	max	1.968	4	.074	4	0	1	.007	4	.006	4	-.199	1
14			min	.619	1	.026	1	0	4	.002	1	.002	1	-.577	4
15		3	max	1.847	4	-.076	1	0	1	.008	4	.005	4	-.104	1
16			min	.59	1	-.225	4	0	4	.002	1	.001	1	-.293	4
17		4	max	.158	4	.244	4	0	1	.005	4	.003	4	.432	4
18			min	.03	1	.082	1	0	4	.002	1	0	1	.142	1
19		5	max	.052	4	-.008	1	0	1	.005	4	0	1	0	1
20			min	.005	1	-.021	4	0	4	.002	1	0	1	0	1
21	M4	1	max	1.778	4	0	1	0	1	.003	4	0	1	0	1
22			min	.623	1	0	1	0	1	0	1	0	1	0	1
23		2	max	1.77	4	0	1	0	1	.003	4	0	1	0	1
24			min	.614	1	0	1	0	1	0	1	0	1	0	1
25		3	max	1.761	4	0	1	0	1	.003	4	0	1	0	1
26			min	.606	1	0	1	0	1	0	1	0	1	0	1
27		4	max	1.752	4	0	1	0	1	.003	4	0	1	0	1
28			min	.597	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
29		5	max	1.744	4	0	1	0	1	.003	4	0	1	0	1
30			min	.588	1	0	1	0	1	0	1	0	1	0	1
31	M5	1	max	-.012	1	-.002	4	0	1	.002	4	0	1	0	1
32			min	-.036	4	-.002	1	0	1	0	1	0	1	0	1
33		2	max	-.012	1	0	4	0	1	.002	4	0	1	0	1
34			min	-.036	4	0	1	0	1	0	1	0	1	0	4
35		3	max	-.012	1	0	1	0	1	.002	4	0	1	.001	1
36			min	-.036	4	0	1	0	1	0	1	0	1	.001	4
37		4	max	-.012	1	0	4	0	1	.002	4	0	1	0	1
38			min	-.036	4	0	1	0	1	0	1	0	1	0	4
39		5	max	-.012	1	.002	4	0	1	.002	4	0	1	0	1
40			min	-.036	4	.002	1	0	1	0	1	0	1	0	1
41	M6	1	max	-.015	1	-.002	1	0	1	0	1	0	1	0	1
42			min	-.039	4	-.002	4	0	1	0	4	0	1	0	1
43		2	max	-.015	1	0	1	0	1	0	1	0	1	0	4
44			min	-.039	4	0	4	0	1	0	4	0	1	0	1
45		3	max	-.015	1	0	1	0	1	0	1	0	1	.001	4
46			min	-.039	4	0	1	0	1	0	4	0	1	.001	1
47		4	max	-.015	1	0	1	0	1	0	1	0	1	0	4
48			min	-.039	4	0	4	0	1	0	4	0	1	0	1
49		5	max	-.015	1	.002	1	0	1	0	1	0	1	0	1
50			min	-.039	4	.002	4	0	1	0	4	0	1	0	1
51	M7	1	max	-.21	1	-.007	1	0	1	0	1	.003	4	-.046	1
52			min	-.776	4	-.019	4	0	4	0	4	0	1	-.127	4
53		2	max	-.221	1	0	4	0	1	0	4	0	4	-.007	1
54			min	-.787	4	0	1	0	4	0	1	0	1	-.023	4
55		3	max	-.23	1	0	4	0	1	0	4	0	1	-.008	1
56			min	-.796	4	0	1	0	4	0	1	0	4	-.024	4
57		4	max	-.239	1	0	4	0	1	0	4	0	1	-.01	1
58			min	-.805	4	0	1	0	4	0	1	-.001	4	-.026	4
59		5	max	-.25	1	.018	4	0	4	0	4	.002	4	-.042	1
60			min	-.815	4	.006	1	0	1	0	1	0	1	-.123	4
61	M8	1	max	2.166	4	.32	4	0	1	-.002	1	.007	4	.111	4
62			min	.795	1	.112	1	0	4	-.006	4	.002	1	.039	1
63		2	max	2.024	4	.05	4	0	1	-.002	1	.005	4	-.218	1
64			min	.735	1	.018	1	0	4	-.006	4	.001	1	-.61	4
65		3	max	1.879	4	-.081	1	0	1	-.002	1	.002	4	-.095	1
66			min	.671	1	-.224	4	0	4	-.006	4	0	1	-.275	4
67		4	max	.152	4	.245	4	0	1	-.003	1	.001	4	.458	4
68			min	.056	1	.084	1	0	4	-.008	4	0	1	.175	1
69		5	max	.018	4	.006	1	0	1	-.003	1	0	1	0	4
70			min	.003	1	-.008	4	0	4	-.008	4	-.001	4	0	1
71	M10	1	max	1.977	4	.316	4	0	1	.007	4	.023	4	.11	4
72			min	.614	1	.108	1	-.002	4	.002	1	.007	1	.038	1
73		2	max	1.87	4	.051	4	0	1	.007	4	.016	4	-.206	1
74			min	.588	1	.018	1	-.002	4	.002	1	.005	1	-.597	4
75		3	max	1.764	4	-.073	1	0	1	.008	4	.012	4	-.1	1
76			min	.564	1	-.215	4	-.002	4	.002	1	.004	1	-.28	4
77		4	max	.103	4	.241	4	0	1	.005	4	.007	4	.42	4
78			min	.014	1	.081	1	-.002	4	.002	1	.002	1	.138	1
79		5	max	-.004	4	-.009	1	0	1	.005	4	0	1	0	1
80			min	-.012	1	-.024	4	-.002	4	.002	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
81	M12	1	max	0	1	-.002	4	0	1	.002	4	0	1	0	1
82			min	0	4	-.002	1	0	1	0	1	0	1	0	1
83		2	max	0	1	0	4	0	1	.002	4	0	1	0	1
84			min	0	4	0	1	0	1	0	1	0	1	0	4
85		3	max	0	1	0	1	0	1	.002	4	0	1	.001	1
86			min	0	4	0	1	0	1	0	1	0	1	.001	4
87		4	max	0	1	0	4	0	1	.002	4	0	1	0	1
88			min	0	4	0	1	0	1	0	1	0	1	0	4
89		5	max	0	1	.002	4	0	1	.002	4	0	1	0	1
90			min	0	4	.002	1	0	1	0	1	0	1	0	1
91	M13	1	max	0	1	-.002	1	0	1	0	4	0	1	0	1
92			min	-.001	4	-.002	4	0	1	0	1	0	1	0	1
93		2	max	0	1	0	1	0	1	0	4	0	1	0	4
94			min	-.001	4	0	4	0	1	0	1	0	1	0	1
95		3	max	0	1	0	1	0	1	0	4	0	1	.001	4
96			min	-.001	4	0	1	0	1	0	1	0	1	.001	1
97		4	max	0	1	0	1	0	1	0	4	0	1	0	4
98			min	-.001	4	0	4	0	1	0	1	0	1	0	1
99		5	max	0	1	.002	1	0	1	0	4	0	1	0	1
100			min	-.001	4	.002	4	0	1	0	1	0	1	0	1
101	M14	1	max	2.21	4	.333	4	.002	4	-.003	1	-.009	1	.16	4
102			min	.808	1	.117	1	0	1	-.008	4	-.032	4	.057	1
103		2	max	2.069	4	.063	4	.002	4	-.003	1	-.006	1	-.218	1
104			min	.748	1	.022	1	0	1	-.008	4	-.023	4	-.61	4
105		3	max	1.914	4	-.084	1	.002	4	-.002	1	-.004	1	-.1	1
106			min	.681	1	-.231	4	0	1	-.008	4	-.013	4	-.289	4
107		4	max	.169	4	.246	4	.002	4	-.003	1	0	1	.463	4
108			min	.059	1	.085	1	0	1	-.011	4	-.002	4	.177	1
109		5	max	.035	4	.007	1	.002	4	-.003	1	.007	4	0	1
110			min	.006	1	-.006	4	0	1	-.011	4	.002	1	0	4
111	M16	1	max	2.038	4	.328	4	-.001	1	.008	4	.048	4	.156	4
112			min	.633	1	.112	1	-.003	4	.003	1	.015	1	.053	1
113		2	max	1.931	4	.063	4	-.001	1	.008	4	.035	4	-.206	1
114			min	.608	1	.022	1	-.003	4	.003	1	.011	1	-.598	4
115		3	max	1.817	4	-.075	1	-.001	1	.009	4	.024	4	-.104	1
116			min	.581	1	-.222	4	-.003	4	.003	1	.008	1	-.293	4
117		4	max	.137	4	.243	4	-.001	1	.006	4	.013	4	.426	4
118			min	.024	1	.081	1	-.003	4	.002	1	.004	1	.14	1
119		5	max	.03	4	-.009	1	-.001	1	.006	4	0	1	0	1
120			min	-.002	1	-.022	4	-.003	4	.002	1	0	1	0	1
121	M18	1	max	-.007	1	-.002	4	0	1	.002	4	0	1	0	1
122			min	-.021	4	-.002	1	0	1	0	1	0	1	0	1
123		2	max	-.007	1	0	4	0	1	.002	4	0	1	0	1
124			min	-.021	4	0	1	0	1	0	1	0	1	0	4
125		3	max	-.007	1	0	1	0	1	.002	4	0	1	.001	1
126			min	-.021	4	0	1	0	1	0	1	0	1	.001	4
127		4	max	-.007	1	0	4	0	1	.002	4	0	1	0	1
128			min	-.021	4	0	1	0	1	0	1	0	1	0	4
129		5	max	-.007	1	.002	4	0	1	.002	4	0	1	0	1
130			min	-.021	4	.002	1	0	1	0	1	0	1	0	1
131	M19	1	max	-.009	1	-.002	1	0	1	0	4	0	1	0	1
132			min	-.023	4	-.002	4	0	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
133		2	max	-.009	1	0	1	0	1	0	4	0	1	0	4
134			min	-.023	4	0	4	0	1	0	1	0	1	0	1
135		3	max	-.009	1	0	1	0	1	0	4	0	1	.001	4
136			min	-.023	4	0	1	0	1	0	1	0	1	.001	1
137		4	max	-.009	1	0	1	0	1	0	4	0	1	0	4
138			min	-.023	4	0	4	0	1	0	1	0	1	0	1
139		5	max	-.009	1	.002	1	0	1	0	4	0	1	0	1
140			min	-.023	4	.002	4	0	1	0	1	0	1	0	1
141	M20	1	max	0	4	-.035	1	.003	4	-.009	1	-.001	1	.008	4
142			min	0	1	-.109	4	.001	1	-.026	4	-.004	4	.002	1
143		2	max	0	4	-.033	1	.003	4	-.009	1	0	1	.116	4
144			min	0	1	-.107	4	.001	1	-.026	4	0	4	.036	1
145		3	max	0	1	-.264	1	-.003	1	-.025	1	.005	4	-.117	1
146			min	0	4	-.858	4	-.008	4	-.072	4	.002	1	-.381	4
147		4	max	0	1	.199	4	-.003	1	-.004	1	0	1	.148	4
148			min	0	4	.061	1	-.008	4	-.01	4	-.003	4	.046	1
149		5	max	0	1	.202	4	-.003	1	-.004	1	-.004	1	-.016	1
150			min	0	4	.064	1	-.008	4	-.01	4	-.012	4	-.052	4
151	M21	1	max	0	1	.137	4	.012	4	.027	4	-.004	1	.024	4
152			min	0	4	.036	1	.003	1	.01	1	-.015	4	.006	1
153		2	max	0	1	.139	4	.012	4	.027	4	0	1	-.031	1
154			min	0	4	.039	1	.003	1	.01	1	-.003	4	-.114	4
155		3	max	0	4	.823	4	0	1	.073	4	.009	4	.33	4
156			min	0	1	.23	1	-.003	4	.025	1	.002	1	.092	1
157		4	max	0	4	-.055	1	0	1	.009	4	0	1	-.043	1
158			min	0	1	-.192	4	-.003	4	.003	1	-.002	4	-.154	4
159		5	max	0	4	-.052	1	0	1	.009	4	-.001	1	.037	4
160			min	0	1	-.19	4	-.003	4	.003	1	-.005	4	.01	1
161	M22	1	max	0	1	.001	4	0	1	0	4	.004	4	-.005	1
162			min	0	1	0	1	-.002	4	0	1	0	1	-.018	4
163		2	max	0	1	.001	4	-.001	1	0	4	.001	4	-.006	1
164			min	0	1	0	1	-.004	4	0	1	0	1	-.02	4
165		3	max	0	1	-.006	1	.008	4	0	1	-.002	1	-.009	1
166			min	0	1	-.021	4	.004	1	0	4	-.006	4	-.033	4
167		4	max	0	1	-.006	1	.006	4	0	1	0	4	-.003	1
168			min	0	1	-.021	4	.002	1	0	4	0	1	-.012	4
169		5	max	0	1	-.006	1	.004	4	0	1	.005	4	.009	4
170			min	0	1	-.021	4	0	1	0	4	.001	1	.003	1
171	M23	1	max	-.464	1	-.007	1	0	1	.001	4	.005	4	-.05	1
172			min	-1.509	4	-.022	4	-.001	4	0	1	.002	1	-.146	4
173		2	max	-.449	1	0	1	0	1	0	4	.002	4	-.01	1
174			min	-1.492	4	0	4	0	4	0	1	0	1	-.026	4
175		3	max	-.44	1	0	1	0	1	0	4	0	4	-.008	1
176			min	-1.483	4	0	4	0	4	0	1	0	1	-.024	4
177		4	max	-.431	1	0	1	0	1	0	4	0	1	-.007	1
178			min	-1.474	4	0	4	0	4	0	1	-.001	4	-.023	4
179		5	max	-.417	1	.024	4	0	4	0	1	.004	4	-.055	1
180			min	-1.459	4	.009	1	0	1	-.001	4	0	1	-.151	4
181	M24	1	max	-.25	1	-.006	1	0	4	0	4	0	1	-.042	1
182			min	-.815	4	-.018	4	0	1	0	1	-.002	4	-.123	4
183		2	max	-.239	1	0	1	0	1	0	4	.001	4	-.01	1
184			min	-.805	4	0	4	0	4	0	1	0	1	-.026	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
185		3	max	-.23	1	0	1	0	1	0	4	0	4	-.008	1
186			min	-.796	4	0	4	0	4	0	1	0	1	-.024	4
187		4	max	-.221	1	0	1	0	1	0	4	0	1	-.007	1
188			min	-.787	4	0	4	0	4	0	1	0	4	-.023	4
189		5	max	-.21	1	.019	4	0	1	0	1	0	1	-.046	1
190			min	-.776	4	.007	1	0	4	0	4	-.003	4	-.127	4
191	M25	1	max	0	1	.004	4	.001	4	0	4	0	1	.001	4
192			min	-.001	4	.004	1	0	1	0	1	-.001	4	.001	1
193		2	max	0	1	.003	4	.001	4	0	4	0	1	-.002	1
194			min	-.001	4	.002	1	0	1	0	1	0	4	-.002	4
195		3	max	0	1	.002	4	.001	4	0	4	0	4	-.004	1
196			min	-.001	4	.001	1	0	1	0	1	0	1	-.005	4
197		4	max	0	1	0	4	0	4	0	4	.001	4	-.002	1
198			min	-.001	4	-.002	1	0	1	0	1	0	1	-.005	4
199		5	max	0	1	-.002	4	0	4	0	4	.001	4	0	1
200			min	-.001	4	-.003	1	0	1	0	1	0	1	-.003	4
201	M26	1	max	0	1	.006	4	0	4	0	1	0	1	.006	4
202			min	-.001	4	.004	1	0	1	0	4	-.001	4	.003	1
203		2	max	0	1	.005	4	0	4	0	1	0	1	0	4
204			min	-.001	4	.003	1	0	1	0	4	0	4	-.001	1
205		3	max	0	1	.004	4	0	4	0	1	0	4	-.003	1
206			min	-.001	4	.002	1	0	1	0	4	0	1	-.004	4
207		4	max	0	1	0	4	0	4	0	1	0	4	-.002	1
208			min	-.001	4	-.001	1	0	1	0	4	0	1	-.003	4
209		5	max	0	1	0	4	0	4	0	1	.002	4	0	1
210			min	-.001	4	-.003	1	0	1	0	4	0	1	-.003	4
211	M27	1	max	-.242	1	0	4	0	1	0	1	0	4	-.016	1
212			min	-.871	4	0	1	0	4	0	4	0	1	-.046	4
213		2	max	-.251	1	0	4	0	1	0	1	0	1	-.016	1
214			min	-.879	4	0	1	0	4	0	4	0	4	-.046	4
215		3	max	-.26	1	0	4	0	1	0	1	0	1	-.016	1
216			min	-.888	4	0	1	0	4	0	4	0	4	-.046	4
217		4	max	-.269	1	0	4	0	1	0	1	0	1	-.016	1
218			min	-.897	4	0	1	0	4	0	4	0	4	-.046	4
219		5	max	-.278	1	0	4	0	1	0	1	0	1	-.016	1
220			min	-.906	4	0	1	0	4	0	4	-.001	4	-.046	4
221	M28	1	max	-.323	1	0	1	0	1	0	1	0	4	-.017	1
222			min	-1.054	4	0	4	0	4	0	4	0	1	-.048	4
223		2	max	-.314	1	0	1	0	1	0	1	0	4	-.017	1
224			min	-1.045	4	0	4	0	4	0	4	0	1	-.048	4
225		3	max	-.305	1	0	1	0	1	0	1	0	1	-.017	1
226			min	-1.036	4	0	4	0	4	0	4	0	4	-.048	4
227		4	max	-.296	1	0	1	0	1	0	1	0	1	-.016	1
228			min	-1.027	4	0	4	0	4	0	4	0	4	-.047	4
229		5	max	-.287	1	0	1	0	1	0	1	0	1	-.016	1
230			min	-1.018	4	0	4	0	4	0	4	0	4	-.047	4
231	M27A	1	max	1.749	4	0	1	0	1	.003	4	0	1	0	1
232			min	.613	1	0	1	0	1	0	1	0	1	0	1
233		2	max	1.74	4	0	1	0	1	.003	4	0	1	0	1
234			min	.605	1	0	1	0	1	0	1	0	1	0	1
235		3	max	1.732	4	0	1	0	1	.003	4	0	1	0	1
236			min	.596	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
237		4	max	1.723	4	0	1	0	1	.003	4	0	1	0	1
238			min	.587	1	0	1	0	1	0	1	0	1	0	1
239		5	max	1.714	4	0	1	0	1	.003	4	0	1	0	1
240			min	.579	1	0	1	0	1	0	1	0	1	0	1
241	M28A	1	max	1.77	4	0	1	0	1	.003	4	0	1	0	1
242			min	.621	1	0	1	0	1	.001	1	0	1	0	1
243		2	max	1.761	4	0	1	0	1	.003	4	0	1	0	1
244			min	.612	1	0	1	0	1	.001	1	0	1	0	1
245		3	max	1.752	4	0	1	0	1	.003	4	0	1	0	1
246			min	.603	1	0	1	0	1	.001	1	0	1	0	1
247		4	max	1.744	4	0	1	0	1	.003	4	0	1	0	1
248			min	.595	1	0	1	0	1	.001	1	0	1	0	1
249		5	max	1.735	4	0	1	0	1	.003	4	0	1	0	1
250			min	.586	1	0	1	0	1	.001	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	.143	4	.033	4	0	1	-.107	1	.297	4	.023	4	-.006	1
2			min	.052	1	.012	1	0	4	-.297	4	.107	1	.006	1	-.023	4
3		2	max	.134	4	.007	4	0	1	.77	4	-.275	1	.016	4	-.004	1
4			min	.048	1	.003	1	0	4	.275	1	-.77	4	.004	1	-.016	4
5		3	max	.123	4	-.008	1	0	1	.379	4	-.133	1	.008	4	-.002	1
6			min	.044	1	-.022	4	0	4	.133	1	-.379	4	.002	1	-.008	4
7		4	max	.012	4	.024	4	0	1	-.233	1	.611	4	.002	4	0	1
8			min	.004	1	.008	1	0	4	-.611	4	.233	1	0	1	-.002	4
9		5	max	.003	4	0	1	0	1	0	4	0	1	0	1	.005	4
10			min	0	1	0	4	0	4	0	1	0	4	-.005	4	0	1
11	M3	1	max	.132	4	.032	4	0	1	-.098	1	.288	4	.01	4	-.003	1
12			min	.041	1	.011	1	0	4	-.288	4	.098	1	.003	1	-.01	4
13		2	max	.125	4	.007	4	0	1	.754	4	-.259	1	.007	4	-.002	1
14			min	.039	1	.002	1	0	4	.259	1	-.754	4	.002	1	-.007	4
15		3	max	.117	4	-.007	1	0	1	.383	4	-.136	1	.005	4	-.001	1
16			min	.037	1	-.021	4	0	4	.136	1	-.383	4	.001	1	-.005	4
17		4	max	.01	4	.023	4	0	1	-.185	1	.564	4	.003	4	0	1
18			min	.002	1	.008	1	0	4	-.564	4	.185	1	0	1	-.003	4
19		5	max	.003	4	0	1	0	1	0	1	0	1	0	1	0	1
20			min	0	1	-.002	4	0	4	0	1	0	1	0	1	0	1
21	M4	1	max	.108	4	0	1	0	1	0	1	0	1	0	1	0	1
22			min	.038	1	0	1	0	1	0	1	0	1	0	1	0	1
23		2	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1
24			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
25		3	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1
26			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
27		4	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
28			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
29		5	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
30			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
31	M5	1	max	-.002	1	0	4	0	1	0	1	0	1	0	1	0	1
32			min	-.007	4	0	1	0	1	0	1	0	1	0	1	0	1
33		2	max	-.002	1	0	4	0	1	-.003	4	.003	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
34			min	-.007	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
35		3	max	-.002	1	0	1	0	1	-.004	4	.004	1	0	1	0	1
36			min	-.007	4	0	1	0	1	-.004	1	.004	4	0	1	0	1
37		4	max	-.002	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
38			min	-.007	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
39		5	max	-.002	1	0	4	0	1	0	1	0	1	0	1	0	1
40			min	-.007	4	0	1	0	1	0	1	0	1	0	1	0	1
41	M6	1	max	-.003	1	0	1	0	1	0	1	0	1	0	1	0	1
42			min	-.007	4	0	4	0	1	0	1	0	1	0	1	0	1
43		2	max	-.003	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
44			min	-.007	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
45		3	max	-.003	1	0	1	0	1	-.004	1	.004	4	0	1	0	1
46			min	-.007	4	0	1	0	1	-.004	4	.004	1	0	1	0	1
47		4	max	-.003	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
48			min	-.007	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
49		5	max	-.003	1	0	1	0	1	0	1	0	1	0	1	0	1
50			min	-.007	4	0	4	0	1	0	1	0	1	0	1	0	1
51	M7	1	max	-.04	1	-.002	1	0	1	.498	4	-.179	1	.026	4	-.006	1
52			min	-.148	4	-.006	4	0	4	.179	1	-.498	4	.006	1	-.026	4
53		2	max	-.042	1	0	4	0	1	.09	4	-.028	1	.006	4	0	1
54			min	-.15	4	0	1	0	4	.028	1	-.09	4	0	1	-.006	4
55		3	max	-.044	1	0	4	0	1	.095	4	-.033	1	0	1	.002	4
56			min	-.152	4	0	1	0	4	.033	1	-.095	4	-.002	4	0	1
57		4	max	-.046	1	0	4	0	1	.1	4	-.038	1	-.002	1	.011	4
58			min	-.153	4	0	1	0	4	.038	1	-.1	4	-.011	4	.002	1
59		5	max	-.048	1	.005	4	0	4	.482	4	-.164	1	.016	4	-.006	1
60			min	-.155	4	.002	1	0	1	.164	1	-.482	4	.006	1	-.016	4
61	M8	1	max	.138	4	.03	4	0	1	-.051	1	.145	4	.007	4	-.002	1
62			min	.051	1	.011	1	0	4	-.145	4	.051	1	.002	1	-.007	4
63		2	max	.129	4	.005	4	0	1	.797	4	-.285	1	.005	4	-.001	1
64			min	.047	1	.002	1	0	4	.285	1	-.797	4	.001	1	-.005	4
65		3	max	.119	4	-.008	1	0	1	.359	4	-.125	1	.002	4	0	1
66			min	.043	1	-.021	4	0	4	.125	1	-.359	4	0	1	-.002	4
67		4	max	.01	4	.023	4	0	1	-.229	1	.598	4	.001	4	0	1
68			min	.004	1	.008	1	0	4	-.598	4	.229	1	0	1	-.001	4
69		5	max	.001	4	0	1	0	1	0	1	0	4	0	1	.001	4
70			min	0	1	0	4	0	4	0	4	0	1	-.001	4	0	1
71	M10	1	max	.126	4	.03	4	0	1	-.05	1	.143	4	.023	4	-.007	1
72			min	.039	1	.01	1	0	4	-.143	4	.05	1	.007	1	-.023	4
73		2	max	.119	4	.005	4	0	1	.78	4	-.268	1	.017	4	-.005	1
74			min	.037	1	.002	1	0	4	.268	1	-.78	4	.005	1	-.017	4
75		3	max	.112	4	-.007	1	0	1	.365	4	-.131	1	.012	4	-.004	1
76			min	.036	1	-.021	4	0	4	.131	1	-.365	4	.004	1	-.012	4
77		4	max	.007	4	.023	4	0	1	-.18	1	.548	4	.007	4	-.002	1
78			min	0	1	.008	1	0	4	-.548	4	.18	1	.002	1	-.007	4
79		5	max	0	4	0	1	0	1	0	1	0	1	0	1	0	1
80			min	0	1	-.002	4	0	4	0	1	0	1	0	1	0	1
81	M12	1	max	0	1	0	4	0	1	0	1	0	1	0	1	0	1
82			min	0	4	0	1	0	1	0	1	0	1	0	1	0	1
83		2	max	0	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
84			min	0	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
85		3	max	0	1	0	1	0	1	-.004	4	.004	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
86			min	0	4	0	1	0	1	-.004	1	.004	4	0	1	0	1
87		4	max	0	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
88			min	0	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
89		5	max	0	1	0	4	0	1	0	1	0	1	0	1	0	1
90			min	0	4	0	1	0	1	0	1	0	1	0	1	0	1
91	M13	1	max	0	1	0	1	0	1	0	1	0	1	0	1	0	1
92			min	0	4	0	4	0	1	0	1	0	1	0	1	0	1
93		2	max	0	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
94			min	0	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
95		3	max	0	1	0	1	0	1	-.004	1	.004	4	0	1	0	1
96			min	0	4	0	1	0	1	-.004	4	.004	1	0	1	0	1
97		4	max	0	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
98			min	0	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
99		5	max	0	1	0	1	0	1	0	1	0	1	0	1	0	1
100			min	0	4	0	4	0	1	0	1	0	1	0	1	0	1
101	M14	1	max	.14	4	.032	4	0	4	-.075	1	.209	4	-.009	1	.033	4
102			min	.051	1	.011	1	0	1	-.209	4	.075	1	-.033	4	.009	1
103		2	max	.131	4	.006	4	0	4	.796	4	-.284	1	-.007	1	.023	4
104			min	.047	1	.002	1	0	1	.284	1	-.796	4	-.023	4	.007	1
105		3	max	.122	4	-.008	1	0	4	.377	4	-.131	1	-.004	1	.013	4
106			min	.043	1	-.022	4	0	1	.131	1	-.377	4	-.013	4	.004	1
107		4	max	.011	4	.023	4	0	4	-.231	1	.605	4	0	1	.002	4
108			min	.004	1	.008	1	0	1	-.605	4	.231	1	-.002	4	0	1
109		5	max	.002	4	0	1	0	4	0	4	0	1	.007	4	-.002	1
110			min	0	1	0	4	0	1	0	1	0	4	.002	1	-.007	4
111	M16	1	max	.129	4	.031	4	0	1	-.07	1	.204	4	.049	4	-.015	1
112			min	.04	1	.011	1	0	4	-.204	4	.07	1	.015	1	-.049	4
113		2	max	.123	4	.006	4	0	1	.781	4	-.269	1	.036	4	-.011	1
114			min	.039	1	.002	1	0	4	.269	1	-.781	4	.011	1	-.036	4
115		3	max	.115	4	-.007	1	0	1	.383	4	-.136	1	.024	4	-.008	1
116			min	.037	1	-.021	4	0	4	.136	1	-.383	4	.008	1	-.024	4
117		4	max	.009	4	.023	4	0	1	-.183	1	.557	4	.013	4	-.004	1
118			min	.001	1	.008	1	0	4	-.557	4	.183	1	.004	1	-.013	4
119		5	max	.002	4	0	1	0	1	0	1	0	1	0	1	0	1
120			min	0	1	-.002	4	0	4	0	1	0	1	0	1	0	1
121	M18	1	max	-.001	1	0	4	0	1	0	1	0	1	0	1	0	1
122			min	-.004	4	0	1	0	1	0	1	0	1	0	1	0	1
123		2	max	-.001	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
124			min	-.004	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
125		3	max	-.001	1	0	1	0	1	-.004	4	.004	1	0	1	0	1
126			min	-.004	4	0	1	0	1	-.004	1	.004	4	0	1	0	1
127		4	max	-.001	1	0	4	0	1	-.003	4	.003	1	0	1	0	1
128			min	-.004	4	0	1	0	1	-.003	1	.003	4	0	1	0	1
129		5	max	-.001	1	0	4	0	1	0	1	0	1	0	1	0	1
130			min	-.004	4	0	1	0	1	0	1	0	1	0	1	0	1
131	M19	1	max	-.002	1	0	1	0	1	0	1	0	1	0	1	0	1
132			min	-.004	4	0	4	0	1	0	1	0	1	0	1	0	1
133		2	max	-.002	1	0	1	0	1	-.003	1	.003	4	0	1	0	1
134			min	-.004	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
135		3	max	-.002	1	0	1	0	1	-.004	1	.004	4	0	1	0	1
136			min	-.004	4	0	1	0	1	-.004	4	.004	1	0	1	0	1
137		4	max	-.002	1	0	1	0	1	-.003	1	.003	4	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
138			min	-.004	4	0	4	0	1	-.003	4	.003	1	0	1	0	1
139		5	max	-.002	1	0	1	0	1	0	1	0	1	0	1	0	1
140			min	-.004	4	0	4	0	1	0	1	0	1	0	1	0	1
141	M20	1	max	0	4	-.005	1	0	4	-.004	1	.016	4	-.003	1	.009	4
142			min	0	1	-.016	4	0	1	-.016	4	.004	1	-.009	4	.003	1
143		2	max	0	4	-.005	1	0	4	-.071	1	.228	4	0	1	.002	4
144			min	0	1	-.015	4	0	1	-.228	4	.071	1	-.002	4	0	1
145		3	max	0	1	-.038	1	0	1	.746	4	-.229	1	.012	4	-.004	1
146			min	0	4	-.123	4	-.001	4	.229	1	-.746	4	.004	1	-.012	4
147		4	max	0	1	.028	4	0	1	-.09	1	.291	4	-.002	1	.007	4
148			min	0	4	.009	1	-.001	4	-.291	4	.09	1	-.007	4	.002	1
149		5	max	0	1	.029	4	0	1	.102	4	-.032	1	-.008	1	.026	4
150			min	0	4	.009	1	-.001	4	.032	1	-.102	4	-.026	4	.008	1
151	M21	1	max	0	1	.02	4	.002	4	-.012	1	.048	4	-.009	1	.033	4
152			min	0	4	.005	1	0	1	-.048	4	.012	1	-.033	4	.009	1
153		2	max	0	1	.02	4	.002	4	.223	4	-.061	1	-.002	1	.007	4
154			min	0	4	.006	1	0	1	.061	1	-.223	4	-.007	4	.002	1
155		3	max	0	4	.118	4	0	1	-.18	1	.647	4	.02	4	-.006	1
156			min	0	1	.033	1	0	4	-.647	4	.18	1	.006	1	-.02	4
157		4	max	0	4	-.008	1	0	1	.302	4	-.085	1	-.001	1	.005	4
158			min	0	1	-.027	4	0	4	.085	1	-.302	4	-.005	4	.001	1
159		5	max	0	4	-.007	1	0	1	-.02	1	.073	4	-.002	1	.011	4
160			min	0	1	-.027	4	0	4	-.073	4	.02	1	-.011	4	.002	1
161	M22	1	max	0	1	0	4	0	1	.029	4	-.009	1	.026	4	-.005	1
162			min	0	1	0	1	0	4	.009	1	-.029	4	.005	1	-.026	4
163		2	max	0	1	0	4	0	1	.032	4	-.009	1	.008	4	-.004	1
164			min	0	1	0	1	0	4	.009	1	-.032	4	.004	1	-.008	4
165		3	max	0	1	-.001	1	.001	4	.053	4	-.015	1	-.013	1	.036	4
166			min	0	1	-.004	4	0	1	.015	1	-.053	4	-.036	4	.013	1
167		4	max	0	1	-.001	1	.001	4	.019	4	-.005	1	.003	4	-.003	1
168			min	0	1	-.004	4	0	1	.005	1	-.019	4	.003	1	-.003	4
169		5	max	0	1	-.001	1	0	4	-.005	1	.015	4	.031	4	-.007	1
170			min	0	1	-.004	4	0	1	-.015	4	.005	1	.007	1	-.031	4
171	M23	1	max	-.088	1	-.002	1	0	1	.571	4	-.194	1	.044	4	-.016	1
172			min	-.287	4	-.006	4	0	4	.194	1	-.571	4	.016	1	-.044	4
173		2	max	-.085	1	0	1	0	1	.102	4	-.039	1	.014	4	-.005	1
174			min	-.284	4	0	4	0	4	.039	1	-.102	4	.005	1	-.014	4
175		3	max	-.084	1	0	1	0	1	.096	4	-.033	1	.001	4	0	1
176			min	-.283	4	0	4	0	4	.033	1	-.096	4	0	1	-.001	4
177		4	max	-.082	1	0	1	0	1	.09	4	-.027	1	-.004	1	.011	4
178			min	-.281	4	0	4	0	4	.027	1	-.09	4	-.011	4	.004	1
179		5	max	-.079	1	.007	4	0	4	.591	4	-.214	1	.039	4	-.009	1
180			min	-.278	4	.003	1	0	1	.214	1	-.591	4	.009	1	-.039	4
181	M24	1	max	-.048	1	-.002	1	0	4	.482	4	-.164	1	-.006	1	.016	4
182			min	-.155	4	-.005	4	0	1	.164	1	-.482	4	-.016	4	.006	1
183		2	max	-.046	1	0	1	0	1	.1	4	-.038	1	.011	4	-.002	1
184			min	-.153	4	0	4	0	4	.038	1	-.1	4	.002	1	-.011	4
185		3	max	-.044	1	0	1	0	1	.095	4	-.033	1	.002	4	0	1
186			min	-.152	4	0	4	0	4	.033	1	-.095	4	0	1	-.002	4
187		4	max	-.042	1	0	1	0	1	.09	4	-.028	1	0	1	.006	4
188			min	-.15	4	0	4	0	4	.028	1	-.09	4	-.006	4	0	1
189		5	max	-.04	1	.006	4	0	1	.498	4	-.179	1	-.006	1	.026	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
190			min	-.148	4	.002	1	0	4	.179	1	-.498	4	-.026	4	.006	1
191	M25	1	max	0	1	.001	4	0	4	-.004	1	.005	4	-.004	1	.012	4
192			min	0	4	.001	1	0	1	-.005	4	.004	1	-.012	4	.004	1
193		2	max	0	1	0	4	0	4	.01	4	-.008	1	0	1	.001	4
194			min	0	4	0	1	0	1	.008	1	-.01	4	-.001	4	0	1
195		3	max	0	1	0	4	0	4	.02	4	-.014	1	.009	4	-.006	1
196			min	0	4	0	1	0	1	.014	1	-.02	4	.006	1	-.009	4
197		4	max	0	1	0	4	0	4	.018	4	-.01	1	.01	4	-.004	1
198			min	0	4	0	1	0	1	.01	1	-.018	4	.004	1	-.01	4
199		5	max	0	1	0	4	0	4	.012	4	0	1	.01	4	-.002	1
200			min	0	4	0	1	0	1	0	1	-.012	4	.002	1	-.01	4
201	M26	1	max	0	1	.002	4	0	4	-.01	1	.025	4	-.003	1	.011	4
202			min	0	4	.001	1	0	1	-.025	4	.01	1	-.011	4	.003	1
203		2	max	0	1	.001	4	0	4	.004	1	.002	4	-.002	1	.005	4
204			min	0	4	0	1	0	1	-.002	4	-.004	1	-.005	4	.002	1
205		3	max	0	1	.001	4	0	4	.015	4	-.013	1	.002	4	0	1
206			min	0	4	0	1	0	1	.013	1	-.015	4	0	1	-.002	4
207		4	max	0	1	0	4	0	4	.012	4	-.008	1	.009	4	-.003	1
208			min	0	4	0	1	0	1	.008	1	-.012	4	.003	1	-.009	4
209		5	max	0	1	0	4	0	4	.013	4	0	1	.016	4	-.006	1
210			min	0	4	0	1	0	1	0	1	-.013	4	.006	1	-.016	4
211	M27	1	max	-.046	1	0	4	0	1	.18	4	-.062	1	.003	4	0	1
212			min	-.166	4	0	1	0	4	.062	1	-.18	4	0	1	-.003	4
213		2	max	-.048	1	0	4	0	1	.18	4	-.063	1	0	1	.001	4
214			min	-.168	4	0	1	0	4	.063	1	-.18	4	-.001	4	0	1
215		3	max	-.049	1	0	4	0	1	.18	4	-.063	1	-.001	1	.005	4
216			min	-.169	4	0	1	0	4	.063	1	-.18	4	-.005	4	.001	1
217		4	max	-.051	1	0	4	0	1	.181	4	-.063	1	-.003	1	.009	4
218			min	-.171	4	0	1	0	4	.063	1	-.181	4	-.009	4	.003	1
219		5	max	-.053	1	0	4	0	1	.181	4	-.064	1	-.004	1	.013	4
220			min	-.173	4	0	1	0	4	.064	1	-.181	4	-.013	4	.004	1
221	M28	1	max	-.061	1	0	1	0	1	.187	4	-.066	1	.004	4	-.001	1
222			min	-.201	4	0	4	0	4	.066	1	-.187	4	.001	1	-.004	4
223		2	max	-.06	1	0	1	0	1	.187	4	-.065	1	.001	4	0	1
224			min	-.199	4	0	4	0	4	.065	1	-.187	4	0	1	-.001	4
225		3	max	-.058	1	0	1	0	1	.186	4	-.065	1	0	1	.001	4
226			min	-.197	4	0	4	0	4	.065	1	-.186	4	-.001	4	0	1
227		4	max	-.056	1	0	1	0	1	.186	4	-.065	1	-.001	1	.004	4
228			min	-.196	4	0	4	0	4	.065	1	-.186	4	-.004	4	.001	1
229		5	max	-.055	1	0	1	0	1	.186	4	-.064	1	-.002	1	.006	4
230			min	-.194	4	0	4	0	4	.064	1	-.186	4	-.006	4	.002	1
231	M27A	1	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
232			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
233		2	max	.105	4	0	1	0	1	0	1	0	1	0	1	0	1
234			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
235		3	max	.105	4	0	1	0	1	0	1	0	1	0	1	0	1
236			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
237		4	max	.104	4	0	1	0	1	0	1	0	1	0	1	0	1
238			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
239		5	max	.104	4	0	1	0	1	0	1	0	1	0	1	0	1
240			min	.035	1	0	1	0	1	0	1	0	1	0	1	0	1
241	M28A	1	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
242			min	.038	1	0	1	0	1	0	1	0	1	0	1	0	1
243		2	max	.107	4	0	1	0	1	0	1	0	1	0	1	0	1
244			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
245		3	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
246			min	.037	1	0	1	0	1	0	1	0	1	0	1	0	1
247		4	max	.106	4	0	1	0	1	0	1	0	1	0	1	0	1
248			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1
249		5	max	.105	4	0	1	0	1	0	1	0	1	0	1	0	1
250			min	.036	1	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Deflections

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
1	M1	1	max	0	1	0	1	0	1	2.475e-4	4	NC	1	NC	1
2			min	0	1	0	1	0	1	6.741e-5	1	NC	1	NC	1
3		2	max	-.001	1	-.142	1	-.003	1	3.457e-4	4	1347.23	1	NC	1
4			min	-.004	4	-.41	4	-.01	4	9.774e-5	1	468.586	4	NC	1
5		3	max	-.003	1	-.105	1	-.003	1	4.479e-4	4	1925.297	1	NC	1
6			min	-.008	4	-.319	4	-.01	4	1.299e-4	1	639.923	4	NC	1
7		4	max	-.004	1	.002	1	-.002	1	5.688e-4	4	NC	1	NC	1
8			min	-.01	4	-.023	4	-.006	4	1.681e-4	1	8545.212	4	NC	1
9		5	max	-.004	1	-.018	1	0	1	7.362e-4	4	NC	1	NC	1
10			min	-.011	4	-.06	4	0	1	2.191e-4	1	NC	1	NC	1
11	M3	1	max	-.008	1	.013	4	0	1	5.15e-5	4	NC	1	NC	1
12			min	-.029	4	.004	1	0	1	1.247e-5	1	NC	1	NC	1
13		2	max	-.01	1	-.141	1	-.001	1	-3.426e-5	1	1318.87	1	NC	1
14			min	-.033	4	-.4	4	-.005	4	-1.057e-4	4	465.033	4	NC	1
15		3	max	-.011	1	-.117	1	-.002	1	-8.321e-5	1	1661.458	1	NC	1
16			min	-.036	4	-.322	4	-.006	4	-2.723e-4	4	607.711	4	NC	1
17		4	max	-.011	1	-.016	1	-.001	1	-1.31e-4	1	NC	1	NC	1
18			min	-.039	4	-.032	4	-.004	4	-4.364e-4	4	NC	1	NC	1
19		5	max	-.011	1	-.015	1	0	1	-1.66e-4	1	NC	1	NC	1
20			min	-.039	4	-.047	4	0	1	-5.54e-4	4	NC	1	NC	1
21	M4	1	max	.014	4	-.01	1	-.002	1	5.282e-4	4	NC	1	NC	1
22			min	0	1	-.055	4	-.007	4	1.547e-4	1	NC	1	NC	1
23		2	max	.012	4	-.015	1	-.001	1	4.83e-4	4	NC	1	NC	1
24			min	0	1	-.06	4	-.004	4	1.423e-4	1	NC	1	NC	1
25		3	max	.011	4	-.021	1	0	1	4.377e-4	4	NC	1	NC	1
26			min	0	1	-.066	4	-.001	4	1.298e-4	1	NC	1	NC	1
27		4	max	.009	4	-.026	1	.002	4	3.924e-4	4	NC	1	NC	1
28			min	-.001	1	-.071	4	0	1	1.174e-4	1	NC	1	NC	1
29		5	max	.007	4	-.031	1	.004	4	3.471e-4	4	NC	1	NC	1
30			min	-.002	1	-.076	4	.001	1	1.049e-4	1	NC	1	NC	1
31	M5	1	max	-.142	1	-.007	1	.025	4	3.793e-4	4	NC	1	NC	1
32			min	-.402	4	-.026	4	.007	1	8.357e-5	1	NC	1	NC	1
33		2	max	-.142	1	.018	4	.02	4	2.684e-4	4	NC	1	NC	1
34			min	-.402	4	.008	1	.006	1	5.743e-5	1	NC	1	NC	1
35		3	max	-.142	1	.062	4	.015	4	1.575e-4	4	NC	1	NC	1
36			min	-.402	4	.024	1	.004	1	3.129e-5	1	NC	1	NC	1
37		4	max	-.142	1	.105	4	.011	4	4.661e-5	4	NC	1	NC	1
38			min	-.402	4	.039	1	.003	1	5.144e-6	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
39		5	max	-.142	1	.148	4	.006	4	-2.1e-5	1	NC	1	NC	1
40			min	-.402	4	.055	1	.002	1	-6.428e-5	4	NC	1	NC	1
41	M6	1	max	-.135	1	-.002	1	0	1	-2.692e-5	4	NC	1	NC	1
42			min	-.394	4	-.006	4	-.002	4	-3.966e-5	1	NC	1	NC	1
43		2	max	-.135	1	-.016	1	0	1	2.076e-5	4	2079.296	1	NC	1
44			min	-.394	4	-.048	4	-.004	4	-1.784e-5	1	709.996	4	NC	1
45		3	max	-.134	1	-.031	1	-.002	1	6.844e-5	4	1037.621	1	NC	1
46			min	-.394	4	-.091	4	-.006	4	3.983e-6	1	354.761	4	NC	1
47		4	max	-.134	1	-.045	1	-.002	1	1.161e-4	4	690.085	1	NC	1
48			min	-.394	4	-.134	4	-.009	4	2.58e-5	1	236.313	4	NC	1
49		5	max	-.134	1	-.06	1	-.003	1	1.638e-4	4	516.441	1	NC	1
50			min	-.394	4	-.176	4	-.011	4	4.762e-5	1	177.103	4	NC	1
51	M7	1	max	0	1	0	1	0	1	8.012e-5	4	NC	1	NC	1
52			min	0	1	0	1	0	1	2.177e-5	1	NC	1	NC	1
53		2	max	.008	4	-.155	1	0	1	3.468e-4	4	2165.091	1	NC	1
54			min	.002	1	-.454	4	0	4	8.825e-5	1	739.369	4	NC	1
55		3	max	.016	4	-.201	1	.022	4	3.67e-4	4	1671.444	1	NC	1
56			min	.004	1	-.579	4	.007	1	1.115e-4	1	580.535	4	NC	1
57		4	max	.024	4	-.164	1	.03	4	3.872e-4	4	2053.09	1	NC	1
58			min	.007	1	-.463	4	.008	1	1.348e-4	1	725.734	4	NC	1
59		5	max	.032	4	0	1	0	1	2.203e-5	4	NC	1	NC	1
60			min	.009	1	0	1	0	1	7.697e-6	1	NC	1	NC	1
61	M8	1	max	0	1	0	1	0	1	6.416e-5	4	NC	1	NC	1
62			min	0	1	0	1	0	1	1.962e-5	1	NC	1	NC	1
63		2	max	-.001	1	-.148	1	0	1	1.931e-4	4	1308.304	1	NC	1
64			min	-.004	4	-.428	4	-.003	4	5.89e-5	1	454.085	4	NC	1
65		3	max	-.003	1	-.108	1	0	1	3.218e-4	4	1924.009	1	NC	1
66			min	-.007	4	-.331	4	-.003	4	9.813e-5	1	633.862	4	NC	1
67		4	max	-.004	1	-.003	1	0	1	4.644e-4	4	NC	1	NC	1
68			min	-.01	4	-.042	4	-.002	4	1.416e-4	1	NC	1	NC	1
69		5	max	-.004	1	-.024	1	0	1	6.543e-4	4	NC	1	NC	1
70			min	-.01	4	-.079	4	0	1	1.995e-4	1	NC	1	NC	1
71	M10	1	max	-.013	1	.02	4	0	1	1.805e-4	4	NC	1	NC	1
72			min	-.044	4	.006	1	0	1	5.518e-5	1	NC	1	NC	1
73		2	max	-.014	1	-.145	1	-.004	1	1.803e-5	4	1274.668	1	NC	1
74			min	-.047	4	-.411	4	-.012	4	5.591e-6	1	449.937	4	NC	1
75		3	max	-.015	1	-.12	1	-.004	1	-4.705e-5	1	1630.164	1	NC	1
76			min	-.051	4	-.329	4	-.014	4	-1.545e-4	4	598.06	4	NC	1
77		4	max	-.016	1	-.021	1	-.003	1	-9.902e-5	1	NC	1	NC	1
78			min	-.053	4	-.046	4	-.009	4	-3.249e-4	4	NC	1	NC	1
79		5	max	-.016	1	-.018	1	0	1	-1.366e-4	1	NC	1	NC	1
80			min	-.053	4	-.059	4	0	1	-4.48e-4	4	NC	1	NC	1
81	M12	1	max	-.147	1	-.01	1	.025	4	4.744e-4	4	NC	1	NC	1
82			min	-.414	4	-.036	4	.007	1	1.438e-4	1	NC	1	NC	1
83		2	max	-.147	1	.008	4	.022	4	3.56e-4	4	NC	1	NC	1
84			min	-.414	4	.006	1	.006	1	1.079e-4	1	NC	1	NC	1
85		3	max	-.147	1	.051	4	.019	4	2.376e-4	4	NC	1	NC	1
86			min	-.414	4	.021	1	.006	1	7.203e-5	1	NC	1	NC	1
87		4	max	-.147	1	.094	4	.017	4	1.192e-4	4	NC	1	NC	1
88			min	-.414	4	.037	1	.005	1	3.614e-5	1	NC	1	NC	1
89		5	max	-.147	1	.138	4	.014	4	7.87e-7	4	NC	1	NC	1
90			min	-.414	4	.052	1	.004	1	2.471e-7	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
91	M13	1	max	-.137	1	-.001	1	0	1	1.217e-4	4	NC	1	NC	1
92			min	-.405	4	-.007	4	-.002	4	3.627e-5	1	NC	1	NC	1
93		2	max	-.137	1	-.016	1	0	1	1.187e-4	4	2021.308	1	NC	1
94			min	-.405	4	-.051	4	-.002	4	3.557e-5	1	692.767	4	NC	1
95		3	max	-.137	1	-.031	1	0	1	1.157e-4	4	1008.738	1	NC	1
96			min	-.405	4	-.094	4	-.003	4	3.486e-5	1	346.158	4	NC	1
97		4	max	-.137	1	-.046	1	0	1	1.127e-4	4	670.921	1	NC	1
98			min	-.405	4	-.138	4	-.003	4	3.415e-5	1	230.587	4	NC	1
99		5	max	-.137	1	-.061	1	-.001	1	1.097e-4	4	502.129	1	NC	1
100			min	-.405	4	-.181	4	-.003	4	3.344e-5	1	172.815	4	NC	1
101	M14	1	max	0	1	0	1	0	1	-7.557e-5	1	NC	1	NC	1
102			min	0	1	0	1	0	1	-2.735e-4	4	NC	1	NC	1
103		2	max	-.001	1	-.15	1	.015	4	-1.763e-5	1	1297.31	1	NC	1
104			min	-.004	4	-.435	4	.004	1	-8.251e-5	4	449.774	4	NC	1
105		3	max	-.003	1	-.114	1	.015	4	1.044e-4	4	1861.742	1	NC	1
106			min	-.008	4	-.348	4	.004	1	3.843e-5	1	613.999	4	NC	1
107		4	max	-.004	1	-.007	1	.008	4	3.022e-4	4	NC	1	NC	1
108			min	-.01	4	-.055	4	.002	1	9.74e-5	1	NC	1	NC	1
109		5	max	-.004	1	-.028	1	0	1	5.521e-4	4	NC	1	NC	1
110			min	-.01	4	-.092	4	0	1	1.736e-4	1	NC	1	NC	1
111	M16	1	max	-.016	1	.025	4	0	1	4.618e-4	4	NC	1	NC	1
112			min	-.054	4	.007	1	0	1	1.435e-4	1	NC	1	NC	1
113		2	max	-.017	1	-.146	1	-.008	1	2.753e-4	4	1262.962	1	NC	1
114			min	-.057	4	-.414	4	-.025	4	8.561e-5	1	445.572	4	7354.91	4
115		3	max	-.018	1	-.123	1	-.009	1	8.196e-5	4	1589.747	1	NC	1
116			min	-.061	4	-.34	4	-.029	4	2.496e-5	1	581.193	4	6409.309	4
117		4	max	-.019	1	-.024	1	-.006	1	-3.385e-5	1	NC	1	NC	1
118			min	-.063	4	-.054	4	-.018	4	-1.04e-4	4	NC	1	NC	1
119		5	max	-.019	1	-.021	1	0	1	-7.542e-5	1	NC	1	NC	1
120			min	-.064	4	-.067	4	0	1	-2.378e-4	4	NC	1	NC	1
121	M18	1	max	-.151	1	-.014	1	.025	4	4.474e-4	4	NC	1	NC	1
122			min	-.427	4	-.048	4	.007	1	1.707e-4	1	NC	1	NC	1
123		2	max	-.151	1	.002	1	.026	4	3.671e-4	4	NC	1	NC	1
124			min	-.427	4	-.002	4	.008	1	1.38e-4	1	NC	1	NC	1
125		3	max	-.151	1	.043	4	.027	4	2.868e-4	4	NC	1	NC	1
126			min	-.427	4	.018	1	.008	1	1.053e-4	1	NC	1	NC	1
127		4	max	-.151	1	.088	4	.028	4	2.064e-4	4	NC	1	NC	1
128			min	-.427	4	.034	1	.009	1	7.253e-5	1	NC	1	NC	1
129		5	max	-.151	1	.133	4	.029	4	1.261e-4	4	NC	1	NC	1
130			min	-.427	4	.05	1	.009	1	3.982e-5	1	NC	1	NC	1
131	M19	1	max	-.142	1	-.003	1	0	1	1.97e-4	4	NC	1	NC	1
132			min	-.418	4	-.011	4	-.002	4	9.349e-5	1	NC	1	NC	1
133		2	max	-.142	1	-.018	1	.003	4	1.499e-4	4	2018.189	1	NC	1
134			min	-.418	4	-.055	4	0	1	7.135e-5	1	685.808	4	NC	1
135		3	max	-.142	1	-.033	1	.007	4	1.028e-4	4	1007.185	1	NC	1
136			min	-.418	4	-.099	4	.002	1	4.922e-5	1	342.683	4	NC	1
137		4	max	-.142	1	-.048	1	.012	4	5.568e-5	4	669.89	1	NC	1
138			min	-.418	4	-.143	4	.003	1	2.708e-5	1	228.274	4	NC	1
139		5	max	-.142	1	-.063	1	.016	4	8.586e-6	4	501.36	1	NC	1
140			min	-.418	4	-.187	4	.005	1	4.948e-6	1	171.082	4	NC	1
141	M20	1	max	0	1	-.009	1	0	1	1.032e-2	4	NC	1	NC	1
142			min	0	1	-.032	4	0	1	3.613e-3	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
143		2	max	0	1	-.01	1	0	4	1.071e-2	4	NC	1	NC	1
144			min	0	1	-.036	4	0	1	3.745e-3	1	NC	1	NC	1
145		3	max	0	1	-.014	1	0	1	1.158e-2	4	NC	1	NC	1
146			min	0	1	-.048	4	0	1	4.042e-3	1	NC	1	NC	1
147		4	max	0	1	-.014	1	0	4	1.125e-2	4	NC	1	NC	1
148			min	0	1	-.048	4	0	1	3.927e-3	1	NC	1	NC	1
149		5	max	0	1	-.018	1	0	1	1.141e-2	4	NC	1	NC	1
150			min	0	1	-.059	4	0	1	3.984e-3	1	NC	1	NC	1
151	M21	1	max	0	1	0	1	0	1	-3.563e-3	1	NC	1	NC	1
152			min	0	1	0	1	0	1	-1.027e-2	4	NC	1	NC	1
153		2	max	0	1	-.001	1	0	4	-3.709e-3	1	NC	1	NC	1
154			min	0	1	-.004	4	0	1	-1.068e-2	4	NC	1	NC	1
155		3	max	0	1	0	1	0	1	-4.018e-3	1	NC	1	NC	1
156			min	0	1	0	1	0	1	-1.156e-2	4	NC	1	NC	1
157		4	max	0	1	-.002	1	0	4	-3.892e-3	1	NC	1	NC	1
158			min	0	1	-.006	4	0	1	-1.121e-2	4	8013.916	4	NC	1
159		5	max	0	1	0	1	0	1	-3.934e-3	1	NC	1	NC	1
160			min	0	1	0	1	0	1	-1.136e-2	4	NC	1	NC	1
161	M22	1	max	0	1	-.027	1	.029	4	1.565e-3	4	NC	1	NC	1
162			min	0	1	-.088	4	.008	1	8.119e-4	1	NC	1	NC	1
163		2	max	0	1	-.025	1	.026	4	1.555e-3	4	NC	1	NC	1
164			min	0	1	-.082	4	.007	1	8.086e-4	1	NC	1	NC	1
165		3	max	0	1	-.023	1	.024	4	1.545e-3	4	NC	1	NC	1
166			min	0	1	-.076	4	.007	1	8.053e-4	1	NC	1	NC	1
167		4	max	0	1	-.021	1	.02	4	1.561e-3	4	NC	1	NC	1
168			min	0	1	-.068	4	.005	1	8.054e-4	1	NC	1	NC	1
169		5	max	0	1	-.018	1	.016	4	1.578e-3	4	NC	1	NC	1
170			min	0	1	-.059	4	.004	1	8.056e-4	1	NC	1	NC	1
171	M23	1	max	-.018	1	0	1	0	1	6.916e-5	4	NC	1	NC	1
172			min	-.059	4	0	1	0	1	2.142e-5	1	NC	1	NC	1
173		2	max	-.013	1	-.172	1	-.01	1	-1.533e-4	1	1950.88	1	NC	1
174			min	-.044	4	-.489	4	-.031	4	-4.841e-4	4	687.436	4	NC	1
175		3	max	-.009	1	-.209	1	-.005	1	-1.633e-4	1	1609.862	1	NC	1
176			min	-.029	4	-.605	4	-.018	4	-4.964e-4	4	555.762	4	NC	1
177		4	max	-.004	1	-.162	1	.004	4	-1.732e-4	1	2071.665	1	NC	1
178			min	-.015	4	-.479	4	.001	1	-5.087e-4	4	701.858	4	NC	1
179		5	max	0	1	0	1	0	1	3.442e-5	4	NC	1	NC	1
180			min	0	1	0	1	0	1	8.117e-6	1	NC	1	NC	1
181	M24	1	max	-.009	1	0	1	0	1	-7.697e-6	1	NC	1	NC	1
182			min	-.032	4	0	1	0	1	-2.203e-5	4	NC	1	NC	1
183		2	max	-.007	1	-.164	1	-.008	1	-1.348e-4	1	2053.09	1	NC	1
184			min	-.024	4	-.463	4	-.03	4	-3.872e-4	4	725.734	4	NC	1
185		3	max	-.004	1	-.201	1	-.007	1	-1.115e-4	1	1671.444	1	NC	1
186			min	-.016	4	-.579	4	-.022	4	-3.67e-4	4	580.535	4	NC	1
187		4	max	-.002	1	-.155	1	0	4	-8.825e-5	1	2165.091	1	NC	1
188			min	-.008	4	-.454	4	0	1	-3.468e-4	4	739.369	4	NC	1
189		5	max	0	1	0	1	0	1	-2.177e-5	1	NC	1	NC	1
190			min	0	1	0	1	0	1	-8.012e-5	4	NC	1	NC	1
191	M25	1	max	.002	4	.011	4	.418	4	3.482e-3	4	NC	1	6733.187	1
192			min	0	1	.003	1	.142	1	1.164e-3	1	9087.322	4	2001.204	4
193		2	max	.002	4	.009	4	.411	4	3.478e-3	4	NC	1	9837.895	1
194			min	0	1	.002	1	.139	1	1.167e-3	1	NC	1	2765.554	4

Envelope Member Section Deflections (Continued)

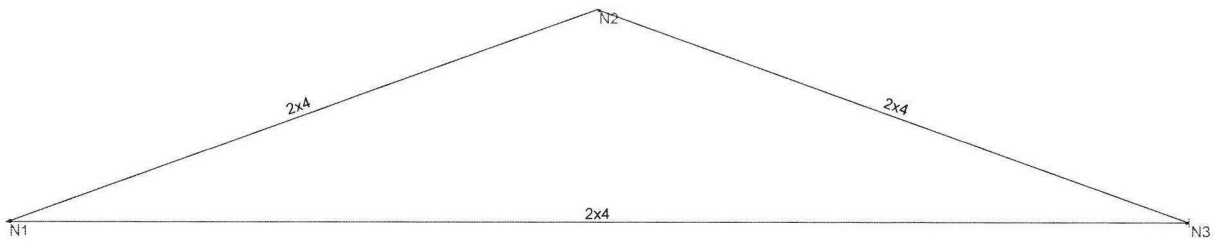
	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
195		3	max	.002	4	.007	4	.405	4	3.475e-3	4	NC	1	NC	1
196			min	0	1	.001	1	.137	1	1.17e-3	1	NC	1	4536.187	4
197		4	max	.002	4	.006	4	.399	4	3.471e-3	4	NC	1	NC	1
198			min	0	1	.001	1	.136	1	1.173e-3	1	NC	1	NC	1
199		5	max	.002	4	.006	4	.394	4	3.468e-3	4	NC	1	NC	1
200			min	0	1	.002	1	.135	1	1.175e-3	1	NC	1	NC	1
201	M26	1	max	-.007	1	.048	4	.427	4	-1.261e-3	1	7116.271	1	NC	1
202			min	-.025	4	.014	1	.151	1	-3.578e-3	4	2166.265	4	1894.96	4
203		2	max	-.007	1	.042	4	.421	4	-1.26e-3	1	NC	1	NC	1
204			min	-.025	4	.012	1	.149	1	-3.571e-3	4	2938.3	4	2524.989	4
205		3	max	-.007	1	.036	4	.414	4	-1.258e-3	1	NC	1	NC	1
206			min	-.025	4	.01	1	.147	1	-3.563e-3	4	4627.342	4	3953.768	4
207		4	max	-.007	1	.03	4	.407	4	-1.257e-3	1	NC	1	NC	1
208			min	-.025	4	.008	1	.144	1	-3.556e-3	4	9815.171	4	8684.655	4
209		5	max	-.007	1	.026	4	.402	4	-1.255e-3	1	NC	1	NC	1
210			min	-.025	4	.007	1	.142	1	-3.548e-3	4	NC	1	NC	1
211	M27	1	max	.004	4	0	1	0	1	-6.47e-6	1	NC	1	NC	1
212			min	.001	1	0	4	0	1	-2.386e-5	4	NC	1	NC	1
213		2	max	.013	4	-.237	1	.033	4	-5.431e-6	1	1416.269	1	NC	1
214			min	.004	1	-.682	4	.01	1	-1.955e-5	4	492.867	4	NC	1
215		3	max	.022	4	-.317	1	.059	4	-4.393e-6	1	1060.07	1	NC	1
216			min	.006	1	-.91	4	.018	1	-1.524e-5	4	369.388	4	5666.793	4
217		4	max	.03	4	-.238	1	.056	4	-3.354e-6	1	1410.597	1	NC	1
218			min	.009	1	-.683	4	.017	1	-1.093e-5	4	492.169	4	6006.602	4
219		5	max	.039	4	0	1	0	1	-2.315e-6	1	NC	1	NC	1
220			min	.011	1	0	4	0	1	-6.621e-6	4	NC	1	NC	1
221	M28	1	max	-.014	1	0	1	0	1	-6.495e-6	1	NC	1	NC	1
222			min	-.047	4	0	4	0	1	-2.1e-5	4	NC	1	NC	1
223		2	max	-.011	1	-.246	1	.005	4	-5.52e-6	1	1367.136	1	NC	1
224			min	-.037	4	-.705	4	.001	1	-1.846e-5	4	476.661	4	NC	1
225		3	max	-.008	1	-.327	1	.017	4	-4.544e-6	1	1027.36	1	NC	1
226			min	-.026	4	-.939	4	.005	1	-1.592e-5	4	357.742	4	NC	1
227		4	max	-.005	1	-.245	1	.02	4	-3.568e-6	1	1372.502	1	NC	1
228			min	-.016	4	-.704	4	.006	1	-1.338e-5	4	477.319	4	NC	1
229		5	max	-.002	1	0	1	0	1	-2.592e-6	1	NC	1	NC	1
230			min	-.005	4	0	4	0	1	-1.084e-5	4	NC	1	NC	1
231	M27A	1	max	.022	4	-.014	1	0	1	3.95e-4	4	NC	1	NC	1
232			min	.003	1	-.071	4	-.002	4	1.204e-4	1	NC	1	NC	1
233		2	max	.02	4	-.02	1	.001	4	3.488e-4	4	NC	1	NC	1
234			min	.002	1	-.077	4	0	1	1.063e-4	1	NC	1	NC	1
235		3	max	.019	4	-.026	1	.004	4	3.026e-4	4	NC	1	NC	1
236			min	.001	1	-.082	4	.001	1	9.223e-5	1	NC	1	NC	1
237		4	max	.017	4	-.031	1	.007	4	2.563e-4	4	NC	1	NC	1
238			min	0	1	-.088	4	.002	1	7.814e-5	1	NC	1	NC	1
239		5	max	.015	4	-.037	1	.01	4	2.101e-4	4	NC	1	NC	1
240			min	0	1	-.094	4	.003	1	6.404e-5	1	NC	1	NC	1
241	M28A	1	max	.028	4	-.018	1	.01	4	1.46e-4	4	NC	1	NC	1
242			min	.004	1	-.084	4	.003	1	5.084e-5	1	NC	1	NC	1
243		2	max	.026	4	-.024	1	.013	4	9.51e-5	4	NC	1	NC	1
244			min	.004	1	-.089	4	.004	1	3.4e-5	1	NC	1	NC	1
245		3	max	.024	4	-.029	1	.016	4	4.424e-5	4	NC	1	NC	1
246			min	.003	1	-.095	4	.005	1	1.716e-5	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
247		4	max	.022	4	-.035	1	.019	4	3.135e-7	1	NC	1	NC	1
248			min	.003	1	-.1	4	.006	1	-6.625e-6	4	NC	1	NC	1
249		5	max	.021	4	-.041	1	.022	4	-1.653e-5	1	NC	1	NC	1
250			min	.002	1	-.106	4	.007	1	-5.749e-5	4	NC	1	NC	1

Envelope Wood Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Fc' [ksi]	Ft' [ksi]	Fb1' [ksi]	Fb2' [ksi]	Fv' [ksi]	Eqn
1	M1	3-2X4	.748	10.612	4	.224	10.612	y	4	.429	.992	1.778	1.964	.207	3.9-3
2	M3	3-2X4	.704	4.824	4	.232	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
3	M4	2-2X6	.470	0	4	.014	0	z	4	.229	.86	1.336	1.547	.207	3.6.3
4	M5	2X4	.010	1.256	4	.065	2.512	y	4	.964	.992	1.544	1.708	.207	3.9-1
5	M6	2X4	.010	1.256	4	.029	0	y	4	.964	.992	1.544	1.708	.207	3.9-1
6	M7	2X4	.485	0	4	.049	22.75	y	4	.01	.992	1.166	1.708	.207	3.9-1
7	M8	3-2X4	.727	4.502	4	.224	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
8	M10	3-2X4	.690	4.502	4	.229	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
9	M12	2X4	.003	1.256	1	.069	2.512	y	4	.885	.776	1.21	1.337	.207	3.9-3
10	M13	2X4	.003	1.256	1	.004	0	y	4	.885	.776	1.21	1.337	.207	3.9-1
11	M14	3-2X4	.753	4.663	4	.238	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
12	M16	3-2X4	.721	4.663	4	.236	10.612	y	4	.429	.992	1.785	1.964	.207	3.9-3
13	M18	2X4	.007	1.256	4	.048	2.512	y	4	.964	.992	1.544	1.708	.207	3.9-1
14	M19	2X4	.007	1.256	4	.029	0	y	4	.964	.992	1.544	1.708	.207	3.9-1
15	M20	2-2X4	.489	2	4	1.200	2	y	4	.758	.992	1.549	1.708	.207	3.9-3
16	M21	2-2X4	.430	2	4	1.181	2	y	4	.758	.992	1.549	1.708	.207	3.9-3
17	M22	2X6	.063	2	4	.025	2	y	4	.439	.86	1.327	1.547	.207	3.9-3
18	M23	2X4	.684	0	4	.069	22.75	y	4	.01	.992	1.166	1.708	.207	3.9-1
19	M24	2X4	.485	28	4	.049	0	y	4	.01	.992	1.166	1.708	.207	3.9-1
20	M25	2X4	.018	2.333	4	.008	0	y	1	.44	.992	1.537	1.708	.162	3.9-1
21	M26	2X4	.023	0	4	.011	0	y	4	.44	.992	1.537	1.708	.207	3.9-1
22	M27	2X4	.298	28	4	.000	0	z	4	.01	.992	1.166	1.708	.207	3.9-1
23	M28	2X4	.325	0	4	.000	0	z	4	.01	.992	1.166	1.708	.207	3.9-1
24	M27A	2-2X6	.462	0	4	.015	0	z	4	.229	.86	1.336	1.547	.207	3.6.3
25	M28A	2-2X6	.467	0	4	.016	0	z	4	.229	.86	1.336	1.547	.207	3.6.3



Envelope Only Solution

Epic Engineering	TL-2	SK - 2
ALR		Jan 15, 2019 at 10:34 AM
		Line RISA Model TL 2.r3d

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2x4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255

Wood Design Parameters

	Label	Shape	Length[ft]	le2[ft]	le1[ft]	le-bend to...	le-bend bo...	Kyy	Kzz	CV	Cr	y sway	z sway
1	M1	2x4	12.5	0	0	Lbyy					Yes		
2	M2	2x4	6.643	0	0	Lbyy					Yes		
3	M3	2x4	6.643	0	0	Lbyy					Yes		

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N3			2x4	Beam	None	DF	Typical
2	M2	N3	N2			2x4	Beam	None	DF	Typical
3	M3	N2	N1			2x4	Beam	None	DF	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL		-1				2		
2	Snow	SL						2		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Deflection 1	Yes	Y		DL	1																		
2	Deflection 2	Yes	Y		LL	1																		
3	Deflection 3	Yes	Y		DL	1	LL	1																
4	IBC 16-8	Yes			DL	1																		
5	IBC 16-9	Yes			DL	1	LL	1	LLS	1														
6	IBC 16-10 ...	Yes			DL	1	RLL	1																
7	IBC 16-10 ...	Yes			DL	1	SL	1	SLN	1														
8	IBC 16-10 ...	Yes			DL	1	RL	1																
9	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RLL	.75												
10	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
11	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RL	.75												

Load Combination Design

	Description	ASIF	CD	Service	Hot Rol...	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-8		.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-10 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-10 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-10 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-11 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-11 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-11 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Member Distributed Loads (BLC 1 : Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.03	-.03	0	0
2	M2	Y	-.03	-.03	0	0

Member Distributed Loads (BLC 2 : Snow)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.05	-.05	0	0
2	M2	Y	-.05	-.05	0	0

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	0	11	.548	7	0	11	0	11	0	11	0	11
2		min	0	1	0	2	0	1	0	1	0	1	0	1
3	N3	max	0	11	.548	7	0	11	0	11	0	11	0	11
4		min	0	1	0	2	0	1	0	1	0	1	0	1
5	N2	max	0	11	0	11	0	11	0	11	0	11	0	11
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	Totals:	max	0	11	1.096	7	0	11						
8		min	0	1	0	2	0	1						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z She...	LC	Torque[k-ft]	LC	y-y Moment[k-..	LC	z-z Moment[k-ft]	LC
1	M1	1	m...	0	2	.008	11	0	11	0	11	0	11	0	11
2			min	-.75	7	0	2	0	1	0	1	0	1	0	1
3		2	m...	0	2	.004	11	0	11	0	11	0	11	0	2
4			min	-.75	7	0	2	0	1	0	1	0	1	-.019	1
5		3	m...	0	2	0	11	0	11	0	11	0	11	0	2
6			min	-.75	7	0	1	0	1	0	1	0	1	-.025	1
7		4	m...	0	2	0	2	0	11	0	11	0	11	0	2
8			min	-.75	7	-.004	1	0	1	0	1	0	1	-.019	1
9		5	m...	0	2	0	2	0	11	0	11	0	11	0	11
10			min	-.75	7	-.008	1	0	1	0	1	0	1	0	1
11	M2	1	m...	.888	7	.254	7	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1
13		2	m...	.843	7	.127	7	0	11	0	11	0	11	0	2
14			min	0	2	0	2	0	1	0	1	0	1	-.316	7
15		3	m...	.797	7	0	11	0	11	0	11	0	11	0	2
16			min	0	2	0	1	0	1	0	1	0	1	-.422	7
17		4	m...	.751	7	0	2	0	11	0	11	0	11	0	2
18			min	0	2	-.127	7	0	1	0	1	0	1	-.316	7
19		5	m...	.706	7	0	2	0	11	0	11	0	11	0	11
20			min	0	2	-.254	7	0	1	0	1	0	1	0	1
21	M3	1	m...	.706	7	.254	7	0	11	0	11	0	11	0	11
22			min	0	2	0	2	0	1	0	1	0	1	0	1
23		2	m...	.751	7	.127	7	0	11	0	11	0	11	0	2
24			min	0	2	0	2	0	1	0	1	0	1	-.316	7
25		3	m...	.797	7	0	11	0	11	0	11	0	11	0	2
26			min	0	2	0	1	0	1	0	1	0	1	-.422	7
27		4	m...	.843	7	0	2	0	11	0	11	0	11	0	2
28			min	0	2	-.127	7	0	1	0	1	0	1	-.316	7
29		5	m...	.888	7	0	2	0	11	0	11	0	11	0	11
30			min	0	2	-.254	7	0	1	0	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top...	LC	z-Bot[..	LC
1	M1	1	max	0	2	.002	11	0	11	0	11	0	11	0	11	0	11
2			min	-.143	7	0	2	0	1	0	1	0	1	0	1	0	1
3		2	max	0	2	.001	11	0	11	.073	11	0	2	0	11	0	11
4			min	-.143	7	0	2	0	1	0	2	-.073	1	0	1	0	1
5		3	max	0	2	0	11	0	11	.098	11	0	2	0	11	0	11
6			min	-.143	7	0	1	0	1	0	2	-.098	1	0	1	0	1
7		4	max	0	2	0	2	0	11	.073	11	0	2	0	11	0	11
8			min	-.143	7	-.001	1	0	1	0	2	-.073	1	0	1	0	1
9		5	max	0	2	0	2	0	11	0	11	0	11	0	11	0	11
10			min	-.143	7	-.002	1	0	1	0	1	0	1	0	1	0	1
11	M2	1	max	.169	7	.073	7	0	11	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
13		2	max	.161	7	.036	7	0	11	1.24	7	0	2	0	11	0	11
14			min	0	2	0	2	0	1	0	2	-1.24	7	0	1	0	1
15		3	max	.152	7	0	11	0	11	1.653	7	0	2	0	11	0	11
16			min	0	2	0	1	0	1	0	2	-1.653	7	0	1	0	1
17		4	max	.143	7	0	2	0	11	1.24	7	0	2	0	11	0	11
18			min	0	2	-.036	7	0	1	0	2	-1.24	7	0	1	0	1
19		5	max	.134	7	0	2	0	11	0	11	0	11	0	11	0	11
20			min	0	2	-.073	7	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	.134	7	.073	7	0	11	0	11	0	11	0	11	0	11
22			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
23		2	max	.143	7	.036	7	0	11	1.24	7	0	2	0	11	0	11
24			min	0	2	0	2	0	1	0	2	-1.24	7	0	1	0	1
25		3	max	.152	7	0	11	0	11	1.653	7	0	2	0	11	0	11
26			min	0	2	0	1	0	1	0	2	-1.653	7	0	1	0	1
27		4	max	.161	7	0	2	0	11	1.24	7	0	2	0	11	0	11
28			min	0	2	-.036	7	0	1	0	2	-1.24	7	0	1	0	1
29		5	max	.169	7	0	2	0	11	0	11	0	11	0	11	0	11
30			min	0	2	-.073	7	0	1	0	1	0	1	0	1	0	1

Envelope Wood Code Checks

	Memb...	Shape	Cod...	Loc[ft]	LC	Shear Ch...	Loc...	Dir	LC	Fc' [...	Ft' [k...	Fb1' [ksi]	Fb2' [ksi]	Fv' [...	RB	CL	CP	Eqn
1	M1	2X4	.172	6.25	7	.014	0	y	4	1.984	1.164	1.984	2.182	.162	0	1	1	3.9-1
2	M2	2X4	.839	3.321	7	.351	0	y	7	1.984	1.164	1.984	2.182	.207	0	1	1	3.9-3
3	M3	2X4	.839	3.321	7	.351	6.6...	y	7	1.984	1.164	1.984	2.182	.207	0	1	1	3.9-3

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2x4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255
4	2x4 Column	2X4	Column	Rectangular	DF	Typical	5.25	.984	5.359	2.877

Wood Design Parameters

	Label	Shape	Length[ft]	le2[ft]	le1[ft]	le-bend to...	le-bend bo...	Kyy	Kzz	CV	Cr	y sway	z sway
1	M1	2x4	21	0	0	Lbyy					Yes		
2	M2	(2) 2x4	11.424	0	0	Lbyy					Yes		
3	M3	(2) 2x4	11.424	0	0	Lbyy					Yes		
4	M4	2x4	2.333			Lbyy					Yes		
5	M5	2x4 Column	2.25			Lbyy							
6	M6	2x4 Column	2.25			Lbyy							

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N3			2x4	Beam	None	DF	Typical
2	M2	N3	N2			(2) 2x4	Beam	None	DF	Typical
3	M3	N2	N1			(2) 2x4	Beam	None	DF	Typical
4	M4	N7	N6			2x4	Beam	None	DF	Typical
5	M5	N6A	N11			2x4 Column	Column	Rectangular	DF	Typical
6	M6	N8	N10			2x4 Column	Column	Rectangular	DF	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL		-1				2		
2	Snow	SL						2		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Deflection 1	Yes	Y		DL	1																		
2	Deflection 2	Yes	Y		LL	1																		
3	Deflection 3	Yes	Y		DL	1	LL	1																
4	IBC 16-8	Yes			DL	1																		
5	IBC 16-9	Yes			DL	1	LL	1	LLS	1														
6	IBC 16-10 ...	Yes			DL	1	RLL	1																
7	IBC 16-10 ...	Yes			DL	1	SL	1	SLN	1														
8	IBC 16-10 ...	Yes			DL	1	RL	1																
9	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RLL	.75												
10	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
11	IBC 16-11 ...	Yes			DL	1	LL	.75	LLS	.75	RL	.75												

Load Combination Design

	Description	ASIF	CD	Service	Hot Rol...	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-8		.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	ASIF	CD	Service	Hot Rol..	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
5	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-10 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-10 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-10 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-11 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-11 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-11 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Member Distributed Loads (BLC 1 : Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.03	-.03	0	0
2	M2	Y	-.03	-.03	0	0

Member Distributed Loads (BLC 2 : Snow)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	M3	Y	-.05	-.05	0	0
2	M2	Y	-.05	-.05	0	0

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	0	11	.961	7	0	11	0	11	0	11	0	11
2		min	0	1	0	2	0	1	0	1	0	1	0	1
3	N3	max	0	11	.961	7	0	11	0	11	0	11	0	11
4		min	0	1	0	2	0	1	0	1	0	1	0	1
5	Totals:	max	0	11	1.922	7	0	11						
6		min	0	1	0	2	0	1						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z She...	LC	Torque[k-ft]	LC	y-y Moment[k-..	LC	z-z Moment[k-ft]	LC
1	M1	1	m...	0	2	.015	7	0	11	0	11	0	11	0	11
2			min	-1.432	7	0	2	0	1	0	1	0	1	0	1
3		2	m...	0	2	.008	7	0	11	0	11	0	11	0	2
4			min	-1.432	7	0	2	0	1	0	1	0	1	-.059	7
5		3	m...	0	2	0	2	0	11	0	11	0	11	0	2
6			min	-1.432	7	0	7	0	1	0	1	0	1	-.077	7
7		4	m...	0	2	0	2	0	11	0	11	0	11	0	2
8			min	-1.432	7	-.008	7	0	1	0	1	0	1	-.059	7
9		5	m...	0	2	0	2	0	11	0	11	0	11	0	11
10			min	-1.432	7	-.015	7	0	1	0	1	0	1	0	1
11	M2	1	m...	1.689	7	.306	7	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1
13		2	m...	1.596	7	.089	7	0	11	0	11	0	11	0	2
14			min	0	2	0	2	0	1	0	1	0	1	-.564	7
15		3	m...	1.503	7	0	2	0	11	0	11	0	11	0	2
16			min	0	2	-.129	7	0	1	0	1	0	1	-.508	7
17		4	m...	1.409	7	0	2	0	11	0	11	0	11	.17	7
18			min	0	2	-.346	7	0	1	0	1	0	1	0	2
19		5	m...	0	2	.593	7	0	11	0	11	0	11	0	11
20			min	-1.385	7	0	2	0	1	0	1	0	1	0	1
21	M3	1	m...	0	2	0	2	0	11	0	11	0	11	0	11
22			min	-1.385	7	-.593	7	0	1	0	1	0	1	0	1
23		2	m...	1.409	7	.346	7	0	11	0	11	0	11	.17	7

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z She...	LC	Torque[k-ft]	LC	y-y Moment[k-..	LC	z-z Moment[k-ft]	LC
24			min	0	2	0	2	0	1	0	1	0	1	0	2
25		3	m...	1.503	7	.129	7	0	11	0	11	0	11	0	2
26			min	0	2	0	2	0	1	0	1	0	1	-.508	7
27		4	m...	1.596	7	0	2	0	11	0	11	0	11	0	2
28			min	0	2	-.089	7	0	1	0	1	0	1	-.564	7
29		5	m...	1.689	7	0	2	0	11	0	11	0	11	0	11
30			min	0	2	-.306	7	0	1	0	1	0	1	0	1
31	M4	1	m...	2.938	7	.001	11	0	11	0	11	0	11	0	11
32			min	0	2	0	2	0	1	0	1	0	1	0	1
33		2	m...	2.938	7	0	11	0	11	0	11	0	11	0	2
34			min	0	2	0	2	0	1	0	1	0	1	0	1
35		3	m...	2.938	7	0	11	0	11	0	11	0	11	0	2
36			min	0	2	0	1	0	1	0	1	0	1	0	1
37		4	m...	2.938	7	0	2	0	11	0	11	0	11	0	2
38			min	0	2	0	1	0	1	0	1	0	1	0	1
39		5	m...	2.938	7	0	2	0	11	0	11	0	11	0	11
40			min	0	2	-.001	1	0	1	0	1	0	1	0	1
41	M5	1	m...	.001	7	0	11	0	11	0	11	0	11	0	11
42			min	-.007	4	0	1	0	1	0	1	0	1	0	1
43		2	m...	0	7	0	11	0	11	0	11	0	11	0	11
44			min	-.007	4	0	1	0	1	0	1	0	1	0	1
45		3	m...	0	2	0	11	0	11	0	11	0	11	0	11
46			min	-.008	4	0	1	0	1	0	1	0	1	0	1
47		4	m...	0	2	0	11	0	11	0	11	0	11	0	11
48			min	-.009	4	0	1	0	1	0	1	0	1	0	1
49		5	m...	0	2	0	11	0	11	0	11	0	11	0	11
50			min	-.009	4	0	1	0	1	0	1	0	1	0	1
51	M6	1	m...	.001	7	0	11	0	11	0	11	0	11	0	11
52			min	-.007	4	0	1	0	1	0	1	0	1	0	1
53		2	m...	0	7	0	11	0	11	0	11	0	11	0	11
54			min	-.007	4	0	1	0	1	0	1	0	1	0	1
55		3	m...	0	2	0	11	0	11	0	11	0	11	0	11
56			min	-.008	4	0	1	0	1	0	1	0	1	0	1
57		4	m...	0	2	0	11	0	11	0	11	0	11	0	11
58			min	-.009	4	0	1	0	1	0	1	0	1	0	1
59		5	m...	0	2	0	11	0	11	0	11	0	11	0	11
60			min	-.009	4	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses

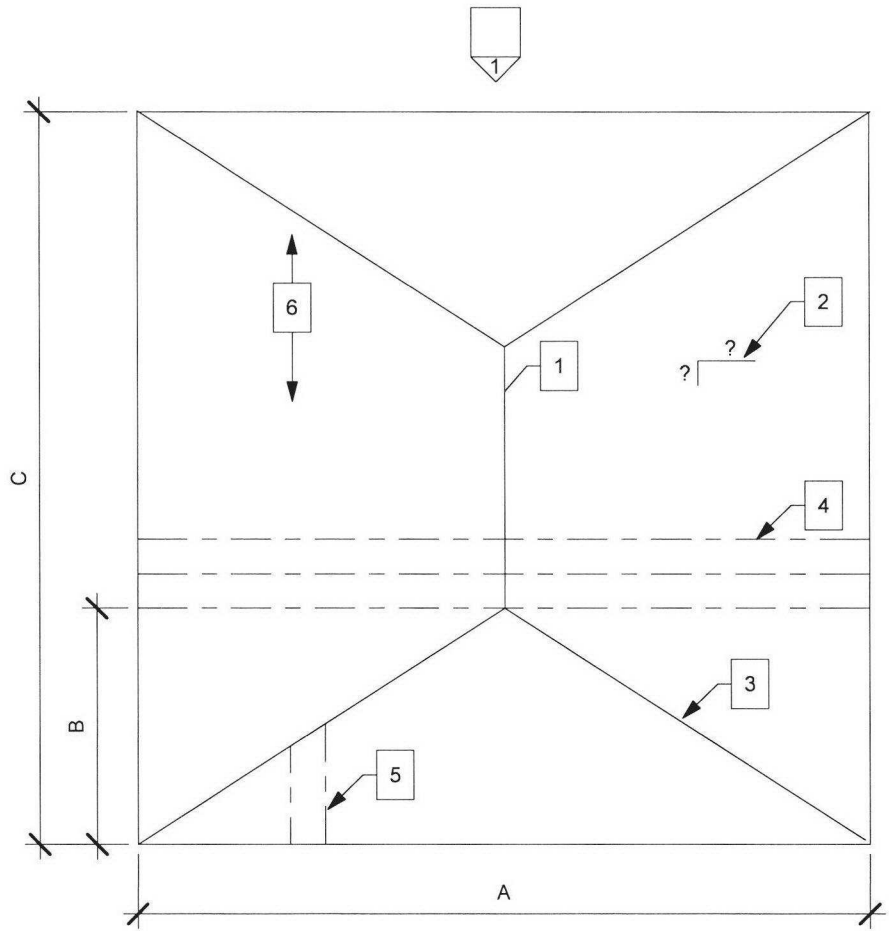
	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top...	LC	z-Bot[..	LC
1	M1	1	max	0	2	.004	7	0	11	0	11	0	11	0	11	0	11
2			min	-.273	7	0	2	0	1	0	1	0	1	0	1	0	1
3		2	max	0	2	.002	7	0	11	.232	7	0	2	0	11	0	11
4			min	-.273	7	0	2	0	1	0	2	-.232	7	0	1	0	1
5		3	max	0	2	0	2	0	11	.301	7	0	2	0	11	0	11
6			min	-.273	7	0	7	0	1	0	2	-.301	7	0	1	0	1
7		4	max	0	2	0	2	0	11	.232	7	0	2	0	11	0	11
8			min	-.273	7	-.002	7	0	1	0	2	-.232	7	0	1	0	1
9		5	max	0	2	0	2	0	11	0	11	0	11	0	11	0	11
10			min	-.273	7	-.004	7	0	1	0	1	0	1	0	1	0	1
11	M2	1	max	.161	7	.044	7	0	11	0	11	0	11	0	11	0	11
12			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
13		2	max	.152	7	.013	7	0	11	1.104	7	0	2	0	11	0	11
14			min	0	2	0	2	0	1	0	2	-1.104	7	0	1	0	1
15		3	max	.143	7	0	2	0	11	.996	7	0	2	0	11	0	11

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top...	LC	z-Bot[...	LC
16			min	0	2	-.018	7	0	1	0	2	-.996	7	0	1	0	1
17		4	max	.134	7	0	2	0	11	0	2	.333	7	0	11	0	11
18			min	0	2	-.049	7	0	1	-.333	7	0	2	0	1	0	1
19		5	max	0	2	.085	7	0	11	0	11	0	11	0	11	0	11
20			min	-.132	7	0	2	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	0	2	0	2	0	11	0	11	0	11	0	11	0	11
22			min	-.132	7	-.085	7	0	1	0	1	0	1	0	1	0	1
23		2	max	.134	7	.049	7	0	11	0	2	.333	7	0	11	0	11
24			min	0	2	0	2	0	1	-.333	7	0	2	0	1	0	1
25		3	max	.143	7	.018	7	0	11	.996	7	0	2	0	11	0	11
26			min	0	2	0	2	0	1	0	2	-.996	7	0	1	0	1
27		4	max	.152	7	0	2	0	11	1.104	7	0	2	0	11	0	11
28			min	0	2	-.013	7	0	1	0	2	-1.104	7	0	1	0	1
29		5	max	.161	7	0	2	0	11	0	11	0	11	0	11	0	11
30			min	0	2	-.044	7	0	1	0	1	0	1	0	1	0	1
31	M4	1	max	.56	7	0	11	0	11	0	11	0	11	0	11	0	11
32			min	0	2	0	2	0	1	0	1	0	1	0	1	0	1
33		2	max	.56	7	0	11	0	11	.003	11	0	2	0	11	0	11
34			min	0	2	0	2	0	1	0	2	-.003	1	0	1	0	1
35		3	max	.56	7	0	11	0	11	.003	11	0	2	0	11	0	11
36			min	0	2	0	1	0	1	0	2	-.003	1	0	1	0	1
37		4	max	.56	7	0	2	0	11	.003	11	0	2	0	11	0	11
38			min	0	2	0	1	0	1	0	2	-.003	1	0	1	0	1
39		5	max	.56	7	0	2	0	11	0	11	0	11	0	11	0	11
40			min	0	2	0	1	0	1	0	1	0	1	0	1	0	1
41	M5	1	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
42			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
43		2	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
44			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
45		3	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
46			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
47		4	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
48			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
49		5	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
50			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
51	M6	1	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
52			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
53		2	max	0	7	0	11	0	11	0	11	0	11	0	11	0	11
54			min	-.001	4	0	1	0	1	0	1	0	1	0	1	0	1
55		3	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
56			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
57		4	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
58			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1
59		5	max	0	2	0	11	0	11	0	11	0	11	0	11	0	11
60			min	-.002	4	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Wood Code Checks

	Memb...	Shape	Cod...	Loc[ft]	LC	Shear Ch...	Loc...	Dir	LC	Fc' [...	Ft' [k...	Fb1' [ksi]	Fb2' [ksi]	Fv' [...	RB	CL	CP	Eqn
1	M1	2X4	.386	10.5	7	.020	0	y	7	1.984	1.164	1.984	2.182	.207	0	1	1	3.9-1
2	M2	2-2X4	.861	10.234	7	.472	10....	y	7	1.984	1.164	1.968	2.182	.207	7.301	.992	1	3.9-1
3	M3	2-2X4	.861	1.19	7	.472	1.19	y	7	1.984	1.164	1.968	2.182	.207	7.301	.992	1	3.9-1
4	M4	2X4	.487	0	7	.003	2.3...	y	4	1.149	1.164	1.971	2.182	.162	6.6	.994	.579	3.6.3
5	M5	2X4	.002	2.25	4	.000	0	z	11	1.081	.911	1.344	1.485	.207	6.481	.996	.696	3.9-1
6	M6	2X4	.002	2.25	4	.000	0	z	11	1.081	.911	1.344	1.485	.207	6.481	.996	.696	3.9-1



A	ROOF WIDTH	28 FT	0 IN	4	RAFTER SIZE & SPACING:	2x4 @ 24" O.C.	
B	HIP LENGTH	14 FT	3 IN	5	HIP RAFTER SIZE & SPACING:	2x4 @ 24" O.C.	
C	ROOF LENGTH	28 FT	9 IN	6	ROOF COMPOSITION		
1	RIDGE BEAM SIZE: 1x8				1x SLEEPERS: [Y] / N		
2	ROOF PITCH: 5 /12				SHEATHING: Y / N		
					SHINGLES: [Y] / N		
3	HIP RAFTER SIZE: 2x4				METAL ROOF: Y / [N]		

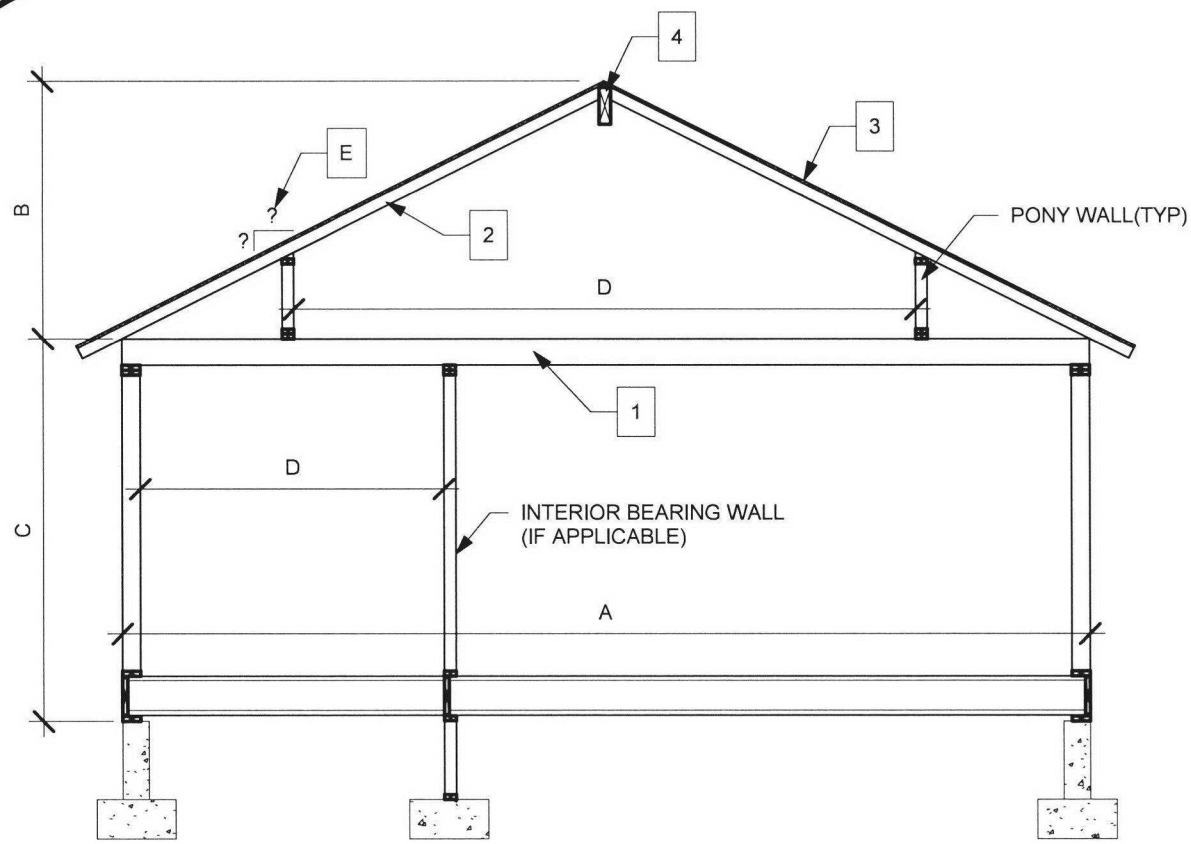
1 INCLUDE PICTURE IN ATTIC SHOWING FRAMING

Epic ENGINEERING

HOUSE DIMENSIONS

SEC. 1 HIPPED ROOF

BRYAN LYNE



1 CEILING JOIST SIZE & SPACING: 2x4 @ 16" O.C.

2 ROOF RAFTER SIZE & SPACING: 2x4 @ 24" O.C.

3 ROOF COMPOSITION:

ASPHALT SHINGLE: [Y] / N

METAL ROOFING: Y / N

SHEATHING: _____

SLEEPER SIZE & SPACING:

1x6 @ 0" O.C.

4 RIDGE PLATE: _____

5 BRACE SIZE AND SPACING: 2x4 @ 24" O.C.

6 FLOOR JOIST SIZE AND SPACING: 2x8 @ 16" O.C.

A DIMENSION: 28 FT. 0 IN.

B DIMENSION: 6 FT. 6 IN.

C DIMENSION: 9 FT. 10 IN.

D DIMENSION: 11 FT. 11 IN.

E ROOF SLOPE: 5:12

epic ENGINEERING

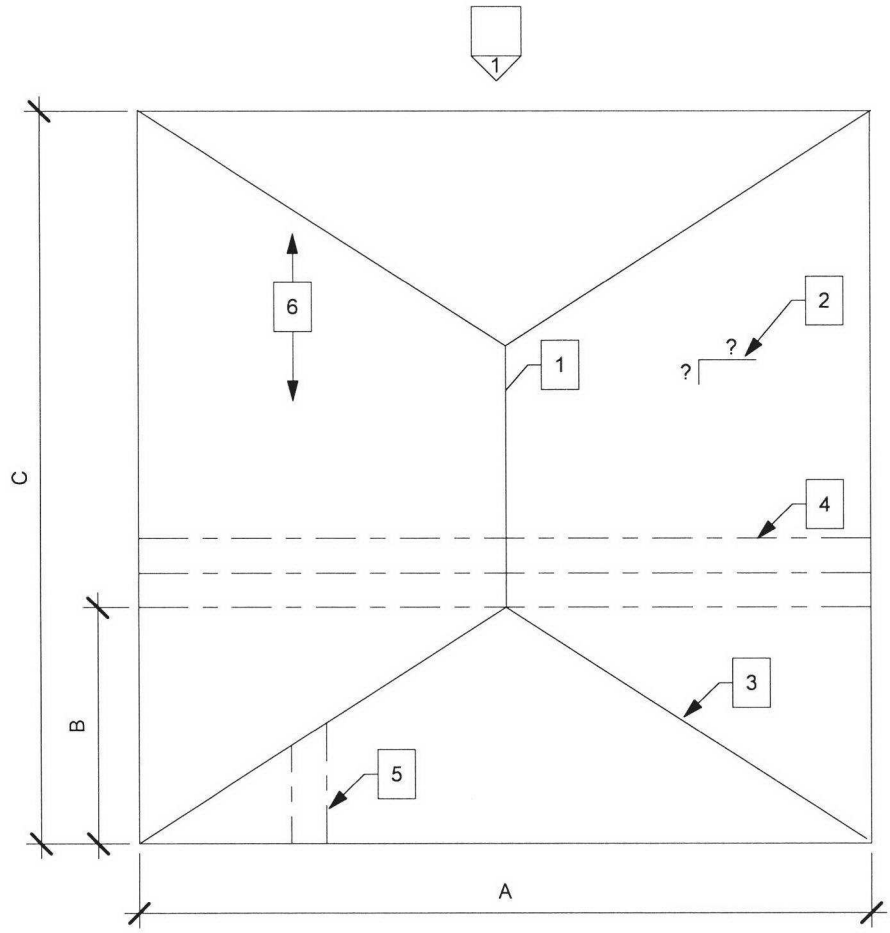
HOUSE DIMENSIONS

SEC. 1

BRYAN LYNE

Designer	Drawn By:
EPIC	EPIC
Reviewed	Project
EPIC	#:

Sheet Number: A1.5



A	ROOF WIDTH	23 FT	9 IN	4	RAFTER SIZE & SPACING: 2x4 @ 24" O.C.
B	HIP LENGTH	11 FT	8 IN	5	HIP RAFTER SIZE & SPACING: 2x4 @ 24" O.C.
C	ROOF LENGTH	15 FT	5 IN	6	ROOF COMPOSITION
1	RIDGE BEAM SIZE: 1x6				1x SLEEPERS: [Y] / N
2	ROOF PITCH: 5 /12				SHEATHING: Y / N
					SHINGLES: [Y] / N
					METAL ROOF: Y / [N]
3	HIP RAFTER SIZE: 2x4				

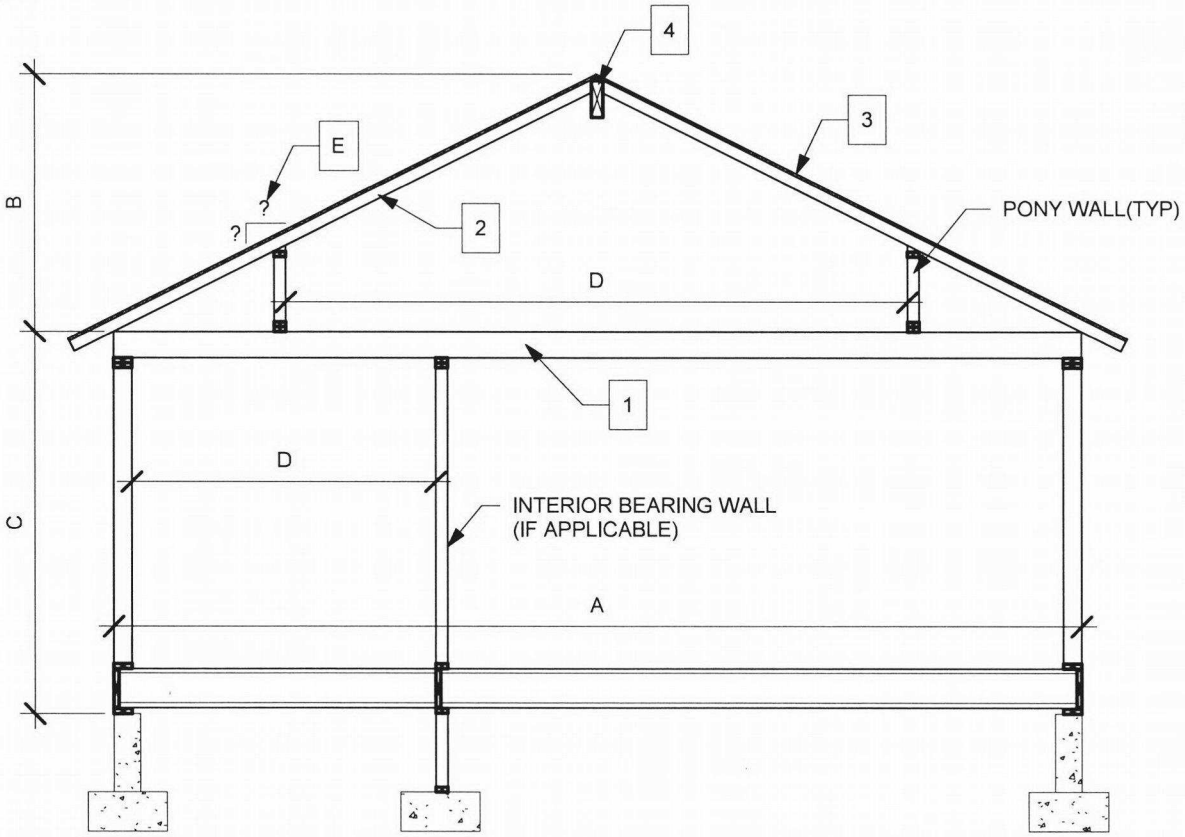
1 INCLUDE PICTURE IN ATTIC SHOWING FRAMING

Epic ENGINEERING

HOUSE DIMENSIONS

SEC. 2 HIPPED ROOF

BRYAN LYNE



1 CEILING JOIST SIZE & SPACING: 2x4 @ 16" O.C.

2 ROOF RAFTER SIZE & SPACING: 2x4 @ 24" O.C.

3 ROOF COMPOSITION:

ASPHALT SHINGLE: [Y] / N

METAL ROOFING: Y / N

SHEATHING: _____

SLEEPER SIZE & SPACING:

1x6 @ 0" O.C.

4 RIDGE PLATE: _____

5 BRACE SIZE AND SPACING: 2x4 @ 24" O.C.

6 FLOOR JOIST SIZE AND SPACING: 2x8 @ 16" O.C.

A DIMENSION: 23 FT. 9 IN.

B DIMENSION: 5 FT. 8 IN.

C DIMENSION: 8 FT. 0 IN.

D DIMENSION: N/A FT. N/A IN.

E ROOF SLOPE: 5:12

epic ENGINEERING

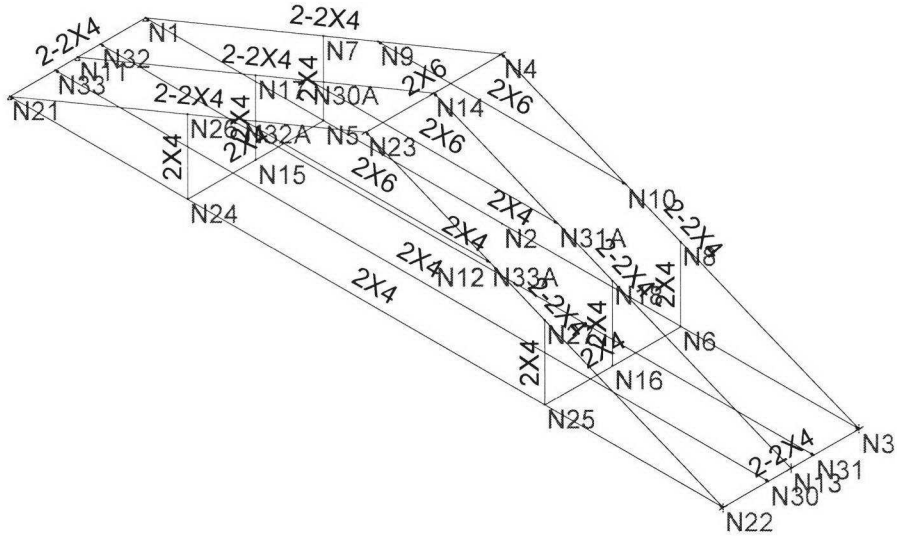
HOUSE DIMENSIONS

SEC. 2

BRYAN LYNE

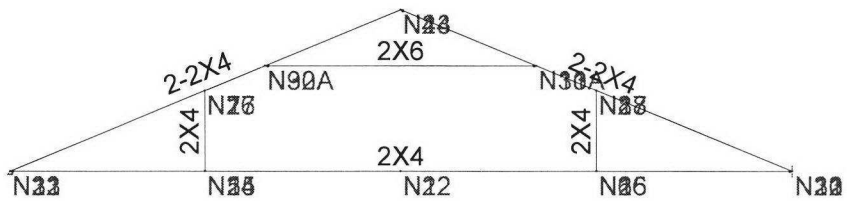
Designer	Drawn By:
EPIC	EPIC
Reviewed	Project
EPIC	#:

Sheet Number: A1.5



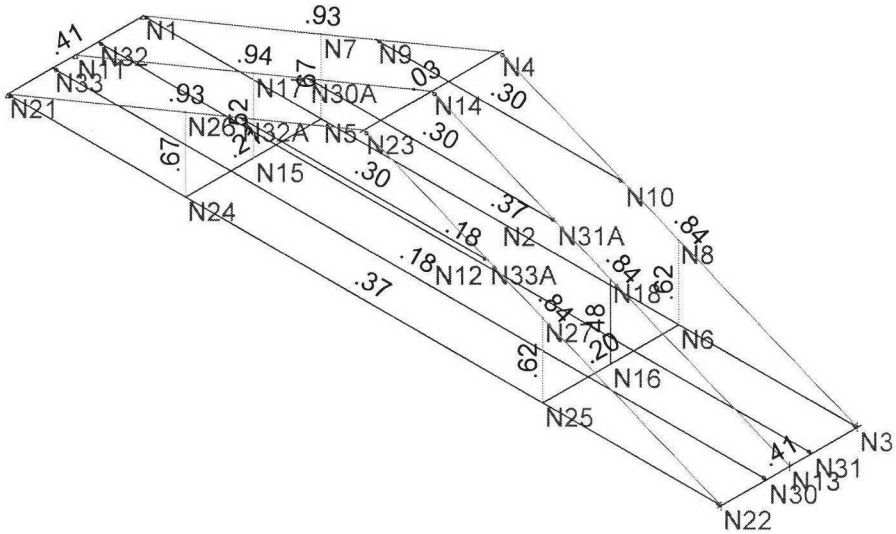
Envelope Only Solution

		SK - 2
		May 29, 2019 at 3:42 PM
	TL-3 Revised Layout	Lyne - TL-3 Revised.r3d



Envelope Only Solution

		SK - 3
		May 29, 2019 at 3:43 PM
	TL-3 Revised Reinforcement	Lyne - TL-3 Revised.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 1
		May 29, 2019 at 3:42 PM
	TL-3 Revised Unity	Lyne - TL-3 Revised.r3d

Wood Material Properties

	Label	Type	Database	Species	Grade	Cm	Emod	Nu	Therm...	Dens[k/f...
1	DF	Solid Sa...	Visually Graded	Douglas Fir-Larch	No.2		1	.3	.3	.035
2	SP	Solid Sa...	Visually Graded	Southern Pine	No.1		1	.3	.3	.035
3	HF	Solid Sa...	Visually Graded	Hem-Fir	No.1		1	.3	.3	.035
4	SPF	Solid Sa...	Visually Graded	Spruce-Pine-fir	No.1		1	.3	.3	.035
5	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_BAL	na		1	.3	.3	.035
6	24F-1.8E D...	Glulam	NDS Table 5A	24F-1.8E_DF_UNBAL	na		1	.3	.3	.035
7	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_BAL	na		1	.3	.3	.035
8	24F-1.8E S...	Glulam	NDS Table 5A	24F-1.8E_SP_UNBAL	na		1	.3	.3	.035

Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2x4	2X4	Beam	None	DF	Typical	5.25	.984	5.359	2.877
2	(2) 2x6	2-2X6	Beam	None	DF	Typical	16.5	12.375	41.594	32.615
3	(2) 2X4	2-2X4	Beam	None	DF	Typical	10.5	7.875	10.719	15.255
4	2x6	2X6	Beam	None	DF	Typical	8.25	1.547	20.797	5.125
5	2x8	2X8	Beam	None	DF	Typical	10.875	2.039	47.635	7.093
6	(3) 2x4	3-2X4	Beam	None	DF	Typical	15.75	26.578	16.078	39.809

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
No Data to Print ...			

Member Distributed Loads (BLC 1 : DEAD)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.024	-.024	0	0
2	M2	Y	-.024	-.024	0	0
3	M6	Y	-.024	-.024	0	0
4	M7	Y	-.024	-.024	0	0
5	M11	Y	-.024	-.024	0	0
6	M12	Y	-.024	-.024	0	0

Member Distributed Loads (BLC 2 : SNOW)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.05	-.05	0	0
2	M2	Y	-.05	-.05	0	0
3	M6	Y	-.05	-.05	0	0
4	M7	Y	-.05	-.05	0	0
5	M11	Y	-.05	-.05	0	0
6	M12	Y	-.05	-.05	0	0

Member Distributed Loads (BLC 3 : SOLAR)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.006	-.006	%4	%68
2	M6	Y	-.006	-.006	%4	%68
3	M11	Y	-.006	-.006	%4	%68

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Pl...
1	DEAD	DL	-1					6		
2	SNOW	SL						6		
3	SOLAR	DL						3		

Load Combinations

	Description	Sol...	P...	SR...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	ASCE ASD 1	Yes			DL	1																		
2	ASCE ASD 2	Yes			DL	1	LL	1	LLS	1														
3	ASCE ASD 3 (a)	Yes			DL	1																		
4	ASCE ASD 3 (b)	Yes			DL	1	SL	1	SLN	1														
5	ASCE ASD 4 (b)	Yes			DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	.126	4	.878	4	-.002	1	0	1	0	1	0	1
2		min	.12	1	.315	1	-.006	4	0	1	0	1	0	1
3	N3	max	0	1	.832	4	-.002	1	0	1	0	1	0	1
4		min	0	1	.269	1	-.007	4	0	1	0	1	0	1
5	N4	max	0	1	0	1	0	4	0	1	0	1	0	1
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	N11	max	.139	1	.899	4	0	4	0	1	0	1	0	1
8		min	.127	4	.322	1	0	1	0	1	0	1	0	1
9	N13	max	0	1	.854	4	0	1	0	1	0	1	0	1
10		min	0	1	.277	1	0	5	0	1	0	1	0	1
11	N14	max	0	1	0	1	0	1	0	1	0	1	0	1
12		min	0	1	0	1	0	4	0	1	0	1	0	1
13	N21	max	.126	4	.878	4	.006	4	0	1	0	1	0	1
14		min	.12	1	.315	1	.002	1	0	1	0	1	0	1
15	N22	max	0	1	.832	4	.007	4	0	1	0	1	0	1
16		min	0	1	.269	1	.002	1	0	1	0	1	0	1
17	N23	max	0	1	0	1	0	1	0	1	0	1	0	1
18		min	0	1	0	1	0	4	0	1	0	1	0	1
19	Totals:	max	.38	4	5.174	4	0	4						
20		min	.38	1	1.766	1	0	1						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
1	N1	max	0	1	0	1	0	4	3.1e-5	4	5.175e-4	4	-2.223e-3	1
2		min	0	4	0	4	0	1	9.799e-6	1	1.519e-4	1	-6.068e-3	4
3	N2	max	.019	4	-.064	1	-.011	1	-2.362e-5	1	4.648e-6	4	1.774e-4	1
4		min	.006	1	-.187	4	-.032	4	-8.08e-5	4	2.11e-6	1	1.767e-4	4
5	N3	max	.039	4	0	1	0	4	3.445e-5	4	-2.134e-4	1	5.67e-3	4
6		min	.012	1	0	4	0	1	1.096e-5	1	-6.424e-4	4	1.829e-3	1
7	N4	max	.019	4	-.023	1	0	1	-3.844e-5	1	-3.895e-5	1	4.737e-4	4
8		min	.006	1	-.072	4	0	4	-1.025e-4	4	-1.021e-4	4	2.036e-4	1
9	N5	max	.01	4	-.046	1	0	1	1.81e-5	1	1.002e-3	4	-8.307e-4	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
10		min	.003	1	-.124	4	0	4	-1.616e-5	4	3.553e-4	1	-2.252e-3	4
11	N6	max	.028	4	-.034	1	0	1	-6.533e-5	1	-3.638e-4	1	2.097e-3	4
12		min	.009	1	-.113	4	0	4	-1.454e-4	4	-1.021e-3	4	6.754e-4	1
13	N7	max	.044	4	-.046	1	-.001	1	-8.108e-6	1	-1.266e-5	1	1.583e-3	4
14		min	.016	1	-.124	4	-.004	4	-1.75e-5	4	-5.366e-5	4	5.732e-4	1
15	N8	max	0	1	-.034	1	-.002	1	-4.882e-6	1	5.801e-5	4	-5.727e-4	1
16		min	0	4	-.113	4	-.007	4	-1.337e-5	4	1.723e-5	1	-1.58e-3	4
17	N9	max	.025	4	-.031	1	0	1	-1.545e-5	1	-2.369e-5	1	1.458e-3	4
18		min	.009	1	-.085	4	-.003	4	-3.449e-5	4	-8.678e-5	4	6.006e-4	1
19	N10	max	.017	4	-.021	1	-.002	1	-2.005e-6	1	9.73e-5	4	-4.11e-4	1
20		min	.006	1	-.076	4	-.005	4	-5.852e-6	4	3.376e-5	1	-1.265e-3	4
21	N11	max	0	4	0	1	0	1	0	5	0	4	-2.27e-3	1
22		min	0	1	0	4	0	4	0	1	0	1	-6.181e-3	4
23	N12	max	0	1	0	1	0	1	0	1	0	1	0	1
24		min	0	1	0	1	0	1	0	1	0	1	0	1
25	N13	max	.037	4	0	1	0	5	0	1	0	4	5.752e-3	4
26		min	.011	1	0	4	0	1	0	4	0	1	1.853e-3	1
27	N14	max	.018	4	-.022	1	0	4	0	4	0	4	4.408e-4	4
28		min	.005	1	-.07	4	0	1	0	1	0	1	1.988e-4	1
29	N15	max	.029	4	-.047	1	0	4	0	1	0	4	-7.405e-4	1
30		min	.01	1	-.128	4	0	1	0	4	0	1	-1.884e-3	4
31	N16	max	.01	4	-.034	1	0	1	0	4	0	4	1.667e-3	4
32		min	.002	1	-.113	4	0	4	0	1	0	1	4.901e-4	1
33	N17	max	.045	4	-.047	1	0	1	0	4	0	4	1.925e-3	4
34		min	.017	1	-.128	4	0	4	0	1	0	1	6.988e-4	1
35	N18	max	0	1	-.034	1	0	4	0	4	0	1	-6.852e-4	1
36		min	-.003	4	-.113	4	0	1	0	1	0	4	-1.901e-3	4
37	N21	max	0	1	0	1	0	1	-9.799e-6	1	-1.519e-4	1	-2.223e-3	1
38		min	0	4	0	4	0	4	-3.1e-5	4	-5.175e-4	4	-6.068e-3	4
39	N22	max	.039	4	0	1	0	1	-1.096e-5	1	6.424e-4	4	5.67e-3	4
40		min	.012	1	0	4	0	4	-3.445e-5	4	2.134e-4	1	1.829e-3	1
41	N23	max	.019	4	-.023	1	0	4	1.025e-4	4	1.021e-4	4	4.737e-4	4
42		min	.006	1	-.072	4	0	1	3.844e-5	1	3.895e-5	1	2.036e-4	1
43	N24	max	.01	4	-.046	1	0	4	1.616e-5	4	-3.553e-4	1	-8.307e-4	1
44		min	.003	1	-.124	4	0	1	-1.81e-5	1	-1.002e-3	4	-2.252e-3	4
45	N25	max	.028	4	-.034	1	0	4	1.454e-4	4	1.021e-3	4	2.097e-3	4
46		min	.009	1	-.113	4	0	1	6.533e-5	1	3.638e-4	1	6.754e-4	1
47	N26	max	.044	4	-.046	1	.004	4	1.75e-5	4	5.366e-5	4	1.583e-3	4
48		min	.016	1	-.124	4	.001	1	8.108e-6	1	1.266e-5	1	5.732e-4	1
49	N27	max	0	1	-.034	1	.007	4	1.337e-5	4	-1.723e-5	1	-5.727e-4	1
50		min	0	4	-.113	4	.002	1	4.882e-6	1	-5.801e-5	4	-1.58e-3	4
51	N30	max	.032	4	0	1	0	1	1.043e-5	4	-1.046e-4	1	5.725e-3	4
52		min	.01	1	0	4	0	4	3.318e-6	1	-3.35e-4	4	1.845e-3	1
53	N31	max	.032	4	0	1	0	4	-3.318e-6	1	3.35e-4	4	5.725e-3	4
54		min	.01	1	0	4	0	1	-1.043e-5	4	1.046e-4	1	1.845e-3	1
55	N32	max	.005	4	0	1	0	4	-2.968e-6	1	-1.143e-4	1	-2.254e-3	1
56		min	.001	1	0	4	0	1	-9.392e-6	4	-3.873e-4	4	-6.143e-3	4
57	N33	max	.005	4	0	1	0	1	9.392e-6	4	3.873e-4	4	-2.254e-3	1
58		min	.001	1	0	4	0	4	2.968e-6	1	1.143e-4	1	-6.143e-3	4
59	N30A	max	.025	4	-.031	1	0	1	0	4	0	5	1.59e-3	4
60		min	.009	1	-.084	4	0	4	0	1	0	1	6.558e-4	1
61	N31A	max	.016	4	-.02	1	0	4	0	4	0	1	-4.413e-4	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [r...	LC	Y Rotation ...	LC	Z Rotation ...	LC
62		min	.006	1	-.072	4	0	1	0	1	0	4	-1.366e-3	4
63	N32A	max	.025	4	-.031	1	.003	4	3.449e-5	4	8.678e-5	4	1.458e-3	4
64		min	.009	1	-.085	4	0	1	1.545e-5	1	2.369e-5	1	6.006e-4	1
65	N33A	max	.017	4	-.021	1	.005	4	5.852e-6	4	-3.376e-5	1	-4.11e-4	1
66		min	.006	1	-.076	4	.002	1	2.005e-6	1	-9.73e-5	4	-1.265e-3	4

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
1	M1	1	max	1.855	4	.191	4	-.002	1	.003	4	.021	4	-.002	1
2			min	.665	1	.068	1	-.005	4	0	1	.006	1	-.004	4
3		2	max	1.763	4	-.005	1	-.002	1	.003	4	.008	4	-.095	1
4			min	.627	1	-.014	4	-.005	4	0	1	.002	1	-.259	4
5		3	max	1.67	4	-.081	1	-.002	1	.003	4	-.002	1	-.069	1
6			min	.587	1	-.221	4	-.005	4	0	1	-.006	4	-.179	4
7		4	max	.251	4	.118	4	0	1	.001	4	0	1	.064	4
8			min	.083	1	.038	1	0	4	0	1	0	4	.024	1
9		5	max	.164	4	-.022	1	0	1	.001	4	0	1	0	4
10			min	.05	1	-.073	4	0	4	0	1	-.001	4	0	1
11	M2	1	max	1.754	4	.184	4	.005	4	-.001	1	-.008	1	0	1
12			min	.563	1	.061	1	.002	1	-.004	4	-.025	4	-.003	4
13		2	max	1.681	4	-.004	1	.005	4	-.001	1	-.003	1	-.081	1
14			min	.544	1	-.013	4	.002	1	-.004	4	-.01	4	-.245	4
15		3	max	1.607	4	-.07	1	.005	4	-.001	1	.006	4	-.052	1
16			min	.525	1	-.21	4	.002	1	-.004	4	.002	1	-.162	4
17		4	max	.235	4	.122	4	0	4	0	1	0	1	.065	4
18			min	.067	1	.042	1	0	1	0	4	-.001	4	.026	1
19		5	max	.162	4	-.024	1	0	4	0	1	0	1	0	1
20			min	.047	1	-.076	4	0	1	0	4	0	1	0	1
21	M3	1	max	-.001	1	.135	4	.004	4	.006	4	-.002	1	.042	4
22			min	-.005	4	.052	1	.001	1	.002	1	-.005	4	.018	1
23		2	max	-.001	1	.136	4	.004	4	.006	4	0	1	-.01	1
24			min	-.005	4	.052	1	.001	1	.002	1	-.002	4	-.031	4
25		3	max	-.001	1	.137	4	.004	4	.006	4	0	4	-.038	1
26			min	-.005	4	.053	1	.001	1	.002	1	0	1	-.105	4
27		4	max	-.001	1	.137	4	.004	4	.006	4	.002	4	-.067	1
28			min	-.005	4	.054	1	.001	1	.002	1	0	1	-.179	4
29		5	max	-.001	1	.138	4	.004	4	.006	4	.005	4	-.097	1
30			min	-.005	4	.055	1	.001	1	.002	1	.001	1	-.254	4
31	M4	1	max	-.003	1	-.04	1	.005	4	-.002	1	-.001	1	-.008	1
32			min	-.006	4	-.124	4	.002	1	-.006	4	-.005	4	-.032	4
33		2	max	-.003	1	-.04	1	.005	4	-.002	1	0	1	.035	4
34			min	-.006	4	-.123	4	.002	1	-.006	4	-.002	4	.013	1
35		3	max	-.003	1	-.039	1	.005	4	-.002	1	0	4	.101	4
36			min	-.006	4	-.123	4	.002	1	-.006	4	0	1	.035	1
37		4	max	-.003	1	-.038	1	.005	4	-.002	1	.003	4	.168	4
38			min	-.006	4	-.122	4	.002	1	-.006	4	.001	1	.056	1
39		5	max	-.003	1	-.038	1	.005	4	-.002	1	.006	4	.233	4
40			min	-.006	4	-.121	4	.002	1	-.006	4	.002	1	.076	1
41	M5	1	max	1.296	4	0	1	0	1	0	1	0	1	0	1
42			min	.45	1	0	1	0	1	0	4	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
43		2	max	1.292	4	0	1	0	1	0	1	0	1	0	1
44			min	.447	1	0	1	0	1	0	4	0	1	0	1
45		3	max	1.288	4	0	1	0	1	0	1	0	1	0	1
46			min	.443	1	0	1	0	1	0	4	0	1	0	1
47		4	max	1.285	4	0	1	0	1	0	1	0	1	0	1
48			min	.439	1	0	1	0	1	0	4	0	1	0	1
49		5	max	1.281	4	0	1	0	1	0	1	0	1	0	1
50			min	.436	1	0	1	0	1	0	4	0	1	0	1
51	M6	1	max	1.856	4	.198	4	0	1	0	1	0	1	.007	4
52			min	.665	1	.071	1	0	1	0	1	0	1	.003	1
53		2	max	1.763	4	-.002	1	0	1	0	1	0	1	-.098	1
54			min	.627	1	-.006	4	0	1	0	1	0	1	-.268	4
55		3	max	1.67	4	-.078	1	0	1	0	1	0	1	-.063	1
56			min	.587	1	-.214	4	0	1	0	1	0	1	-.162	4
57		4	max	.299	4	.121	4	0	1	0	1	0	1	.071	4
58			min	.101	1	.039	1	0	1	0	1	0	1	.027	1
59		5	max	.212	4	-.021	1	0	1	0	1	0	1	0	1
60			min	.069	1	-.07	4	0	1	0	1	0	1	0	4
61	M7	1	max	1.757	4	.19	4	0	1	0	1	0	1	.005	4
62			min	.566	1	.063	1	0	1	0	1	0	1	.002	1
63		2	max	1.683	4	-.003	1	0	1	0	1	0	1	-.084	1
64			min	.546	1	-.007	4	0	1	0	1	0	1	-.254	4
65		3	max	1.61	4	-.068	1	0	1	0	1	0	1	-.045	1
66			min	.527	1	-.204	4	0	1	0	1	0	1	-.143	4
67		4	max	.279	4	.124	4	0	1	0	1	0	1	.074	4
68			min	.082	1	.043	1	0	1	0	1	0	1	.029	1
69		5	max	.206	4	-.023	1	0	1	0	1	0	1	0	1
70			min	.063	1	-.073	4	0	1	0	1	0	1	0	1
71	M8	1	max	.009	4	.092	4	0	1	0	1	0	1	-.001	1
72			min	.004	1	.035	1	0	1	0	1	0	1	-.005	4
73		2	max	.009	4	.092	4	0	1	0	1	0	1	-.02	1
74			min	.004	1	.035	1	0	1	0	1	0	1	-.054	4
75		3	max	.009	4	.093	4	0	1	0	1	0	1	-.039	1
76			min	.004	1	.036	1	0	1	0	1	0	1	-.105	4
77		4	max	.009	4	.094	4	0	1	0	1	0	1	-.059	1
78			min	.004	1	.037	1	0	1	0	1	0	1	-.155	4
79		5	max	.009	4	.094	4	0	1	0	1	0	1	-.079	1
80			min	.004	1	.037	1	0	1	0	1	0	1	-.206	4
81	M9	1	max	.007	4	-.029	1	0	1	0	1	0	1	.005	4
82			min	.002	1	-.087	4	0	1	0	1	0	1	.002	1
83		2	max	.007	4	-.028	1	0	1	0	1	0	1	.052	4
84			min	.002	1	-.086	4	0	1	0	1	0	1	.018	1
85		3	max	.007	4	-.027	1	0	1	0	1	0	1	.098	4
86			min	.002	1	-.085	4	0	1	0	1	0	1	.033	1
87		4	max	.007	4	-.027	1	0	1	0	1	0	1	.144	4
88			min	.002	1	-.085	4	0	1	0	1	0	1	.047	1
89		5	max	.007	4	-.026	1	0	1	0	1	0	1	.19	4
90			min	.002	1	-.084	4	0	1	0	1	0	1	.061	1
91	M11	1	max	1.855	4	.191	4	.005	4	0	1	-.006	1	-.002	1
92			min	.665	1	.068	1	.002	1	-.003	4	-.021	4	-.004	4
93		2	max	1.763	4	-.005	1	.005	4	0	1	-.002	1	-.095	1
94			min	.627	1	-.014	4	.002	1	-.003	4	-.008	4	-.259	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
95		3	max	1.67	4	-.081	1	.005	4	0	1	.006	4	-.069	1
96			min	.587	1	-.221	4	.002	1	-.003	4	.002	1	-.179	4
97		4	max	.251	4	.118	4	0	4	0	1	0	4	.064	4
98			min	.083	1	.038	1	0	1	-.001	4	0	1	.024	1
99		5	max	.164	4	-.022	1	0	4	0	1	.001	4	0	4
100			min	.05	1	-.073	4	0	1	-.001	4	0	1	0	1
101	M12	1	max	1.754	4	.184	4	-.002	1	.004	4	.025	4	0	1
102			min	.563	1	.061	1	-.005	4	.001	1	.008	1	-.003	4
103		2	max	1.681	4	-.004	1	-.002	1	.004	4	.01	4	-.081	1
104			min	.544	1	-.013	4	-.005	4	.001	1	.003	1	-.245	4
105		3	max	1.607	4	-.07	1	-.002	1	.004	4	-.002	1	-.052	1
106			min	.525	1	-.21	4	-.005	4	.001	1	-.006	4	-.162	4
107		4	max	.235	4	.122	4	0	1	0	4	.001	4	.065	4
108			min	.067	1	.042	1	0	4	0	1	0	1	.026	1
109		5	max	.162	4	-.024	1	0	1	0	4	0	1	0	1
110			min	.047	1	-.076	4	0	4	0	1	0	1	0	1
111	M13	1	max	-.001	1	.135	4	-.001	1	-.002	1	.005	4	.042	4
112			min	-.005	4	.052	1	-.004	4	-.006	4	.002	1	.018	1
113		2	max	-.001	1	.136	4	-.001	1	-.002	1	.002	4	-.01	1
114			min	-.005	4	.052	1	-.004	4	-.006	4	0	1	-.031	4
115		3	max	-.001	1	.137	4	-.001	1	-.002	1	0	1	-.038	1
116			min	-.005	4	.053	1	-.004	4	-.006	4	0	4	-.105	4
117		4	max	-.001	1	.137	4	-.001	1	-.002	1	0	1	-.067	1
118			min	-.005	4	.054	1	-.004	4	-.006	4	-.002	4	-.179	4
119		5	max	-.001	1	.138	4	-.001	1	-.002	1	-.001	1	-.097	1
120			min	-.005	4	.055	1	-.004	4	-.006	4	-.005	4	-.254	4
121	M14	1	max	-.003	1	-.04	1	-.002	1	.006	4	.005	4	-.008	1
122			min	-.006	4	-.124	4	-.005	4	.002	1	.001	1	-.032	4
123		2	max	-.003	1	-.04	1	-.002	1	.006	4	.002	4	.035	4
124			min	-.006	4	-.123	4	-.005	4	.002	1	0	1	.013	1
125		3	max	-.003	1	-.039	1	-.002	1	.006	4	0	1	.101	4
126			min	-.006	4	-.123	4	-.005	4	.002	1	0	4	.035	1
127		4	max	-.003	1	-.038	1	-.002	1	.006	4	-.001	1	.168	4
128			min	-.006	4	-.122	4	-.005	4	.002	1	-.003	4	.056	1
129		5	max	-.003	1	-.038	1	-.002	1	.006	4	-.002	1	.233	4
130			min	-.006	4	-.121	4	-.005	4	.002	1	-.006	4	.076	1
131	M16	1	max	0	1	-.005	1	-.001	4	0	4	0	1	0	1
132			min	0	1	-.014	4	-.002	1	0	1	0	4	-.002	4
133		2	max	0	1	-.005	1	0	4	0	4	0	1	.012	4
134			min	0	1	-.014	4	0	1	0	1	-.001	4	.004	1
135		3	max	0	1	.011	5	.003	4	0	4	0	1	.025	4
136			min	0	1	-.014	4	-.003	5	0	1	0	4	.009	1
137		4	max	0	1	.014	4	0	1	0	1	0	1	.012	4
138			min	0	1	.005	1	0	4	0	4	-.001	4	.004	1
139		5	max	0	1	.014	4	.002	1	0	1	0	1	0	1
140			min	0	1	.005	1	.001	4	0	4	0	4	-.002	4
141	M17	1	max	0	1	.169	4	.004	4	.003	4	-.002	1	.025	4
142			min	0	1	.056	1	.001	1	0	1	-.006	4	.008	1
143		2	max	0	1	.166	4	.004	4	.003	4	0	1	-.046	1
144			min	0	1	.053	1	.001	1	0	1	-.002	4	-.143	4
145		3	max	0	1	.776	4	.001	1	0	1	.003	4	.318	4
146			min	0	1	-.249	1	-.004	4	-.003	4	0	1	.102	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
147		4	max	0	1	-.053	1	-.001	1	0	1	0	1	-.046	1
148			min	0	1	-.166	4	-.004	4	-.003	4	-.002	4	-.143	4
149		5	max	0	1	-.056	1	-.001	1	0	1	-.002	1	.025	4
150			min	0	1	-.169	4	-.004	4	-.003	4	-.006	4	.008	1
151	M18	1	max	0	1	.151	4	.004	4	.004	4	-.002	1	.021	4
152			min	0	1	.044	1	.001	1	.002	1	-.005	4	.006	1
153		2	max	0	1	.154	4	.004	4	.004	4	0	1	-.039	1
154			min	0	1	.047	1	.001	1	.002	1	-.001	4	-.132	4
155		3	max	0	1	.756	4	-.001	1	.004	4	.003	4	.321	4
156			min	0	1	.224	1	-.004	4	.002	1	0	1	.095	1
157		4	max	0	1	-.047	1	-.001	1	-.002	1	0	1	-.039	1
158			min	0	1	-.154	4	-.004	4	-.004	4	-.001	4	-.132	4
159		5	max	0	1	-.044	1	-.001	1	-.002	1	-.002	1	.021	4
160			min	0	1	-.151	4	-.004	4	-.004	4	-.005	4	.006	1
161	M19	1	max	-.441	1	0	1	.001	4	0	1	0	1	0	1
162			min	-1.383	4	-.002	4	0	1	0	4	0	1	0	1
163		2	max	-.435	1	.001	1	.001	4	0	1	.006	4	.005	1
164			min	-1.376	4	-.002	4	0	1	0	4	.002	1	-.019	4
165		3	max	-.371	1	.001	1	0	4	0	4	0	1	-.009	1
166			min	-1.199	4	.001	4	0	1	0	1	-.002	4	-.025	4
167		4	max	-.431	1	.002	4	0	1	0	4	.006	4	-.014	1
168			min	-1.371	4	.001	1	-.001	4	0	1	.002	1	-.03	4
169		5	max	-.424	1	.002	4	0	1	0	4	0	1	0	1
170			min	-1.365	4	0	1	-.001	4	0	1	0	1	0	1
171	M20	1	max	-.273	1	0	1	0	1	0	4	0	1	0	1
172			min	-.913	4	0	1	0	1	0	1	0	1	0	1
173		2	max	-.28	1	0	1	0	1	0	4	0	1	0	1
174			min	-.919	4	0	1	0	1	0	1	0	1	0	1
175		3	max	-.287	1	0	1	0	1	0	4	0	1	0	1
176			min	-.926	4	0	1	0	1	0	1	0	1	0	1
177		4	max	-.293	1	0	1	0	1	0	4	0	1	0	1
178			min	-.933	4	0	1	0	1	0	1	0	1	0	1
179		5	max	-.3	1	0	1	0	1	0	4	0	1	0	1
180			min	-.94	4	0	1	0	1	0	1	0	1	0	1
181	M21	1	max	-.3	1	0	1	0	1	0	1	0	1	0	1
182			min	-.94	4	0	1	0	1	0	4	0	1	0	1
183		2	max	-.293	1	0	1	0	1	0	1	0	1	0	1
184			min	-.933	4	0	1	0	1	0	4	0	1	0	1
185		3	max	-.287	1	0	1	0	1	0	1	0	1	0	1
186			min	-.926	4	0	1	0	1	0	4	0	1	0	1
187		4	max	-.28	1	0	1	0	1	0	1	0	1	0	1
188			min	-.919	4	0	1	0	1	0	4	0	1	0	1
189		5	max	-.273	1	0	1	0	1	0	1	0	1	0	1
190			min	-.913	4	0	1	0	1	0	4	0	1	0	1
191	M22	1	max	-.424	1	0	1	.001	4	0	1	0	1	0	1
192			min	-1.365	4	-.002	4	0	1	0	4	0	1	0	1
193		2	max	-.431	1	-.001	1	.001	4	0	1	.006	4	-.014	1
194			min	-1.371	4	-.002	4	0	1	0	4	.002	1	-.03	4
195		3	max	-.371	1	-.001	4	0	1	0	1	0	1	-.009	1
196			min	-1.199	4	-.001	1	0	4	0	4	-.002	4	-.025	4
197		4	max	-.435	1	.002	4	0	1	0	4	.006	4	.005	1
198			min	-1.376	4	-.001	1	-.001	4	0	1	.002	1	-.019	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Momen...	LC	z-z Momen...	LC
199		5	max	-.441	1	.002	4	0	1	0	4	0	1	0	1
200			min	-1.383	4	0	1	-.001	4	0	1	0	1	0	1
201	M23	1	max	-.002	1	-.017	1	0	1	.003	4	.004	4	-.005	1
202			min	-.006	4	-.046	4	-.003	4	.001	1	.001	1	-.015	4
203		2	max	-.002	1	-.016	1	0	1	.003	4	0	4	.031	4
204			min	-.006	4	-.045	4	-.003	4	.001	1	0	1	.011	1
205		3	max	-.002	1	.043	4	.003	4	-.001	1	0	1	.075	4
206			min	-.006	4	.014	1	0	1	-.003	4	-.003	4	.026	1
207		4	max	-.002	1	.045	4	.003	4	-.001	1	0	4	.031	4
208			min	-.006	4	.016	1	0	1	-.003	4	0	1	.011	1
209		5	max	-.002	1	.046	4	.003	4	-.001	1	.004	4	-.005	1
210			min	-.006	4	.017	1	0	1	-.003	4	.001	1	-.015	4
211	M24	1	max	-.002	1	-.015	1	-.002	1	.002	4	.005	4	-.005	1
212			min	-.005	4	-.043	4	-.005	4	0	1	.002	1	-.014	4
213		2	max	-.002	1	-.016	1	-.002	1	.002	4	0	4	.03	4
214			min	-.005	4	-.045	4	-.005	4	0	1	0	1	.01	1
215		3	max	-.002	1	-.017	1	-.002	1	.002	5	-.002	1	.075	4
216			min	-.005	4	-.046	4	-.005	4	-.002	4	-.004	4	.027	1
217		4	max	-.002	1	.045	4	.005	4	0	1	0	4	.03	4
218			min	-.005	4	.016	1	.002	1	-.002	4	0	1	.01	1
219		5	max	-.002	1	.043	4	.005	4	0	1	.005	4	-.005	1
220			min	-.005	4	.015	1	.002	1	-.002	4	.002	1	-.014	4
221	M23A	1	max	1.293	4	0	1	0	1	0	1	0	1	0	1
222			min	.45	1	0	1	0	1	0	1	0	1	0	1
223		2	max	1.29	4	0	1	0	1	0	1	0	1	0	1
224			min	.446	1	0	1	0	1	0	1	0	1	0	1
225		3	max	1.286	4	0	1	0	1	0	1	0	1	0	1
226			min	.442	1	0	1	0	1	0	1	0	1	0	1
227		4	max	1.283	4	0	1	0	1	0	1	0	1	0	1
228			min	.439	1	0	1	0	1	0	1	0	1	0	1
229		5	max	1.279	4	0	1	0	1	0	1	0	1	0	1
230			min	.435	1	0	1	0	1	0	1	0	1	0	1
231	M24A	1	max	1.296	4	0	1	0	1	0	4	0	1	0	1
232			min	.45	1	0	1	0	1	0	1	0	1	0	1
233		2	max	1.292	4	0	1	0	1	0	4	0	1	0	1
234			min	.447	1	0	1	0	1	0	1	0	1	0	1
235		3	max	1.288	4	0	1	0	1	0	4	0	1	0	1
236			min	.443	1	0	1	0	1	0	1	0	1	0	1
237		4	max	1.285	4	0	1	0	1	0	4	0	1	0	1
238			min	.439	1	0	1	0	1	0	1	0	1	0	1
239		5	max	1.281	4	0	1	0	1	0	4	0	1	0	1
240			min	.436	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	.177	4	.027	4	0	1	.007	4	-.003	1	.049	4	-.015	1
2			min	.063	1	.01	1	0	4	.003	1	-.007	4	.015	1	-.049	4
3		2	max	.168	4	0	1	0	1	.506	4	-.185	1	.018	4	-.005	1
4			min	.06	1	-.002	4	0	4	.185	1	-.506	4	.005	1	-.018	4
5		3	max	.159	4	-.012	1	0	1	.352	4	-.135	1	-.005	1	.013	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
6			min	.056	1	-.032	4	0	4	.135	1	-.352	4	-.013	4	.005	1
7		4	max	.024	4	.017	4	0	1	-.047	1	.125	4	0	1	0	4
8			min	.008	1	.005	1	0	4	-.125	4	.047	1	0	4	0	1
9		5	max	.016	4	-.003	1	0	1	0	1	0	4	0	1	.003	4
10			min	.005	1	-.01	4	0	4	0	4	0	1	-.003	4	0	1
11	M2	1	max	.167	4	.026	4	0	4	.005	4	-.002	1	-.019	1	.057	4
12			min	.054	1	.009	1	0	1	.002	1	-.005	4	-.057	4	.019	1
13		2	max	.16	4	0	1	0	4	.481	4	-.16	1	-.007	1	.022	4
14			min	.052	1	-.002	4	0	1	.16	1	-.481	4	-.022	4	.007	1
15		3	max	.153	4	-.01	1	0	4	.317	4	-.101	1	.013	4	-.004	1
16			min	.05	1	-.03	4	0	1	.101	1	-.317	4	.004	1	-.013	4
17		4	max	.022	4	.017	4	0	4	-.05	1	.128	4	-.001	1	.003	4
18			min	.006	1	.006	1	0	1	-.128	4	.05	1	-.003	4	.001	1
19		5	max	.015	4	-.003	1	0	4	0	1	0	1	0	1	0	1
20			min	.005	1	-.011	4	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	0	1	.039	4	.001	4	-.072	1	.165	4	-.015	1	.042	4
22			min	-.001	4	.015	1	0	1	-.165	4	.072	1	-.042	4	.015	1
23		2	max	0	1	.039	4	.001	4	.123	4	-.038	1	-.008	1	.021	4
24			min	-.001	4	.015	1	0	1	.038	1	-.123	4	-.021	4	.008	1
25		3	max	0	1	.039	4	.001	4	.412	4	-.15	1	0	4	.001	1
26			min	-.001	4	.015	1	0	1	.15	1	-.412	4	-.001	1	0	4
27		4	max	0	1	.039	4	.001	4	.703	4	-.264	1	.021	4	-.006	1
28			min	-.001	4	.015	1	0	1	.264	1	-.703	4	.006	1	-.021	4
29		5	max	0	1	.039	4	.001	4	.995	4	-.379	1	.042	4	-.013	1
30			min	-.001	4	.016	1	0	1	.379	1	-.995	4	.013	1	-.042	4
31	M4	1	max	0	1	-.012	1	.001	4	.125	4	-.033	1	-.013	1	.043	4
32			min	-.001	4	-.035	4	0	1	.033	1	-.125	4	-.043	4	.013	1
33		2	max	0	1	-.011	1	.001	4	-.052	1	.137	4	-.005	1	.019	4
34			min	-.001	4	-.035	4	0	1	-.137	4	.052	1	-.019	4	.005	1
35		3	max	0	1	-.011	1	.001	4	-.135	1	.397	4	.006	4	-.003	1
36			min	-.001	4	-.035	4	0	1	-.397	4	.135	1	.003	1	-.006	4
37		4	max	0	1	-.011	1	.001	4	-.218	1	.657	4	.031	4	-.011	1
38			min	-.001	4	-.035	4	0	1	-.657	4	.218	1	.011	1	-.031	4
39		5	max	0	1	-.011	1	.001	4	-.298	1	.914	4	.055	4	-.018	1
40			min	-.001	4	-.035	4	0	1	-.914	4	.298	1	.018	1	-.055	4
41	M5	1	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
42			min	.055	1	0	1	0	1	0	1	0	1	0	1	0	1
43		2	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
44			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
45		3	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
46			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
47		4	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
48			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
49		5	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
50			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
51	M6	1	max	.177	4	.028	4	0	1	-.006	1	.014	4	0	1	0	1
52			min	.063	1	.01	1	0	1	-.014	4	.006	1	0	1	0	1
53		2	max	.168	4	0	1	0	1	.525	4	-.192	1	0	1	0	1
54			min	.06	1	0	4	0	1	.192	1	-.525	4	0	1	0	1
55		3	max	.159	4	-.011	1	0	1	.317	4	-.124	1	0	1	0	1
56			min	.056	1	-.031	4	0	1	.124	1	-.317	4	0	1	0	1
57		4	max	.028	4	.017	4	0	1	-.052	1	.14	4	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
58			min	.01	1	.006	1	0	1	-.14	4	.052	1	0	1	0	1
59		5	max	.02	4	-.003	1	0	1	.001	4	0	1	0	1	0	1
60			min	.007	1	-.01	4	0	1	0	1	-.001	4	0	1	0	1
61	M7	1	max	.167	4	.027	4	0	1	-.003	1	.01	4	0	1	0	1
62			min	.054	1	.009	1	0	1	-.01	4	.003	1	0	1	0	1
63		2	max	.16	4	0	1	0	1	.497	4	-.165	1	0	1	0	1
64			min	.052	1	-.001	4	0	1	.165	1	-.497	4	0	1	0	1
65		3	max	.153	4	-.01	1	0	1	.281	4	-.088	1	0	1	0	1
66			min	.05	1	-.029	4	0	1	.088	1	-.281	4	0	1	0	1
67		4	max	.027	4	.018	4	0	1	-.057	1	.145	4	0	1	0	1
68			min	.008	1	.006	1	0	1	-.145	4	.057	1	0	1	0	1
69		5	max	.02	4	-.003	1	0	1	0	1	0	1	0	1	0	1
70			min	.006	1	-.01	4	0	1	0	1	0	1	0	1	0	1
71	M8	1	max	.002	4	.026	4	0	1	.018	4	-.004	1	0	1	0	1
72			min	0	1	.01	1	0	1	.004	1	-.018	4	0	1	0	1
73		2	max	.002	4	.026	4	0	1	.213	4	-.079	1	0	1	0	1
74			min	0	1	.01	1	0	1	.079	1	-.213	4	0	1	0	1
75		3	max	.002	4	.027	4	0	1	.41	4	-.154	1	0	1	0	1
76			min	0	1	.01	1	0	1	.154	1	-.41	4	0	1	0	1
77		4	max	.002	4	.027	4	0	1	.608	4	-.231	1	0	1	0	1
78			min	0	1	.01	1	0	1	.231	1	-.608	4	0	1	0	1
79		5	max	.002	4	.027	4	0	1	.807	4	-.31	1	0	1	0	1
80			min	0	1	.011	1	0	1	.31	1	-.807	4	0	1	0	1
81	M9	1	max	.001	4	-.008	1	0	1	-.009	1	.021	4	0	1	0	1
82			min	0	1	-.025	4	0	1	-.021	4	.009	1	0	1	0	1
83		2	max	.001	4	-.008	1	0	1	-.069	1	.204	4	0	1	0	1
84			min	0	1	-.025	4	0	1	-.204	4	.069	1	0	1	0	1
85		3	max	.001	4	-.008	1	0	1	-.128	1	.386	4	0	1	0	1
86			min	0	1	-.024	4	0	1	-.386	4	.128	1	0	1	0	1
87		4	max	.001	4	-.008	1	0	1	-.185	1	.566	4	0	1	0	1
88			min	0	1	-.024	4	0	1	-.566	4	.185	1	0	1	0	1
89		5	max	.001	4	-.007	1	0	1	-.241	1	.745	4	0	1	0	1
90			min	0	1	-.024	4	0	1	-.745	4	.241	1	0	1	0	1
91	M11	1	max	.177	4	.027	4	0	4	.007	4	-.003	1	-.015	1	.049	4
92			min	.063	1	.01	1	0	1	.003	1	-.007	4	-.049	4	.015	1
93		2	max	.168	4	0	1	0	4	.506	4	-.185	1	-.005	1	.018	4
94			min	.06	1	-.002	4	0	1	.185	1	-.506	4	-.018	4	.005	1
95		3	max	.159	4	-.012	1	0	4	.352	4	-.135	1	.013	4	-.005	1
96			min	.056	1	-.032	4	0	1	.135	1	-.352	4	.005	1	-.013	4
97		4	max	.024	4	.017	4	0	4	-.047	1	.125	4	0	4	0	1
98			min	.008	1	.005	1	0	1	-.125	4	.047	1	0	1	0	4
99		5	max	.016	4	-.003	1	0	4	0	1	0	4	.003	4	0	1
100			min	.005	1	-.01	4	0	1	0	4	0	1	0	1	-.003	4
101	M12	1	max	.167	4	.026	4	0	1	.005	4	-.002	1	.057	4	-.019	1
102			min	.054	1	.009	1	0	4	.002	1	-.005	4	.019	1	-.057	4
103		2	max	.16	4	0	1	0	1	.481	4	-.16	1	.022	4	-.007	1
104			min	.052	1	-.002	4	0	4	.16	1	-.481	4	.007	1	-.022	4
105		3	max	.153	4	-.01	1	0	1	.317	4	-.101	1	-.004	1	.013	4
106			min	.05	1	-.03	4	0	4	.101	1	-.317	4	-.013	4	.004	1
107		4	max	.022	4	.017	4	0	1	-.05	1	.128	4	.003	4	-.001	1
108			min	.006	1	.006	1	0	4	-.128	4	.05	1	.001	1	-.003	4
109		5	max	.015	4	-.003	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
110			min	.005	1	-.011	4	0	4	0	1	0	1	0	1	0	1
111	M13	1	max	0	1	.039	4	0	1	-.072	1	.165	4	.042	4	-.015	1
112			min	-.001	4	.015	1	-.001	4	-.165	4	.072	1	.015	1	-.042	4
113		2	max	0	1	.039	4	0	1	.123	4	-.038	1	.021	4	-.008	1
114			min	-.001	4	.015	1	-.001	4	.038	1	-.123	4	.008	1	-.021	4
115		3	max	0	1	.039	4	0	1	.412	4	-.15	1	.001	1	0	4
116			min	-.001	4	.015	1	-.001	4	.15	1	-.412	4	0	4	-.001	1
117		4	max	0	1	.039	4	0	1	.703	4	-.264	1	-.006	1	.021	4
118			min	-.001	4	.015	1	-.001	4	.264	1	-.703	4	-.021	4	.006	1
119		5	max	0	1	.039	4	0	1	.995	4	-.379	1	-.013	1	.042	4
120			min	-.001	4	.016	1	-.001	4	.379	1	-.995	4	-.042	4	.013	1
121	M14	1	max	0	1	-.012	1	0	1	.125	4	-.033	1	.043	4	-.013	1
122			min	-.001	4	-.035	4	-.001	4	.033	1	-.125	4	.013	1	-.043	4
123		2	max	0	1	-.011	1	0	1	-.052	1	.137	4	.019	4	-.005	1
124			min	-.001	4	-.035	4	-.001	4	-.137	4	.052	1	.005	1	-.019	4
125		3	max	0	1	-.011	1	0	1	-.135	1	.397	4	-.003	1	.006	4
126			min	-.001	4	-.035	4	-.001	4	-.397	4	.135	1	-.006	4	.003	1
127		4	max	0	1	-.011	1	0	1	-.218	1	.657	4	-.011	1	.031	4
128			min	-.001	4	-.035	4	-.001	4	-.657	4	.218	1	-.031	4	.011	1
129		5	max	0	1	-.011	1	0	1	-.298	1	.914	4	-.018	1	.055	4
130			min	-.001	4	-.035	4	-.001	4	-.914	4	.298	1	-.055	4	.018	1
131	M16	1	max	0	1	0	1	0	4	.003	4	0	1	0	1	.005	4
132			min	0	1	-.002	4	0	1	0	1	-.003	4	-.005	4	0	1
133		2	max	0	1	0	1	0	4	-.007	1	.019	4	-.004	1	.007	4
134			min	0	1	-.002	4	0	1	-.019	4	.007	1	-.007	4	.004	1
135		3	max	0	1	.002	5	0	4	-.015	1	.04	4	.003	1	-.002	4
136			min	0	1	-.002	4	0	5	-.04	4	.015	1	.002	4	-.003	1
137		4	max	0	1	.002	4	0	1	-.007	1	.019	4	-.004	1	.007	4
138			min	0	1	0	1	0	4	-.019	4	.007	1	-.007	4	.004	1
139		5	max	0	1	.002	4	0	1	.003	4	0	1	0	1	.005	4
140			min	0	1	0	1	0	4	0	1	-.003	4	-.005	4	0	1
141	M17	1	max	0	1	.024	4	0	4	-.016	1	.048	4	-.004	1	.013	4
142			min	0	1	.008	1	0	1	-.048	4	.016	1	-.013	4	.004	1
143		2	max	0	1	.024	4	0	4	.28	4	-.091	1	-.001	1	.003	4
144			min	0	1	.008	1	0	1	.091	1	-.28	4	-.003	4	.001	1
145		3	max	0	1	.111	4	0	1	-.199	1	.624	4	.006	4	-.002	1
146			min	0	1	-.036	1	0	4	-.624	4	.199	1	.002	1	-.006	4
147		4	max	0	1	-.008	1	0	1	.28	4	-.091	1	-.001	1	.003	4
148			min	0	1	-.024	4	0	4	.091	1	-.28	4	-.003	4	.001	1
149		5	max	0	1	-.008	1	0	1	-.016	1	.048	4	-.004	1	.013	4
150			min	0	1	-.024	4	0	4	-.048	4	.016	1	-.013	4	.004	1
151	M18	1	max	0	1	.022	4	0	4	-.012	1	.041	4	-.004	1	.012	4
152			min	0	1	.006	1	0	1	-.041	4	.012	1	-.012	4	.004	1
153		2	max	0	1	.022	4	0	4	.258	4	-.076	1	0	1	.003	4
154			min	0	1	.007	1	0	1	.076	1	-.258	4	-.003	4	0	1
155		3	max	0	1	.108	4	0	1	-.187	1	.63	4	.006	4	-.002	1
156			min	0	1	.032	1	0	4	-.63	4	.187	1	.002	1	-.006	4
157		4	max	0	1	-.007	1	0	1	.258	4	-.076	1	0	1	.003	4
158			min	0	1	-.022	4	0	4	.076	1	-.258	4	-.003	4	0	1
159		5	max	0	1	-.006	1	0	1	-.012	1	.041	4	-.004	1	.012	4
160			min	0	1	-.022	4	0	4	-.041	4	.012	1	-.012	4	.004	1
161	M19	1	max	-.084	1	0	1	0	4	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
162			min	-.263	4	0	4	0	1	0	1	0	1	0	1	0	1
163		2	max	-.083	1	0	1	0	4	.074	4	.018	1	.058	4	-.021	1
164			min	-.262	4	0	4	0	1	-.018	1	-.074	4	.021	1	-.058	4
165		3	max	-.071	1	0	1	0	4	.097	4	-.033	1	-.007	1	.019	4
166			min	-.228	4	0	4	0	1	.033	1	-.097	4	-.019	4	.007	1
167		4	max	-.082	1	0	4	0	1	.119	4	-.056	1	.057	4	-.02	1
168			min	-.261	4	0	1	0	4	.056	1	-.119	4	.02	1	-.057	4
169		5	max	-.081	1	0	4	0	1	0	1	0	1	0	1	0	1
170			min	-.26	4	0	1	0	4	0	1	0	1	0	1	0	1
171	M20	1	max	-.052	1	0	1	0	1	0	1	0	1	0	1	0	1
172			min	-.174	4	0	1	0	1	0	1	0	1	0	1	0	1
173		2	max	-.053	1	0	1	0	1	0	1	0	1	0	1	0	1
174			min	-.175	4	0	1	0	1	0	1	0	1	0	1	0	1
175		3	max	-.055	1	0	1	0	1	0	1	0	1	0	1	0	1
176			min	-.176	4	0	1	0	1	0	1	0	1	0	1	0	1
177		4	max	-.056	1	0	1	0	1	0	1	0	1	0	1	0	1
178			min	-.178	4	0	1	0	1	0	1	0	1	0	1	0	1
179		5	max	-.057	1	0	1	0	1	0	1	0	1	0	1	0	1
180			min	-.179	4	0	1	0	1	0	1	0	1	0	1	0	1
181	M21	1	max	-.057	1	0	1	0	1	0	1	0	1	0	1	0	1
182			min	-.179	4	0	1	0	1	0	1	0	1	0	1	0	1
183		2	max	-.056	1	0	1	0	1	0	1	0	1	0	1	0	1
184			min	-.178	4	0	1	0	1	0	1	0	1	0	1	0	1
185		3	max	-.055	1	0	1	0	1	0	1	0	1	0	1	0	1
186			min	-.176	4	0	1	0	1	0	1	0	1	0	1	0	1
187		4	max	-.053	1	0	1	0	1	0	1	0	1	0	1	0	1
188			min	-.175	4	0	1	0	1	0	1	0	1	0	1	0	1
189		5	max	-.052	1	0	1	0	1	0	1	0	1	0	1	0	1
190			min	-.174	4	0	1	0	1	0	1	0	1	0	1	0	1
191	M22	1	max	-.081	1	0	1	0	4	0	1	0	1	0	1	0	1
192			min	-.26	4	0	4	0	1	0	1	0	1	0	1	0	1
193		2	max	-.082	1	0	1	0	4	.119	4	-.056	1	.057	4	-.02	1
194			min	-.261	4	0	4	0	1	.056	1	-.119	4	.02	1	-.057	4
195		3	max	-.071	1	0	4	0	1	.097	4	-.033	1	-.007	1	.019	4
196			min	-.228	4	0	1	0	4	.033	1	-.097	4	-.019	4	.007	1
197		4	max	-.083	1	0	4	0	1	.074	4	.018	1	.058	4	-.021	1
198			min	-.262	4	0	1	0	4	-.018	1	-.074	4	.021	1	-.058	4
199		5	max	-.084	1	0	4	0	1	0	1	0	1	0	1	0	1
200			min	-.263	4	0	1	0	4	0	1	0	1	0	1	0	1
201	M23	1	max	0	1	-.005	1	0	1	.057	4	-.02	1	.038	4	-.01	1
202			min	-.001	4	-.013	4	0	4	.02	1	-.057	4	.01	1	-.038	4
203		2	max	0	1	-.004	1	0	1	-.043	1	.12	4	.007	4	-.003	1
204			min	-.001	4	-.013	4	0	4	-.12	4	.043	1	.003	1	-.007	4
205		3	max	0	1	.012	4	0	4	-.102	1	.292	4	-.004	1	.023	4
206			min	-.001	4	.004	1	0	1	-.292	4	.102	1	-.023	4	.004	1
207		4	max	0	1	.013	4	0	4	-.043	1	.12	4	.007	4	-.003	1
208			min	-.001	4	.004	1	0	1	-.12	4	.043	1	.003	1	-.007	4
209		5	max	0	1	.013	4	0	4	.057	4	-.02	1	.038	4	-.01	1
210			min	-.001	4	.005	1	0	1	.02	1	-.057	4	.01	1	-.038	4
211	M24	1	max	0	1	-.004	1	0	1	.056	4	-.02	1	.042	4	-.016	1
212			min	-.001	4	-.012	4	-.001	4	.02	1	-.056	4	.016	1	-.042	4
213		2	max	0	1	-.005	1	0	1	-.041	1	.116	4	0	4	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
214			min	-.001	4	-.013	4	-.001	4	-.116	4	.041	1	0	1	0	4
215		3	max	0	1	-.005	1	0	1	-.106	1	.293	4	-.018	1	.041	4
216			min	-.001	4	-.013	4	-.001	4	-.293	4	.106	1	-.041	4	.018	1
217		4	max	0	1	.013	4	.001	4	-.041	1	.116	4	0	4	0	1
218			min	-.001	4	.005	1	0	1	-.116	4	.041	1	0	1	0	4
219		5	max	0	1	.012	4	.001	4	.056	4	-.02	1	.042	4	-.016	1
220			min	-.001	4	.004	1	0	1	.02	1	-.056	4	.016	1	-.042	4
221	M23A	1	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
222			min	.055	1	0	1	0	1	0	1	0	1	0	1	0	1
223		2	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
224			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
225		3	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
226			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
227		4	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
228			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
229		5	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
230			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
231	M24A	1	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
232			min	.055	1	0	1	0	1	0	1	0	1	0	1	0	1
233		2	max	.157	4	0	1	0	1	0	1	0	1	0	1	0	1
234			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
235		3	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
236			min	.054	1	0	1	0	1	0	1	0	1	0	1	0	1
237		4	max	.156	4	0	1	0	1	0	1	0	1	0	1	0	1
238			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1
239		5	max	.155	4	0	1	0	1	0	1	0	1	0	1	0	1
240			min	.053	1	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Member Section Deflections

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
1	M1	1	max	0	1	0	1	0	1	2.26e-4	4	NC	1	NC	1
2			min	0	1	0	1	0	1	6.696e-5	1	NC	1	NC	1
3		2	max	-.001	1	-.055	1	-.002	1	9.466e-5	4	2755.244	1	NC	1
4			min	-.004	4	-.151	4	-.007	4	2.732e-5	1	1028.597	4	NC	1
5		3	max	-.003	1	-.048	1	-.001	1	-1.232e-5	1	3713.762	1	NC	1
6			min	-.007	4	-.132	4	-.004	4	-3.664e-5	4	1437.011	4	NC	1
7		4	max	-.003	1	-.028	1	0	1	-3.085e-5	1	NC	1	NC	1
8			min	-.009	4	-.08	4	-.002	4	-8.409e-5	4	5576.276	4	NC	1
9		5	max	-.003	1	-.023	1	0	1	-5.038e-5	1	NC	1	NC	1
10			min	-.01	4	-.073	4	0	1	-1.337e-4	4	NC	1	NC	1
11	M2	1	max	-.011	1	.015	4	0	1	-9.149e-5	1	NC	1	NC	1
12			min	-.036	4	.005	1	0	1	-2.768e-4	4	NC	1	NC	1
13		2	max	-.012	1	-.04	1	.009	4	-4.02e-5	1	3510.223	1	NC	1
14			min	-.039	4	-.126	4	.003	1	-1.211e-4	4	1118.631	4	NC	1
15		3	max	-.013	1	-.031	1	.007	4	3.448e-5	4	5656.182	1	NC	1
16			min	-.042	4	-.104	4	.002	1	1.108e-5	1	1656.324	4	NC	1
17		4	max	-.014	1	-.016	1	.004	4	4.62e-5	4	NC	1	NC	1
18			min	-.044	4	-.057	4	.001	1	1.638e-5	1	8041.242	4	NC	1
19		5	max	-.014	1	-.019	1	0	1	5.579e-5	4	NC	1	NC	1
20			min	-.045	4	-.059	4	0	1	2.068e-5	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
21	M3	1	max	-.046	1	-.003	1	0	1	1.002e-3	4	NC	1	NC	1
22			min	-.124	4	-.01	4	0	4	3.553e-4	1	NC	1	NC	1
23		2	max	-.046	1	-.009	1	0	1	7.383e-4	4	NC	1	NC	1
24			min	-.124	4	-.026	4	0	4	2.633e-4	1	3635.519	4	NC	1
25		3	max	-.046	1	-.014	1	0	1	4.743e-4	4	5717.076	1	NC	1
26			min	-.124	4	-.039	4	-.002	4	1.713e-4	1	2088.722	4	NC	1
27		4	max	-.046	1	-.017	1	0	1	2.103e-4	4	6098.187	1	NC	1
28			min	-.124	4	-.047	4	-.004	4	7.934e-5	1	2255.855	4	7063.436	4
29		5	max	-.046	1	-.016	1	-.001	1	-1.266e-5	1	NC	1	NC	1
30			min	-.124	4	-.044	4	-.004	4	-5.366e-5	4	NC	1	5882.976	4
31	M4	1	max	-.034	1	-.009	1	0	1	-3.638e-4	1	3106.057	1	NC	1
32			min	-.113	4	-.028	4	0	4	-1.021e-3	4	903.345	4	NC	1
33		2	max	-.034	1	-.004	1	0	1	-2.685e-4	1	6748.99	1	NC	1
34			min	-.113	4	-.014	4	-.002	4	-7.511e-4	4	1784.097	4	NC	1
35		3	max	-.034	1	0	1	-.001	1	-1.733e-4	1	NC	1	NC	1
36			min	-.113	4	-.002	4	-.004	4	-4.814e-4	4	NC	1	NC	1
37		4	max	-.034	1	.004	4	-.002	1	-7.802e-5	1	NC	1	NC	1
38			min	-.113	4	.001	1	-.006	4	-2.117e-4	4	6958.221	4	NC	1
39		5	max	-.034	1	0	4	-.002	1	5.801e-5	4	NC	1	NC	1
40			min	-.113	4	0	1	-.007	4	1.723e-5	1	NC	1	NC	1
41	M5	1	max	.025	4	-.031	1	0	1	-1.545e-5	1	NC	1	NC	1
42			min	.009	1	-.085	4	-.003	4	-3.449e-5	4	NC	1	NC	1
43		2	max	.023	4	-.028	1	-.001	1	-1.209e-5	1	NC	1	NC	1
44			min	.009	1	-.083	4	-.004	4	-2.733e-5	4	NC	1	NC	1
45		3	max	.021	4	-.026	1	-.001	1	-8.729e-6	1	NC	1	NC	1
46			min	.008	1	-.08	4	-.004	4	-2.017e-5	4	NC	1	NC	1
47		4	max	.019	4	-.024	1	-.002	1	-5.367e-6	1	NC	1	NC	1
48			min	.007	1	-.078	4	-.005	4	-1.301e-5	4	NC	1	NC	1
49		5	max	.017	4	-.021	1	-.002	1	-2.005e-6	1	NC	1	NC	1
50			min	.006	1	-.076	4	-.005	4	-5.852e-6	4	NC	1	NC	1
51	M6	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
52			min	0	1	0	1	0	1	0	1	NC	1	NC	1
53		2	max	-.001	1	-.058	1	0	1	0	1	2621.048	1	NC	1
54			min	-.004	4	-.156	4	0	1	0	1	983.163	4	NC	1
55		3	max	-.003	1	-.05	1	0	1	0	1	3509.84	1	NC	1
56			min	-.007	4	-.135	4	0	1	0	1	1372.132	4	NC	1
57		4	max	-.003	1	-.027	1	0	1	0	1	NC	1	NC	1
58			min	-.009	4	-.077	4	0	1	0	1	5789.102	4	NC	1
59		5	max	-.003	1	-.023	1	0	1	0	1	NC	1	NC	1
60			min	-.01	4	-.071	4	0	1	0	1	NC	1	NC	1
61	M7	1	max	-.01	1	.014	4	0	1	0	1	NC	1	NC	1
62			min	-.034	4	.004	1	0	1	0	1	NC	1	NC	1
63		2	max	-.012	1	-.041	1	0	1	0	1	3401.888	1	NC	1
64			min	-.037	4	-.13	4	0	1	0	1	1080.032	4	NC	1
65		3	max	-.013	1	-.031	1	0	1	0	1	5620.184	1	NC	1
66			min	-.041	4	-.106	4	0	1	0	1	1620.017	4	NC	1
67		4	max	-.013	1	-.014	1	0	1	0	1	NC	1	NC	1
68			min	-.043	4	-.054	4	0	1	0	1	9467.844	4	NC	1
69		5	max	-.014	1	-.019	1	0	1	0	1	NC	1	NC	1
70			min	-.043	4	-.058	4	0	1	0	1	NC	1	NC	1
71	M8	1	max	-.047	1	-.01	1	0	1	0	1	NC	1	NC	1
72			min	-.128	4	-.029	4	0	1	0	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
73		2	max	-.047	1	-.014	1	0	1	0	1	8890.8	1	NC	1
74			min	-.128	4	-.041	4	0	1	0	1	3338.096	4	NC	1
75		3	max	-.047	1	-.018	1	0	1	0	1	5575.687	1	NC	1
76			min	-.128	4	-.049	4	0	1	0	1	2102.582	4	NC	1
77		4	max	-.047	1	-.019	1	0	1	0	1	6379.109	1	NC	1
78			min	-.128	4	-.052	4	0	1	0	1	2415.174	4	NC	1
79		5	max	-.047	1	-.017	1	0	1	0	1	NC	1	NC	1
80			min	-.128	4	-.045	4	0	1	0	1	NC	1	NC	1
81	M9	1	max	-.034	1	-.002	1	0	1	0	1	NC	1	NC	1
82			min	-.113	4	-.01	4	0	1	0	1	NC	1	NC	1
83		2	max	-.034	1	0	1	0	1	0	1	NC	1	NC	1
84			min	-.113	4	0	4	0	1	0	1	3540.862	4	NC	1
85		3	max	-.034	1	.008	4	0	1	0	1	6780.16	1	NC	1
86			min	-.113	4	.003	1	0	1	0	1	2238.806	4	NC	1
87		4	max	-.034	1	.01	4	0	1	0	1	7855.535	1	NC	1
88			min	-.113	4	.003	1	0	1	0	1	2581.507	4	NC	1
89		5	max	-.034	1	.003	4	0	1	0	1	NC	1	NC	1
90			min	-.113	4	0	1	0	1	0	1	NC	1	NC	1
91	M11	1	max	0	1	0	1	0	1	-6.696e-5	1	NC	1	NC	1
92			min	0	1	0	1	0	1	-2.26e-4	4	NC	1	NC	1
93		2	max	-.001	1	-.055	1	.007	4	-2.732e-5	1	2755.244	1	NC	1
94			min	-.004	4	-.151	4	.002	1	-9.466e-5	4	1028.597	4	NC	1
95		3	max	-.003	1	-.048	1	.004	4	3.664e-5	4	3713.762	1	NC	1
96			min	-.007	4	-.132	4	.001	1	1.232e-5	1	1437.011	4	NC	1
97		4	max	-.003	1	-.028	1	.002	4	8.409e-5	4	NC	1	NC	1
98			min	-.009	4	-.08	4	0	1	3.085e-5	1	5576.276	4	NC	1
99		5	max	-.003	1	-.023	1	0	1	1.337e-4	4	NC	1	NC	1
100			min	-.01	4	-.073	4	0	1	5.038e-5	1	NC	1	NC	1
101	M12	1	max	-.011	1	.015	4	0	1	2.768e-4	4	NC	1	NC	1
102			min	-.036	4	.005	1	0	1	9.149e-5	1	NC	1	NC	1
103		2	max	-.012	1	-.04	1	-.003	1	1.211e-4	4	3510.223	1	NC	1
104			min	-.039	4	-.126	4	-.009	4	4.02e-5	1	1118.631	4	NC	1
105		3	max	-.013	1	-.031	1	-.002	1	-1.108e-5	1	5656.182	1	NC	1
106			min	-.042	4	-.104	4	-.007	4	-3.448e-5	4	1656.324	4	NC	1
107		4	max	-.014	1	-.016	1	-.001	1	-1.638e-5	1	NC	1	NC	1
108			min	-.044	4	-.057	4	-.004	4	-4.62e-5	4	8041.242	4	NC	1
109		5	max	-.014	1	-.019	1	0	1	-2.068e-5	1	NC	1	NC	1
110			min	-.045	4	-.059	4	0	1	-5.579e-5	4	NC	1	NC	1
111	M13	1	max	-.046	1	-.003	1	0	4	-3.553e-4	1	NC	1	NC	1
112			min	-.124	4	-.01	4	0	1	-1.002e-3	4	NC	1	NC	1
113		2	max	-.046	1	-.009	1	0	4	-2.633e-4	1	NC	1	NC	1
114			min	-.124	4	-.026	4	0	1	-7.383e-4	4	3635.519	4	NC	1
115		3	max	-.046	1	-.014	1	.002	4	-1.713e-4	1	5717.076	1	NC	1
116			min	-.124	4	-.039	4	0	1	-4.743e-4	4	2088.722	4	NC	1
117		4	max	-.046	1	-.017	1	.004	4	-7.934e-5	1	6098.187	1	NC	1
118			min	-.124	4	-.047	4	0	1	-2.103e-4	4	2255.855	4	7063.436	4
119		5	max	-.046	1	-.016	1	.004	4	5.366e-5	4	NC	1	NC	1
120			min	-.124	4	-.044	4	.001	1	1.266e-5	1	NC	1	5882.976	4
121	M14	1	max	-.034	1	-.009	1	0	4	1.021e-3	4	3106.057	1	NC	1
122			min	-.113	4	-.028	4	0	1	3.638e-4	1	903.345	4	NC	1
123		2	max	-.034	1	-.004	1	.002	4	7.511e-4	4	6748.99	1	NC	1
124			min	-.113	4	-.014	4	0	1	2.685e-4	1	1784.097	4	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
125		3	max	-.034	1	0	1	.004	4	4.814e-4	4	NC	1	NC	1
126			min	-.113	4	-.002	4	.001	1	1.733e-4	1	NC	1	NC	1
127		4	max	-.034	1	.004	4	.006	4	2.117e-4	4	NC	1	NC	1
128			min	-.113	4	.001	1	.002	1	7.802e-5	1	6958.221	4	NC	1
129		5	max	-.034	1	0	4	.007	4	-1.723e-5	1	NC	1	NC	1
130			min	-.113	4	0	1	.002	1	-5.801e-5	4	NC	1	NC	1
131	M16	1	max	0	1	-.023	1	-.006	1	4.737e-4	4	NC	1	NC	1
132			min	0	1	-.072	4	-.019	4	2.036e-4	1	NC	1	NC	1
133		2	max	0	1	-.023	1	-.005	1	4.573e-4	4	NC	1	NC	1
134			min	0	1	-.07	4	-.018	4	2.012e-4	1	NC	1	NC	1
135		3	max	0	1	-.022	1	-.005	1	4.408e-4	4	NC	1	NC	1
136			min	0	1	-.07	4	-.018	4	1.988e-4	1	NC	1	NC	1
137		4	max	0	1	-.023	1	-.005	1	4.573e-4	4	NC	1	NC	1
138			min	0	1	-.07	4	-.018	4	2.012e-4	1	NC	1	NC	1
139		5	max	0	1	-.023	1	-.006	1	4.737e-4	4	NC	1	NC	1
140			min	0	1	-.072	4	-.019	4	2.036e-4	1	NC	1	NC	1
141	M17	1	max	0	1	.039	4	0	1	-1.829e-3	1	NC	1	NC	1
142			min	0	1	.012	1	0	1	-5.67e-3	4	NC	1	NC	1
143		2	max	0	1	.032	4	0	4	-1.841e-3	1	NC	1	NC	1
144			min	0	1	.01	1	0	1	-5.711e-3	4	7402.778	4	NC	1
145		3	max	0	1	.037	4	0	1	-1.853e-3	1	NC	1	NC	1
146			min	0	1	.011	1	0	1	-5.752e-3	4	NC	1	NC	1
147		4	max	0	1	.032	4	0	4	-1.841e-3	1	NC	1	NC	1
148			min	0	1	.01	1	0	1	-5.711e-3	4	7402.778	4	NC	1
149		5	max	0	1	.039	4	0	1	-1.829e-3	1	NC	1	NC	1
150			min	0	1	.012	1	0	1	-5.67e-3	4	NC	1	NC	1
151	M18	1	max	0	1	0	1	0	1	-2.223e-3	1	NC	1	NC	1
152			min	0	1	0	1	0	1	-6.068e-3	4	NC	1	NC	1
153		2	max	0	1	-.001	1	0	4	-2.246e-3	1	NC	1	NC	1
154			min	0	1	-.005	4	0	1	-6.124e-3	4	9517.069	4	NC	1
155		3	max	0	1	0	1	0	1	-2.27e-3	1	NC	1	NC	1
156			min	0	1	0	1	0	1	-6.181e-3	4	NC	1	NC	1
157		4	max	0	1	-.001	1	0	4	-2.246e-3	1	NC	1	NC	1
158			min	0	1	-.005	4	0	1	-6.124e-3	4	9517.069	4	NC	1
159		5	max	0	1	0	1	0	1	-2.223e-3	1	NC	1	NC	1
160			min	0	1	0	1	0	1	-6.068e-3	4	NC	1	NC	1
161	M19	1	max	-.012	1	0	1	0	1	-1.096e-5	1	NC	1	NC	1
162			min	-.039	4	0	1	0	1	-3.445e-5	4	NC	1	NC	1
163		2	max	-.009	1	-.034	1	0	4	1.454e-4	4	7401.943	1	NC	1
164			min	-.028	4	-.113	4	0	1	6.533e-5	1	2235.501	4	NC	1
165		3	max	-.006	1	-.064	1	.032	4	8.08e-5	4	3961.422	1	NC	1
166			min	-.019	4	-.187	4	.011	1	2.362e-5	1	1347.235	4	7904.87	4
167		4	max	-.003	1	-.046	1	0	4	1.616e-5	4	5509.398	1	NC	1
168			min	-.01	4	-.124	4	0	1	-1.81e-5	1	2026.044	4	NC	1
169		5	max	0	1	0	1	0	1	-9.799e-6	1	NC	1	NC	1
170			min	0	1	0	1	0	1	-3.1e-5	4	NC	1	NC	1
171	M20	1	max	.005	4	0	1	0	1	-2.968e-6	1	NC	1	NC	1
172			min	.001	1	0	4	0	1	-9.392e-6	4	NC	1	NC	1
173		2	max	.011	4	0	1	0	1	-3.056e-6	1	NC	1	NC	1
174			min	.003	1	0	4	0	1	-9.653e-6	4	NC	1	NC	1
175		3	max	.018	4	0	1	0	1	-3.143e-6	1	NC	1	NC	1
176			min	.006	1	0	4	0	1	-9.913e-6	4	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
177		4	max	.025	4	0	1	0	1	-3.231e-6	1	NC	1	NC	1
178			min	.008	1	0	4	0	1	-1.017e-5	4	NC	1	NC	1
179		5	max	.032	4	0	1	0	1	-3.318e-6	1	NC	1	NC	1
180			min	.01	1	0	4	0	1	-1.043e-5	4	NC	1	NC	1
181	M21	1	max	-.01	1	0	1	0	1	-3.318e-6	1	NC	1	NC	1
182			min	-.032	4	0	4	0	1	-1.043e-5	4	NC	1	NC	1
183		2	max	-.008	1	0	1	0	1	-3.231e-6	1	NC	1	NC	1
184			min	-.025	4	0	4	0	1	-1.017e-5	4	NC	1	NC	1
185		3	max	-.006	1	0	1	0	1	-3.143e-6	1	NC	1	NC	1
186			min	-.018	4	0	4	0	1	-9.913e-6	4	NC	1	NC	1
187		4	max	-.003	1	0	1	0	1	-3.056e-6	1	NC	1	NC	1
188			min	-.011	4	0	4	0	1	-9.653e-6	4	NC	1	NC	1
189		5	max	-.001	1	0	1	0	1	-2.968e-6	1	NC	1	NC	1
190			min	-.005	4	0	4	0	1	-9.392e-6	4	NC	1	NC	1
191	M22	1	max	0	1	0	1	0	1	-9.799e-6	1	NC	1	NC	1
192			min	0	1	0	1	0	1	-3.1e-5	4	NC	1	NC	1
193		2	max	.01	4	-.046	1	0	4	1.616e-5	4	5509.398	1	NC	1
194			min	.003	1	-.124	4	0	1	-1.81e-5	1	2026.044	4	NC	1
195		3	max	.019	4	-.064	1	.032	4	8.08e-5	4	3961.422	1	NC	1
196			min	.006	1	-.187	4	.011	1	2.362e-5	1	1347.235	4	7904.87	4
197		4	max	.028	4	-.034	1	0	4	1.454e-4	4	7401.943	1	NC	1
198			min	.009	1	-.113	4	0	1	6.533e-5	1	2235.501	4	NC	1
199		5	max	.039	4	0	1	0	1	-1.096e-5	1	NC	1	NC	1
200			min	.012	1	0	1	0	1	-3.445e-5	4	NC	1	NC	1
201	M23	1	max	0	1	-.009	1	.113	4	2.097e-3	4	NC	1	NC	1
202			min	0	4	-.028	4	.034	1	6.754e-4	1	NC	1	NC	1
203		2	max	0	1	-.004	1	.113	4	1.882e-3	4	NC	1	NC	1
204			min	0	4	-.016	4	.034	1	5.828e-4	1	3873.808	4	NC	1
205		3	max	0	1	-.002	1	.113	4	1.667e-3	4	7273.004	1	NC	1
206			min	0	1	-.01	4	.034	1	4.901e-4	1	2575.687	4	NC	1
207		4	max	0	4	-.004	1	.113	4	1.882e-3	4	NC	1	NC	1
208			min	0	1	-.016	4	.034	1	5.828e-4	1	3873.808	4	NC	1
209		5	max	0	4	-.009	1	.113	4	2.097e-3	4	NC	1	NC	1
210			min	0	1	-.028	4	.034	1	6.754e-4	1	NC	1	NC	1
211	M24	1	max	0	1	.01	4	.124	4	2.252e-3	4	NC	1	NC	1
212			min	0	4	.003	1	.046	1	8.307e-4	1	NC	1	NC	1
213		2	max	0	1	.022	4	.126	4	2.068e-3	4	NC	1	NC	1
214			min	0	4	.008	1	.047	1	7.856e-4	1	3934.93	4	NC	1
215		3	max	0	1	.029	4	.128	4	1.884e-3	4	7318.438	1	NC	1
216			min	0	1	.01	1	.047	1	7.405e-4	1	2608.014	4	NC	1
217		4	max	0	4	.022	4	.126	4	2.068e-3	4	NC	1	NC	1
218			min	0	1	.008	1	.047	1	7.856e-4	1	3934.93	4	NC	1
219		5	max	0	4	.01	4	.124	4	2.252e-3	4	NC	1	NC	1
220			min	0	1	.003	1	.046	1	8.307e-4	1	NC	1	NC	1
221	M23A	1	max	.025	4	-.031	1	0	1	0	1	NC	1	NC	1
222			min	.009	1	-.084	4	0	1	0	1	NC	1	NC	1
223		2	max	.023	4	-.028	1	0	1	0	1	NC	1	NC	1
224			min	.008	1	-.081	4	0	1	0	1	NC	1	NC	1
225		3	max	.021	4	-.025	1	0	1	0	1	NC	1	NC	1
226			min	.008	1	-.078	4	0	1	0	1	NC	1	NC	1
227		4	max	.018	4	-.022	1	0	1	0	1	NC	1	NC	1
228			min	.007	1	-.075	4	0	1	0	1	NC	1	NC	1

Envelope Member Section Deflections (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
229		5	max	.016	4	-.02	1	0	1	0	1	NC	1	NC	1
230			min	.006	1	-.072	4	0	1	0	1	NC	1	NC	1
231	M24A	1	max	.025	4	-.031	1	.003	4	3.449e-5	4	NC	1	NC	1
232			min	.009	1	-.085	4	0	1	1.545e-5	1	NC	1	NC	1
233		2	max	.023	4	-.028	1	.004	4	2.733e-5	4	NC	1	NC	1
234			min	.009	1	-.083	4	.001	1	1.209e-5	1	NC	1	NC	1
235		3	max	.021	4	-.026	1	.004	4	2.017e-5	4	NC	1	NC	1
236			min	.008	1	-.08	4	.001	1	8.729e-6	1	NC	1	NC	1
237		4	max	.019	4	-.024	1	.005	4	1.301e-5	4	NC	1	NC	1
238			min	.007	1	-.078	4	.002	1	5.367e-6	1	NC	1	NC	1
239		5	max	.017	4	-.021	1	.005	4	5.852e-6	4	NC	1	NC	1
240			min	.006	1	-.076	4	.002	1	2.005e-6	1	NC	1	NC	1

Envelope Wood Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Fc' [ksi]	Ft' [ksi]	Fb1' [ksi]	Fb2' [ksi]	Fv' [ksi]	Eqn
1	M1	2-2X4	.928	2.485	4	.212	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
2	M2	2-2X4	.841	2.485	4	.199	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
3	M3	2X4	.669	2.165	4	.365	2.165	y	4	1.165	.992	1.545	1.708	.207	3.9-3
4	M4	2X4	.624	2.165	4	.349	0	y	4	1.165	.992	1.545	1.708	.207	3.9-3
5	M5	2X6	.301	0	4	.001	0	z	4	.521	.86	1.303	1.547	.207	3.6.3
6	M6	2-2X4	.935	2.603	4	.200	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
7	M7	2-2X4	.845	2.603	4	.194	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
8	M8	2X4	.523	2.165	4	.130	2.165	y	4	1.165	.992	1.545	1.708	.207	3.9-3
9	M9	2X4	.482	2.165	4	.120	0	y	4	1.165	.992	1.545	1.708	.207	3.9-3
10	M11	2-2X4	.928	2.485	4	.212	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
11	M12	2-2X4	.841	2.485	4	.199	7.335	y	4	.304	.992	1.785	1.964	.207	3.9-3
12	M13	2X4	.669	2.165	4	.365	2.165	y	4	1.165	.992	1.545	1.708	.207	3.9-3
13	M14	2X4	.624	2.165	4	.349	0	y	4	1.165	.992	1.545	1.708	.207	3.9-3
14	M16	2X6	.032	2	4	.018	0	y	4	.439	.86	1.327	1.547	.207	3.9-3
15	M17	2-2X4	.406	2	4	.558	2	y	4	.758	.992	1.549	1.708	.207	3.9-3
16	M18	2-2X4	.410	2	4	.554	1.333	y	4	.758	.992	1.549	1.708	.207	3.9-3
17	M19	2X4	.374	15.75	4	.015	0	y	4	.017	.992	1.347	1.708	.207	3.9-1
18	M20	2X4	.180	21	4	.000	0	z	4	.017	.992	1.347	1.708	.207	3.9-1
19	M21	2X4	.180	0	4	.000	0	z	4	.017	.992	1.347	1.708	.207	3.9-1
20	M22	2X4	.374	5.25	4	.015	15.75	y	4	.017	.992	1.347	1.708	.207	3.9-1
21	M23	2X4	.204	2	4	.140	4	y	4	.44	.992	1.537	1.708	.207	3.9-3
22	M24	2X4	.215	2	4	.129	2	y	4	.44	.992	1.537	1.708	.207	3.9-3
23	M23A	2X6	.301	0	4	.000	0	z	1	.521	.86	1.303	1.547	.162	3.6.3
24	M24A	2X6	.301	0	4	.001	0	z	4	.521	.86	1.303	1.547	.207	3.6.3