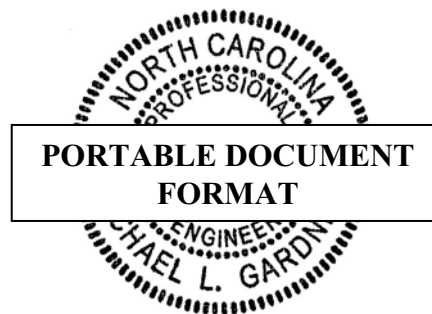


**STRUCTURAL ANALYSIS REPORT**

**WHISPER 100/200  
80-ft GUYED WIND TURBINE**

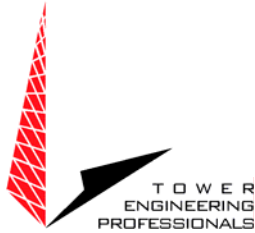
**TEP # 061289**

**Revision 1  
November 1, 2006**



**Prepared For:**





## **1.0 ASSIGNMENT**

**Subject** – Structural analysis of the 80-ft guyed wind turbine

**Purpose** – The objective of the analysis was to determine if the guyed wind turbine would meet the ASCE 7-05, Minimum Design Loads for Buildings and Other Structures and the 2003 International Building Code for four different load cases.

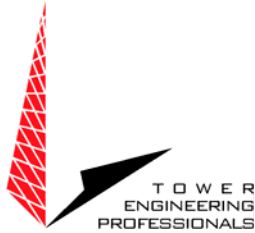
## **2.0 SCOPE OF SERVICES**

- 1) Conduct a structural analysis of the wind turbine support structure
- 2) Prepare a report of findings and conclusions

## **3.0 PARTICIPATING PERSONNEL**

Carrier Representative: Mr. Jay Yeager  
Southwest Windpower (SW)  
1801 W. Route 66  
Flagstaff, AZ 86001  
(928) 779-9463

Consulting Engineers: Mr. Michael L. Gardner, P.E.  
Mr. Ronnie E. Glover, EI  
Tower Engineering Professionals, Inc. (TEP)  
3703 Junction Boulevard  
Raleigh, NC 27603-5263  
(919) 661-6351



#### 4.0 BACKGROUND INFORMATION

SW requested that TEP conduct a structural analysis of the guyed support structure. The analysis was to determine if the support structure would meet the ASCE 7-05. The structure is an 80-ft guyed, 2-1/2 Sch40-Grade 50 steel pipe with a Whisper 100/200 wind turbine installed.

TEP utilized the following information to complete the analysis:

- 1) Tower land kit installation manual by Southwest Windpower dated May 20, 2005, Document # 0033 REV E, provided by SW
- 2) Previous structural analysis by Southwest Windpower dated July 7, 2003, Document # 0190, provided by SW
- 3) Correspondence with SW with respect to the tower configuration

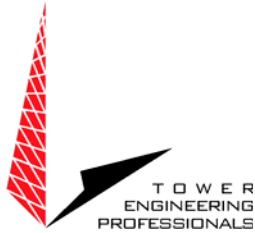
#### 5.0 INVESTIGATION

**Analyzed Appurtenance** – See the appendix for a schedule including the wind turbine model considered in the analysis.

**Codes and Standards** – The structural analysis was performed in accordance with the ASCE/SEI 7-05, Minimum Design Loads for Buildings and Other Structures and the 2003 International Building Code.

**Basic Load Combinations** – Nine load combinations per ASCE 7-05 were considered for each of the four load cases as follows:

- |   |                                |
|---|--------------------------------|
| 1) 1.4D                                   | D = dead load                  |
| 2) 1.2D + 0.8W                            | W = wind load                  |
| 3) 1.2D + 1.6W                            | E = earthquake load            |
| 4) 1.2D + 1.0E                            | D <sub>i</sub> = weight of ice |
| 5) 0.9D + 1.6W                            | W <sub>i</sub> = wind-on-ice   |
| 6) 0.9D + 1.0E                            |                                |
| 7) 1.2D + 0.2D <sub>i</sub>               |                                |
| 8) 1.2D + D <sub>i</sub> + W <sub>i</sub> |                                |
| 9) 0.9D + D <sub>i</sub> + W <sub>i</sub> |                                |



## **5.0 INVESTIGATION – continued**

**Load Cases** – Four load cases were considered in accordance with the above load combinations:

### **Load Case I – High wind, no ice, low seismic region**

1) A 150-mph 3-second gust wind was applied for stress analysis.

### **Load Case II – Moderate wind, heavy ice, low seismic region**

2) A 90-mph 3-second gust wind was applied for stress analysis.

3) A 40-mph 3-second gust wind was applied with 3/4” radial ice for stress analysis.

### **Load Case III – High wind, moderate ice, high seismic region**

4) A 130-mph 3-second gust wind was applied for stress analysis.

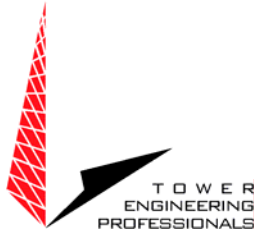
5) A 30-mph 3-second gust wind was applied with 1/4” radial ice for stress analysis.

### **Load Case IV – Low wind, no ice, high seismic region**

6) An 85-mph 3-second gust wind was applied for stress analysis.

### **Provisions of This Analysis**

- 1) The tower and foundation were constructed according to manufacturer’s requirements.
- 2) The tower has been maintained according to the manufacturer’s specifications.
- 3) The structural integrity of the tower and tower components has not been compromised.
- 4) The information provided by SW was assumed accurate and complete.
- 5) This analysis report is not a construction document.
- 6) In determination of the design loads, TEP assumed the following:
  - a) Importance Factor = 1.00
  - b) Exposure Category C
  - c) Site Class D assumed for all seismic conditionsThese assumptions may change depending on site specific data. See Recommendations.
- 7) The mechanical specifications for the Whisper 200 wind turbine at the top of the tower are as follows:
  - a) Rotor Diameter = 9.2 ft
  - b) Swept Area = 66.3 ft<sup>2</sup>
  - c) Turbine Weight = 46 lb
  - d) Turbine Thrust = 400 lb



**6.0 RESULTS** – It is the opinion of Tower Engineering Professionals, Inc. that:

**Load Cases I – IV**

- 1) The superstructure will meet the ASCE 7-05 and 2003 IBC standards for structural capacity.

**7.0 RECOMMENDATIONS** – TEP recommends the following:

**Load Cases I – IV**

- 1) If the load differs from that described in the appendix of this report, or the assumptions listed in the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) This analysis report includes four load cases indicative to typical site design parameters. This analysis report is not a construction document. TEP shall reanalyze and issue a sealed report in the state specific to the wind turbine location.



## 8.0 APPENDIX

Height (ft)	Location	Mount	Description / Model
80	Top of Pipe Support	(1) Tower Insert Mount Bracket	Wind Turbine Whisper 100/200
60 – 80	–	–	(1) 20-ft 2-1/2 Sch40 ASTM A572 Gr. 50 Steel Pipe
45 – 60	–	–	(1) 15-ft 2-1/2 Sch40 ASTM A572 Gr. 50 Steel Pipe
30 – 45	–	–	(1) 15-ft 2-1/2 Sch40 ASTM A572 Gr. 50 Steel Pipe
15 – 30	–	–	(1) 15-ft 2-1/2 Sch40 ASTM A572 Gr. 50 Steel Pipe
0 – 15	–	–	(1) 15-ft 2-1/2 Sch40 ASTM A572 Gr. 50 Steel Pipe

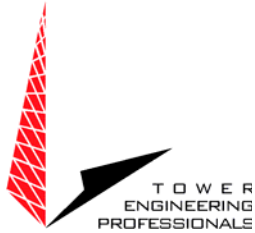
### Superstructure Results:

Item	Height (ft)	Result	Percent Capacity Used	Notes
<b>Deflection</b>	80	0.86-ft	-	
<b>Twist</b>	80	5.09°	-	
<b>Mast Pipe</b>	0 – 80	O. K.	82.0 %	
<b>Guy Wires</b>	0 – 80	O. K.	68.1 %	
<b>Pivot Bolt</b>	0	O. K.	21.3 %	Assumed A325 Type N 7/8" Φ

### Guy Wire Configuration:

Elevation (ft)	Guy Wires		Anchor Radius (ft)	IT @ 60°-F (kip) <sup>1</sup>	Allowable Tension (kip)	Maximum Tension (kip)
	Type	Diameter (in)				
75	7x19 Strand	1/4	40	0.33	4.20	2.86
60	7x19 Strand	1/4	40	0.33	4.20	0.71
45	7x19 Strand	1/4	40	0.33	4.20	0.71
30	7x19 Strand	1/4	40	0.33	4.20	0.65
15	7x19 Strand	1/4	40	0.33	4.20	0.65

<sup>1</sup> – Initial tension assumed to be 5% of breaking strength



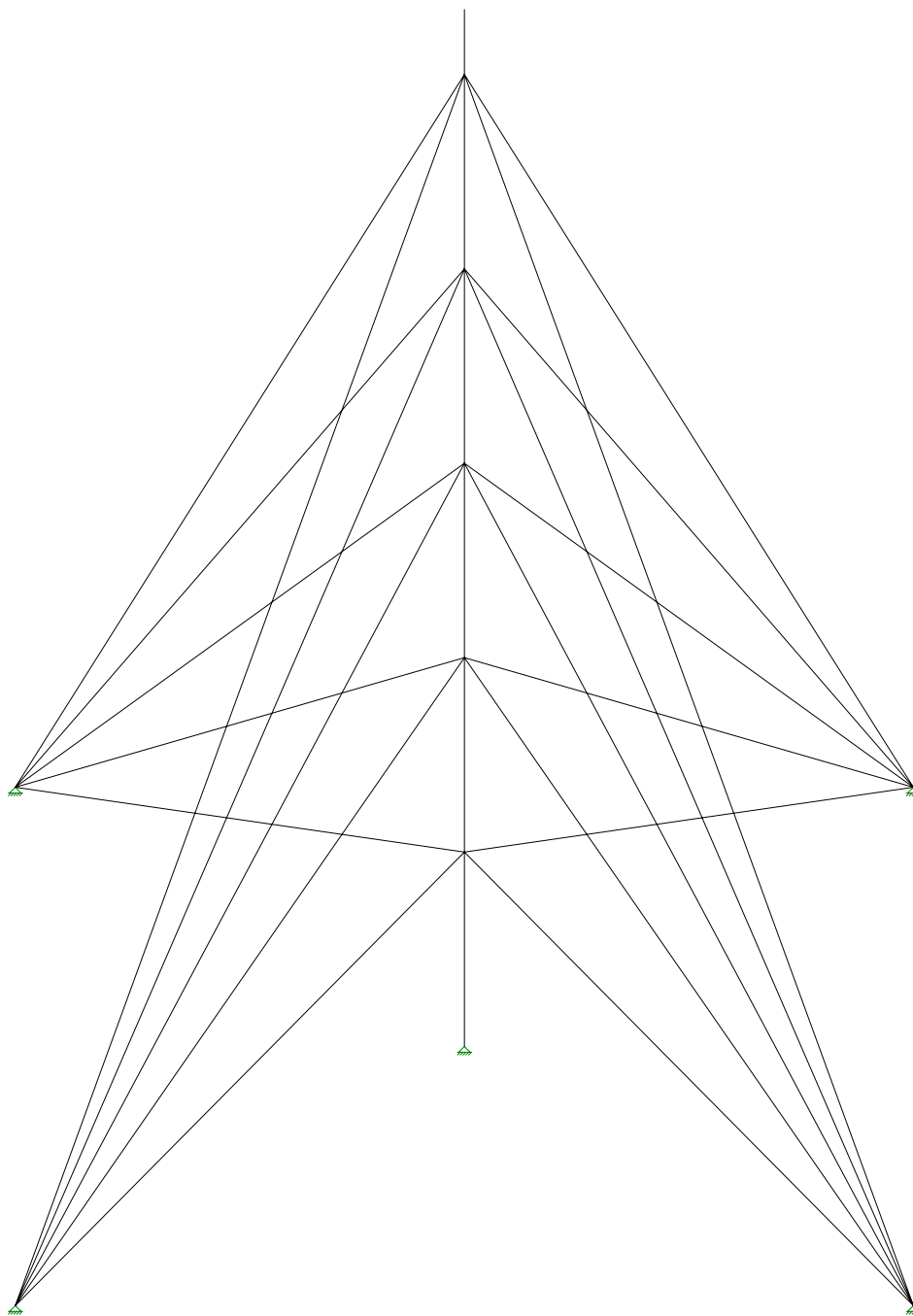
## 8.0 APPENDIX – continued

### Substructure Results:

Item	Analysis Reactions (Kip)	Notes
Mast horizontal	0.1	
Mast vertical	8.2	
Anchor shear	3.3	
Anchor vertical	4.2	
Anchor rod	5.4	
Anchor angle	51.8°	

## 9.0 ATTACHMENTS

- 1) Program Output



Solution: Envelope

Tower Engineering Profes...

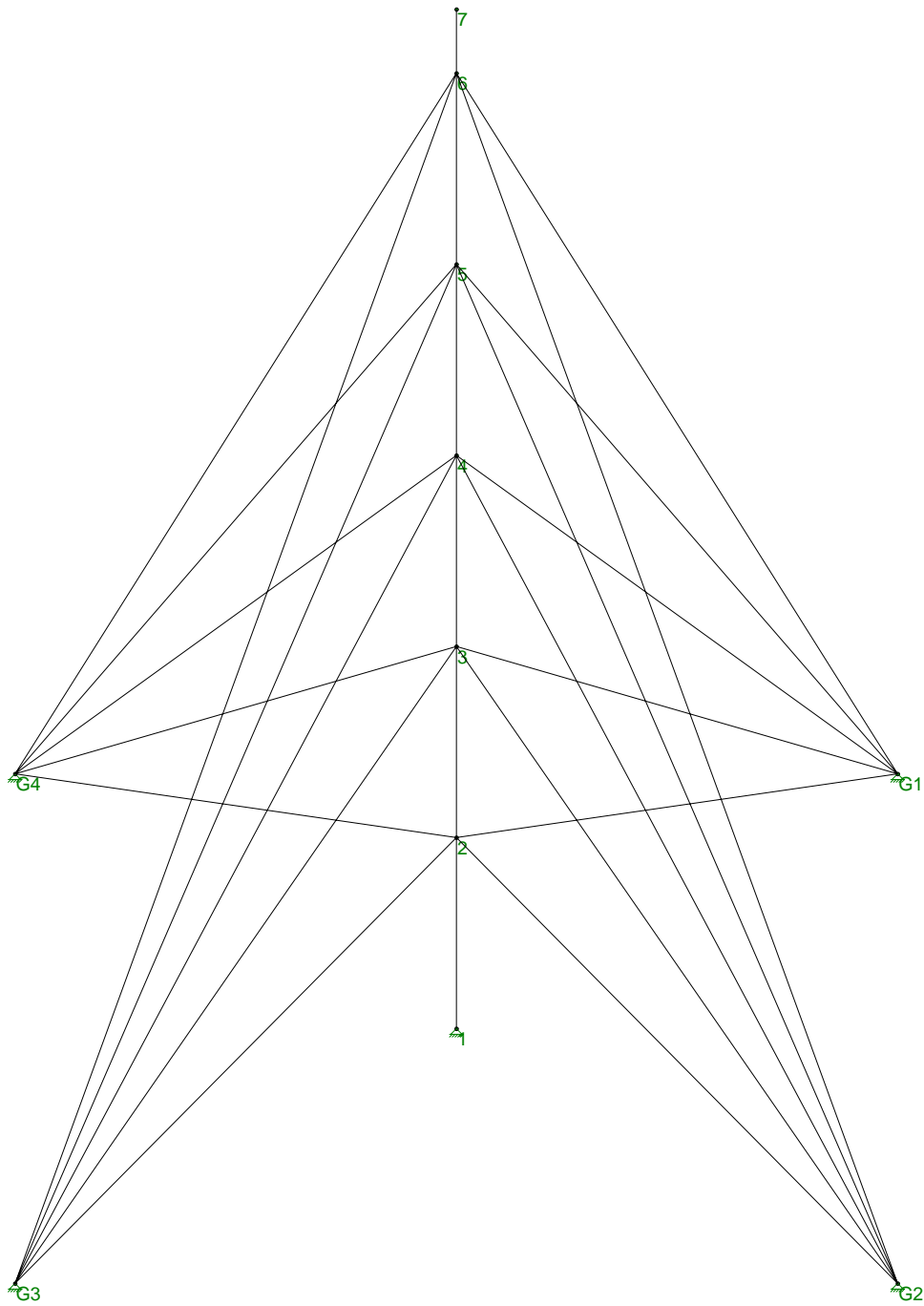
Whisper 100/200 80-ft

REG

Oct 31, 2006 at 11:26 AM

061289

80-ft LC #1.r3d



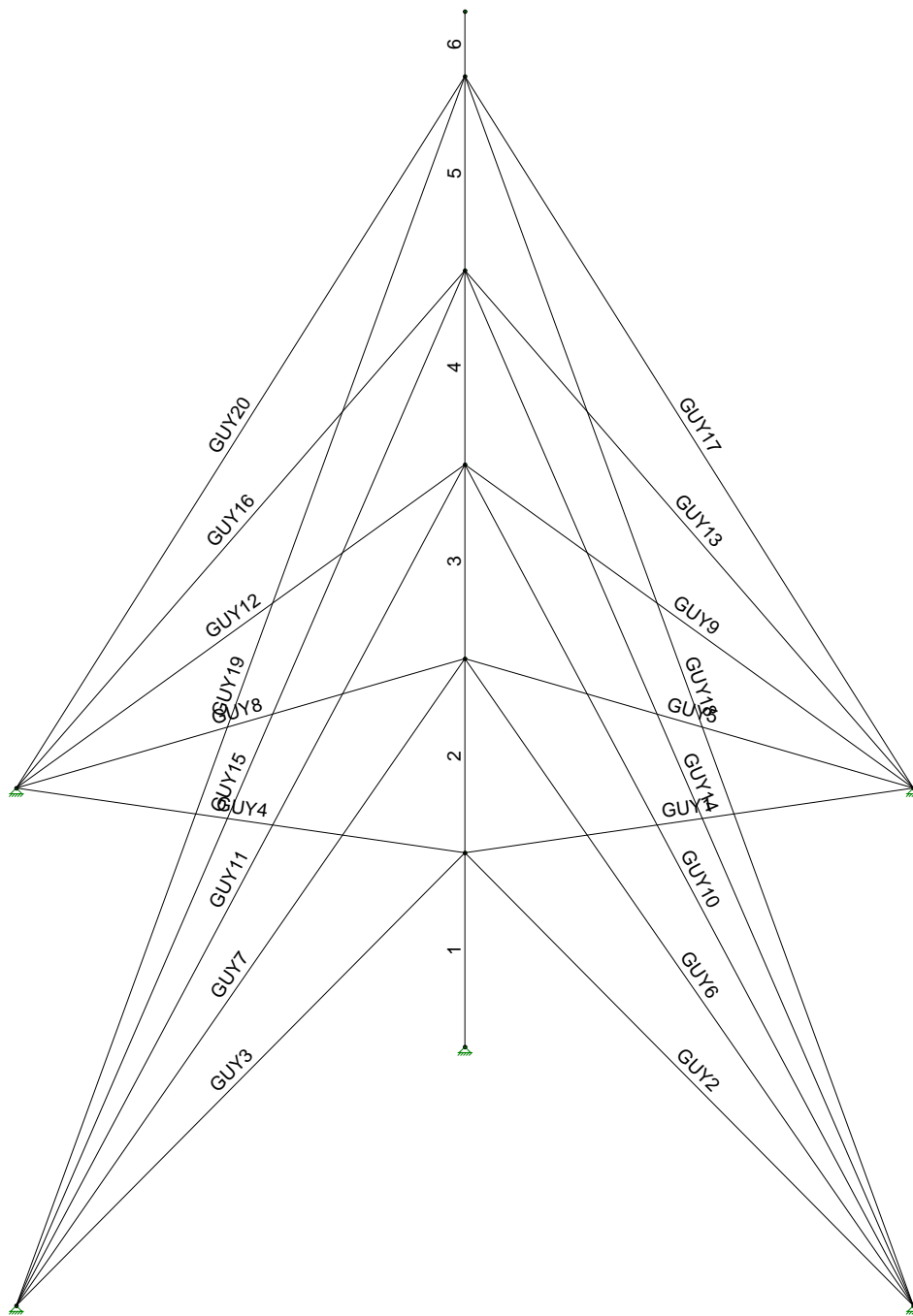
Solution: Envelope

Tower Engineering Profes...  
REG  
061289

Whisper 100/200 80-ft

Oct 31, 2006 at 11:25 AM

80-ft LC #1.r3d



Solution: Envelope

Tower Engineering Profes...

Whisper 100/200 80-ft

REG

Oct 31, 2006 at 11:26 AM

061289

80-ft LC #1.r3d

**Basic Load Cases**

	BLC Description	Category	X Gr...	Y Grav...	Z Grav...	Joint	Point	Distributed	Area (... Surfac...
1	Dead	DL		-1		11		20	
2	Wind	WL				11		6	
3	Earthquake	EL				7			
4	Ice Weight	DL				11		6	
5	Wind on Iced Members	WL				10		6	

**Load Combinations**

	Description	Solve	PDelta	SRSS	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Comb 1	Yes	Y		1	1.4						
2	Comb 2	Yes	Y		1	1.2	2	.8				
3	Comb 3	Yes	Y		1	1.2	2	1.6				
4	Comb 4	Yes	Y		1	1.2	3	1				
5	Comb 5	Yes	Y		1	.9	2	1.6				
6	Comb 6	Yes	Y		1	.9	3	1				
7	Comb 7	Yes	Y		1	1.2	4	.2				
8	Comb 8	Yes	Y		1	1.2	4	1	5	1		
9	Comb 9	Yes	Y		1	.9	4	1	5	1		

**General Material Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]
1	gen Conc3NW	3155	1372	.15	.6	.145
2	gen Conc4NW	3644	1584	.15	.6	.145
3	gen Conc3LW	2085	906	.15	.6	.11
4	gen Conc4LW	2408	1047	.15	.6	.11
5	gen Alum	10600	4077	.3	1.29	.173
6	gen Steel	29000	11154	.3	.65	.49
7	RIGID	1e+7		0	0	0
8	Guy E=26800	26800	11154	.3	1.17	0

**Joint Coordinates and Temperatures**

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	1	0	0	0	0	
2	2	0	15	0	0	
3	3	0	30	0	0	
4	4	0	45	0	0	
5	5	0	60	0	0	
6	6	0	75	0	0	
7	7	0	80	0	0	
8	G1	0	0	-40	0	
9	G2	40	0	0	0	
10	G3	0	0	40	0	
11	G4	-40	0	0	0	

**Joint Boundary Conditions**

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	G1	Reaction	Reaction	Reaction				
2	G2	Reaction	Reaction	Reaction				
3	G3	Reaction	Reaction	Reaction				
4	G4	Reaction	Reaction	Reaction				
5	1	Reaction	Reaction	Reaction				

**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	2			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
2	2	2	3			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
3	3	3	4			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
4	4	4	5			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
5	5	5	6			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
6	6	6	7			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
7	GUY1	G1	2			1/4" EHS	None	None	Guy E=26800	Typical
8	GUY2	G2	2			1/4" EHS	None	None	Guy E=26800	Typical
9	GUY3	G3	2			1/4" EHS	None	None	Guy E=26800	Typical
10	GUY4	G4	2			1/4" EHS	None	None	Guy E=26800	Typical
11	GUY5	G1	3			1/4" EHS	None	None	Guy E=26800	Typical
12	GUY6	G2	3			1/4" EHS	None	None	Guy E=26800	Typical
13	GUY7	G3	3			1/4" EHS	None	None	Guy E=26800	Typical
14	GUY8	G4	3			1/4" EHS	None	None	Guy E=26800	Typical
15	GUY9	G1	4			1/4" EHS	None	None	Guy E=26800	Typical
16	GUY10	G2	4			1/4" EHS	None	None	Guy E=26800	Typical
17	GUY11	G3	4			1/4" EHS	None	None	Guy E=26800	Typical
18	GUY12	G4	4			1/4" EHS	None	None	Guy E=26800	Typical
19	GUY13	G1	5			1/4" EHS	None	None	Guy E=26800	Typical
20	GUY14	G2	5			1/4" EHS	None	None	Guy E=26800	Typical
21	GUY15	G3	5			1/4" EHS	None	None	Guy E=26800	Typical
22	GUY16	G4	5			1/4" EHS	None	None	Guy E=26800	Typical
23	GUY17	G1	6			1/4" EHS	None	None	Guy E=26800	Typical
24	GUY18	G2	6			1/4" EHS	None	None	Guy E=26800	Typical
25	GUY19	G3	6			1/4" EHS	None	None	Guy E=26800	Typical
26	GUY20	G4	6			1/4" EHS	None	None	Guy E=26800	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	TOM	Inactive
1	1						Yes		
2	2						Yes		
3	3						Yes		
4	4						Yes		
5	5						Yes		
6	6						Yes		
7	GUY1					Tension Only	Yes		
8	GUY2					Tension Only	Yes		
9	GUY3					Tension Only	Yes		
10	GUY4					Tension Only	Yes		
11	GUY5					Tension Only	Yes		
12	GUY6					Tension Only	Yes		
13	GUY7					Tension Only	Yes		
14	GUY8					Tension Only	Yes		
15	GUY9					Tension Only	Yes		
16	GUY10					Tension Only	Yes		
17	GUY11					Tension Only	Yes		
18	GUY12					Tension Only	Yes		
19	GUY13					Tension Only	Yes		
20	GUY14					Tension Only	Yes		
21	GUY15					Tension Only	Yes		
22	GUY16					Tension Only	Yes		
23	GUY17					Tension Only	Yes		
24	GUY18					Tension Only	Yes		
25	GUY19					Tension Only	Yes		
26	GUY20					Tension Only	Yes		

**Joint Loads and Enforced Displacements (BLC 1 : Dead)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	-.046
2	2	L	Y	-.004
3	3	L	Y	-.0047
4	4	L	Y	-.0056
5	5	L	Y	-.0068
6	6	L	Y	-.008
7	2	L	Y	-.004
8	3	L	Y	-.0047
9	4	L	Y	-.0056
10	5	L	Y	-.0068
11	6	L	Y	-.008

**Joint Loads and Enforced Displacements (BLC 2 : Wind)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	.4
2	2	L	X	.0211
3	3	L	X	.0286
4	4	L	X	.0374
5	5	L	X	.0477
6	6	L	X	.0589
7	2	L	X	.0211
8	3	L	X	.0286
9	4	L	X	.0374
10	5	L	X	.0477
11	6	L	X	.0589

**Joint Loads and Enforced Displacements (BLC 3 : Earthquake)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	1	L	X	.001
2	2	L	X	.002
3	3	L	X	.002
4	4	L	X	.002
5	5	L	X	.002
6	6	L	X	.001
7	7	L	X	0

**Joint Loads and Enforced Displacements (BLC 4 : Ice Weight)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	0
2	2	L	Y	0
3	3	L	Y	0
4	4	L	Y	0
5	5	L	Y	0
6	6	L	Y	0
7	2	L	Y	0
8	3	L	Y	0
9	4	L	Y	0
10	5	L	Y	0
11	6	L	Y	0

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	2	L	X	0
2	3	L	X	0
3	4	L	X	0

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members) (Continued)**

	Joint Label	L.D.M	Direction	Magnitude[k.k-ft in.rad k*s^2/ft]
4	5	L	X	0
5	6	L	X	0
6	2	L	X	0
7	3	L	X	0
8	4	L	X	0
9	5	L	X	0
10	6	L	X	0

**Member Distributed Loads (BLC 1 : Dead)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft, %]
1	GUY1	T	-27.91	-27.91	0	0
2	GUY2	T	-27.91	-27.91	0	0
3	GUY3	T	-27.91	-27.91	0	0
4	GUY4	T	-27.91	-27.91	0	0
5	GUY5	T	-27.91	-27.91	0	0
6	GUY6	T	-27.91	-27.91	0	0
7	GUY7	T	-27.91	-27.91	0	0
8	GUY8	T	-27.91	-27.91	0	0
9	GUY9	T	-27.91	-27.91	0	0
10	GUY10	T	-27.91	-27.91	0	0
11	GUY11	T	-27.91	-27.91	0	0
12	GUY12	T	-27.91	-27.91	0	0
13	GUY13	T	-27.91	-27.91	0	0
14	GUY14	T	-27.91	-27.91	0	0
15	GUY15	T	-27.91	-27.91	0	0
16	GUY16	T	-27.91	-27.91	0	0
17	GUY17	T	-27.91	-27.91	0	0
18	GUY18	T	-27.91	-27.91	0	0
19	GUY19	T	-27.91	-27.91	0	0
20	GUY20	T	-27.91	-27.91	0	0

**Member Distributed Loads (BLC 2 : Wind)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft, %]
1	1	X	.0162	.0162	0	0
2	2	X	.0162	.0162	0	0
3	3	X	.0162	.0162	0	0
4	4	X	.0162	.0162	0	0
5	5	X	.0162	.0162	0	0
6	6	X	.0162	.0162	0	0

**Member Distributed Loads (BLC 4 : Ice Weight)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft, %]
1	1	Y	0	0	0	0
2	2	Y	0	0	0	0
3	3	Y	0	0	0	0
4	4	Y	0	0	0	0
5	5	Y	0	0	0	0
6	6	Y	0	0	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft, %]
1	1	X	0	0	0	0
2	2	X	0	0	0	0
3	3	X	0	0	0	0
4	4	X	0	0	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members) (Continued)**

Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...	End Location[ft.%]
5	5	X	0	0	0
6	6	X	0	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	G1	max	0	5	-809	5	-853	5	0	1	0	1
2		min	0	4	-1.394	1	-1.434	1	0	1	0	1
3	G2	max	1.434	1	-.006	5	0	2	0	1	0	1
4		min	.016	5	-1.394	1	0	3	0	1	0	1
5	G3	max	0	5	-809	5	1.434	1	0	1	0	1
6		min	0	4	-1.394	1	.853	5	0	1	0	1
7	G4	max	-.922	9	-.896	9	0	3	0	1	0	1
8		min	-3.334	3	-4.237	3	0	2	0	1	0	1
9	1	max	0	7	7.235	3	0	3	0	1	0	1
10		min	-.148	5	4.095	6	0	2	0	1	0	1
11	Totals:	max	0	7	.795	1	0	6				
12		min	-3.333	3	.511	5	0	1				

**Envelope Member Section Forces**

Member	Sec	Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
1	1	max	7.235	3	.153	3	0	1	0	1	0	1	1
2		min	4.095	6	0	1	0	1	0	1	0	1	1
9		max	7.131	3	0	4	0	1	0	1	0	.627	5
10		min	4.017	6	-.236	5	0	1	0	1	0	0	4
11	2	max	6.588	3	.198	3	0	1	0	1	0	.562	5
12		min	3.604	6	0	4	0	1	0	1	0	0	4
19		max	6.484	3	0	1	0	1	0	1	0	.512	5
20		min	3.526	6	-.191	5	0	1	0	1	0	0	1
21	3	max	5.638	3	.2	5	0	1	0	1	0	.504	5
22		min	2.867	6	0	1	0	1	0	1	0	0	1
29		max	5.534	3	0	6	0	1	0	1	0	.428	3
30		min	2.789	6	-.189	3	0	1	0	1	0	0	1
31	4	max	4.505	3	.166	5	0	1	0	1	0	.37	5
32		min	2.003	6	0	1	0	1	0	1	0	0	1
39		max	4.4	3	0	4	0	1	0	1	0	.806	3
40		min	1.925	6	-.224	3	0	1	0	1	0	0	4
41	5	max	3.283	3	.093	3	0	1	0	1	0	.867	3
42		min	1.064	6	0	4	0	1	0	1	0	0	4
49		max	3.178	3	0	1	0	1	0	1	0	2.391	3
50		min	.986	6	-.296	5	0	1	0	1	0	0	1
51	6	max	.105	1	.775	3	0	1	0	1	0	3.553	3
52		min	.067	5	0	4	0	1	0	1	0	0	4
59		max	.064	1	.646	3	0	1	0	1	0	0	1
60		min	.041	5	0	4	0	1	0	1	0	0	1
61	GUY1	max	-.283	5	0	1	.001	5	.006	3	0	0	6
62		min	-.45	1	0	6	0	1	0	4	-.031	5	3
69		max	-.283	5	0	1	.001	5	.006	3	.023	3	6
70		min	-.45	1	0	6	0	1	0	4	0	1	3
71	GUY2	max	-.017	5	0	4	0	1	0	1	0	0	5
72		min	-.45	1	0	3	0	1	0	1	0	-.007	3
79		max	-.017	5	0	4	0	1	0	1	0	.016	3
80		min	-.45	1	0	3	0	1	0	1	0	0	1
81	GUY3	max	-.283	5	0	1	0	1	0	4	.031	5	6
82		min	-.45	1	0	6	-.001	5	-.006	3	0	0	3
89		max	-.283	5	0	1	0	1	0	4	0	0	6

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Momen(k...	lc
90		min	-.45	1	0	6	-.001	5	-.006	3	-.023	3	0	3
91	GUY4	1	max	-.289	9	.003	3	0	1	0	1	0	.068	3
92		min	-.648	3	0	6	0	1	0	1	0	1	0	4
99		5	max	-.289	9	.003	3	0	1	0	1	0	1	0
100		min	-.648	3	0	6	0	1	0	1	0	1	-.047	3
101	GUY5	1	max	-.255	5	0	3	.001	3	.007	5	0	4	0
102		min	-.422	1	0	6	0	4	0	4	-.037	3	0	6
109		5	max	-.255	5	0	3	.001	3	.007	5	.014	3	0
110		min	-.422	1	0	6	0	4	0	4	0	6	0	3
111	GUY6	1	max	0	5	0	3	0	1	0	1	0	.007	3
112		min	-.422	1	0	5	0	1	0	1	0	1	0	5
119		5	max	0	5	0	3	0	1	0	1	0	1	0
120		min	-.422	1	0	5	0	1	0	1	0	1	-.016	3
121	GUY7	1	max	-.255	5	0	3	0	4	0	4	.037	3	0
122		min	-.422	1	0	6	-.001	3	-.007	5	0	4	0	6
129		5	max	-.255	5	0	3	0	4	0	4	0	6	0
130		min	-.422	1	0	6	-.001	3	-.007	5	-.014	3	0	3
131	GUY8	1	max	-.271	9	.001	3	0	1	0	1	0	.045	3
132		min	-.645	3	0	6	0	1	0	1	0	1	0	6
139		5	max	-.271	9	.001	3	0	1	0	1	0	1	0
140		min	-.645	3	0	6	0	1	0	1	0	1	-.011	3
141	GUY9	1	max	-.234	5	0	3	.001	3	.004	5	0	4	0
142		min	-.403	1	0	6	0	4	0	1	-.046	3	0	6
149		5	max	-.234	5	0	3	.001	3	.004	5	.027	3	0
150		min	-.403	1	0	6	0	4	0	1	0	4	0	3
151	GUY10	1	max	0	3	0	1	0	1	0	1	0	1	0
152		min	-.403	1	0	2	0	1	0	1	0	1	-.001	2
159		5	max	0	3	0	1	0	1	0	1	0	1	0
160		min	-.403	1	0	2	0	1	0	1	0	1	0	2
161	GUY11	1	max	-.234	5	0	3	0	4	0	1	.046	3	0
162		min	-.403	1	0	6	-.001	3	-.004	5	0	4	0	6
169		5	max	-.234	5	0	3	0	4	0	1	0	4	0
170		min	-.403	1	0	6	-.001	3	-.004	5	-.027	3	0	3
171	GUY12	1	max	-.259	9	.001	3	0	1	0	1	0	.047	3
172		min	-.712	5	0	6	0	1	0	1	0	1	0	6
179		5	max	-.259	9	.001	3	0	1	0	1	0	1	0
180		min	-.712	5	0	6	0	1	0	1	0	1	-.026	3
181	GUY13	1	max	-.224	5	0	3	0	2	.006	3	0	1	0
182		min	-.397	1	0	6	0	1	0	4	-.024	5	0	1
189		5	max	-.224	5	0	3	0	2	.006	3	0	4	0
190		min	-.397	1	0	6	0	1	0	4	-.017	3	0	3
191	GUY14	1	max	0	3	0	2	0	1	0	1	0	.004	2
192		min	-.397	1	0	3	0	1	0	1	0	1	0	4
199		5	max	0	3	0	2	0	1	0	1	0	1	0
200		min	-.397	1	0	3	0	1	0	1	0	1	-.012	2
201	GUY15	1	max	-.224	5	0	3	0	1	0	4	.024	5	0
202		min	-.397	1	0	6	0	2	-.006	3	0	1	0	1
209		5	max	-.224	5	0	3	0	1	0	4	.017	3	0
210		min	-.397	1	0	6	0	2	-.006	3	0	4	0	3
211	GUY16	1	max	-.255	9	0	2	0	1	0	1	0	.017	5
212		min	-.705	5	0	3	0	1	0	1	0	1	0	1
219		5	max	-.255	9	0	2	0	1	0	1	0	.027	5
220		min	-.705	5	0	3	0	1	0	1	0	1	0	1
221	GUY17	1	max	-.222	5	0	5	0	4	.028	3	.133	3	0
222		min	-.399	1	0	1	-.006	3	0	4	0	4	0	1
229		5	max	-.222	5	0	5	0	4	.028	3	0	4	0
230		min	-.399	1	0	1	-.006	3	0	4	-.385	3	0	3

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc	
231	GUY18	1	max	0	2	0	2	0	1	0	1	0	1	0	2
232			min	-.399	1	0	4	0	1	0	1	0	1	0	4
239		5	max	0	2	0	2	0	1	0	1	0	1	0	2
240			min	-.399	1	0	4	0	1	0	1	0	1	0	1
241	GUY19	1	max	-.222	5	0	5	.006	3	0	4	0	4	0	6
242			min	-.399	1	0	1	0	4	-.028	3	-.133	3	0	1
249		5	max	-.222	5	0	5	.006	3	0	4	.385	3	0	6
250			min	-.399	1	0	1	0	4	-.028	3	0	4	0	3
251	GUY20	1	max	-.256	9	0	6	0	1	0	1	0	1	0	6
252			min	-2.857	3	-.007	3	0	1	0	1	0	1	-.176	3
259		5	max	-.256	9	0	6	0	1	0	1	0	1	.457	3
260			min	-2.857	3	-.007	3	0	1	0	1	0	1	0	4

**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	1	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
2			min	0	1	0	1	0	1	0	1	NC	1	NC	1
9		5	max	-.015	6	0	1	0	1	0	1	NC	1	NC	1
10			min	-.026	3	-.144	3	0	1	0	1	NC	3	NC	1
11	2	1	max	-.015	6	0	1	0	1	0	1	NC	1	NC	1
12			min	-.026	3	-.144	3	0	1	0	1	NC	3	NC	1
19		5	max	-.028	6	0	1	0	1	0	1	NC	1	NC	1
20			min	-.05	3	-.25	5	0	1	0	1	NC	5	NC	1
21	3	1	max	-.028	6	0	1	0	1	0	1	NC	1	NC	1
22			min	-.05	3	-.25	5	0	1	0	1	NC	5	NC	1
29		5	max	-.038	6	0	1	0	1	0	1	NC	1	NC	1
30			min	-.07	3	-.51	5	0	1	0	1	NC	5	NC	1
31	4	1	max	-.038	6	0	1	0	1	0	1	NC	1	NC	1
32			min	-.07	3	-.51	5	0	1	0	1	NC	5	NC	1
39		5	max	-.045	6	0	1	0	1	0	1	NC	1	NC	1
40			min	-.087	3	-.738	5	0	1	0	1	NC	5	NC	1
41	5	1	max	-.045	6	0	1	0	1	0	1	NC	1	NC	1
42			min	-.087	3	-.738	5	0	1	0	1	NC	5	NC	1
49		5	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
50			min	-.098	3	-5.587	5	0	1	0	1	37.123	5	NC	1
51	6	1	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
52			min	-.098	3	-5.587	5	0	1	0	1	NC	5	NC	1
59		5	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
60			min	-.098	3	-10.368	5	0	1	0	1	12.548	5	NC	1
61	GUY1	1	max	0	1	0	1	0	1	4.136e-3	3	NC	1	NC	1
62			min	0	1	0	1	0	1	-3.18e-6	4	NC	1	NC	1
69		5	max	-.005	6	-.014	6	0	1	8.236e-4	3	NC	6	NC	1
70			min	-.009	3	-.024	3	-.144	3	-1.85e-6	6	NC	3	3566.161	3
71	GUY2	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
72			min	0	1	0	1	0	1	0	1	NC	1	NC	1
79		5	max	-.005	9	.029	5	0	1	0	1	NC	5	NC	1
80			min	-.144	3	-.022	1	0	1	0	1	NC	1	NC	1
81	GUY3	1	max	0	1	0	1	0	1	3.18e-6	4	NC	1	NC	1
82			min	0	1	0	1	0	1	-4.136e-3	3	NC	1	NC	1
89		5	max	-.005	6	-.014	6	.144	3	1.85e-6	6	NC	6	3566.161	3
90			min	-.009	3	-.024	3	0	1	-8.236e-4	3	NC	3	NC	1
91	GUY4	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
92			min	0	1	0	1	0	1	0	1	NC	1	NC	1
99		5	max	.126	5	-.014	9	0	1	0	1	NC	9	NC	1
100			min	-.008	1	-.075	3	0	1	0	1	NC	3	NC	1
101	GUY5	1	max	0	1	0	1	0	1	3.63e-3	3	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	
102		min	0	1	0	1	0	1	-2.708e-6	4	NC	1	NC	1	
109	5	max	-.017	6	-.022	6	0	1	0	1	NC	6	NC	1	
110		min	-.03	3	-.04	3	-.25	5	-1.315e-3	5	NC	3	2396.885	5	
111	GUY6	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
112		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
119	5	max	-.017	9	.115	5	0	1	0	1	5214.349	5	NC	1	
120		min	-.227	5	-.035	1	0	1	0	1	NC	1	NC	1	
121	GUY7	1	max	0	1	0	1	0	1	2.708e-6	4	NC	1	NC	1
122		min	0	1	0	1	0	1	-3.63e-3	3	NC	1	NC	1	
129	5	max	-.017	6	-.022	6	.25	5	1.315e-3	5	NC	6	2396.885	5	
130		min	-.03	3	-.04	3	0	1	0	1	NC	3	NC	1	
131	GUY8	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
132		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
139	5	max	.174	5	-.022	9	0	1	0	1	NC	9	NC	1	
140		min	-.026	1	-.185	5	0	1	0	1	NC	5	NC	1	
141	GUY9	1	max	0	1	0	1	0	1	3.095e-3	3	NC	1	NC	1
142		min	0	1	0	1	0	1	-2.241e-6	4	NC	1	NC	1	
149	5	max	-.028	6	-.025	6	0	1	0	1	NC	6	NC	1	
150		min	-.053	3	-.047	3	-.51	5	-4.028e-4	5	NC	3	1415.799	5	
151	GUY10	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
152		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
159	5	max	-.028	9	.34	5	0	1	0	1	2124.712	5	NC	1	
160		min	-.386	5	-.039	1	0	1	0	1	NC	1	NC	1	
161	GUY11	1	max	0	1	0	1	0	1	2.241e-6	4	NC	1	NC	1
162		min	0	1	0	1	0	1	-3.095e-3	3	NC	1	NC	1	
169	5	max	-.028	6	-.025	6	.51	5	4.028e-4	5	NC	6	1415.799	5	
170		min	-.053	3	-.047	3	0	1	0	1	NC	3	NC	1	
171	GUY12	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
172		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
179	5	max	.292	5	-.025	9	0	1	0	1	NC	9	NC	1	
180		min	-.044	1	-.423	5	0	1	0	1	1708.932	5	NC	1	
181	GUY13	1	max	0	1	0	1	0	1	2.651e-3	3	NC	1	NC	1
182		min	0	1	0	1	0	1	-1.864e-6	4	NC	1	NC	1	
189	5	max	-.038	6	-.025	6	0	1	0	1	NC	6	NC	1	
190		min	-.072	3	-.048	3	-.738	5	-3.005e-3	5	NC	3	NC	5	
191	GUY14	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
192		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
199	5	max	-.038	9	.571	5	0	1	0	1	1515.021	5	NC	1	
200		min	-.473	5	-.039	1	0	1	0	1	NC	1	NC	1	
201	GUY15	1	max	0	1	0	1	0	1	1.864e-6	4	NC	1	NC	1
202		min	0	1	0	1	0	1	-2.651e-3	3	NC	1	NC	1	
209	5	max	-.038	6	-.025	6	.738	5	3.005e-3	5	NC	6	NC	5	
210		min	-.072	3	-.048	3	0	1	0	1	NC	3	NC	1	
211	GUY16	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
212		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
219	5	max	.345	5	-.025	9	0	1	0	1	NC	9	NC	1	
220		min	-.059	1	-.657	5	0	1	0	1	NC	5	NC	1	
221	GUY17	1	max	0	1	0	1	0	1	2.306e-3	3	NC	1	NC	1
222		min	0	1	0	1	0	1	-1.576e-6	4	NC	1	NC	1	
229	5	max	-.043	6	-.023	6	0	1	1.146e-6	4	NC	6	NC	1	
230		min	-.087	3	-.046	3	-5.587	5	-2.865e-2	5	NC	3	NC	5	
231	GUY18	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
232		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
239	5	max	-.043	9	4.888	5	0	1	0	1	NC	5	NC	1	
240		min	-2.707	5	-.036	1	0	1	0	1	NC	1	NC	1	
241	GUY19	1	max	0	1	0	1	0	1	1.576e-6	4	NC	1	NC	1
242		min	0	1	0	1	0	1	-2.306e-3	3	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
249		5	max	-.043	6	-.023	6	5.587	5	2.865e-2	5	NC	6	NC	5
250			min	-.087	3	-.046	3	0	1	-1.146e-6	4	NC	3	NC	1
251	GUY20	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
252			min	0	1	0	1	0	1	0	1	NC	1	NC	1
259		5	max	2.551	5	-.023	9	0	1	0	1	NC	9	NC	1
260			min	-.067	1	-4.971	5	0	1	0	1	NC	5	NC	1

### Basic Load Cases

	BLC Description	Category	X Gr...	Y Grav...	Z Grav...	Joint	Point	Distributed	Area (... Surfac...
1	Dead	DL		-1		11		20	
2	Wind	WL				11		6	
3	Earthquake	EL				7			
4	Ice Weight	DL				11		6	
5	Wind on Iced Members	WL				11		6	

### Load Combinations

	Description	Solve	PDelta	SRSS	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Comb 1	Yes	Y		1	1.4						
2	Comb 2	Yes	Y		1	1.2	2	.8				
3	Comb 3	Yes	Y		1	1.2	2	1.6				
4	Comb 4	Yes	Y		1	1.2	3	1				
5	Comb 5	Yes	Y		1	.9	2	1.6				
6	Comb 6	Yes	Y		1	.9	3	1				
7	Comb 7	Yes	Y		1	1.2	4	.2				
8	Comb 8	Yes	Y		1	1.2	4	1	5	1		
9	Comb 9	Yes	Y		1	.9	4	1	5	1		

### General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]
1	gen Conc3NW	3155	1372	.15	.6	.145
2	gen Conc4NW	3644	1584	.15	.6	.145
3	gen Conc3LW	2085	906	.15	.6	.11
4	gen Conc4LW	2408	1047	.15	.6	.11
5	gen Alum	10600	4077	.3	1.29	.173
6	gen Steel	29000	11154	.3	.65	.49
7	RIGID	1e+7		0	0	0
8	Guy E=26800	26800	11154	.3	1.17	0

### Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	1	0	0	0	0	
2	2	0	15	0	0	
3	3	0	30	0	0	
4	4	0	45	0	0	
5	5	0	60	0	0	
6	6	0	75	0	0	
7	7	0	80	0	0	
8	G1	0	0	-40	0	
9	G2	40	0	0	0	
10	G3	0	0	40	0	
11	G4	-40	0	0	0	

### Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	G1	Reaction	Reaction	Reaction				
2	G2	Reaction	Reaction	Reaction				
3	G3	Reaction	Reaction	Reaction				
4	G4	Reaction	Reaction	Reaction				
5	1	Reaction	Reaction	Reaction				

**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	2			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
2	2	2	3			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
3	3	3	4			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
4	4	4	5			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
5	5	5	6			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
6	6	6	7			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
7	GUY1	G1	2			1/4" EHS	None	None	Guy E=26800	Typical
8	GUY2	G2	2			1/4" EHS	None	None	Guy E=26800	Typical
9	GUY3	G3	2			1/4" EHS	None	None	Guy E=26800	Typical
10	GUY4	G4	2			1/4" EHS	None	None	Guy E=26800	Typical
11	GUY5	G1	3			1/4" EHS	None	None	Guy E=26800	Typical
12	GUY6	G2	3			1/4" EHS	None	None	Guy E=26800	Typical
13	GUY7	G3	3			1/4" EHS	None	None	Guy E=26800	Typical
14	GUY8	G4	3			1/4" EHS	None	None	Guy E=26800	Typical
15	GUY9	G1	4			1/4" EHS	None	None	Guy E=26800	Typical
16	GUY10	G2	4			1/4" EHS	None	None	Guy E=26800	Typical
17	GUY11	G3	4			1/4" EHS	None	None	Guy E=26800	Typical
18	GUY12	G4	4			1/4" EHS	None	None	Guy E=26800	Typical
19	GUY13	G1	5			1/4" EHS	None	None	Guy E=26800	Typical
20	GUY14	G2	5			1/4" EHS	None	None	Guy E=26800	Typical
21	GUY15	G3	5			1/4" EHS	None	None	Guy E=26800	Typical
22	GUY16	G4	5			1/4" EHS	None	None	Guy E=26800	Typical
23	GUY17	G1	6			1/4" EHS	None	None	Guy E=26800	Typical
24	GUY18	G2	6			1/4" EHS	None	None	Guy E=26800	Typical
25	GUY19	G3	6			1/4" EHS	None	None	Guy E=26800	Typical
26	GUY20	G4	6			1/4" EHS	None	None	Guy E=26800	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	TOM	Inactive
1	1						Yes		
2	2						Yes		
3	3						Yes		
4	4						Yes		
5	5						Yes		
6	6						Yes		
7	GUY1					Tension Only	Yes		
8	GUY2					Tension Only	Yes		
9	GUY3					Tension Only	Yes		
10	GUY4					Tension Only	Yes		
11	GUY5					Tension Only	Yes		
12	GUY6					Tension Only	Yes		
13	GUY7					Tension Only	Yes		
14	GUY8					Tension Only	Yes		
15	GUY9					Tension Only	Yes		
16	GUY10					Tension Only	Yes		
17	GUY11					Tension Only	Yes		
18	GUY12					Tension Only	Yes		
19	GUY13					Tension Only	Yes		
20	GUY14					Tension Only	Yes		
21	GUY15					Tension Only	Yes		
22	GUY16					Tension Only	Yes		
23	GUY17					Tension Only	Yes		
24	GUY18					Tension Only	Yes		
25	GUY19					Tension Only	Yes		
26	GUY20					Tension Only	Yes		

**Joint Loads and Enforced Displacements (BLC 1 : Dead)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	-.046
2	2	L	Y	-.004
3	3	L	Y	-.0047
4	4	L	Y	-.0056
5	5	L	Y	-.0068
6	6	L	Y	-.008
7	2	L	Y	-.004
8	3	L	Y	-.0047
9	4	L	Y	-.0056
10	5	L	Y	-.0068
11	6	L	Y	-.008

**Joint Loads and Enforced Displacements (BLC 2 : Wind)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	.4
2	2	L	X	.0076
3	3	L	X	.0103
4	4	L	X	.0135
5	5	L	X	.0172
6	6	L	X	.0212
7	2	L	X	.0076
8	3	L	X	.0103
9	4	L	X	.0135
10	5	L	X	.0172
11	6	L	X	.0212

**Joint Loads and Enforced Displacements (BLC 3 : Earthquake)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	1	L	X	.002
2	2	L	X	.005
3	3	L	X	.005
4	4	L	X	.005
5	5	L	X	.005
6	6	L	X	.003
7	7	L	X	.001

**Joint Loads and Enforced Displacements (BLC 4 : Ice Weight)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	-.05
2	2	L	Y	-.1616
3	3	L	Y	-.1891
4	4	L	Y	-.2277
5	5	L	Y	-.2727
6	6	L	Y	-.3215
7	2	L	Y	-.1616
8	3	L	Y	-.1891
9	4	L	Y	-.2277
10	5	L	Y	-.2727
11	6	L	Y	-.3215

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	.05
2	2	L	X	.0212
3	3	L	X	.0287

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members) (Continued)**

	Joint Label	L.D.M	Direction	Magnitude[k.k-ft in.rad k*s^2/ft]
4	4	L	X	.0376
5	5	L	X	.0478
6	6	L	X	.0591
7	2	L	X	.0212
8	3	L	X	.0287
9	4	L	X	.0376
10	5	L	X	.0478
11	6	L	X	.0591

**Member Distributed Loads (BLC 1 : Dead)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	GUY1	T	-27.91	-27.91	0	0
2	GUY2	T	-27.91	-27.91	0	0
3	GUY3	T	-27.91	-27.91	0	0
4	GUY4	T	-27.91	-27.91	0	0
5	GUY5	T	-27.91	-27.91	0	0
6	GUY6	T	-27.91	-27.91	0	0
7	GUY7	T	-27.91	-27.91	0	0
8	GUY8	T	-27.91	-27.91	0	0
9	GUY9	T	-27.91	-27.91	0	0
10	GUY10	T	-27.91	-27.91	0	0
11	GUY11	T	-27.91	-27.91	0	0
12	GUY12	T	-27.91	-27.91	0	0
13	GUY13	T	-27.91	-27.91	0	0
14	GUY14	T	-27.91	-27.91	0	0
15	GUY15	T	-27.91	-27.91	0	0
16	GUY16	T	-27.91	-27.91	0	0
17	GUY17	T	-27.91	-27.91	0	0
18	GUY18	T	-27.91	-27.91	0	0
19	GUY19	T	-27.91	-27.91	0	0
20	GUY20	T	-27.91	-27.91	0	0

**Member Distributed Loads (BLC 2 : Wind)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	X	.0058	.0058	0	0
2	2	X	.0058	.0058	0	0
3	3	X	.0058	.0058	0	0
4	4	X	.0058	.0058	0	0
5	5	X	.0058	.0058	0	0
6	6	X	.0058	.0058	0	0

**Member Distributed Loads (BLC 4 : Ice Weight)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	Y	-.009	-.009	0	0
2	2	Y	-.009	-.009	0	0
3	3	Y	-.009	-.009	0	0
4	4	Y	-.009	-.009	0	0
5	5	Y	-.009	-.009	0	0
6	6	Y	-.009	-.009	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	X	.0025	.0025	0	0
2	2	X	.0025	.0025	0	0
3	3	X	.0025	.0025	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members) (Continued)**

Member Label	Direction	Start Magnitude[k/ft.deg]	End Magnitud...	Start Location[...	End Location[ft.%]
4	X	.0025	.0025	0	0
5	X	.0025	.0025	0	0
6	X	.0025	.0025	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	G1	max	.001	5	-.814	9	-.854	9	0	1	0	1
2		min	0	8	-1.394	1	-1.434	1	0	1	0	1
3	G2	max	1.434	1	-.411	9	0	5	0	1	0	1
4		min	.499	5	-1.394	1	0	3	0	1	0	1
5	G3	max	.001	5	-.814	9	1.434	1	0	1	0	1
6		min	0	8	-1.394	1	.854	9	0	1	0	1
7	G4	max	-.934	6	-.909	6	0	3	0	1	0	1
8		min	-2.327	3	-2.97	3	0	5	0	1	0	1
9	1	max	0	7	8.248	8	0	5	0	1	0	1
10		min	-.053	5	4.095	6	0	3	0	1	0	1
11	Totals:	max	0	7	3.797	8	0	2				
12		min	-1.606	5	.511	5	0	9				

**Envelope Member Section Forces**

Member	Sec	Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
1	1	1	max	8.248	8	.054	3	0	1	0	1	0	1
2			min	4.095	6	0	1	0	1	0	1	0	1
9		5	max	8.008	8	0	4	0	1	0	1	.228	5
10			min	4.017	6	-.085	5	0	1	0	1	0	4
11	2	1	max	7.144	8	.07	3	0	1	0	1	.191	3
12			min	3.604	6	0	4	0	1	0	1	0	4
19		5	max	6.905	8	0	1	0	1	0	1	.192	5
20			min	3.526	6	-.07	5	0	1	0	1	0	1
21	3	1	max	5.693	8	.072	5	0	1	0	1	.173	3
22			min	2.867	6	0	1	0	1	0	1	0	1
29		5	max	5.453	8	0	4	0	1	0	1	.138	3
30			min	2.789	6	-.067	3	0	1	0	1	0	1
31	4	1	max	4.029	8	.051	3	0	1	0	1	.072	3
32			min	2.003	6	0	1	0	1	0	1	0	1
39		5	max	3.79	8	0	6	0	1	0	1	.378	5
40			min	1.925	6	-.09	5	0	1	0	1	0	6
41	5	1	max	2.684	3	.01	8	0	1	0	1	.402	5
42			min	1.064	6	-.055	3	0	1	0	1	0	6
49		5	max	2.579	3	0	1	0	1	0	1	2.232	3
50			min	.986	6	-.194	3	0	1	0	1	0	1
51	6	1	max	.185	8	.692	3	0	1	0	1	3.343	3
52			min	.067	5	0	1	0	1	0	1	0	1
59		5	max	.105	8	.645	3	0	1	0	1	0	1
60			min	.041	5	0	1	0	1	0	1	0	1
61	GUY1	1	max	-.282	9	0	8	0	5	.007	5	0	6
62			min	-.45	1	0	6	0	1	0	1	-.026	5
69		5	max	-.282	9	0	8	0	5	.007	5	.016	5
70			min	-.45	1	0	6	0	1	0	1	0	8
71	GUY2	1	max	-.192	5	0	1	0	1	0	1	0	6
72			min	-.45	1	0	5	0	1	0	1	-.005	5
79		5	max	-.192	5	0	1	0	1	0	1	.006	5
80			min	-.45	1	0	5	0	1	0	1	0	1
81	GUY3	1	max	-.282	9	0	8	0	1	0	1	.026	5
82			min	-.45	1	0	6	0	5	-.007	5	0	3

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
89		5	max	-282	9	0	8	0	1	0	1	0	1	0
90			min	-45	1	0	6	0	5	-.007	5	-.016	5	0
91	GUY4	1	max	-.292	6	.002	5	0	1	0	1	0	1	.06
92			min	-.477	3	0	6	0	1	0	1	0	1	0
99		5	max	-.292	6	.002	5	0	1	0	1	0	1	0
100			min	-.477	3	0	6	0	1	0	1	0	1	-.034
101	GUY5	1	max	-.253	9	0	8	.001	5	.007	5	0	1	0
102			min	-.422	1	0	6	0	1	0	1	-.037	5	0
109		5	max	-.253	9	0	8	.001	5	.007	5	.016	5	0
110			min	-.422	1	0	6	0	1	0	1	0	1	0
111	GUY6	1	max	-.154	5	0	3	0	1	0	1	0	1	.002
112			min	-.422	1	0	9	0	1	0	1	0	1	-.002
119		5	max	-.154	5	0	3	0	1	0	1	0	1	0
120			min	-.422	1	0	9	0	1	0	1	0	1	-.007
121	GUY7	1	max	-.253	9	0	8	0	1	0	1	.037	5	0
122			min	-.422	1	0	6	-.001	5	-.007	5	0	1	0
129		5	max	-.253	9	0	8	0	1	0	1	0	1	0
130			min	-.422	1	0	6	-.001	5	-.007	5	-.016	5	0
131	GUY8	1	max	-.274	6	.001	5	0	1	0	1	0	1	.046
132			min	-.46	3	0	6	0	1	0	1	0	1	0
139		5	max	-.274	6	.001	5	0	1	0	1	0	1	0
140			min	-.46	3	0	6	0	1	0	1	0	1	-.018
141	GUY9	1	max	-.233	9	0	8	.001	5	.004	3	0	1	0
142			min	-.403	1	0	6	0	6	0	1	-.044	5	0
149		5	max	-.233	9	0	8	.001	5	.004	3	.026	5	0
150			min	-.403	1	0	6	0	6	0	1	0	9	0
151	GUY10	1	max	-.125	5	0	1	0	1	0	1	0	1	0
152			min	-.403	1	0	5	0	1	0	1	0	1	-.006
159		5	max	-.125	5	0	1	0	1	0	1	0	1	.007
160			min	-.403	1	0	5	0	1	0	1	0	1	-.002
161	GUY11	1	max	-.233	9	0	8	0	6	0	1	.044	5	0
162			min	-.403	1	0	6	-.001	5	-.004	3	0	1	0
169		5	max	-.233	9	0	8	0	6	0	1	0	9	0
170			min	-.403	1	0	6	-.001	5	-.004	3	-.026	5	0
171	GUY12	1	max	-.263	6	.001	5	0	1	0	1	0	1	.045
172			min	-.453	3	0	6	0	1	0	1	0	1	0
179		5	max	-.263	6	.001	5	0	1	0	1	0	1	0
180			min	-.453	3	0	6	0	1	0	1	0	1	-.027
181	GUY13	1	max	-.226	9	0	8	0	3	.004	5	0	1	0
182			min	-.397	1	0	6	0	1	0	1	-.031	3	0
189		5	max	-.226	9	0	8	0	3	.004	5	.01	2	0
190			min	-.397	1	0	6	0	1	0	1	0	8	0
191	GUY14	1	max	-.116	9	0	5	0	1	0	1	0	1	.009
192			min	-.397	1	0	2	0	1	0	1	0	1	-.002
199		5	max	-.116	9	0	5	0	1	0	1	0	1	0
200			min	-.397	1	0	2	0	1	0	1	0	1	-.02
201	GUY15	1	max	-.226	9	0	8	0	1	0	1	.031	3	0
202			min	-.397	1	0	6	0	3	-.004	5	0	1	0
209		5	max	-.226	9	0	8	0	1	0	1	0	8	0
210			min	-.397	1	0	6	0	3	-.004	5	-.01	2	0
211	GUY16	1	max	-.259	6	0	3	0	1	0	1	0	1	.025
212			min	-.421	8	0	7	0	1	0	1	0	1	0
219		5	max	-.259	6	0	3	0	1	0	1	0	1	.003
220			min	-.421	8	0	7	0	1	0	1	0	1	-.009
221	GUY17	1	max	-.228	9	0	5	0	1	.027	5	.135	5	0
222			min	-.399	1	0	8	-.006	5	0	1	0	1	0
229		5	max	-.228	9	0	5	0	1	.027	5	0	1	0

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc	
230		min	-399	1	0	8	-006	5	0	1	-373	5	0	3	
231	GUY18	1	max	0	2	0	8	0	1	0	1	0	.01	8	
232		min	-399	1	0	1	0	1	0	1	0	1	0	1	
239		5	max	0	2	0	8	0	1	0	1	0	1	2	
240		min	-399	1	0	1	0	1	0	1	0	1	-0.029	8	
241	GUY19	1	max	-228	9	0	5	.006	5	0	1	0	1	6	
242		min	-399	1	0	8	0	1	-0.027	5	-135	5	0	8	
249		5	max	-228	9	0	5	.006	5	0	1	.373	5	6	
250		min	-399	1	0	8	0	1	-0.027	5	0	1	0	3	
251	GUY20	1	max	-261	6	0	7	0	1	0	1	0	1	7	
252		min	-2.154	3	-0.007	5	0	1	0	1	0	1	-1.176	5	
259		5	max	-261	6	0	7	0	1	0	1	0	1	.44	5
260		min	-2.154	3	-0.007	5	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	1	1	max	0	1	0	1	0	1	0	1	NC	1	1	
2		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
9		5	max	-.015	6	0	1	0	1	0	1	NC	1	1	
10		min	-.03	8	-.051	3	0	1	0	1	NC	3	NC	1	
11	2	1	max	-.015	6	0	1	0	1	0	1	NC	1	1	
12		min	-.03	8	-.051	3	0	1	0	1	NC	3	NC	1	
19		5	max	-.028	6	0	1	0	1	0	1	NC	1	1	
20		min	-.055	8	-.079	5	0	1	0	1	NC	5	NC	1	
21	3	1	max	-.028	6	0	1	0	1	0	1	NC	1	1	
22		min	-.055	8	-.079	5	0	1	0	1	NC	5	NC	1	
29		5	max	-.038	6	0	1	0	1	0	1	NC	1	1	
30		min	-.075	8	-.129	3	0	1	0	1	NC	3	NC	1	
31	4	1	max	-.038	6	0	1	0	1	0	1	NC	1	1	
32		min	-.075	8	-.129	3	0	1	0	1	NC	3	NC	1	
39		5	max	-.045	6	0	1	0	1	0	1	NC	1	1	
40		min	-.09	8	-.168	9	0	1	0	1	NC	9	NC	1	
41	5	1	max	-.045	6	0	1	0	1	0	1	NC	1	1	
42		min	-.09	8	-.168	9	0	1	0	1	NC	9	NC	1	
49		5	max	-.049	6	0	1	0	1	0	1	NC	1	1	
50		min	-.097	8	-4.06	5	0	1	0	1	44.91	5	NC	1	
51	6	1	max	-.049	6	0	1	0	1	0	1	NC	1	1	
52		min	-.097	8	-4.06	5	0	1	0	1	NC	5	NC	1	
59		5	max	-.049	6	0	1	0	1	0	1	NC	1	1	
60		min	-.097	8	-8.571	5	0	1	0	1	13.3	5	NC	1	
61	GUY1	1	max	0	1	0	1	0	1	4.362e-3	5	NC	1	1	
62		min	0	1	0	1	0	1	-2.033e-6	6	NC	1	NC	1	
69		5	max	-.005	6	-.014	6	0	1	2.479e-4	3	NC	6	NC	1
70		min	-.01	8	-.028	8	-.051	3	-4.877e-6	6	NC	8	NC	3	
71	GUY2	1	max	0	1	0	1	0	1	0	1	NC	1	1	
72		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
79		5	max	-.007	6	0	5	0	1	0	1	NC	5	NC	1
80		min	-.056	3	-.022	1	0	1	0	1	NC	1	NC	1	
81	GUY3	1	max	0	1	0	1	0	1	2.033e-6	6	NC	1	1	
82		min	0	1	0	1	0	1	-4.362e-3	5	NC	1	NC	1	
89		5	max	-.005	6	-.014	6	.051	3	4.877e-6	6	NC	6	NC	3
90		min	-.01	8	-.028	8	0	1	-2.479e-4	3	NC	8	NC	1	
91	GUY4	1	max	0	1	0	1	0	1	0	1	NC	1	1	
92		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
99		5	max	.041	5	-.014	6	0	1	0	1	NC	6	NC	1
100		min	-.008	1	-.04	3	0	1	0	1	NC	3	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
101	GUY5	1	max	0	1	0	1	0	1	3.818e-3	5	NC	1	NC	1
102			min	0	1	0	1	0	1	-1.6e-6	6	NC	1	NC	1
109		5	max	-0.017	6	-0.022	6	0	1	0	1	NC	6	NC	1
110			min	-0.033	8	-0.044	8	-0.079	5	-4.726e-4	5	NC	8	NC	5
111	GUY6	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
112			min	0	1	0	1	0	1	0	1	NC	1	NC	1
119		5	max	-0.018	6	.018	5	0	1	0	1	NC	5	NC	1
120			min	-0.09	3	-0.035	1	0	1	0	1	NC	1	NC	1
121	GUY7	1	max	0	1	0	1	0	1	1.6e-6	6	NC	1	NC	1
122			min	0	1	0	1	0	1	-3.818e-3	5	NC	1	NC	1
129		5	max	-0.017	6	-0.022	6	.079	5	4.726e-4	5	NC	6	NC	5
130			min	-0.033	8	-0.044	8	0	1	0	1	NC	8	NC	1
131	GUY8	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
132			min	0	1	0	1	0	1	0	1	NC	1	NC	1
139		5	max	.041	5	-0.024	6	0	1	0	1	NC	6	NC	1
140			min	-0.026	1	-0.084	3	0	1	0	1	NC	3	NC	1
141	GUY9	1	max	0	1	0	1	0	1	3.247e-3	5	NC	1	NC	1
142			min	0	1	0	1	0	1	-1.214e-6	6	NC	1	NC	1
149		5	max	-0.028	6	-0.025	6	0	1	2.324e-4	5	NC	6	NC	1
150			min	-0.056	8	-0.05	8	-.129	3	-2.187e-4	9	NC	8	NC	3
151	GUY10	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
152			min	0	1	0	1	0	1	0	1	NC	1	NC	1
159		5	max	-0.031	6	.061	5	0	1	0	1	NC	5	NC	1
160			min	-0.133	3	-0.039	1	0	1	0	1	NC	1	NC	1
161	GUY11	1	max	0	1	0	1	0	1	1.214e-6	6	NC	1	NC	1
162			min	0	1	0	1	0	1	-3.247e-3	5	NC	1	NC	1
169		5	max	-0.028	6	-0.025	6	.129	3	2.187e-4	9	NC	6	NC	3
170			min	-0.056	8	-0.05	8	0	1	-2.324e-4	5	NC	8	NC	1
171	GUY12	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
172			min	0	1	0	1	0	1	0	1	NC	1	NC	1
179		5	max	.046	5	-0.028	6	0	1	0	1	NC	6	NC	1
180			min	-0.044	1	-0.139	3	0	1	0	1	NC	3	NC	1
181	GUY13	1	max	0	1	0	1	0	1	2.775e-3	5	NC	1	NC	1
182			min	0	1	0	1	0	1	-9.186e-7	6	NC	1	NC	1
189		5	max	-0.038	6	-0.025	6	0	1	6.017e-5	2	NC	6	NC	1
190			min	-0.075	8	-.05	8	-.168	9	-1.127e-3	5	NC	8	5144.023	9
191	GUY14	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
192			min	0	1	0	1	0	1	0	1	NC	1	NC	1
199		5	max	-0.041	6	.099	9	0	1	0	1	8780.228	9	NC	1
200			min	-0.168	8	-0.039	1	0	1	0	1	NC	1	NC	1
201	GUY15	1	max	0	1	0	1	0	1	9.186e-7	6	NC	1	NC	1
202			min	0	1	0	1	0	1	-2.775e-3	5	NC	1	NC	1
209		5	max	-0.038	6	-0.025	6	.168	9	1.127e-3	5	NC	6	5144.023	9
210			min	-0.075	8	-0.05	8	0	1	-6.017e-5	2	NC	8	NC	1
211	GUY16	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
212			min	0	1	0	1	0	1	0	1	NC	1	NC	1
219		5	max	.031	9	-.03	6	0	1	0	1	NC	6	NC	1
220			min	-0.059	1	-0.189	8	0	1	0	1	4569.921	8	NC	1
221	GUY17	1	max	0	1	0	1	0	1	2.408e-3	5	NC	1	NC	1
222			min	0	1	0	1	0	1	-6.985e-7	6	NC	1	NC	1
229		5	max	-0.043	6	-0.023	6	0	1	0	1	NC	6	NC	1
230			min	-0.086	8	-0.046	8	-4.06	5	-2.693e-2	5	NC	8	NC	5
231	GUY18	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
232			min	0	1	0	1	0	1	0	1	NC	1	NC	1
239		5	max	-0.048	6	3.548	5	0	1	0	1	NC	5	NC	1
240			min	-1.975	5	-0.036	1	0	1	0	1	NC	1	NC	1
241	GUY19	1	max	0	1	0	1	0	1	6.985e-7	6	NC	1	NC	1

**Envelope Member Section Deflections (Continued)**

	Member	Sec		x [in]	lc	y [in]	lc	z [in]	lc	x Rotate fr...	lc	(n) L/y Ratio	lc	(n) L/z Ratio	lc
242			min	0	1	0	1	0	1	-2.408e-3	5	NC	1	NC	1
249		5	max	-0.043	6	-0.023	6	4.06	5	2.693e-2	5	NC	6	NC	5
250			min	-0.086	8	-0.046	8	0	1	0	1	NC	8	NC	1
251	GUY20	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
252			min	0	1	0	1	0	1	0	1	NC	1	NC	1
259		5	max	1.846	5	-0.032	6	0	1	0	1	NC	6	NC	1
260			min	-0.067	1	-3.617	5	0	1	0	1	NC	5	NC	1

**Basic Load Cases**

	BLC Description	Category	X Gr...	Y Grav...	Z Grav...	Joint	Point	Distributed	Area (... Surfac...
1	Dead	DL		-1		11		20	
2	Wind	WL				11		6	
3	Earthquake	EL				7			
4	Ice Weight	DL				11		6	
5	Wind on Iced Members	WL				11		6	

**Load Combinations**

	Description	Solve	PDelta	SRSS	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Comb 1	Yes	Y		1	1.4						
2	Comb 2	Yes	Y		1	1.2	2	.8				
3	Comb 3	Yes	Y		1	1.2	2	1.6				
4	Comb 4	Yes	Y		1	1.2	3	1				
5	Comb 5	Yes	Y		1	.9	2	1.6				
6	Comb 6	Yes	Y		1	.9	3	1				
7	Comb 7	Yes	Y		1	1.2	4	.2				
8	Comb 8	Yes	Y		1	1.2	4	1	5	1		
9	Comb 9	Yes	Y		1	.9	4	1	5	1		

**General Material Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]
1	gen Conc3NW	3155	1372	.15	.6	.145
2	gen Conc4NW	3644	1584	.15	.6	.145
3	gen Conc3LW	2085	906	.15	.6	.11
4	gen Conc4LW	2408	1047	.15	.6	.11
5	gen Alum	10600	4077	.3	1.29	.173
6	gen Steel	29000	11154	.3	.65	.49
7	RIGID	1e+7		0	0	0
8	Guy E=26800	26800	11154	.3	1.17	0

**Joint Coordinates and Temperatures**

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	1	0	0	0	0	
2	2	0	15	0	0	
3	3	0	30	0	0	
4	4	0	45	0	0	
5	5	0	60	0	0	
6	6	0	75	0	0	
7	7	0	80	0	0	
8	G1	0	0	-40	0	
9	G2	40	0	0	0	
10	G3	0	0	40	0	
11	G4	-40	0	0	0	

**Joint Boundary Conditions**

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	G1	Reaction	Reaction	Reaction				
2	G2	Reaction	Reaction	Reaction				
3	G3	Reaction	Reaction	Reaction				
4	G4	Reaction	Reaction	Reaction				
5	1	Reaction	Reaction	Reaction				

**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	2			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
2	2	2	3			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
3	3	3	4			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
4	4	4	5			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
5	5	5	6			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
6	6	6	7			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
7	GUY1	G1	2			1/4" EHS	None	None	Guy E=26800	Typical
8	GUY2	G2	2			1/4" EHS	None	None	Guy E=26800	Typical
9	GUY3	G3	2			1/4" EHS	None	None	Guy E=26800	Typical
10	GUY4	G4	2			1/4" EHS	None	None	Guy E=26800	Typical
11	GUY5	G1	3			1/4" EHS	None	None	Guy E=26800	Typical
12	GUY6	G2	3			1/4" EHS	None	None	Guy E=26800	Typical
13	GUY7	G3	3			1/4" EHS	None	None	Guy E=26800	Typical
14	GUY8	G4	3			1/4" EHS	None	None	Guy E=26800	Typical
15	GUY9	G1	4			1/4" EHS	None	None	Guy E=26800	Typical
16	GUY10	G2	4			1/4" EHS	None	None	Guy E=26800	Typical
17	GUY11	G3	4			1/4" EHS	None	None	Guy E=26800	Typical
18	GUY12	G4	4			1/4" EHS	None	None	Guy E=26800	Typical
19	GUY13	G1	5			1/4" EHS	None	None	Guy E=26800	Typical
20	GUY14	G2	5			1/4" EHS	None	None	Guy E=26800	Typical
21	GUY15	G3	5			1/4" EHS	None	None	Guy E=26800	Typical
22	GUY16	G4	5			1/4" EHS	None	None	Guy E=26800	Typical
23	GUY17	G1	6			1/4" EHS	None	None	Guy E=26800	Typical
24	GUY18	G2	6			1/4" EHS	None	None	Guy E=26800	Typical
25	GUY19	G3	6			1/4" EHS	None	None	Guy E=26800	Typical
26	GUY20	G4	6			1/4" EHS	None	None	Guy E=26800	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	TOM	Inactive
1	1						Yes		
2	2						Yes		
3	3						Yes		
4	4						Yes		
5	5						Yes		
6	6						Yes		
7	GUY1					Tension Only	Yes		
8	GUY2					Tension Only	Yes		
9	GUY3					Tension Only	Yes		
10	GUY4					Tension Only	Yes		
11	GUY5					Tension Only	Yes		
12	GUY6					Tension Only	Yes		
13	GUY7					Tension Only	Yes		
14	GUY8					Tension Only	Yes		
15	GUY9					Tension Only	Yes		
16	GUY10					Tension Only	Yes		
17	GUY11					Tension Only	Yes		
18	GUY12					Tension Only	Yes		
19	GUY13					Tension Only	Yes		
20	GUY14					Tension Only	Yes		
21	GUY15					Tension Only	Yes		
22	GUY16					Tension Only	Yes		
23	GUY17					Tension Only	Yes		
24	GUY18					Tension Only	Yes		
25	GUY19					Tension Only	Yes		
26	GUY20					Tension Only	Yes		

**Joint Loads and Enforced Displacements (BLC 1 : Dead)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	-.046
2	2	L	Y	-.004
3	3	L	Y	-.0047
4	4	L	Y	-.0056
5	5	L	Y	-.0068
6	6	L	Y	-.008
7	2	L	Y	-.004
8	3	L	Y	-.0047
9	4	L	Y	-.0056
10	5	L	Y	-.0068
11	6	L	Y	-.008

**Joint Loads and Enforced Displacements (BLC 2 : Wind)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	.4
2	2	L	X	.0158
3	3	L	X	.0214
4	4	L	X	.0281
5	5	L	X	.0358
6	6	L	X	.0442
7	2	L	X	.0158
8	3	L	X	.0214
9	4	L	X	.0281
10	5	L	X	.0358
11	6	L	X	.0442

**Joint Loads and Enforced Displacements (BLC 3 : Earthquake)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	1	L	X	.017
2	2	L	X	.035
3	3	L	X	.035
4	4	L	X	.035
5	5	L	X	.035
6	6	L	X	.023
7	7	L	X	.006

**Joint Loads and Enforced Displacements (BLC 4 : Ice Weight)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	-.05
2	2	L	Y	-.0227
3	3	L	Y	-.0266
4	4	L	Y	-.032
5	5	L	Y	-.0383
6	6	L	Y	-.0452
7	2	L	Y	-.0227
8	3	L	Y	-.0266
9	4	L	Y	-.032
10	5	L	Y	-.0383
11	6	L	Y	-.0452

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	.05
2	2	L	X	.0045
3	3	L	X	.0061

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members) (Continued)**

	Joint Label	L.D.M	Direction	Magnitude[k.ft in.rad k*s^2/ft]
4	4	L	X	.008
5	5	L	X	.0102
6	6	L	X	.0126
7	2	L	X	.0045
8	3	L	X	.0061
9	4	L	X	.008
10	5	L	X	.0102
11	6	L	X	.0126

**Member Distributed Loads (BLC 1 : Dead)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	GUY1	T	-27.91	-27.91	0	0
2	GUY2	T	-27.91	-27.91	0	0
3	GUY3	T	-27.91	-27.91	0	0
4	GUY4	T	-27.91	-27.91	0	0
5	GUY5	T	-27.91	-27.91	0	0
6	GUY6	T	-27.91	-27.91	0	0
7	GUY7	T	-27.91	-27.91	0	0
8	GUY8	T	-27.91	-27.91	0	0
9	GUY9	T	-27.91	-27.91	0	0
10	GUY10	T	-27.91	-27.91	0	0
11	GUY11	T	-27.91	-27.91	0	0
12	GUY12	T	-27.91	-27.91	0	0
13	GUY13	T	-27.91	-27.91	0	0
14	GUY14	T	-27.91	-27.91	0	0
15	GUY15	T	-27.91	-27.91	0	0
16	GUY16	T	-27.91	-27.91	0	0
17	GUY17	T	-27.91	-27.91	0	0
18	GUY18	T	-27.91	-27.91	0	0
19	GUY19	T	-27.91	-27.91	0	0
20	GUY20	T	-27.91	-27.91	0	0

**Member Distributed Loads (BLC 2 : Wind)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	X	.0121	.0121	0	0
2	2	X	.0121	.0121	0	0
3	3	X	.0121	.0121	0	0
4	4	X	.0121	.0121	0	0
5	5	X	.0121	.0121	0	0
6	6	X	.0121	.0121	0	0

**Member Distributed Loads (BLC 4 : Ice Weight)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	Y	-.0023	-.0023	0	0
2	2	Y	-.0023	-.0023	0	0
3	3	Y	-.0023	-.0023	0	0
4	4	Y	-.0023	-.0023	0	0
5	5	Y	-.0023	-.0023	0	0
6	6	Y	-.0023	-.0023	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	X	.00089	.00089	0	0
2	2	X	.00089	.00089	0	0
3	3	X	.00089	.00089	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members) (Continued)**

Member Label	Direction	Start Magnitude[k/ft.deg]	End Magnitud...	Start Location[...	End Location[ft.%]
4	X	.00089	.00089	0	0
5	X	.00089	.00089	0	0
6	X	.00089	.00089	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	G1	max	.001	5	-.83	5	-.87	5	0	1	0	1
2		min	0	4	-1.394	1	-1.434	1	0	1	0	1
3	G2	max	1.434	1	-.052	5	0	8	0	1	0	1
4		min	.11	5	-1.394	1	0	5	0	1	0	1
5	G3	max	.001	5	-.83	5	1.434	1	0	1	0	1
6		min	0	4	-1.394	1	.87	5	0	1	0	1
7	G4	max	-1.006	6	-.989	6	0	5	0	1	0	1
8		min	-2.915	3	-3.709	3	0	3	0	1	0	1
9	1	max	0	1	6.929	3	0	9	0	1	0	1
10		min	-.111	5	4.095	6	0	3	0	1	0	1
11	Totals:	max	0	1	1.245	8	0	2				
12		min	-2.654	5	.511	6	0	3				

**Envelope Member Section Forces**

Member	Sec	Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
1	1	max	6.929	3	.114	5	0	1	0	1	0	1	1
2		min	4.095	6	0	1	0	1	0	1	0	1	1
9		max	6.824	3	0	4	0	1	0	1	0	1	3
10		min	4.017	6	-.176	3	0	1	0	1	0	1	4
11	2	max	6.281	3	.148	3	0	1	0	1	0	1	3
12		min	3.604	6	0	4	0	1	0	1	0	1	4
19		max	6.176	3	0	1	0	1	0	1	0	1	5
20		min	3.526	6	-.143	5	0	1	0	1	0	1	1
21	3	max	5.325	3	.15	5	0	1	0	1	0	1	5
22		min	2.867	6	0	1	0	1	0	1	0	1	1
29		max	5.221	3	0	4	0	1	0	1	0	1	3
30		min	2.789	6	-.142	3	0	1	0	1	0	1	1
31	4	max	4.226	3	.121	3	0	1	0	1	0	1	3
32		min	2.003	6	0	1	0	1	0	1	0	1	1
39		max	4.122	3	0	6	0	1	0	1	0	1	5
40		min	1.925	6	-.172	5	0	1	0	1	0	1	6
41	5	max	3.045	3	.04	5	0	1	0	1	0	1	5
42		min	1.064	6	-.004	9	0	1	0	1	0	1	6
49		max	2.941	3	0	1	0	1	0	1	0	1	3
50		min	.986	6	-.254	3	0	1	0	1	0	1	1
51	6	max	.151	8	.742	3	0	1	0	1	0	1	3
52		min	.067	5	0	1	0	1	0	1	0	1	1
59		max	.105	8	.646	3	0	1	0	1	0	1	1
60		min	.041	5	0	1	0	1	0	1	0	1	1
61	GUY1	max	-.285	5	0	1	.001	5	.007	5	0	1	6
62		min	-.45	1	0	6	0	1	0	1	-.029	5	3
69		max	-.285	5	0	1	.001	5	.007	5	.02	5	6
70		min	-.45	1	0	6	0	1	0	1	0	1	3
71	GUY2	max	-.086	5	0	4	0	1	0	1	0	1	7
72		min	-.45	1	0	5	0	1	0	1	0	1	5
79		max	-.086	5	0	4	0	1	0	1	0	1	5
80		min	-.45	1	0	5	0	1	0	1	0	1	4
81	GUY3	max	-.285	5	0	1	0	1	0	1	.029	5	6
82		min	-.45	1	0	6	-.001	5	-.007	5	0	1	3

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
89		5	max	-285	5	0	1	0	1	0	1	0	1	0
90			min	-.45	1	0	6	-.001	5	-.007	5	-.02	5	0
91	GUY4	1	max	-.3	9	.003	5	0	1	0	1	0	1	.065
92			min	-.581	3	0	6	0	1	0	1	0	1	0
99		5	max	-.3	9	.003	5	0	1	0	1	0	1	0
100			min	-.581	3	0	6	0	1	0	1	0	1	-.042
101	GUY5	1	max	-.259	5	0	3	.001	3	.007	5	0	1	0
102			min	-.422	1	0	6	0	1	0	1	-.037	5	0
109		5	max	-.259	5	0	3	.001	3	.007	5	.015	3	0
110			min	-.422	1	0	6	0	1	0	1	0	1	0
111	GUY6	1	max	-.036	5	0	3	0	1	0	1	0	1	.002
112			min	-.422	1	0	9	0	1	0	1	0	1	-.002
119		5	max	-.036	5	0	3	0	1	0	1	0	1	0
120			min	-.422	1	0	9	0	1	0	1	0	1	-.011
121	GUY7	1	max	-.259	5	0	3	0	1	0	1	.037	5	0
122			min	-.422	1	0	6	-.001	3	-.007	5	0	1	0
129		5	max	-.259	5	0	3	0	1	0	1	0	1	0
130			min	-.422	1	0	6	-.001	3	-.007	5	-.015	3	0
131	GUY8	1	max	-.283	9	.001	3	0	1	0	1	0	1	.046
132			min	-.572	3	0	6	0	1	0	1	0	1	0
139		5	max	-.283	9	.001	3	0	1	0	1	0	1	0
140			min	-.572	3	0	6	0	1	0	1	0	1	-.015
141	GUY9	1	max	-.24	5	0	3	.001	5	.004	3	0	1	0
142			min	-.403	1	0	6	0	6	0	1	-.046	5	0
149		5	max	-.24	5	0	3	.001	5	.004	3	.028	5	0
150			min	-.403	1	0	6	0	6	0	1	0	4	0
151	GUY10	1	max	0	5	0	4	0	1	0	1	0	1	0
152			min	-.403	1	0	3	0	1	0	1	0	1	-.006
159		5	max	0	5	0	4	0	1	0	1	0	1	.005
160			min	-.403	1	0	3	0	1	0	1	0	1	0
161	GUY11	1	max	-.24	5	0	3	0	6	0	1	.046	5	0
162			min	-.403	1	0	6	-.001	5	-.004	3	0	1	0
169		5	max	-.24	5	0	3	0	6	0	1	0	4	0
170			min	-.403	1	0	6	-.001	5	-.004	3	-.028	5	0
171	GUY12	1	max	-.277	9	.001	5	0	1	0	1	0	1	.048
172			min	-.593	3	0	6	0	1	0	1	0	1	0
179		5	max	-.277	9	.001	5	0	1	0	1	0	1	0
180			min	-.593	3	0	6	0	1	0	1	0	1	-.028
181	GUY13	1	max	-.232	5	0	3	0	2	.005	5	0	1	0
182			min	-.397	1	0	6	0	1	0	1	-.026	3	0
189		5	max	-.232	5	0	3	0	2	.005	5	.004	2	0
190			min	-.397	1	0	6	0	1	0	1	-.01	5	0
191	GUY14	1	max	0	5	0	5	0	1	0	1	0	1	.013
192			min	-.397	1	0	9	0	1	0	1	0	1	-.003
199		5	max	0	5	0	5	0	1	0	1	0	1	.001
200			min	-.397	1	0	9	0	1	0	1	0	1	-.035
201	GUY15	1	max	-.232	5	0	3	0	1	0	1	.026	3	0
202			min	-.397	1	0	6	0	2	-.005	5	0	1	0
209		5	max	-.232	5	0	3	0	1	0	1	.01	5	0
210			min	-.397	1	0	6	0	2	-.005	5	-.004	2	0
211	GUY16	1	max	-.269	9	0	2	0	1	0	1	0	1	.02
212			min	-.541	3	0	7	0	1	0	1	0	1	0
219		5	max	-.269	9	0	2	0	1	0	1	0	1	.018
220			min	-.541	3	0	7	0	1	0	1	0	1	-.002
221	GUY17	1	max	-.229	5	0	5	0	1	.028	5	.135	5	0
222			min	-.399	1	0	1	-.006	5	0	1	0	1	0
229		5	max	-.229	5	0	5	0	1	.028	5	0	1	0

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
230		min	-399	1	0	1	-.006	5	0	1	-.384	5	0	3
231	GUY18	1	max	0	2	0	8	0	1	0	1	.011	8	
232		min	-399	1	0	1	0	1	0	1	0	1	0	
239		5	max	0	2	0	8	0	1	0	1	0	2	
240		min	-399	1	0	1	0	1	0	1	0	1	-.027	
241	GUY19	1	max	-.229	5	0	5	.006	5	0	1	0	1	0
242		min	-399	1	0	1	0	1	-.028	5	-.135	5	0	1
249		5	max	-.229	5	0	5	.006	5	0	1	.384	5	0
250		min	-399	1	0	1	0	1	-.028	5	0	1	0	3
251	GUY20	1	max	-.289	6	0	7	0	1	0	1	0	1	0
252		min	-2.577	3	-.007	5	0	1	0	1	0	1	-.177	5
259		5	max	-.289	6	0	7	0	1	0	1	0	1	.455
260		min	-2.577	3	-.007	5	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	1	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
2		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
9		5	max	-.015	6	0	1	0	1	0	1	NC	1	NC	1
10		min	-.025	3	-.107	3	0	1	0	1	NC	3	NC	1	
11	2	1	max	-.015	6	0	1	0	1	0	1	NC	1	NC	1
12		min	-.025	3	-.107	3	0	1	0	1	NC	3	NC	1	
19		5	max	-.028	6	0	1	0	1	0	1	NC	1	NC	1
20		min	-.048	3	-.164	5	0	1	0	1	NC	5	NC	1	
21	3	1	max	-.028	6	0	1	0	1	0	1	NC	1	NC	1
22		min	-.048	3	-.164	5	0	1	0	1	NC	5	NC	1	
29		5	max	-.038	6	0	1	0	1	0	1	NC	1	NC	1
30		min	-.067	3	-.301	5	0	1	0	1	NC	5	NC	1	
31	4	1	max	-.038	6	0	1	0	1	0	1	NC	1	NC	1
32		min	-.067	3	-.301	5	0	1	0	1	NC	5	NC	1	
39		5	max	-.045	6	0	1	0	1	0	1	NC	1	NC	1
40		min	-.082	3	-.354	5	0	1	0	1	NC	5	NC	1	
41	5	1	max	-.045	6	0	1	0	1	0	1	NC	1	NC	1
42		min	-.082	3	-.354	5	0	1	0	1	NC	5	NC	1	
49		5	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
50		min	-.093	3	-4.97	5	0	1	0	1	38.999	5	NC	1	
51	6	1	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
52		min	-.093	3	-4.97	5	0	1	0	1	NC	5	NC	1	
59		5	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
60		min	-.093	3	-9.686	5	0	1	0	1	12.723	5	NC	1	
61	GUY1	1	max	0	1	0	1	0	1	4.262e-3	5	NC	1	NC	1
62		min	0	1	0	1	0	1	-1.88e-5	6	NC	1	NC	1	
69		5	max	-.005	6	-.014	6	0	1	5.839e-4	5	NC	6	NC	1
70		min	-.009	3	-.023	3	-.107	3	-3.402e-5	6	NC	3	4783.747	3	
71	GUY2	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
72		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
79		5	max	-.007	7	.018	5	0	1	0	1	NC	5	NC	1
80		min	-.109	3	-.022	1	0	1	0	1	NC	1	NC	1	
81	GUY3	1	max	0	1	0	1	0	1	1.88e-5	6	NC	1	NC	1
82		min	0	1	0	1	0	1	-4.262e-3	5	NC	1	NC	1	
89		5	max	-.005	6	-.014	6	.107	3	3.402e-5	6	NC	6	4783.747	3
90		min	-.009	3	-.023	3	0	1	-5.839e-4	5	NC	3	NC	1	
91	GUY4	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
92		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
99		5	max	.093	5	-.017	6	0	1	0	1	NC	6	NC	1
100		min	-.008	1	-.061	3	0	1	0	1	NC	3	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
101	GUY5	1	max	0	1	0	1	0	1	3.735e-3	5	NC	1	NC	1
102			min	0	1	0	1	0	1	-1.539e-5	6	NC	1	NC	1
109		5	max	-0.017	6	-0.022	6	0	1	0	1	NC	6	NC	1
110			min	-0.029	3	-0.038	3	-0.164	5	-8.338e-4	5	NC	3	NC	5
111	GUY6	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
112			min	0	1	0	1	0	1	0	1	NC	1	NC	1
119		5	max	-0.023	7	.067	5	0	1	0	1	NC	5	NC	1
120			min	-0.159	3	-0.035	1	0	1	0	1	NC	1	NC	1
121	GUY7	1	max	0	1	0	1	0	1	1.539e-5	6	NC	1	NC	1
122			min	0	1	0	1	0	1	-3.735e-3	5	NC	1	NC	1
129		5	max	-0.017	6	-0.022	6	.164	5	8.338e-4	5	NC	6	NC	5
130			min	-0.029	3	-0.038	3	0	1	0	1	NC	3	NC	1
131	GUY8	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
132			min	0	1	0	1	0	1	0	1	NC	1	NC	1
139		5	max	.108	5	-.03	7	0	1	0	1	NC	7	NC	1
140			min	-0.026	1	-.136	3	0	1	0	1	NC	3	NC	1
141	GUY9	1	max	0	1	0	1	0	1	3.184e-3	3	NC	1	NC	1
142			min	0	1	0	1	0	1	-1.222e-5	6	NC	1	NC	1
149		5	max	-0.028	6	-0.025	6	0	1	5.183e-5	5	NC	6	NC	1
150			min	-.05	3	-.044	3	-.301	5	-1.283e-4	2	NC	3	2399.175	5
151	GUY10	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
152			min	0	1	0	1	0	1	0	1	NC	1	NC	1
159		5	max	-0.039	7	.188	5	0	1	0	1	3844.531	5	NC	1
160			min	-0.242	5	-0.039	1	0	1	0	1	NC	1	NC	1
161	GUY11	1	max	0	1	0	1	0	1	1.222e-5	6	NC	1	NC	1
162			min	0	1	0	1	0	1	-3.184e-3	3	NC	1	NC	1
169		5	max	-0.028	6	-0.025	6	.301	5	1.283e-4	2	NC	6	2399.175	5
170			min	-.05	3	-.044	3	0	1	-5.183e-5	5	NC	3	NC	1
171	GUY12	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
172			min	0	1	0	1	0	1	0	1	NC	1	NC	1
179		5	max	.158	5	-.034	7	0	1	0	1	NC	7	NC	1
180			min	-.044	1	-.262	5	0	1	0	1	NC	5	NC	1
181	GUY13	1	max	0	1	0	1	0	1	2.729e-3	3	NC	1	NC	1
182			min	0	1	0	1	0	1	-9.741e-6	6	NC	1	NC	1
189		5	max	-0.038	6	-0.025	6	0	1	7.046e-6	9	NC	6	NC	1
190			min	-.068	3	-.046	3	-.354	5	-2.215e-3	5	NC	3	NC	5
191	GUY14	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
192			min	0	1	0	1	0	1	0	1	NC	1	NC	1
199		5	max	-.051	7	.256	5	0	1	0	1	NC	5	NC	1
200			min	-.258	3	-.039	1	0	1	0	1	NC	1	NC	1
201	GUY15	1	max	0	1	0	1	0	1	9.741e-6	6	NC	1	NC	1
202			min	0	1	0	1	0	1	-2.729e-3	3	NC	1	NC	1
209		5	max	-0.038	6	-0.025	6	.354	5	2.215e-3	5	NC	6	NC	5
210			min	-.068	3	-.046	3	0	1	-7.046e-6	9	NC	3	NC	1
211	GUY16	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
212			min	0	1	0	1	0	1	0	1	NC	1	NC	1
219		5	max	.139	5	-.034	7	0	1	0	1	NC	7	NC	1
220			min	-.059	1	-.333	5	0	1	0	1	NC	5	NC	1
221	GUY17	1	max	0	1	0	1	0	1	2.375e-3	3	NC	1	NC	1
222			min	0	1	0	1	0	1	-7.869e-6	6	NC	1	NC	1
229		5	max	-.043	6	-0.023	6	0	1	0	1	NC	6	NC	1
230			min	-.082	3	-.044	3	-4.97	5	-2.829e-2	5	NC	3	NC	5
231	GUY18	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
232			min	0	1	0	1	0	1	0	1	NC	1	NC	1
239		5	max	-.059	7	4.348	5	0	1	0	1	NC	5	NC	1
240			min	-2.409	5	-.036	1	0	1	0	1	NC	1	NC	1
241	GUY19	1	max	0	1	0	1	0	1	7.869e-6	6	NC	1	NC	1

**Envelope Member Section Deflections (Continued)**

	Member	Sec		x [in]	lc	y [in]	lc	z [in]	lc	x Rotate fr...	lc	(n) L/y Ratio	lc	(n) L/z Ratio	lc
242			min	0	1	0	1	0	1	-2.375e-3	3	NC	1	NC	1
249		5	max	-0.043	6	-0.023	6	4.97	5	2.829e-2	5	NC	6	NC	5
250			min	-0.082	3	-0.044	3	0	1	0	1	NC	3	NC	1
251	GUY20	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
252			min	0	1	0	1	0	1	0	1	NC	1	NC	1
259		5	max	2.269	5	-0.031	7	0	1	0	1	NC	7	NC	1
260			min	-0.067	1	-4.422	5	0	1	0	1	NC	5	NC	1

**Basic Load Cases**

	BLC Description	Category	X Gr...	Y Grav...	Z Grav...	Joint	Point	Distributed	Area (... Surfac...
1	Dead	DL		-1		11		20	
2	Wind	WL				11		6	
3	Earthquake	EL				7			
4	Ice Weight	DL				11		6	
5	Wind on Iced Members	WL				11		6	

**Load Combinations**

	Description	Solve	PDelta	SRSS	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Comb 1	Yes	Y		1	1.4						
2	Comb 2	Yes	Y		1	1.2	2	.8				
3	Comb 3	Yes	Y		1	1.2	2	1.6				
4	Comb 4	Yes	Y		1	1.2	3	1				
5	Comb 5	Yes	Y		1	.9	2	1.6				
6	Comb 6	Yes	Y		1	.9	3	1				
7	Comb 7	Yes	Y		1	1.2	4	.2				
8	Comb 8	Yes	Y		1	1.2	4	1	5	1		
9	Comb 9	Yes	Y		1	.9	4	1	5	1		

**General Material Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]
1	gen Conc3NW	3155	1372	.15	.6	.145
2	gen Conc4NW	3644	1584	.15	.6	.145
3	gen Conc3LW	2085	906	.15	.6	.11
4	gen Conc4LW	2408	1047	.15	.6	.11
5	gen Alum	10600	4077	.3	1.29	.173
6	gen Steel	29000	11154	.3	.65	.49
7	RIGID	1e+7		0	0	0
8	Guy E=26800	26800	11154	.3	1.17	0

**Joint Coordinates and Temperatures**

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	1	0	0	0	0	
2	2	0	15	0	0	
3	3	0	30	0	0	
4	4	0	45	0	0	
5	5	0	60	0	0	
6	6	0	75	0	0	
7	7	0	80	0	0	
8	G1	0	0	-40	0	
9	G2	40	0	0	0	
10	G3	0	0	40	0	
11	G4	-40	0	0	0	

**Joint Boundary Conditions**

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	G1	Reaction	Reaction	Reaction				
2	G2	Reaction	Reaction	Reaction				
3	G3	Reaction	Reaction	Reaction				
4	G4	Reaction	Reaction	Reaction				
5	1	Reaction	Reaction	Reaction				

**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	2			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
2	2	2	3			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
3	3	3	4			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
4	4	4	5			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
5	5	5	6			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
6	6	6	7			PIPE 2.5	Column	Pipe	A572 Gr.50	Typical
7	GUY1	G1	2			1/4" EHS	None	None	Guy E=26800	Typical
8	GUY2	G2	2			1/4" EHS	None	None	Guy E=26800	Typical
9	GUY3	G3	2			1/4" EHS	None	None	Guy E=26800	Typical
10	GUY4	G4	2			1/4" EHS	None	None	Guy E=26800	Typical
11	GUY5	G1	3			1/4" EHS	None	None	Guy E=26800	Typical
12	GUY6	G2	3			1/4" EHS	None	None	Guy E=26800	Typical
13	GUY7	G3	3			1/4" EHS	None	None	Guy E=26800	Typical
14	GUY8	G4	3			1/4" EHS	None	None	Guy E=26800	Typical
15	GUY9	G1	4			1/4" EHS	None	None	Guy E=26800	Typical
16	GUY10	G2	4			1/4" EHS	None	None	Guy E=26800	Typical
17	GUY11	G3	4			1/4" EHS	None	None	Guy E=26800	Typical
18	GUY12	G4	4			1/4" EHS	None	None	Guy E=26800	Typical
19	GUY13	G1	5			1/4" EHS	None	None	Guy E=26800	Typical
20	GUY14	G2	5			1/4" EHS	None	None	Guy E=26800	Typical
21	GUY15	G3	5			1/4" EHS	None	None	Guy E=26800	Typical
22	GUY16	G4	5			1/4" EHS	None	None	Guy E=26800	Typical
23	GUY17	G1	6			1/4" EHS	None	None	Guy E=26800	Typical
24	GUY18	G2	6			1/4" EHS	None	None	Guy E=26800	Typical
25	GUY19	G3	6			1/4" EHS	None	None	Guy E=26800	Typical
26	GUY20	G4	6			1/4" EHS	None	None	Guy E=26800	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	TOM	Inactive
1	1						Yes		
2	2						Yes		
3	3						Yes		
4	4						Yes		
5	5						Yes		
6	6						Yes		
7	GUY1					Tension Only	Yes		
8	GUY2					Tension Only	Yes		
9	GUY3					Tension Only	Yes		
10	GUY4					Tension Only	Yes		
11	GUY5					Tension Only	Yes		
12	GUY6					Tension Only	Yes		
13	GUY7					Tension Only	Yes		
14	GUY8					Tension Only	Yes		
15	GUY9					Tension Only	Yes		
16	GUY10					Tension Only	Yes		
17	GUY11					Tension Only	Yes		
18	GUY12					Tension Only	Yes		
19	GUY13					Tension Only	Yes		
20	GUY14					Tension Only	Yes		
21	GUY15					Tension Only	Yes		
22	GUY16					Tension Only	Yes		
23	GUY17					Tension Only	Yes		
24	GUY18					Tension Only	Yes		
25	GUY19					Tension Only	Yes		
26	GUY20					Tension Only	Yes		

**Joint Loads and Enforced Displacements (BLC 1 : Dead)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	-.046
2	2	L	Y	-.004
3	3	L	Y	-.0047
4	4	L	Y	-.0056
5	5	L	Y	-.0068
6	6	L	Y	-.008
7	2	L	Y	-.004
8	3	L	Y	-.0047
9	4	L	Y	-.0056
10	5	L	Y	-.0068
11	6	L	Y	-.008

**Joint Loads and Enforced Displacements (BLC 2 : Wind)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	.4
2	2	L	X	.0068
3	3	L	X	.0092
4	4	L	X	.012
5	5	L	X	.0153
6	6	L	X	.0189
7	2	L	X	.0068
8	3	L	X	.0092
9	4	L	X	.012
10	5	L	X	.0153
11	6	L	X	.0189

**Joint Loads and Enforced Displacements (BLC 3 : Earthquake)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	1	L	X	.017
2	2	L	X	.035
3	3	L	X	.035
4	4	L	X	.035
5	5	L	X	.035
6	6	L	X	.023
7	7	L	X	.006

**Joint Loads and Enforced Displacements (BLC 4 : Ice Weight)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	Y	0
2	2	L	Y	0
3	3	L	Y	0
4	4	L	Y	0
5	5	L	Y	0
6	6	L	Y	0
7	2	L	Y	0
8	3	L	Y	0
9	4	L	Y	0
10	5	L	Y	0
11	6	L	Y	0

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members)**

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	7	L	X	0
2	2	L	X	0
3	3	L	X	0

**Joint Loads and Enforced Displacements (BLC 5 : Wind on Iced Members) (Continued)**

	Joint Label	L.D.M	Direction	Magnitude[k.k-ft in.rad k*s^2/ft]
4	4	L	X	0
5	5	L	X	0
6	6	L	X	0
7	2	L	X	0
8	3	L	X	0
9	4	L	X	0
10	5	L	X	0
11	6	L	X	0

**Member Distributed Loads (BLC 1 : Dead)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	GUY1	T	-27.91	-27.91	0	0
2	GUY2	T	-27.91	-27.91	0	0
3	GUY3	T	-27.91	-27.91	0	0
4	GUY4	T	-27.91	-27.91	0	0
5	GUY5	T	-27.91	-27.91	0	0
6	GUY6	T	-27.91	-27.91	0	0
7	GUY7	T	-27.91	-27.91	0	0
8	GUY8	T	-27.91	-27.91	0	0
9	GUY9	T	-27.91	-27.91	0	0
10	GUY10	T	-27.91	-27.91	0	0
11	GUY11	T	-27.91	-27.91	0	0
12	GUY12	T	-27.91	-27.91	0	0
13	GUY13	T	-27.91	-27.91	0	0
14	GUY14	T	-27.91	-27.91	0	0
15	GUY15	T	-27.91	-27.91	0	0
16	GUY16	T	-27.91	-27.91	0	0
17	GUY17	T	-27.91	-27.91	0	0
18	GUY18	T	-27.91	-27.91	0	0
19	GUY19	T	-27.91	-27.91	0	0
20	GUY20	T	-27.91	-27.91	0	0

**Member Distributed Loads (BLC 2 : Wind)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	X	.0052	.0052	0	0
2	2	X	.0052	.0052	0	0
3	3	X	.0052	.0052	0	0
4	4	X	.0052	.0052	0	0
5	5	X	.0052	.0052	0	0
6	6	X	.0052	.0052	0	0

**Member Distributed Loads (BLC 4 : Ice Weight)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	Y	0	0	0	0
2	2	Y	0	0	0	0
3	3	Y	0	0	0	0
4	4	Y	0	0	0	0
5	5	Y	0	0	0	0
6	6	Y	0	0	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members)**

	Member Label	Direction	Start Magnitude[k/ft,deg]	End Magnitud...	Start Location[...]	End Location[ft,%]
1	1	X	0	0	0	0
2	2	X	0	0	0	0
3	3	X	0	0	0	0

**Member Distributed Loads (BLC 5 : Wind on Iced Members) (Continued)**

Member Label	Direction	Start Magnitude[k/ft.deg]	End Magnitud...	Start Location[...	End Location[ft.%]
4	X	0	0	0	0
5	X	0	0	0	0
6	X	0	0	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	G1	max	.001	5	-.846	5	-.882	5	0	1	0	1
2		min	0	4	-1.394	1	-1.434	1	0	1	0	1
3	G2	max	1.434	1	-.459	5	0	2	0	1	0	1
4		min	.538	5	-1.394	1	0	6	0	1	0	1
5	G3	max	.001	5	-.846	5	1.434	1	0	1	0	1
6		min	0	4	-1.394	1	.882	5	0	1	0	1
7	G4	max	-.922	9	-.896	9	0	5	0	1	0	1
8		min	-2.27	3	-2.899	3	0	1	0	1	0	1
9	1	max	0	7	6.57	3	0	9	0	1	0	1
10		min	-.047	5	4.095	6	0	5	0	1	0	1
11	Totals:	max	0	7	.795	1	0	2				
12		min	-1.505	5	.511	6	0	1				

**Envelope Member Section Forces**

Member	Sec	Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
1	1	max	6.57	3	.049	3	0	1	0	1	0	1	1
2		min	4.095	6	0	1	0	1	0	1	0	1	1
9		max	6.465	3	0	4	0	1	0	1	0	1	5
10		min	4.017	6	-.076	5	0	1	0	1	0	1	4
11	2	max	5.92	3	.062	3	0	1	0	1	0	1	3
12		min	3.604	6	0	4	0	1	0	1	0	1	4
19		max	5.816	3	0	1	0	1	0	1	0	1	5
20		min	3.526	6	-.063	5	0	1	0	1	0	1	1
21	3	max	4.958	3	.065	5	0	1	0	1	0	1	3
22		min	2.867	6	0	1	0	1	0	1	0	1	1
29		max	4.854	3	0	4	0	1	0	1	0	1	3
30		min	2.789	6	-.06	3	0	1	0	1	0	1	1
31	4	max	3.847	3	.044	3	0	1	0	1	0	1	3
32		min	2.003	6	0	1	0	1	0	1	0	1	1
39		max	3.742	3	0	6	0	1	0	1	0	1	5
40		min	1.925	6	-.082	5	0	1	0	1	0	1	6
41	5	max	2.649	3	0	1	0	1	0	1	0	1	5
42		min	1.064	6	-.063	3	0	1	0	1	0	1	6
49		max	2.544	3	0	1	0	1	0	1	0	1	3
50		min	.986	6	-.188	3	0	1	0	1	0	1	1
51	6	max	.105	1	.687	3	0	1	0	1	0	1	3
52		min	.067	5	0	1	0	1	0	1	0	1	1
59		max	.064	1	.645	3	0	1	0	1	0	1	1
60		min	.041	5	0	1	0	1	0	1	0	1	1
61	GUY1	max	-.286	5	0	1	0	5	.008	5	0	1	6
62		min	-.45	1	0	6	0	1	0	1	-.026	5	3
69		max	-.286	5	0	1	0	5	.008	5	.015	5	6
70		min	-.45	1	0	6	0	1	0	1	0	1	1
71	GUY2	max	-.202	5	0	4	0	1	0	1	0	1	9
72		min	-.45	1	0	5	0	1	0	1	0	1	5
79		max	-.202	5	0	4	0	1	0	1	0	1	5
80		min	-.45	1	0	5	0	1	0	1	0	1	4
81	GUY3	max	-.286	5	0	1	0	1	0	1	.026	5	6
82		min	-.45	1	0	6	0	5	-.008	5	0	1	3

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Moment[k...	lc
89		5	max	-286	5	0	1	0	1	0	1	0	1	0
90			min	-.45	1	0	6	0	5	-.008	5	-.015	5	0
91	GUY4	1	max	-.289	9	.002	5	0	1	0	1	0	1	.06
92			min	-.467	3	0	6	0	1	0	1	0	1	0
99		5	max	-.289	9	.002	5	0	1	0	1	0	1	0
100			min	-.467	3	0	6	0	1	0	1	0	1	-.034
101	GUY5	1	max	-.262	5	0	3	.001	5	.007	5	0	1	0
102			min	-.422	1	0	6	0	1	0	1	-.037	5	0
109		5	max	-.262	5	0	3	.001	5	.007	5	.016	5	0
110			min	-.422	1	0	6	0	1	0	1	0	1	0
111	GUY6	1	max	-.166	5	0	3	0	1	0	1	0	1	.002
112			min	-.422	1	0	6	0	1	0	1	0	1	0
119		5	max	-.166	5	0	3	0	1	0	1	0	1	0
120			min	-.422	1	0	6	0	1	0	1	0	1	-.007
121	GUY7	1	max	-.262	5	0	3	0	1	0	1	.037	5	0
122			min	-.422	1	0	6	-.001	5	-.007	5	0	1	0
129		5	max	-.262	5	0	3	0	1	0	1	0	1	0
130			min	-.422	1	0	6	-.001	5	-.007	5	-.016	5	0
131	GUY8	1	max	-.271	9	.001	5	0	1	0	1	0	1	.046
132			min	-.449	3	0	9	0	1	0	1	0	1	0
139		5	max	-.271	9	.001	5	0	1	0	1	0	1	0
140			min	-.449	3	0	9	0	1	0	1	0	1	-.018
141	GUY9	1	max	-.245	5	0	3	.001	5	.004	3	0	1	0
142			min	-.403	1	0	6	0	6	0	1	-.044	5	0
149		5	max	-.245	5	0	3	.001	5	.004	3	.026	5	0
150			min	-.403	1	0	6	0	6	0	1	0	4	0
151	GUY10	1	max	-.14	5	0	4	0	1	0	1	0	1	0
152			min	-.403	1	0	5	0	1	0	1	0	1	-.005
159		5	max	-.14	5	0	4	0	1	0	1	0	1	.007
160			min	-.403	1	0	5	0	1	0	1	0	1	0
161	GUY11	1	max	-.245	5	0	3	0	6	0	1	.044	5	0
162			min	-.403	1	0	6	-.001	5	-.004	3	0	1	0
169		5	max	-.245	5	0	3	0	6	0	1	0	4	0
170			min	-.403	1	0	6	-.001	5	-.004	3	-.026	5	0
171	GUY12	1	max	-.259	9	.001	5	0	1	0	1	0	1	.045
172			min	-.44	3	0	6	0	1	0	1	0	1	0
179		5	max	-.259	9	.001	5	0	1	0	1	0	1	0
180			min	-.44	3	0	6	0	1	0	1	0	1	-.028
181	GUY13	1	max	-.237	5	0	3	0	3	.004	5	0	1	0
182			min	-.397	1	0	6	0	1	0	1	-.031	3	0
189		5	max	-.237	5	0	3	0	3	.004	5	.01	2	0
190			min	-.397	1	0	6	0	1	0	1	0	1	0
191	GUY14	1	max	-.222	5	0	5	0	1	0	1	0	1	.008
192			min	-.397	1	0	2	0	1	0	1	0	1	0
199		5	max	-.222	5	0	5	0	1	0	1	0	1	.002
200			min	-.397	1	0	2	0	1	0	1	0	1	-.018
201	GUY15	1	max	-.237	5	0	3	0	1	0	1	.031	3	0
202			min	-.397	1	0	6	0	3	-.004	5	0	1	0
209		5	max	-.237	5	0	3	0	1	0	1	0	1	0
210			min	-.397	1	0	6	0	3	-.004	5	-.01	2	0
211	GUY16	1	max	-.252	5	0	3	0	1	0	1	0	1	.026
212			min	-.397	1	0	9	0	1	0	1	0	1	0
219		5	max	-.252	5	0	3	0	1	0	1	0	1	.001
220			min	-.397	1	0	9	0	1	0	1	0	1	-.01
221	GUY17	1	max	-.236	5	0	5	0	1	.027	5	.135	5	0
222			min	-.399	1	0	1	-.006	5	0	1	0	1	0
229		5	max	-.236	5	0	5	0	1	.027	5	0	1	0

**Envelope Member Section Forces (Continued)**

Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque...	lc	y-y Momen...	lc	z-z Momen[k...	lc
230		min	-399	1	0	1	-006	5	0	1	-372	5	0	3
231	GUY18	max	0	2	0	4	0	1	0	1	0	1	0	6
232		min	-399	1	0	1	0	1	0	1	0	1	0	1
239		max	0	2	0	4	0	1	0	1	0	1	0	2
240		min	-399	1	0	1	0	1	0	1	0	1	-003	4
241	GUY19	max	-236	5	0	5	.006	5	0	1	0	1	0	6
242		min	-399	1	0	1	0	1	-027	5	-135	5	0	1
249		max	-236	5	0	5	.006	5	0	1	.372	5	0	6
250		min	-399	1	0	1	0	1	-027	5	0	1	0	3
251	GUY20	max	-256	9	0	9	0	1	0	1	0	1	0	9
252		min	-2.114	3	-.007	5	0	1	0	1	0	1	-.175	5
259		max	-256	9	0	9	0	1	0	1	0	1	.439	5
260		min	-2.114	3	-.007	5	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	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
2		min	0	1	0	1	0	1	0	1	NC	1	NC	1
9		max	-.015	6	0	1	0	1	0	1	NC	1	NC	1
10		min	-.024	3	-.045	3	0	1	0	1	NC	3	NC	1
11	2	max	-.015	6	0	1	0	1	0	1	NC	1	NC	1
12		min	-.024	3	-.045	3	0	1	0	1	NC	3	NC	1
19		max	-.028	6	0	1	0	1	0	1	NC	1	NC	1
20		min	-.045	3	-.071	5	0	1	0	1	NC	5	NC	1
21	3	max	-.028	6	0	1	0	1	0	1	NC	1	NC	1
22		min	-.045	3	-.071	5	0	1	0	1	NC	5	NC	1
29		max	-.038	6	0	1	0	1	0	1	NC	1	NC	1
30		min	-.063	3	-.115	3	0	1	0	1	NC	3	NC	1
31	4	max	-.038	6	0	1	0	1	0	1	NC	1	NC	1
32		min	-.063	3	-.115	3	0	1	0	1	NC	3	NC	1
39		max	-.045	6	0	1	0	1	0	1	NC	1	NC	1
40		min	-.077	3	-.045	6	0	1	0	1	NC	6	NC	1
41	5	max	-.045	6	0	1	0	1	0	1	NC	1	NC	1
42		min	-.077	3	-.045	6	0	1	0	1	NC	6	NC	1
49		max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
50		min	-.086	3	-3.972	5	0	1	0	1	45.577	5	NC	1
51	6	max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
52		min	-.086	3	-3.972	5	0	1	0	1	NC	5	NC	1
59		max	-.049	6	0	1	0	1	0	1	NC	1	NC	1
60		min	-.086	3	-8.464	5	0	1	0	1	13.358	5	NC	1
61	GUY1	max	0	1	0	1	0	1	4.37e-3	5	NC	1	NC	1
62		min	0	1	0	1	0	1	-1.88e-5	6	NC	1	NC	1
69		max	-.005	6	-.014	6	0	1	2.163e-4	3	NC	6	NC	1
70		min	-.008	3	-.022	3	-.045	3	-3.402e-5	6	NC	3	NC	3
71	GUY2	max	0	1	0	1	0	1	0	1	NC	1	NC	1
72		min	0	1	0	1	0	1	0	1	NC	1	NC	1
79		max	-.005	9	-.002	5	0	1	0	1	NC	5	NC	1
80		min	-.051	3	-.022	1	0	1	0	1	NC	1	NC	1
81	GUY3	max	0	1	0	1	0	1	1.88e-5	6	NC	1	NC	1
82		min	0	1	0	1	0	1	-4.37e-3	5	NC	1	NC	1
89		max	-.005	6	-.014	6	.045	3	3.402e-5	6	NC	6	NC	3
90		min	-.008	3	-.022	3	0	1	-2.163e-4	3	NC	3	NC	1
91	GUY4	max	0	1	0	1	0	1	0	1	NC	1	NC	1
92		min	0	1	0	1	0	1	0	1	NC	1	NC	1
99		max	.036	5	-.014	9	0	1	0	1	NC	9	NC	1
100		min	-.008	1	-.038	3	0	1	0	1	NC	3	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
101	GUY5	1	max	0	1	0	1	0	1	3.825e-3	5	NC	1	NC	1
102			min	0	1	0	1	0	1	-1.539e-5	6	NC	1	NC	1
109		5	max	-0.017	6	-0.022	6	0	1	0	1	NC	6	NC	1
110			min	-0.027	3	-0.036	3	-0.071	5	-4.44e-4	5	NC	3	NC	5
111	GUY6	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
112			min	0	1	0	1	0	1	0	1	NC	1	NC	1
119		5	max	-0.017	9	.013	5	0	1	0	1	NC	5	NC	1
120			min	-0.084	3	-0.035	1	0	1	0	1	NC	1	NC	1
121	GUY7	1	max	0	1	0	1	0	1	1.539e-5	6	NC	1	NC	1
122			min	0	1	0	1	0	1	-3.825e-3	5	NC	1	NC	1
129		5	max	-0.017	6	-0.022	6	.071	5	4.44e-4	5	NC	6	NC	5
130			min	-0.027	3	-0.036	3	0	1	0	1	NC	3	NC	1
131	GUY8	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
132			min	0	1	0	1	0	1	0	1	NC	1	NC	1
139		5	max	.035	5	-0.022	9	0	1	0	1	NC	9	NC	1
140			min	-0.026	1	-0.079	3	0	1	0	1	NC	3	NC	1
141	GUY9	1	max	0	1	0	1	0	1	3.253e-3	5	NC	1	NC	1
142			min	0	1	0	1	0	1	-1.222e-5	6	NC	1	NC	1
149		5	max	-0.028	6	-0.025	6	0	1	2.524e-4	5	NC	6	NC	1
150			min	-0.047	3	-0.042	3	-.115	3	-6.008e-5	4	NC	3	NC	3
151	GUY10	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
152			min	0	1	0	1	0	1	0	1	NC	1	NC	1
159		5	max	-0.028	9	.05	5	0	1	0	1	NC	5	NC	1
160			min	-0.123	3	-0.039	1	0	1	0	1	NC	1	NC	1
161	GUY11	1	max	0	1	0	1	0	1	1.222e-5	6	NC	1	NC	1
162			min	0	1	0	1	0	1	-3.253e-3	5	NC	1	NC	1
169		5	max	-0.028	6	-0.025	6	.115	3	6.008e-5	4	NC	6	NC	3
170			min	-0.047	3	-0.042	3	0	1	-2.524e-4	5	NC	3	NC	1
171	GUY12	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
172			min	0	1	0	1	0	1	0	1	NC	1	NC	1
179		5	max	.036	5	-0.025	9	0	1	0	1	NC	9	NC	1
180			min	-0.044	1	-0.127	3	0	1	0	1	NC	3	NC	1
181	GUY13	1	max	0	1	0	1	0	1	2.779e-3	5	NC	1	NC	1
182			min	0	1	0	1	0	1	-9.741e-6	6	NC	1	NC	1
189		5	max	-0.038	6	-0.025	6	0	1	1.13e-4	2	NC	6	NC	1
190			min	-0.064	3	-0.043	3	-.045	6	-1.019e-3	5	NC	3	NC	6
191	GUY14	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
192			min	0	1	0	1	0	1	0	1	NC	1	NC	1
199		5	max	-0.038	9	.013	6	0	1	0	1	NC	6	NC	1
200			min	-0.075	4	-0.039	1	0	1	0	1	NC	1	NC	1
201	GUY15	1	max	0	1	0	1	0	1	9.741e-6	6	NC	1	NC	1
202			min	0	1	0	1	0	1	-2.779e-3	5	NC	1	NC	1
209		5	max	-0.038	6	-0.025	6	.045	6	1.019e-3	5	NC	6	NC	6
210			min	-0.064	3	-0.043	3	0	1	-1.13e-4	2	NC	3	NC	1
211	GUY16	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
212			min	0	1	0	1	0	1	0	1	NC	1	NC	1
219		5	max	-0.012	6	-0.025	9	0	1	0	1	NC	9	NC	1
220			min	-0.059	1	-0.071	4	0	1	0	1	NC	4	NC	1
221	GUY17	1	max	0	1	0	1	0	1	2.411e-3	5	NC	1	NC	1
222			min	0	1	0	1	0	1	-7.869e-6	6	NC	1	NC	1
229		5	max	-0.043	6	-0.023	6	0	1	0	1	NC	6	NC	1
230			min	-0.076	3	-0.041	3	-3.972	5	-2.68e-2	5	NC	3	NC	5
231	GUY18	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
232			min	0	1	0	1	0	1	0	1	NC	1	NC	1
239		5	max	-0.043	9	3.471	5	0	1	0	1	NC	5	NC	1
240			min	-1.933	5	-0.036	1	0	1	0	1	NC	1	NC	1
241	GUY19	1	max	0	1	0	1	0	1	7.869e-6	6	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
242			min	0	1	0	1	0	1	-2.411e-3	5	NC	1	NC	1
249		5	max	-0.043	6	-0.023	6	3.972	5	2.68e-2	5	NC	6	NC	5
250			min	-0.076	3	-0.041	3	0	1	0	1	NC	3	NC	1
251	GUY20	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
252			min	0	1	0	1	0	1	0	1	NC	1	NC	1
259		5	max	1.806	5	-0.023	9	0	1	0	1	NC	9	NC	1
260			min	-0.067	1	-3.539	5	0	1	0	1	NC	5	NC	1