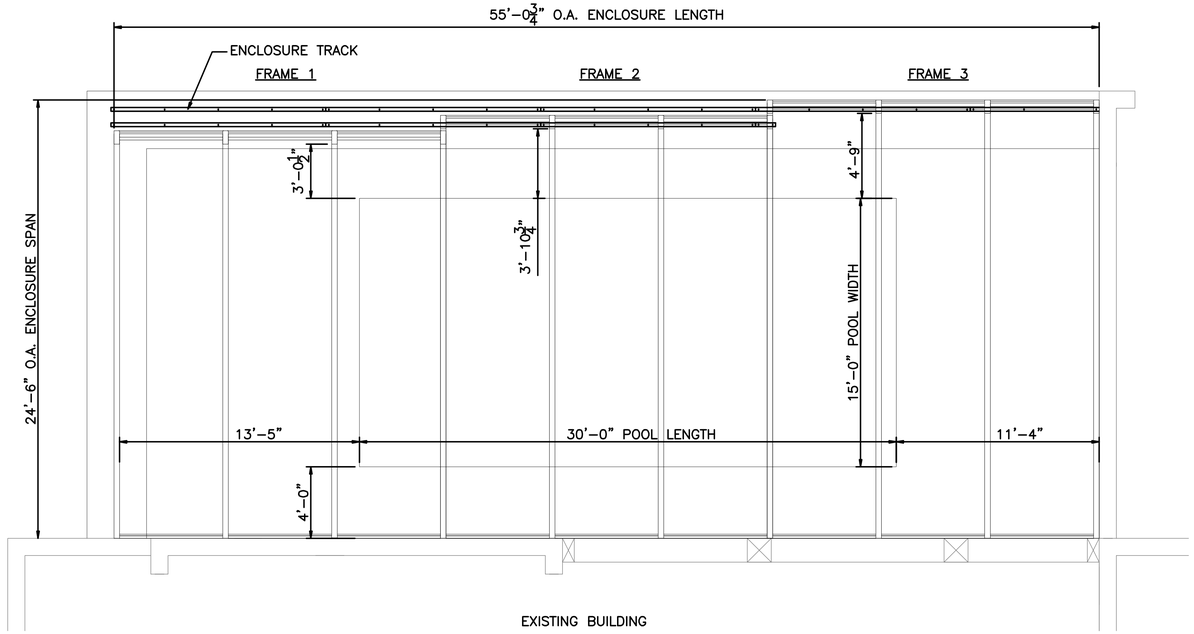
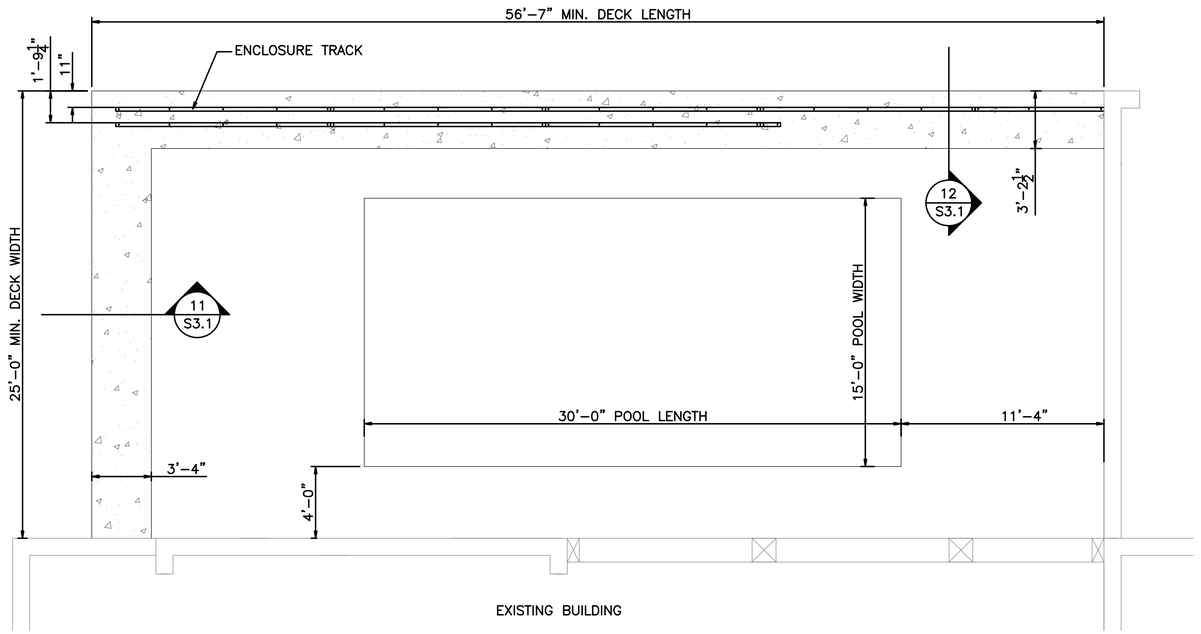


ENCLOSURE PLAN VIEW



FOUNDATION PLAN

NOTE:
ALL DIMENSIONS ARE TAKEN FROM WATERS EDGE (INTERNAL CLEARANCES SHOWN)

DESIGN DATA
THE STRUCTURAL DESIGN OF THIS BUILDING WAS BASED ON THE FOLLOWING DESIGN CRITERIA:

1.	2006 INTERNATIONAL BUILDING CODE	
2.	FLOOR LIVE LOAD:	N/A
3.	MINIMUM ROOF LIVE LOAD:	10 PSF
4.	GROUND SNOW LOAD:	25 PSF
5.	WIND LOADING	
	BASIC WIND SPEED:	90 MPH
	WIND IMPORTANCE FACTOR:	1.00
	WIND EXPOSURE:	B
6.	SEISMIC LOADING	
	USE GROUP	I
	SITE CLASS	D
	DESIGN CATEGORY	B
	Ss	0.233
	S1	0.055
	Fa	1.6
	Fv	2.4
7.	FLOOD LOAD	N/A
8.	SPECIAL LOADS	N/A

DESIGN STRESSES

1.	ALUMINUM: ALL ALUMINUM NOT OTHERWISE NOTED: (6061-T6 OR 6063-T5)	Fy = 35,000 PSI
2.	STRUCTURAL STEEL: ASTM A-572 GRADE 5	Fy = 50,000 PSI

REVISION RECORD

REV NO.	DATE

LONCO, INC.
CONSULTING ENGINEERS
NAPERVILLE, ILLINOIS 60563
1560 WALL STREET, SUITE 222
(630) 577-9100

Drawn By: MP
Checked By: JPI
Approved By: WHE

Date: 10/28/10
Project No. C10104-07

1232 CHOPTANK ROAD
MIDDLETOWN, DELAWARE 19709

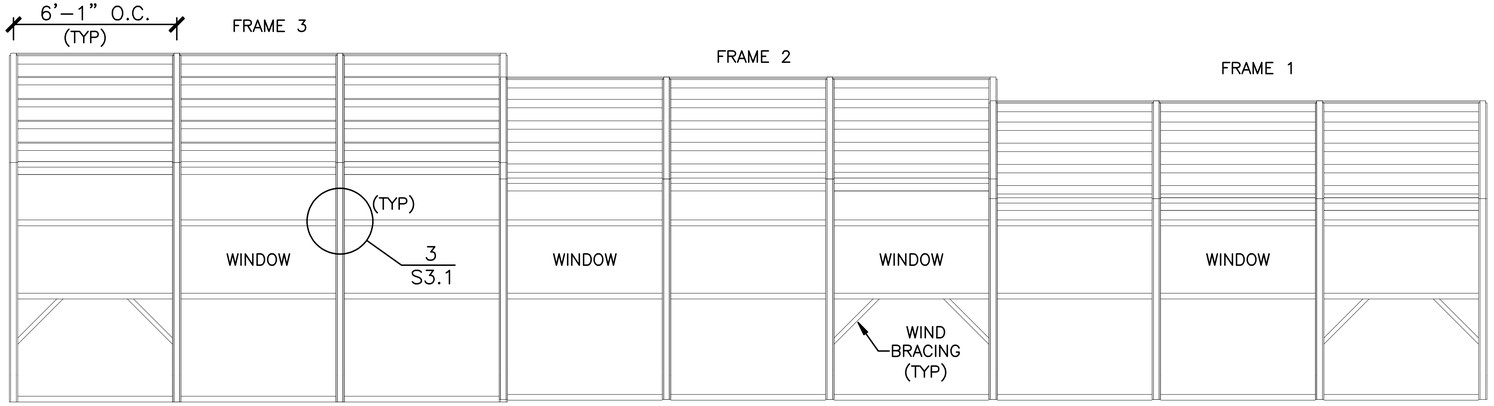
11025 Delaware Parkway
Crown Point, IN 46307
Phone: 219.750.1031

DynaDome
Custom Pool Enclosures

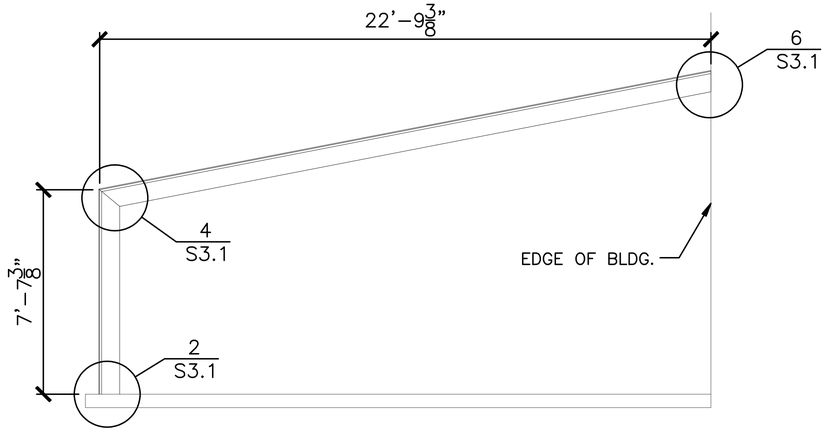
GENERAL NOTES AND POOL ENCLOSURE PLAN

Sheet No.
S1.0
SCALE 1/4"=1'-0"

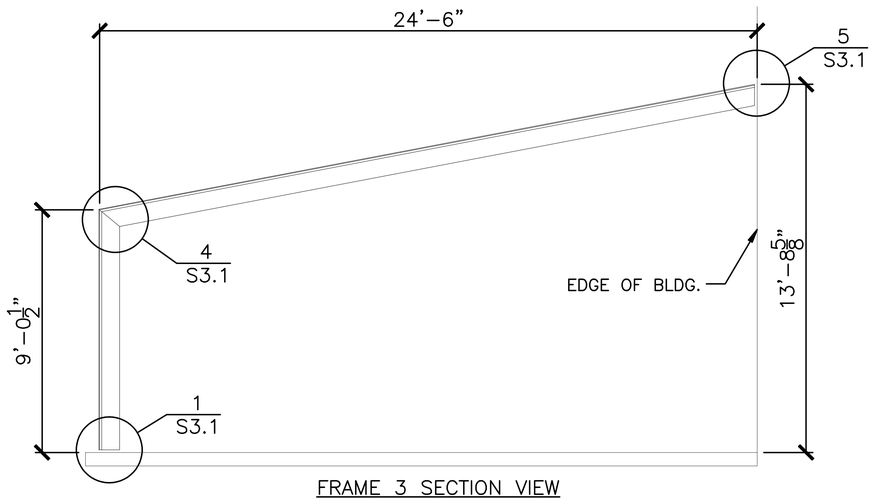
DRAWING NO.
1 OF 4



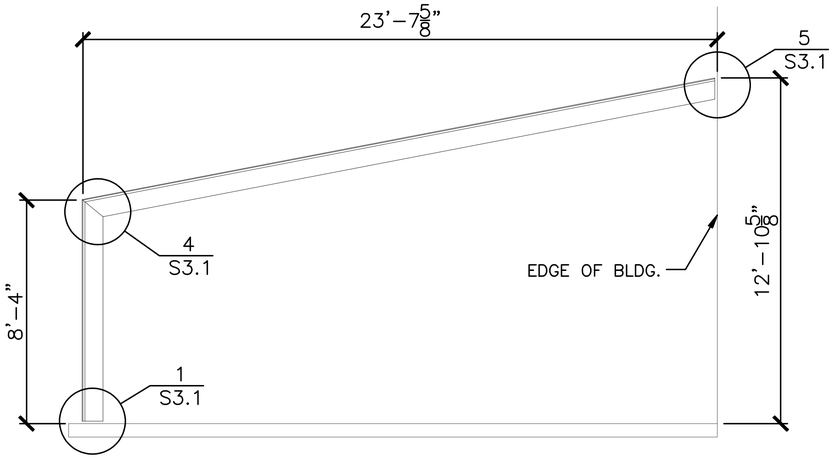
SIDE ELEVATION



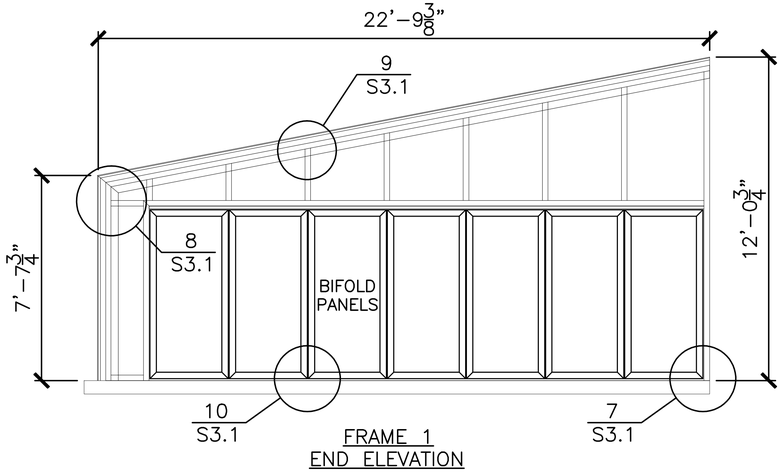
FRAME 1 SECTION VIEW
STATIONARY FRAME



FRAME 3 SECTION VIEW
MOVING FRAME



FRAME 2 SECTION VIEW
MOVING FRAME



FRAME 1
END ELEVATION

REVISION RECORD

REV NO.	DATE	

LOMCO, INC.
CONSULTING ENGINEERS 1560 WALL STREET, SUITE 222
NAPERVILLE, ILLINOIS 60563 (630) 577-9100

Drawn By: MP
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1232 CHOPTANK ROAD
MIDDLETOWN, DELAWARE 19709

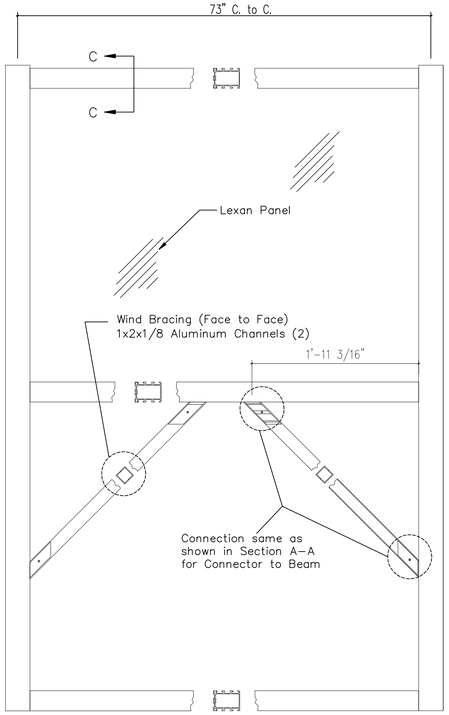
11025 Delaware Parkway
Crown Point, IN 46307
Phone: 219.750.1031

DynaDome
Custom Pool Enclosures

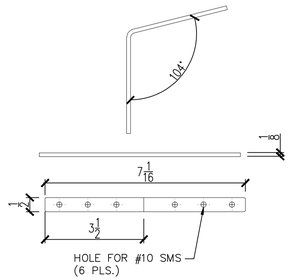
ELEVATIONS

Sheet No. **S2.0**
SCALE 3/8"=1'-0"

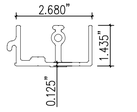
DRAWING NO.
2 OF 4



Side Wall Assembly (End Section; Envelope)
NTS

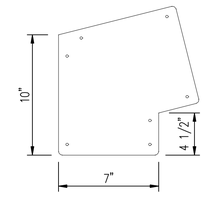


1/2" x 7" x 1/8"
Corner Strap
Stainless Steel

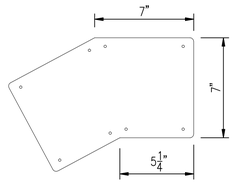


REGIONS	
Area:	1.26
Principal moments and X-Y directions about centroid:	I: 0.25 J: 1.02

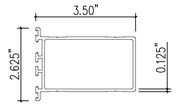
Connector Key
6005-T5
(Joints)



MK A 1/4" Plate
Grade 50 Carbon Steel

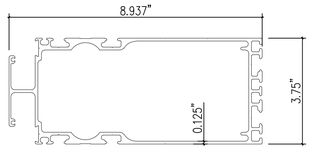


MK B 1/4" Plate
Grade 50 Carbon Steel



REGIONS	
Area:	1.06
Principal moments and X-Y directions about centroid:	I: 0.684 J: 1.787

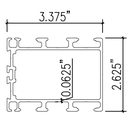
Purlin Connector
Connector "C"
6005-T5



REGIONS	
Area:	3.7594
Principal moments and X-Y directions about centroid:	I: 8.3746 J: 35.470

8" Frame Beam
6005-T5
(Beam/Column)

PART NO. EAB101F



REGIONS	
Area:	1.488
Principal moments and X-Y directions about centroid:	I: 1.3321 J: 2.0925

Horizontal Connector And
End Wall Header/Interior Column
Connector "B"
NTS

PART NO. EAB101B

Hilti Kwik Bolt II Data
Material = Stainless Steel
Diameter = 3/8"
Allowable Tension = 880 lbs
Allowable Shear = 1330 lbs
For f'c = 3000psi

GENERAL NOTES:

1 – ALL FRAMING MEMBERS ARE ALUMINUM ALLOY 6061-T6 OR 6063-T5

2 – ALL FASTENERS 18-8 SS (OR EQUIVALENT)

GENERAL REQUIREMENT:

1. Furnish all labor, materials, and equipment necessary to complete the work shown or inferred by these drawings.
2. Where construction details are not shown or noted for any part of the work, such details shall be the same as for similar work shown on the drawings.
3. Notes and details on the drawings take precedence over the general notes and typical details in case of conflict.
4. Pipes, ducts, sleeves, chases, etc. shall not be placed in slabs, beams, or walls unless specifically shown or noted nor shall any structural member be cut for pipe, ducts, etc., unless specifically shown. Obtain prior written approval for installation of any additional holes, ducts, etc.
5. Locate and protect underground or concealed conduit, plumbing or other utilities where new work is being performed.
6. The contract drawings and specifications represent the finished structure and do not indicate methods, procedures or sequence of construction. Take necessary precautions to maintain and insure the integrity of the structure during construction. The design stresses shall not be exceeded during construction. Neither the owner nor Architect/Engineer will enforce safety measure regulations. Contractor shall design, construct and maintain all safety devices, including shoring and bracing, and shall be solely responsible for conforming to all local, state and federal safety and health standards, laws and regulations.
7. Obtain prior written approval for any changes to the drawings.
8. The contractor shall review and compare the structural drawings with all other Construction Documents, such as Architectural, Mechanical and Electrical drawings, specifications, etc.. The contractor shall verify dimensions, elevations and all information. Report, in writing, any inconsistencies, errors, or omissions to the Architect/Engineer of record before proceeding with the work.
9. All existing constructions are shown schematic only. Contractor is responsible to verify actual conditions and allow for them in his bid. Notify the Architect/Engineer, in writing, in case of any discrepancy between actual conditions and what is shown on the structural drawings before proceeding with the work.
10. All communication shall be in writing. No verbal communications, decisions, instructions or approvals shall be valid.

DESIGN CODE:

1. All design, material, and construction work for this project shall conform to 2006 International Building Code.

CONCRETE:

1. All concrete work shall conform to the American Concrete Institute's Standard Building Code Requirements for Structural Concrete, ACI318.Place concrete in accordance with ACI 301.
2. Rebar should be placed in the upper 1/3 of the slab. Provide control joints to 20% of slab thickness @ max. 15' o.c. E.W.
3. Concrete shall develop 28-days minimum compressive strengths of 3000 PSI.
4. All exposed exterior concrete shall contain the proper admixtures to obtain 5% to 7% Air Entrainment.
5. Reinforcing Steel:
   a) Reinforcing steel shall be ASTM A615 Grade 60 for #5 bars and larger and ASTM Grade 40 for #4 bars & smaller.
   b) Bars marked continuous and all vertical steel shall be lapped 48 bar diameters at splices UON on the drawings.
   c) Vertical bars shall be doweled to supporting members with the same size and spacing of reinforcement shown in the drawing or general notes.
   d) All reinforcing bars shall be in the correct place, tied and secured prior to concrete placement. Use chairs, spacers and sanplates as required.
6. Execution:
   a) All concrete is reinforced concrete unless specifically called out as "Unreinforced". Reinforce all concrete not otherwise shown with same steel as in similar sections or areas.
7. Standard concrete cover of bars unless otherwise noted shall be:
   a) Where earth formed: 3 inches minimum.
   b) Board formed then permanently exposed to earth or weather: 2 inches.
   c) Slabs not exposed to earth or weather: 1 inch.
   d) Beams and columns not exposed to earth or weather: 1-1/2 inches.
   e) Others: 2 inches.
8. Slump shall not be more than 4 inches.
9. Water/Cement ratio shall not exceed 0.45.
10. All concrete shall be consolidated with mechanical vibrators.
11. Coordinate concrete work with architectural drawings and specifications for any architectural finished concrete, recessed area, embedded items, or special control joint patterns.
12. All concrete work shall be cured and maintained above 50 degrees Fahrenheit for at least seven days according to the Standard Practice for Curing Concrete, ACI 308, ACI 318 and as approved by the Engineer.
13. When air temperature is above 80 degrees Fahrenheit, Hot Weather Concreting, ACI 305R shall apply. When the average air temperature is below 40 degree Fahrenheit, Cold Weather Concreting, ACI 306R shall apply.
14. Reference the specifications for additional requirements.
15. All backfill to be done with stone to within 12" of final grade.
16. Stone under slab to be minimum 4".

REV NO.	DATE	REVISION RECORD

LONCO, INC.
CONSULTING ENGINEERS
1560 WALL STREET, SUITE 222
NAPERVILLE, ILLINOIS 60563 (630) 577-9100

Drawn By:	MP
Checked By:	JPI
Approved By:	WHE
Date:	10/28/10
Project No.	C10104-07

1232 CHOPTANK ROAD
MIDDLETOWN, DELAWARE 19709

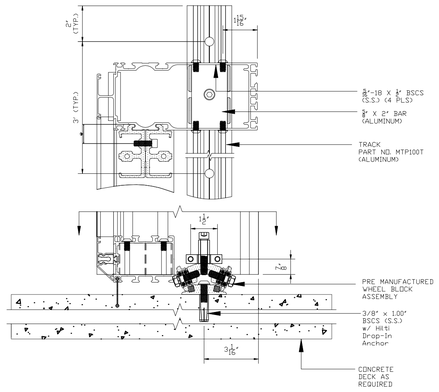
11025 Delaware Parkway
Crown Point, IN 46307
Phone: 219.760.1031

DynaDome
Custom Pool Enclosures

DETAILS

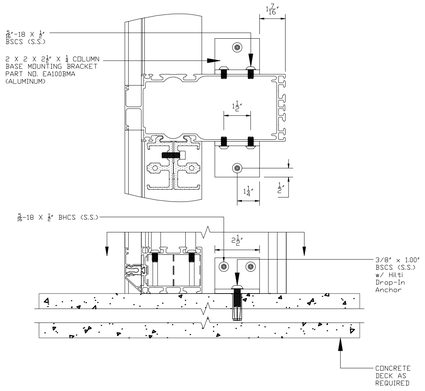
Sheet No.
S3.0

DRAWING NO.
3 OF 4



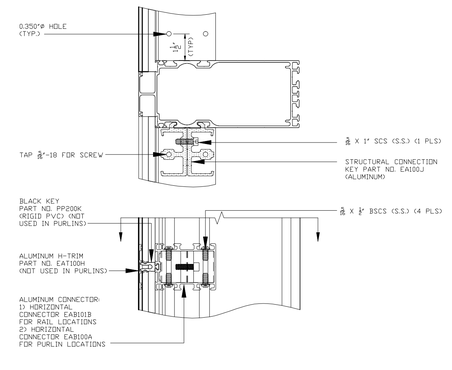
1 MOVING FRAME TRACK MOUNTING DETAIL

SCALE: 3" = 1'-0"



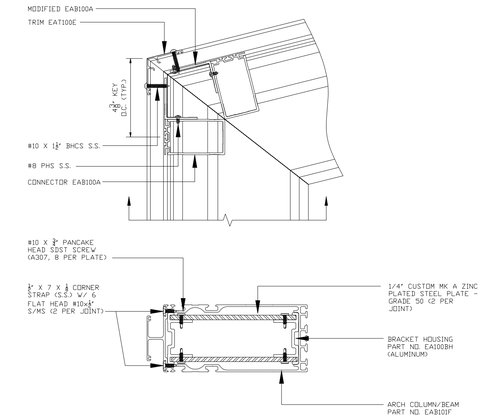
2 STATIONARY FRAME DECK MOUNTING DETAIL

SCALE: 3" = 1'-0"



3 CONNECTOR TO FRAME CONNECTION DETAIL

SCALE: 3" = 1'-0"



4 FRAME EAVE CONNECTION

SCALE: 3" = 1'-0"

5 MOVING FRAME RIDGE CONNECTION

SCALE: 3" = 1'-0"

6 STATIONARY FRAME RIDGE CONNECTION

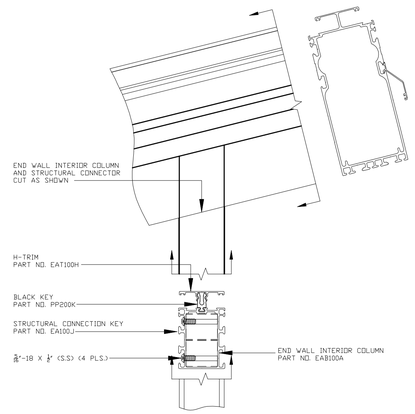
SCALE: 3" = 1'-0"

7 ENDWALL POST DECK MOUNTING

SCALE: 3" = 1'-0"

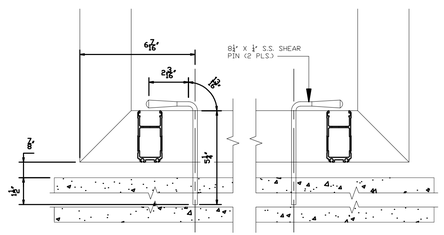
8 END WALL BEAM/COLUMN CONNECTION

SCALE: 3" = 1'-0"



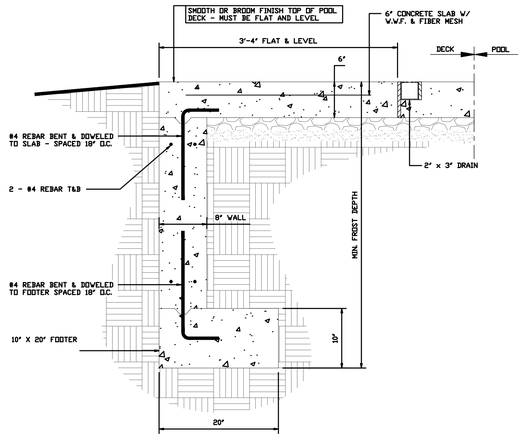
9 END WALL INTERIOR COLUMN TO BEAM CONNECTION

SCALE: 3" = 1'-0"



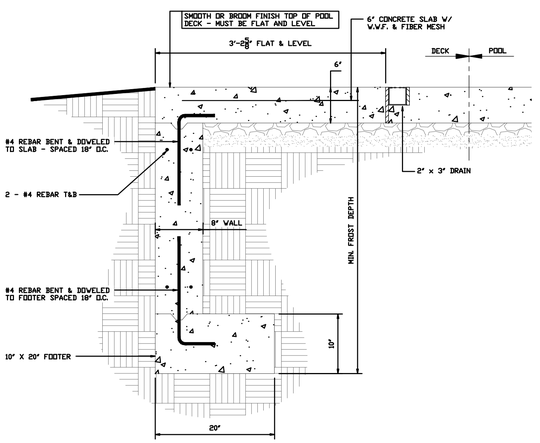
10 BIFOLD DOOR LOCKING MECHANISM

SCALE: 3" = 1'-0"



11 DECK DETAIL

SCALE: 3/4" = 1'-0"



12 DECK DETAIL

SCALE: 3/4" = 1'-0"

REV NO.	DATE	REVISION RECORD

LOMCO, INC.
CONSULTING ENGINEERS 1560 WALL STREET, SUITE 222
NAPERVILLE, ILLINOIS 60563 (630) 577-9100

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1232 CHOPTANK ROAD
MIDDLETOWN, DELAWARE 19709

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DynaDome
Custom Pool Enclosures

DETAILS

Sheet No.
S3.1

DRAWING NO.
4 OF 4

STRUCTURAL CALCULATIONS

FOR

Pool Enclosure

1232 Choptank Road
Middletown, DE 19709

FOR

DynaDome Custom Pool Enclosures
11025 Delaware Parkway
Crown Point, IN 46307

October 28, 2010
Last Revised: n/a

LONCO INC. Project # C10104-07

Prepared By: Mamta Patel, P.E.
Reviewed By: William H. Epp, P.E. S.E.

LONCO, INC.
Civil, Structural & Transportation Engineering Since 1962

LONCO, INC.
1700 Broadway, Suite 1512, Denver, CO 80290
1560 Wall Street, Suite 222, Naperville, IL 60563

PROJECT DESIGN CRITERIA

BUILDING CODE / YEAR: 2006 International Building Code

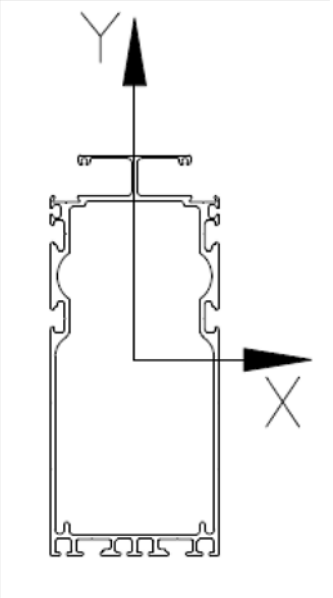
LOAD CRITERIA:

A. Dead Load:		
Glazing:	0.55 psf	
Bi-Fold Panel:	13 lb each	
B. Live Load:		[2006 IBC - SEC. 1607]
Minimum Roof Load:	10 psf	
Ground Snow Load:	25 psf	
C. Wind Load:		[2006 IBC - SEC. 1609]
Basic Wind Speed:	90mph	
Exposure Category:	B	
Importance Factor, I_w:	1.00	
D. Seimic Loading:		[2006 IBC - SEC. 1613]
Ss	0.233	
S1	0.055	
Fa	1.6	
Fv	2.4	
Use Group	I	
Site Class	D	
Seismic Design Category	B	
R	2.5	

REFERENCES:

1. 2006 INTERNATIONAL BUILDING CODE
2. ASCE7-05, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
3. ALUMINUM DESIGN MANUAL 2005: SPECIFICATIONS & GUIDELINES FOR ALUMINUM STRUCTURES
4. ASTM 307 SPECIFICATION
5. STRUCTURAL DRAWINGS
8. AISC MANUAL OF STEEL CONSTRUCTION, 9TH EDITION
9. RISA3D
10. MATHCAD, VERSION 11.2

SECTION PROPERTIES: MAIN BEAMS AND COLUMNS: 8" Dynatech standard section :



Minimum Thickness: $t_{min.1} = 0.125in$

Depth: $d_1 = 8.9375in$

Width: $w_1 = 3.75in$

Area: $A_1 = 3.759in^2$

Moment of Inertia (I_{xx} - strong axis): $I_{xx.1} = 35.47in^4$

Moment of Inertia (I_{yy} - weak axis): $I_{yy.1} = 8.3746in^4$

Section Modulus (S_{xx} - strong axis): $S_{xx.1} = \frac{I_{xx.1}}{\frac{d_1}{2}}$ $S_{xx.1} = 7.94\,in^3$

Section Modulus (S_{yy} - weak axis): $S_{yy.1} = \frac{I_{yy.1}}{\frac{w_1}{2}}$ $S_{yy.1} = 4.47\,in^3$

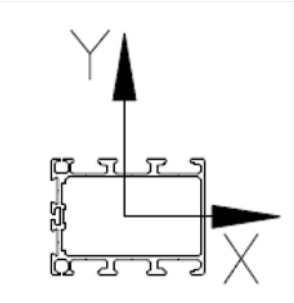
Shear Area (x-axis): $A_{vx.1} = 0.9375in^2$

Shear Area (y-axis): $A_{vy.1} = 2.234in^2$

Radius of gyration (x-axis): $r_{x.1} = \sqrt{\frac{I_{xx.1}}{A_1}}$ $r_{x.1} = 3.07\,in$

Radius of gyration (y-axis): $r_{y.1} = \sqrt{\frac{I_{yy.1}}{A_1}}$ $r_{y.1} = 1.49\,in$

SECTION PROPERTIES: PURLINS AT END: CONNECTOR "B"



Minimum Thickness: $t_{min.B} = 0.0625in$

Depth: $d_B = 3.375in$

Width: $w_B = 2.625in$

Area: $A_B = 1.488in^2$

Moment of Inertia (I_{xx}): $I_{xx.B} = 1.3321in^4$

Moment of Inertia (I_{yy}): $I_{yy.B} = 2.0925in^4$

Section Modulus (S_{xx}): $S_{xx.B} = \frac{I_{xx.B}}{\frac{d_B}{2}}$ $S_{xx.B} = 0.79\,in^3$

Section Modulus (S_{yy}): $S_{yy.B} = \frac{I_{yy.B}}{\frac{w_B}{2}}$ $S_{yy.B} = 1.59\,in^3$

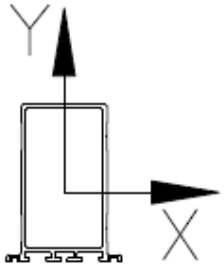
Shear Area (x-axis): $A_{vx.B} = 0.328in^2$

Shear Area (y-axis): $A_{vy.B} = 0.4218in^2$

Radius of gyration (r_x): $r_{x.B} = \sqrt{\frac{I_{xx.B}}{A_B}}$ $r_{x.B} = 0.95\,in$

Radius of gyration (r_y): $r_{y.B} = \sqrt{\frac{I_{yy.B}}{A_B}}$ $r_{y.B} = 1.19\,in$

SECTION PROPERTIES: PURLINS AT ROOF: CONNECTOR "C"



Minimum Thickness: $t_{min.C} = 0.125in$

Depth: $d_C = 3.5in$

Width: $w_C = 2.625in$

Area: $A_C = 1.06in^2$

Moment of Inertia (I_{xx}): $I_{xx.C} = 1.787in^4$

Moment of Inertia (I_{yy}): $I_{yy.C} = 0.684in^4$

Section Modulus (S_{xx}): $S_{xx.C} = \frac{I_{xx.C}}{\frac{d_C}{2}}$ $S_{xx.C} = 1.02in^3$

Section Modulus (S_{yy}): $S_{yy.C} = \frac{I_{yy.C}}{\frac{w_C}{2}}$ $S_{yy.C} = 0.52in^3$

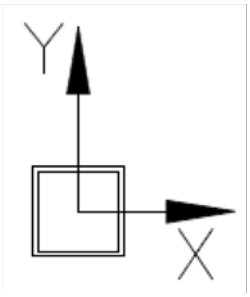
Shear Area (x-axis): $A_{vx.C} = 0.875in^2$

Shear Area (y-axis): $A_{vy.C} = 0.625in^2$

Radius of gyration (r_x): $r_{x.C} = \sqrt{\frac{I_{xx.C}}{A_C}}$ $r_{x.C} = 1.30in$

Radius of gyration (r_y): $r_{y.C} = \sqrt{\frac{I_{yy.C}}{A_C}}$ $r_{y.C} = 0.80in$

SECTION PROPERTIES: BRACING MEMBERS: 2-1x2x1/8 ALUMINUM CHANNELS



Minimum Thickness: $t_{min.BR} = 0.125in$

Depth: $d_{BR} = 2.00in$

Width: $w_{BR} = 2.00in$

Area: $A_{BR} = w_{BR} d_{BR} - \left(w_{BR} - 2t_{min.BR}\right)\left(d_{BR} - 2t_{min.BR}\right)$

$A_{BR} = 0.94 in^2$

Moment of Inertia (I_{xx}): $I_{xx.BR} = 0.5518in^4$

Moment of Inertia (I_{yy}): $I_{yy.BR} = 0.5518in^4$

Section Modulus (S_{xx}): $S_{xx.BR} = \dfrac{I_{xx.BR}}{\frac{d_{BR}}{2}}$ $S_{xx.BR} = 0.55 in^3$

Section Modulus (S_{yy}): $S_{yy.BR} = \dfrac{I_{yy.BR}}{\frac{w_{BR}}{2}}$ $S_{yy.BR} = 0.55 in^3$

Torsional Constant (x-axis): $J = 0.8420in^4$

Shear Area (x-axis): $A_{vx.BR} = 0.500in^2$

Shear Area (y-axis): $A_{vy.BR} = 0.500in^2$

Radius of gyration (r_x): $r_{x.BR} = \sqrt{\dfrac{I_{xx.BR}}{A_{BR}}}$ $r_{x.BR} = 0.77 in$

Radius of gyration (r_y): $r_{y.BR} = \sqrt{\dfrac{I_{yy.BR}}{A_{BR}}}$ $r_{y.BR} = 0.77 in$

MATERIAL PROPERTIES:

All framing members are aluminum alloy 6005-T5 or 6061-T6. The mechanical properties of this material are from the AluminumDesign Manual, Part V, Table 1 (page V-7).

TENSILE STRENGTH (TENSION): $F_{tu} = 38ksi$

YIELD STRENGTH (TENSION): $F_{ty} = 35ksi$

YIELD STRENGTH (COMPRESSION): $F_{cy} = 35ksi$

TENSILE STRENGTH (SHEAR): $F_{su} = 24ksi$

YIELD STRENGTH (SHEAR): $F_{sy} = 20ksi$

MODULUS OF ELASTICITY: $E_{AL} = 10100ksi$

ALLOWABLE STRESSES:

The allowable stresses are from the Aluminum Design Manual, Part VII, Table 2-21 (pages VII-66 and VII-67).

Allowable Axial Tension: $F_t = 21ksi$

Allowable Tension in Beams (Extreme Fiber): $F_{tb} = 21ksi$

Allowable bearing stress: $F_{br} = 29ksi$

Allowable compression in beams (extreme fiber): $F_{cb} = 21ksi$

BEAM ELEMENT: (8 inch section**)**

Consider roof members pinned-pinned: $K_1 = 1.0$

Maximum Roof Beam span: $L_1 = 24ft + 5.625in$

Slenderness ratio: $SR_1 = \frac{K_1 L_1}{r_{x.1}}$ $SR_1 = 95.59$

Allowable Compression in Columns: $F_{a1} = \frac{51100ksi}{SR_1^2}$ $F_{a1} = 5.59\,ksi$

Beam web depth to thickness: $BR_S = \frac{d_1}{t_{min.1}}$ $BR_S = 71.50$

Allowable shear in beam web: $F_{vbm} = \frac{38700ksi}{BR_S^2}$ $F_{vbm} = 7.57\,ksi$

CONNECTOR "B":

Consider Connector "B" members pinned-pinned: $K_B = 1.0$

Maximum length of Connector "B": $L_B = 6ft + 1in$

Slenderness ratio: $SR_B = \frac{K_B L_B}{r_{y.B}}$ $SR_B = 61.56$

Allowable Compression in Columns: $F_{aB} = \frac{51100ksi}{SR_B^2}$ $F_{aB} = 13.48\,ksi$

Connector "B" web depth to thickness: $BR_B = \frac{d_B}{t_{min.B}}$ $BR_B = 54.00$

Allowable shear in Connector "B" web: $F_{vB} = (15.8 - 0.101 BR_B)ksi$ $F_{vB} = 10.35\,ksi$

CONNECTOR "C":

Consider Connector "C" members pinned-pinned: $K_C = 1.0$

Maximum length of Connector "C": $L_C = 6ft + 1in$

Slenderness ratio: $SR_C = \frac{K_C L_C}{r_{y.C}}$ $SR_C = 90.88$

Allowable Compression in Columns: $F_{aC} = \frac{51100ksi}{SR_C^2}$ $F_{aC} = 6.19\,ksi$

Connector "C" web depth to thickness: $BR_C = \frac{d_C}{t_{min.C}}$ $BR_C = 28.00$

Allowable shear in Connector "C" web: $F_{vC} = (15.8 - 0.101 BR_C)ksi$ $F_{vC} = 12.97\,ksi$

BRACING MEMBER:

Consider bracing members pinned-pinned: $K_{BR} = 1.0$

Maximum length of bracing member $L_{BR} = 2ft + 2.625in$

Slenderness ratio: $SR_{BR} = \frac{K_{BR} L_{BR}}{r_{y.BR}}$ $SR_{BR} = 34.70$

Allowable Compression in Columns: $F_{aBR} = \frac{51100ksi}{SR_{BR}^2}$ $F_{aBR} = 42.43\,ksi$

Web depth to thickness: $BR_{BR} = \frac{d_{BR}}{t_{min.BR}}$ $BR_{BR} = 16.00$

Allowable shear in web: $F_{vBR} = (15.8 - 0.101 BR_{BR})ksi$ $F_{vBR} = 14.18\,ksi$

DEFLECTIONS:

Per Part I-A, Section 9.4.4 of the Aluminum Design Manual (p. I-A-71), live load deflections shall be limited to one sixtieth of the span length.

Maximum allowable LL deflection: $\delta_{max} = \frac{L_1}{60}$ $\delta_{max} = 4.89\,in$

APPLIED LOADS:

Roof Slope (inches of rise per foot) $r_{slope} = 3in$

Building Length: $L_{bldg} = 55ft + 0.75in$

Building Width: $W_{bldg} = 24ft + 6in$

Height Above Gable End Header: $h_g = 4ft + 7.75in$

Eave Height: $h_b = 9ft + 0.5in$

Length of Gable End Header: $gb_h = 24ft + 5in$

Based on the tributary width, the inner arches are loaded differently than the outer arches.

Tributary frame width: $TW = \begin{pmatrix} 6ft + 1in \\ 3ft + 0.5in \end{pmatrix}$ $\begin{pmatrix} \text{"Interior Arches"} \\ \text{"Exterior Arches"} \end{pmatrix}$

DEAD LOADS:

The dead weight of the structure includes the weight of the framing members (aluminum) and the weight of the polycarbonate sheets (glazing material). The glazing is a Macrolux 16mm thick polycarbonate panel with a weight of 0.55 lb/ft^2.

Glazing unit weight: $w_{glaz} = 0.55psf$

The dead weight of the framing members is automatically calculated by the program and included in the analysis. The dead weight at the gable end of the structure is equal to the weight of the polycarbonate sheet above the horizontal main member and the weight of the bi-fold panels. The weight of each bi-fold panels is 13 pounds.

Weight of bi-fold panels per foot: $w_{panel} = \frac{7 \times 13lb}{gb_h}$ $w_{panel} = 3.73\,\frac{lb}{ft}$

Weight of glazing on gable end header: $w_{gb.gl} = w_{glaz}\,h_g$ $w_{gb.gl} = 2.56\,\frac{lb}{ft}$

Weight on gable end header (TOTAL): $w_{gb.end} = w_{panel} + w_{gb.gl}$ $w_{gb.end} = 6.28\,\frac{lb}{ft}$

LIVE LOADS:

Minimum Roof Live Load (without snow): $L_{min} = 10psf$

Ground Snow Load: $Pg = 25psf$

Exposure Factor: $Ce = 1.0$

Snow Importance Factor: $Is = 1.0$

Thermal Factor: $Ct = 1.0$

Roof Slope Factor: $Cs = 0.95$

Flat Roof Snow Load:

$Pf = 0.7 Ce\, Ct\, Is\, Pg$

$Pf = 17.50\ psf$

Shall Not Be Less Than:

$$P_{fmin} = \begin{cases} Pg\, Is & \text{if } Pg < 20psf \\ 20psf\, Is & \text{if } Pg \geq 20psf \end{cases} \qquad P_{fmin} = 20.00\ psf$$

Sloped Roof Snow Load:

$Ps = \left(\max\left(Pf, P_{fmin}\right)\right) Cs \qquad Ps = 19.00\ psf$

Minimum Design Roof Live Load (Use this for Analysis)

$Lr = \max\left(L_{min}, Ps\right) \qquad Lr = 19.00\ psf$

WIND LOADS:

Simplified design wind pressure (combination of the windward and leeward net presssures):

Transverse Direction: $p_t = 7520lb$

Longitudinal Direction: $p_l = 2780lb$

Uplift Pressure: $p_u = -13480lb$

Tributary Wind Load to the Frame:

Transverse Direction: $w_t = \left(\frac{p_t}{L_{bldg}}\right) TW \qquad w_t = \begin{pmatrix} 830.81 \\ 415.41 \end{pmatrix} lb$

Longitudinal Direction: $w_l = 0.5 p_l \qquad w_l = 1390.00\ lb$

Uplift on roof: $w_{up} = \left(\frac{p_u}{L_{bldg} W_{bldg}}\right) TW \qquad w_{up} = \begin{pmatrix} -60.79 \\ -30.39 \end{pmatrix} \frac{lb}{ft}$

SEISMIC LOADS:

Soil Profile: (assumed) S_D

Seismic Importance Factor: $I = 1.00$

$S_s = 0.233$ $S_1 = 0.055$ $R = 2.5$

Site Coefficient: $F_a = 1.60$ $F_v = 2.4$

Seismic Coefficient: $S_{DS} = 0.249$

Seismic Coefficient: $S_{D1} = 0.088$

Weight of enclosure:

$W_{roof} = L_{bldg} W_{bldg} w_{glaz}$ $W_{roof} = 741.97\ lb$

$W_{wall} = 2(L_{bldg} + W_{bldg}) w_{gb.gl}$ $W_{wall} = 406.60\ lb$

$W_{struct} = L_{bldg} W_{bldg} 1psf$ $W_{struct} = 1349.03\ lb$

$W = W_{roof} + W_{wall} + W_{struct}$ $W = 2.50\ kip$

Fundamental Period:

$h_n = h_b$ $C_t = 0.020 \frac{sec}{ft^{0.75}}$

$T = C_t h_n^{0.75}$ $T = 0.10\ s$

Design base shear (total base shear in a given direction):

$V_1 = \frac{S_{DS} I}{R} W$ $V_1 = 0.25\ kips$

need not exceed:

$V_2 = \frac{S_{DS} I}{T R} W sec$ $V_2 = 2.39\ kips$

shall not be less than:

$V_3 = 0.044 S_{DS} I W$ $V_3 = 0.03\ kip$

$V = \max(V_3, \min(V_1, V_2))$ $V = 248.76\ lb$

Governing Load Case

Transverse = "Wind Loads Govern Design" if $p_t > V$
"Seismic Loads Govern Design" if $V \geq p_t$

Transverse = "Wind Loads Govern Design"

Longitudinal = "Wind Loads Govern Design" if $p_l > V$
"Seismic Loads Govern Design" if $V \geq p_l$

Longitudinal = "Wind Loads Govern Design"

LOAD COMBINATIONS:

From the 2006 International Building Code:

Basic load combinations. Where allowable stress design (working stress design) is used, structures and all portions thereof shall resist the most critical effects resulting from the following combinations of loads:

1. D + F
2. D + H + F + L + T
3. D + H + F + (Lr or S or R)
4. D + H + F + 0.75(L+T) + 0.75(Lr or S or R)
5. D + H + F + 0.75(W or 0.7E)
6. D + H + F + 0.75(W or 0.7E) + 0.75L + 0.75(Lr or S or R)
7. 0.6D + W + H
8. 0.6D + 0.7E + H

Where D is dead load, F is fluid load, H is lateral earth pressure, L is live load, T is self-straining force, Lr is roof live load, S is snow load, R is rain load, W is load due to wind pressure, and E is the combined effect of horizontal and vertical earthquake loads.

Earthquake loads were found to be less critical than wind loading before the 1.4 reduction.

No increase in allowable stresses shall be used with these load combinations except as specifically permitted elsewhere in this code.

CHECK DEFLECTION OF THE STRUCTURE:

The maximum deflection in any given direction is 0.684 inches is which is less the allowable live load deflection of 4.89 inches per the Aluminum Design Manual.

CHECK ROOF GLAZING:

The attached vendor document (Macrolux) shows that for a 6' width of multiwall polycarbonate sheet (16mm thick) and a purlin spacing of 36", the recommended allowable loading (corresponding to a deflection of 1") is 25 psf. This is greater than the maximum roof live load of 19 psf and is adequate.

CHECK GLASS SUPPORTS:

The members supporting the glazing are identical in section size to the bottom chord of the gable end. Since the loading on the gable end bottom chord is much higher than the loading on the glass supports, the design of the gable end bottom chord envelopes the design of this member and is considered to be acceptable by engineering judgement.

MEMBER & CONNECTION VERIFICATION:

Geometry and loading for the largest fram were inputed into RISA3D, and run under the combinations listed previously. Since the Beams are uniform in Shape the maximum forces can be used for design purposes.

Below are the maximum results for member end forces from the analysis output:

Beam/Column Maximum Results - Main Beam/Column: Maximum Moment:

$F_{xbm1} = 1.771\,kip$ $M_{xbm1} = 0.000\,kip\,ft$

$F_{ybm1} = 1.731\,kip$ $M_{ybm1} = 0.000\,kip\,ft$

$F_{zbm1} = 0.000\,kip$ $M_{zbm1} = 6.931\,kip\,ft$

Beam/Column Maximum Results - Connector "B":

$F_{xB} = -0.751\,kip$ $M_{xB} = 0.000\,kip\,ft$

$F_{yB} = -0.133\,kip$ $M_{yB} = 0.000\,kip\,ft$

$F_{zB} = 0.000\,kip$ $M_{zB} = -0.677\,kip\,ft$

Beam/Column Maximum Results - Connector "C":

$F_{xC} = 1.127\,kip$ $M_{xC} = 0.000\,kip\,ft$

$F_{yC} = 0.084\,kip$ $M_{yC} = 0.000\,kip\,ft$

$F_{zC} = 0.000\,kip$ $M_{zC} = -0.171\,kip\,ft$

Beam/Column Maximum Results - Braces:

$F_{xBR} = 0.908\,kip$ $M_{xBR} = 0.000\,kip\,ft$

$F_{yBR} = 0.002\,kip$ $M_{yBR} = 0.000\,kip\,ft$

$F_{zBR} = 0.000\,kip$ $M_{zBR} = 0.002\,kip\,ft$

DESIGN OF THE MAIN FRAMING MEMBERS: USING DYNA TECHNOLOGIES 8" SECTION WITH CHANNELS

Member End Forces:

$F_{xbm1} = 1771.00\ lb$ $M_{xbm1} = 0.00$

$F_{ybm1} = 1731.00\ lb$ $M_{ybm1} = 0.00$

$F_{zbm1} = 0.00$ $M_{zbm1} = 6.93\ kip\ ft$

Member Stresses:

Flexural Stress: $f_{bt} = \frac{M_{zbm1}}{S_{xx.1}}$ $f_{bt} = 10.48\ ksi$

Allowable Stress: $1.00F_{tb} = 21.00\ ksi$

Combined Shear, Compression and Bending:

$f_{abm1} = \frac{F_{xbm1}}{A_1}$ $f_{abm1} = 0.47\ ksi$

$f_{b1} = \frac{M_{ybm1}}{S_{yy.1}} + \frac{M_{zbm1}}{S_{xx.1}}$ $f_{b1} = 10.48\ ksi$

$f_{v1} = \frac{|F_{ybm1}|}{A_{vy.1}}$ $f_{v1} = 0.77\ ksi$

$IC_1 = \frac{f_{abm1}}{F_{a1}} + \left(\frac{f_{b1}}{F_{tb}}\right)^2 + \left(\frac{f_{v1}}{F_{vbm}}\right)^2$ $IC_1 = 0.34$ < 1.0 OK

EVALUATE THE ROOF BEAM TO COLUMN CONNECTION:

Check the 1/4" plate for Moment Transfer at the joint:

Section Modulus of one plate: $S_{pl} = \frac{\frac{1}{4}in\,(10in)^2}{6}$ $S_{pl} = 4.17\ in^3$

Flexural stress in the plate: (2 per connection) $f_{bpl} = \frac{M_{zbm1}}{S_{pl}}$ $f_{bpl} = 19.96\ ksi$

Allowable bending stress in the plate: (ASTM A-572 Grade 50 plate) $F_{bpl} = 0.75 \times 50ksi$ $F_{bpl} = 37.50\ ksi$

Plate flexural interaction: $IC_{pl} = \frac{f_{bpl}}{F_{bpl}}$ $IC_{pl} = 0.53$ < 1.00 OK

Evaluate the shear in the tube walls:

Decouple the applied moment: $V_{bm} = \frac{M_{zbm1}}{2 \times 8in}$ $V_{bm} = 5.20\ kip$

Shear area: $A_{vy.1} = 2.23\ in^2$ Allowable shear stress: $F_{vbm} = 7.57\ ksi$

Shear stress: $f_v = \frac{V_{bm}}{A_{vy.1}}$ $f_v = 2.33\ ksi$

Shear interaction: $IC_v = \frac{f_v}{F_{vbm}}$ $IC_v = 0.307$ < 1.00 OK

DESIGN OF DYNA TECHNOLOGIES CONNECTOR "B":

Beam/Column Maximum Results - Connector "B": Maximum Moment With Axial Compression

$F_{xB} = -751.00\ lb$ $M_{xB} = 0.00$

$F_{yB} = -133.00\ lb$ $M_{yB} = 0.00$

$F_{zB} = 0.00$ $M_{zB} = -677.00\ lb \cdot ft$

MEMBER STRESSES:

flexural stress: $f_{btB} = \frac{M_{zB}}{S_{xx.B}}$ $f_{btB} = -10.29\ ksi$

Allowable flexural stress: $F_{tb} = 21.00\ ksi$

Combined Shear, Compression and Bending:

$f_{aB} = \frac{F_{xB}}{A_B}$ $f_{aB} = -0.50\ ksi$

$f_{bB} = \frac{M_{yB}}{S_{yy.B}} + \frac{M_{zB}}{S_{xx.B}}$ $f_{bB} = -10.29\ ksi$

$f_{vB} = \frac{|F_{yB}|}{A_{vy.B}}$ $f_{vB} = 0.32\ ksi$

$IC_B = \frac{f_{aB}}{F_{aB}} + \left(\frac{f_{bB}}{F_{tb}}\right)^2 + \left(\frac{f_{vB}}{F_{vB}}\right)^2$ $IC_B = 0.20$ < 1.00, OK

Evaluate the connection between Connector "B" and the Main Beams:
Based on the stiffness of the joint and the inability to transfer moment at the joint, the connections at the ends of the glass support beams are modeled as pinned (i.e. no moment transfer).

Decouple the Moment: $V_B = |F_{yB}| + \frac{M_{zB}}{d_B}$ $V_B = -2.27\ kip$

Shear Area: $A_{vy.B} = 0.42\ in^2$

Shear Stress: $f_{v.B} = \frac{V_B}{A_{vy.B}}$ $f_{v.B} = -5.39\ ksi$

Allowable Shear stress: $F_{vB} = 10.35\ ksi$

Shear interaction: $IC_{vB} = \frac{f_{v.B}}{F_{vB}}$ $IC_{vB} = -0.52$ < 1.00, OK

EVALUATE THE GABLE END HEADER BEAM:

The bottom chord of the gable end supports the weight of the panels and the transfers the wind load to the side walls of the structure:

$F_{xgb} = -0.165\,kip$ $M_{xgb} = 0.000\,kip\,ft$

$F_{ygb} = -0.024\,kip$ $M_{ygb} = 0.00\,kip\,ft$

$F_{zgb} = 0.000\,kip$ $M_{zgb} = 0.002\,kip\,ft$

Member Stresses:

flexural stress: $f_{btgb} = \frac{|M_{ygb}|}{S_{yy.B}}$ $f_{btgb} = 0.00\,ksi$

Allowable flexural stress: $F_{tb} = 21.00\,ksi$

Combined Shear, Compression and Bending:

$f_{agb} = \frac{|F_{xgb}|}{A_B}$ $f_{agb} = 0.11\,ksi$

$f_{bgb} = \frac{|M_{ygb}|}{S_{yy.B}} + \frac{M_{zgb}}{S_{xx.B}}$ $f_{bgb} = 0.03\,ksi$

$f_{vgb} = \frac{|F_{zgb}|}{A_{vx.B}}$ $f_{vgb} = 0.00\,ksi$

$IC_{gb} = \frac{f_{agb}}{F_{aB}} + \left(\frac{f_{btgb}}{F_{tb}}\right)^2 + \left(\frac{f_{vgb}}{F_{vB}}\right)^2$ $IC_{gb} = 0.01$ < 1.00 OK

DESIGN OF DYNA TECHNOLOGIES CONNECTOR "C":

Beam/Column Maximum Results - Connector "C": Maximum Moment With Axial Compression

$F_{xC} = 1127.00\ lb$ $M_{xC} = 0.00$

$F_{yC} = 84.00\ lb$ $M_{yC} = 0.00$

$F_{zC} = 0.00$ $M_{zC} = -171.00\ lb{\cdot}ft$

MEMBER STRESSES:

flexural stress: $f_{btC} = \frac{M_{zC}}{S_{xx.C}}$ $f_{btC} = -2.01\,ksi$

Allowable flexural stress: $F_{tb} = 21.00\,ksi$

Combined Shear, Compression and Bending:

$f_{aC} = \frac{F_{xC}}{A_C}$ $f_{aC} = 1.06\,ksi$

$f_{bC} = \frac{M_{yC}}{S_{yy.C}} + \frac{M_{zC}}{S_{xx.C}}$ $f_{bC} = -2.01\,ksi$

$f_{vC} = \frac{|F_{yC}|}{A_{vy.C}}$ $f_{vC} = 0.13\,ksi$

$IC_C = \frac{f_{aC}}{F_{aC}} + \left(\frac{f_{bC}}{F_{tb}}\right)^2 + \left(\frac{f_{vC}}{F_{vC}}\right)^2$ $IC_C = 0.18$ < 1.00, OK

Evaluate the connection between Connector "C" and the Main Beams:
Based on the stiffness of the joint and the inability to transfer moment at the joint, the connections at the ends of the glass support beams are modeled as pinned (i.e. no moment transfer).

Decouple the Moment: $V_C = |F_{yC}| + \frac{M_{zC}}{d_C}$ $V_C = -0.50\,\text{kip}$

Shear Area: $A_{vy.C} = 0.63\,\text{in}^2$

Shear Stress: $f_{v.C} = \frac{V_C}{A_{vy.C}}$ $f_{v.C} = -0.80\,\text{ksi}$

Allowable Shear stress: $F_{vC} = 12.97\,\text{ksi}$

Shear interaction: $IC_{vC} = \frac{f_{v.C}}{F_{vC}}$ $IC_{vC} = -0.062$ < 1.00, OK

DESIGN OF BRACING MEMBER:

Beam/Column Maximum Results - Bracing Member: Maximum Axial Compression

$F_{xBR} = 908.00\ \text{lb}$ $M_{xBR} = 0.00$

$F_{yBR} = 2.00\ \text{lb}$ $M_{yBR} = 0.00$

$F_{zBR} = 0.00$ $M_{zBR} = 2.00\ \text{lb·ft}$

MEMBER STRESSES:

flexural stress: $f_{btBR} = \frac{M_{zBR}}{S_{xx.BR}}$ $f_{btBR} = 0.04\,\text{ksi}$

Allowable flexural stress: $F_{tb} = 21.00\,\text{ksi}$

Combined Shear, Compression and Bending:

$f_{aBR} = \frac{F_{xBR}}{A_{BR}}$ $f_{aBR} = 0.97\,\text{ksi}$

$f_{bBR} = \frac{M_{yBR}}{S_{yy.BR}} + \frac{M_{zBR}}{S_{xx.BR}}$ $f_{bBR} = 0.04\,\text{ksi}$

$f_{vBR} = \frac{|F_{yBR}|}{A_{vy.BR}}$ $f_{vBR} = 0.00\,\text{ksi}$

$IC_{BR} = \frac{f_{aBR}}{F_{aBR}} + \left(\frac{f_{bBR}}{F_{tb}}\right)^2 + \left(\frac{f_{vBR}}{F_{vBR}}\right)^2$ $IC_{BR} = 0.02$ < 1.00 OK

Evaluate the connection between bracing member and the Main Beams:
Based on the stiffness of the joint and the inability to transfer moment at the joint, the connections at the ends of the glass support beams are modeled as pinned (i.e. no moment transfer).

Decouple the Moment: $V_{BR} = \left|F_{yBR}\right| + \frac{M_{zBR}}{d_{BR}}$ $V_{BR} = 0.01\,kip$

Shear Area: $A_{vy.BR} = 0.50\,in^2$

Shear Stress: $f_{v.BR} = \frac{V_{BR}}{A_{vy.B}}$ $f_{v.BR} = 0.03\,ksi$

Allowable Shear stress: $F_{vBR} = 14.18\,ksi$

Shear interaction: $IC_{vBR} = \frac{f_{v.BR}}{F_{vBR}}$ $IC_{vBR} = 0.0023$ < 1.00 OK

EVALUATE THE CONNECTION AT THE BASE OF THE FRAME:

3/8" Hilti stainless steel anchors: (Hilti Product Technical Guide - 3000 psi concrete)

$n = 2$ minimum number of anchors resisting reactions from one frame

$V_{allow} = 1330lb$ $T_{allow} = 1000lb$

Maximum Shear at Anchor:

$nV_{allow} = 2660\ lb > V_{max} = 1414lb$ OK

Maximum Uplift at Anchor:

$nT_{allow} = 2000\ lb > T_{max} = 1745lb$ OK

EVALUATE THE TRACK BENDING DUE TO THE LATERAL REACTIONS FROM THE FRAMES:

$t_{bc} = 0.562in$ Track thickness

$w_{bc} = 2.5in$ Track width

$S_{bc} = \frac{t_{bc} w_{bc}^2}{6}$ $S_{bc} = 0.59\,in^3$

$L_{bc} = 36in$ Spacing between anchors

$f_{b.bc} = \frac{0.171 V_{max} L_{bc}}{S_{bc}}$ $f_{b.bc} = 14.87\,ksi$

$IC_{bc} = \frac{f_{b.bc}}{F_{tb}}$ $IC_{bc} = 0.708$ < 1.00 OK

EVALUATE CONNECTION AT JOINTS

Screw diameter: $d_{screw} = 0.3125in$

Screw Area $A_{screw} = \frac{\pi\left(d_{screw}^{2}\right)}{4}$

Total number of screws: $N_{screw} = 8$

Tension Force: $F_{tf} = 10.40kip$ From Risa Analysis

Shear Force: $F_s = 1.731kip$ From Risa Analysis

Allowable Tension per Screw: $Ft_{allow} = 75ksi\, A_{screw}$ Aluminum Structures Design Guide Table 8-10

$Ft_{allow} = 5752.43\ lb$

Allowable Shear per Screw: $Fv_{allow} = 45ksi\, A_{screw}$ Aluminum Structures Design Guide Table 8-10

$Fv_{allow} = 3451.46\ lb$

Tension per Bolt: $F_t = \frac{F_{tf}}{N_{screw}}$ $check = if\left(F_t < Ft_{allow}, "OK", "NOT OK"\right)$

check = "OK"

Shear per Bolt: $F_v = \frac{F_s}{N_{screw}}$ $check = if\left(F_v < Fv_{allow}, "OK", "NOT OK"\right)$

check = "OK"

$\left(\frac{F_t}{Ft_{allow}}\right) + \left(\frac{F_v}{Fv_{allow}}\right) = 0.29$ < 1.00; OK

Based on the analysis and evaluations performed in this report, the structure designed per the References is structurally adequate.

LONCO, INC.
Civil, Structural, Transportation & Environmental Consulting Since 1962

Project:	Dyna Dome - Middletown, DE	Job No.	C10104-07
By:	M. Patel	Date:	10/27/210
Checked By:	WHE	Date:	
Subject:	Structural Calculations	Sheet No.:	

References / Notes

Exterior Foundation Pressure Check:

Distance between columns	6.08	FT								
Grade Wall Size:	1.33	feet by deep	0.67	ft wide						
Footing Size	0.83	feet by deep	1.67	ft wide						
Weight of Footing:					1.23	Kips				
Weight of Grade wall					0.78	Kips				
Weight of Structure:					1.00	Kips				
Total Dead Load					3.01	Kips				
Max Compressive Force From RISA Analysis:					2.51	Kips	=	1.361	ksf	
Max Uplift Force From RISA Analysis:					1.75	Kips				
Allowable Soil Bearing Capacity:	**1.500**	ksf		***Footing design okay***						Assumed
Uplift Check				***Footing design okay***						(no Geotech Report)

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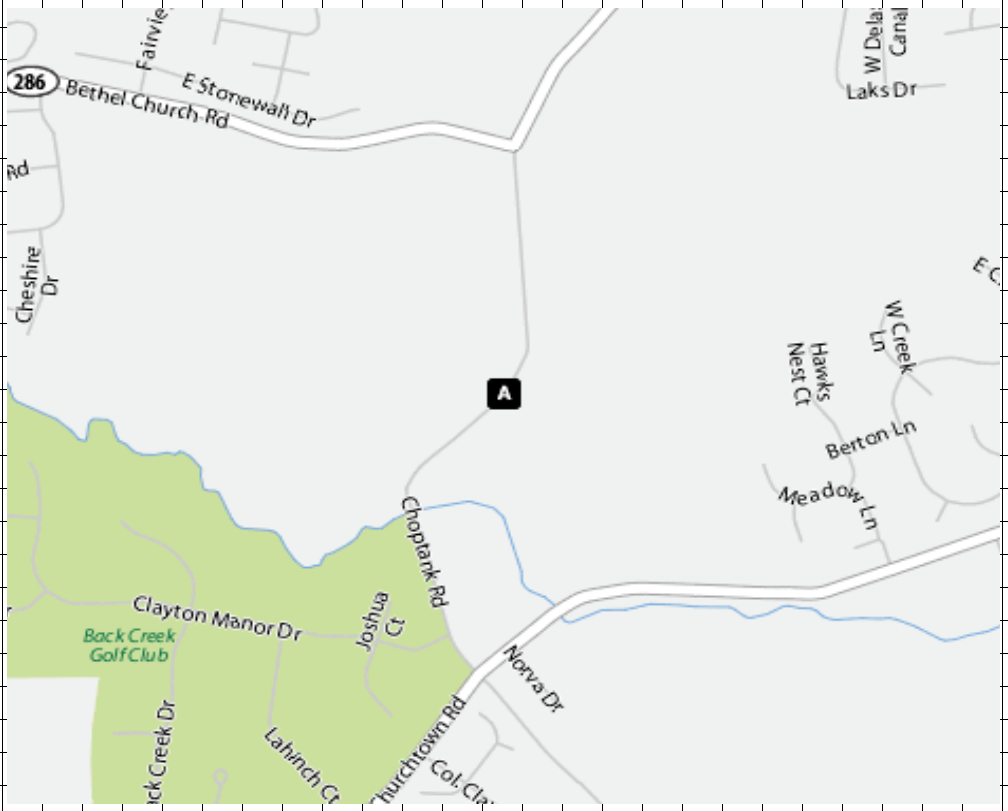
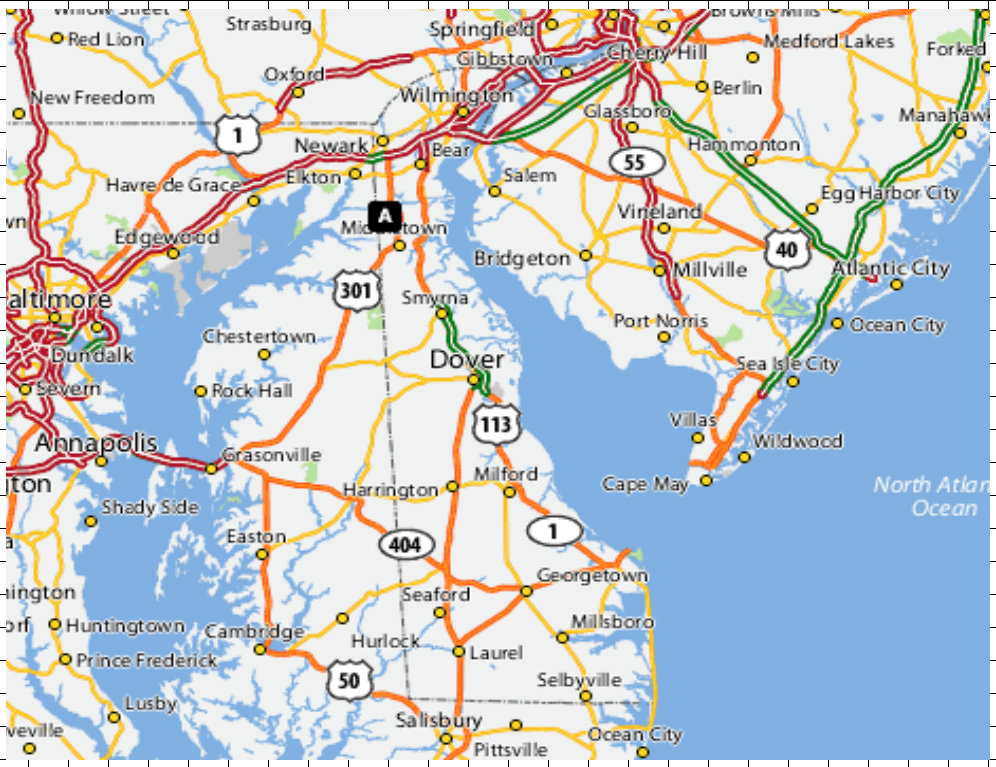
Project:	Dyna Dome - Middletown, DE	Job No.	C10104-07
By:	M. Patel	Date:	10/27/210
Checked By:	WHE	Date:	
Subject:	Structural Calculations	Sheet No.:	

1232 Choptank Road, Middletown, DE 19709

Local Map:



State Map



References / Notes

Yahoo Maps

References / Notes

USGS

USGS: Seismic Hazard Curves and Uniform Hazard Response Spectra

2003 NEHRP Seismic Design Provisions

Zip Code = 19709

Spectral Response Accelerations Ss and S1

Ss and S1 = Mapped Spectral Acceleration Values

Data are based on a 0.05000000074505806 deg grid spacing

Period (sec)	Centroid Sa (g)		Period (sec)	Maximum Sa (g)		Period (sec)	Minimum Sa (g)	
0.2	0.217	(Ss)	0.2	0.233	(Ss)	0.2	0.203	(Ss)
1.0	0.054	(S1)	1.0	0.055	(S1)	1.0	0.053	(S1)

Spectral Response Accelerations SMs and SM1

SMs = Fa x Ss and SM1 = Fv x S1

Site Class D

Period (sec)	Centroid Sa (g)	
0.2	0.347	(SMs, Fa = 1.600)
1.0	0.129	(SM1, Fv = 2.400)

Period (sec)	Maximum Sa (g)	
0.2	0.373	(SMs, Fa = 1.600)
1.0	0.133	(SM1, Fv = 2.400)

Period (sec)	Minimum Sa (g)	
0.2	0.325	(SMs, Fa = 1.600)
1.0	0.126	(SM1, Fv = 2.400)

Spectral Response Accelerations SDs and SD1

SDs = 2/3 x SMs and SD1 = 2/3 x SM1

Site Class D

Period (sec)	Centroid Sa (g)	
0.2	0.231	(SDs)
1.0	0.086	(SD1)

Period (sec)	Maximum Sa (g)	
0.2	0.249	(SDs)
1.0	0.088	(SD1)

Period (sec)	Minimum Sa (g)	
0.2	0.217	(SDs)
1.0	0.084	(SD1)

LONCO, INC.
Civil, Structural & Transportation Consulting Since 1962

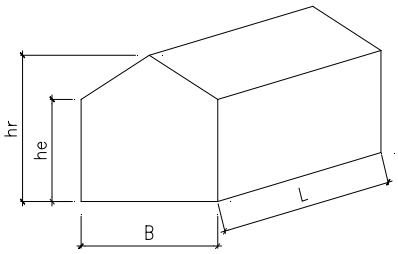
PROJECT : Middletown, DE
CLIENT : DynaDome Pool Enclosures
JOB NO. : C10104-07 DATE :

PAGE :
DESIGN BY :
REVIEW BY :

Wind Analysis for Low-rise Building, Based on ASCE 7-05 / IBC 2006

INPUT DATA

Exposure category (B, C or D)			B	
Importance factor, pg 77, (0.87, 1.0 or 1.15)	I =		1.00	Category II
Basic wind speed (IBC Tab 1609.3.1 V_{3S})	V =		90	mph
Topographic factor (Sec.6.5.7.2, pg 26 & 45)	K_{zt} =		1	Flat
Building height to eave	h_e =		9	ft
Building height to ridge	h_r =		13.67	ft
Building length	L =		55	ft
Building width	B =		24.5	ft
Effective area of components	A =		0	ft^2



DESIGN SUMMARY

Max horizontal force normal to building length, L, face	=	7.52	kips
Max horizontal force normal to building length, B, face	=	2.78	kips
Max total horizontal torsional load	=	37.40	ft-kips
Max total upward force	=	13.48	kips

ANALYSIS

Velocity pressure

$q_h = 0.00256\, K_h\, K_{zt}\, K_d\, V^2\, I$ = **12.34** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 6-15, page 27)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 6-3, Case 1,pg 79) = **0.70**

K_d = wind directionality factor. (Tab. 6-4, for building, page 80) = **0.85**

h = mean roof height = **11.34** ft

< 60 ft, [Satisfactory]

Design pressures for MWFRS

$p = q_h\, [(G\, C_{pf}) - (G\, C_{pi})]$

where: p = pressure in appropriate zone. (Eq. 6-18, page 28).

$G\, C_{pf}$ = product of gust effect factor and external pressure coefficient, see table below. (Fig. 6-10, page 53 & 54)

$G\, C_{pi}$ = product of gust effect factor and internal pressure coefficient.(Fig. 6-5, Enclosed Building, page 47)

= **0.18** or **-0.18**

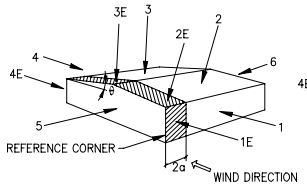
a = width of edge strips, Fig 6-10, note 9, page 54, MAX[MIN(0.1B, 0.4h), 0.04B,3] = **3.00 ft**

Net Pressures (psf), Basic Load Cases

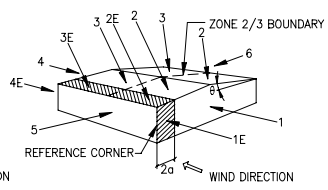
Surface	Roof angle θ = 20.87			Roof angle θ = 0.00		
	$G\, C_{pf}$	Net Pressure with		$G\, C_{pf}$	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$		$(+GC_{pi})$	$(-GC_{pi})$
1	0.53	4.35	8.79	0.40	2.71	7.16
2	-0.61	-9.77	-5.33	-0.69	-10.73	-6.29
3	-0.48	-8.09	-3.65	-0.37	-6.79	-2.34
4	-0.42	-7.46	-3.02	-0.29	-5.80	-1.36
1E	0.79	7.53	11.97	0.61	5.31	9.75
2E	-0.95	-13.99	-9.55	-1.07	-15.42	-10.98
3E	-0.68	-10.56	-6.12	-0.53	-8.76	-4.32
4E	-0.63	-9.95	-5.50	-0.43	-7.53	-3.08
5	-0.45	-7.77	-3.33	-0.45	-7.77	-3.33
6	-0.45	-7.77	-3.33	-0.45	-7.77	-3.33

Net Pressures (psf), Torsional Load Cases

Surface	Roof angle θ = 20.87		
	$G\, C_{pf}$	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$
1T	0.53	1.09	2.20
2T	-0.61	-2.44	-1.33
3T	-0.48	-2.02	-0.91
4T	-0.42	-1.87	-0.76
Surface	Roof angle θ = 0.00		
	$G\, C_{pf}$	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$
1T	0.40	0.68	1.79
2T	-0.69	-2.68	-1.57
3T	-0.37	-1.70	-0.59
4T	-0.29	-1.45	-0.34

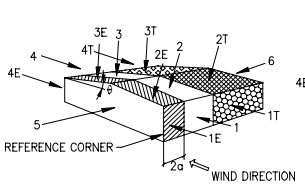


Transverse Direction

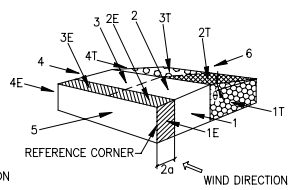


Longitudinal Direction

Basic Load Cases



Transverse Direction



Longitudinal Direction

Torsional Load Cases

Basic Load Cases in Transverse Direction

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$
1	441	1.92	3.88
2	642	-6.28	-3.42
3	642	-5.20	-2.34
4	441	-3.29	-1.33
1E	54	0.41	0.65
2E	79	-1.10	-0.75
3E	79	-0.83	-0.48
4E	54	-0.54	-0.30
Σ	Horiz.	5.67	5.67
	Vert.	-12.52	-6.54
10 psf min.	Horiz.	7.52	7.52
Sec. 6.1.4.1	Vert.	-13.48	-13.48

Basic Load Cases in Longitudinal Direction

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$
1	217	0.59	1.55
2	544	-5.84	-3.43
3	544	-3.69	-1.28
4	217	-1.26	-0.29
1E	61	0.32	0.59
2E	177	-2.72	-1.94
3E	177	-1.55	-0.76
4E	61	-0.46	-0.19
Σ	Horiz.	2.63	2.63
	Vert.	-12.90	-6.92
10 psf min.	Horiz.	2.78	2.78
Sec. 6.1.4.1	Vert.	-13.48	-13.48

Torsional Load Cases in Transverse Direction

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$	Torsion (ft-k) $(+GC_{pi})$	Torsion (ft-k) $(-GC_{pi})$
1	194	0.84	1.70	10	21
2	282	-2.75	-1.50	-12	-7
3	282	-2.28	-1.03	10	4
4	194	-1.44	-0.58	18	7
1E	54	0.41	0.65	10	16
2E	79	-1.10	-0.75	-10	-7
3E	79	-0.83	-0.48	7	4
4E	54	-0.54	-0.30	13	7
1T	248	0.27	0.54	-4	-7
2T	361	-0.88	-0.48	4	2
3T	361	-0.73	-0.33	-4	-2
4T	248	-0.46	-0.19	-6	-3
Total Horiz. Torsional Load, M_T				37	37

Torsional Load Cases in Longitudinal Direction

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$	Torsion (ft-k) $(+GC_{pi})$	Torsion (ft-k) $(-GC_{pi})$
1	78	0.21	0.56	1	2
2	368	-3.95	-2.31	19	11
3	368	-2.50	-0.86	-12	-4
4	78	-0.45	-0.11	1	0
1E	61	0.32	0.59	3	5
2E	177	-2.72	-1.94	13	9
3E	177	-1.55	-0.76	-8	-4
4E	61	-0.46	-0.19	4	2
1T	139	0.09	0.25	-1	-1
2T	544	-1.46	-0.86	-14	-8
3T	544	-0.92	-0.32	9	3
4T	139	-0.20	-0.05	-1	0
Total Horiz. Torsional Load, M_T				15.1	15.1

Design pressures for components and cladding

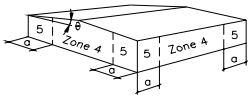
$p = q_h[(G C_p) - (G C_{pi})]$

where: p = pressure on component. (Eq. 6-22, pg 28)

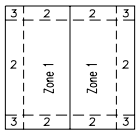
p_{min} = 10 psf (Sec. 6.1.4.2, pg 21)

G C_p = external pressure coefficient.

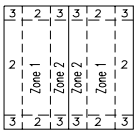
see table below. (Fig. 6-11, page 55~58)



Walls



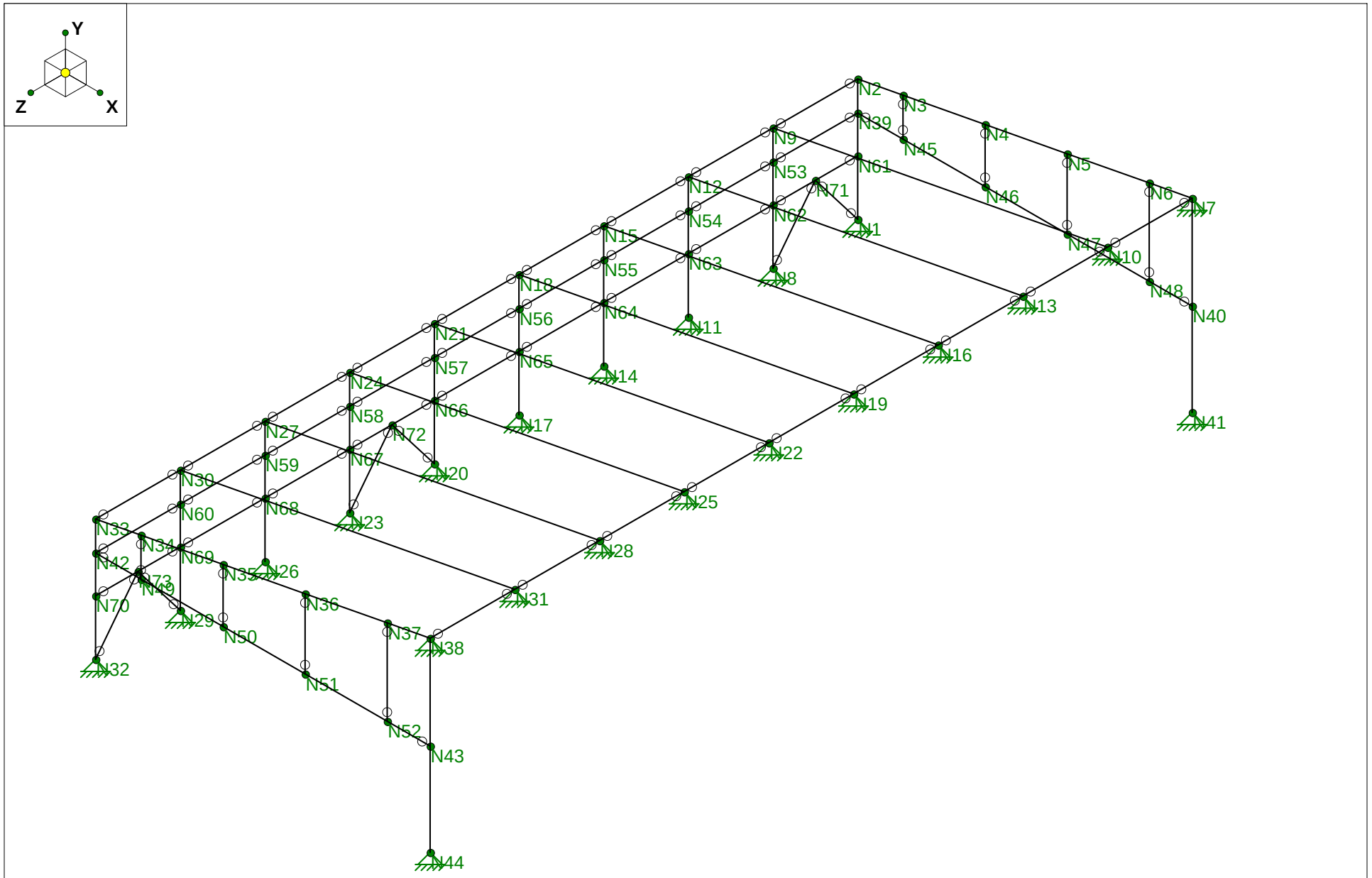
Roof $\theta \leq 7°$



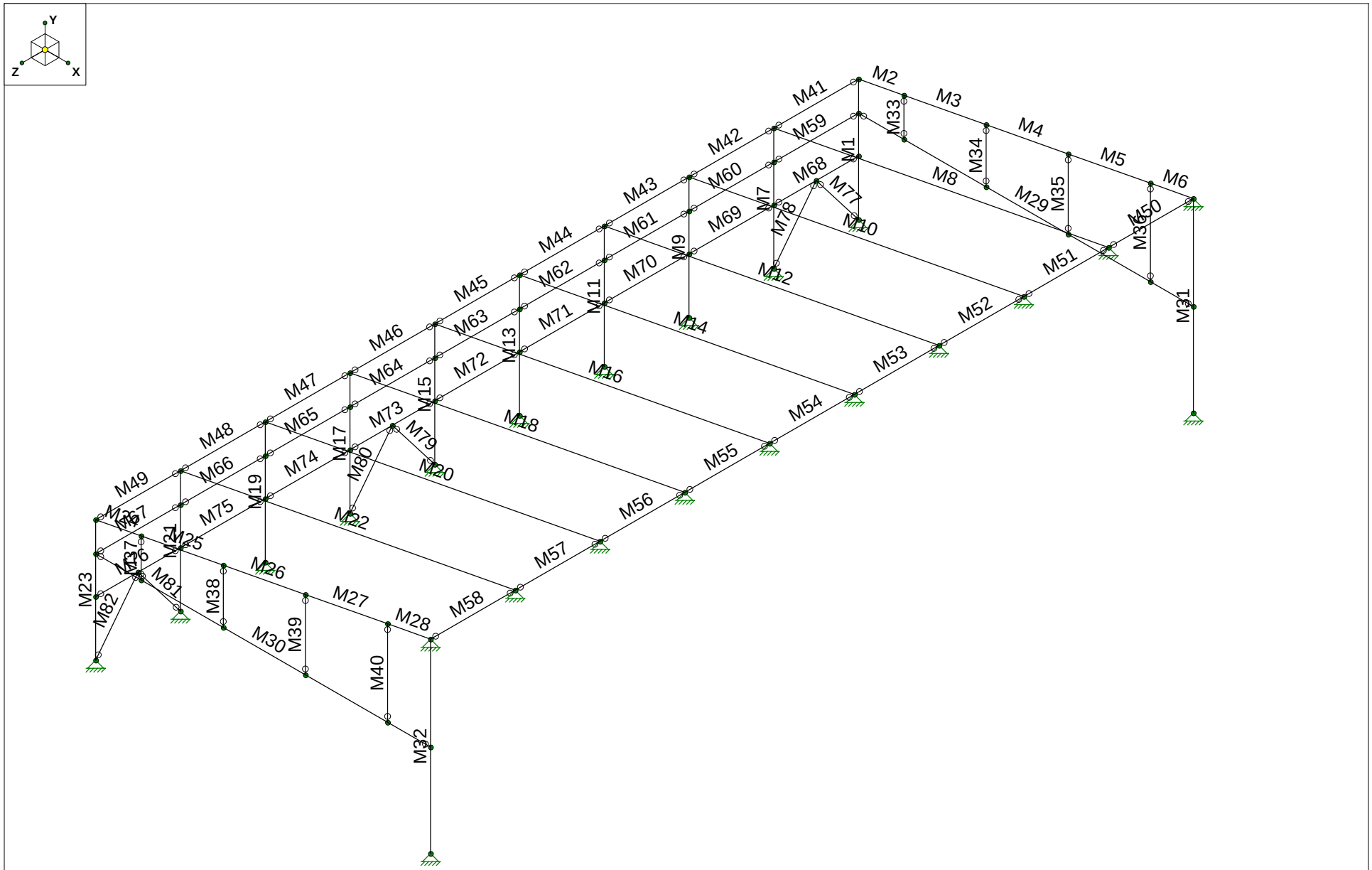
Roof $\theta > 7°$

	Effective Area (ft^2)	Zone 1 GC_P	Zone 1 $-GC_P$	Zone 2 GC_P	Zone 2 $-GC_P$	Zone 3 GC_P	Zone 3 $-GC_P$	Zone 4 GC_P	Zone 4 $-GC_P$	Zone 5 GC_P	Zone 5 $-GC_P$
Comp.	0	0.50	-0.90	0.50	-1.90	0.50	-2.60	1.00	-1.10	1.00	-1.40

Comp. & Cladding Pressure (psf)	Zone 1 Positive	Zone 1 Negative	Zone 2 Positive	Zone 2 Negative	Zone 3 Positive	Zone 3 Negative	Zone 4 Positive	Zone 4 Negative	Zone 5 Positive	Zone 5 Negative
	10.00	-13.32	10.00	-25.66	10.00	-34.30	14.56	-15.79	14.56	-19.49



LONCO, Inc.	Middletown, DE	
M. Patel		Oct 28, 2010 at 3:29 PM
C10104-07		C10104-07.r3d



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M. Patel		Oct 28, 2010 at 3:30 PM
C10104-07		C10104-07.r3d

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation	Yes
Include Warping	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Vertical Axis	Y

Hot Rolled Steel Code	AISC: LRFD 3rd
Cold Formed Steel Code	AISI 99: ASD
Wood Code	NDS 91/97: ASD
Wood Temperature	< 100F
Concrete Code	ACI 1999

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	PCA Load Contour
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections	Yes
Bad Framing Warnings	No
Unused Force Warnings	Yes

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]
1	ALUMINUM	10100	4077	.3	1.29	.173
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	10100	4077	.3	1.29	.173

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	COL	8" Section	Column	ALUMINUM	3.759	8.375	35.47	44.281
2	BEAM	8" Section	Beam	ALUMINUM	3.759	8.375	35.47	44.281
3	ConnB	3.425" CONNECTOR B	Beam	ALUMINUM	1.488	1.332	2.092	3.49
4	Brace	2-1x2x1/8 channels	HBrace	ALUMINUM	.938	.552	.552	.552
5	ConnC	3.526" CONNECTOR C	Beam	ALUMINUM	1.06	.684	1.787	1.812

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area (Me...	Surface (...
1	D	DL						2	9	
2	Lr	RLL							9	
3	W1	WL				10		18		
4	W2	WL				10		18		
5	W3	WL				2		18		
6	W4	None				2		18		
7	BLC 1 Transient Are...	None						286		
8	BLC 2 Transient Are...	None						286		

Load Combinations

	Description	Solve	PD...	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Total Dead	Yes	Y		Y	1	1	1												
2	SELF+D+Lr	Yes	Y		L1	1	2	1												
3	SELF+D+W1	Yes	Y		L1	1	3	1												
4	SELF+D+W2	Yes	Y		L1	1	4	1												
5	SELF+D+W3	Yes	Y		L1	1	5	1												
6	SELF+D+W4	Yes	Y		L1	1	6	1												
7	SELF+D+0.75L+0....	Yes	Y		L1	1	2	.75	3	.75										
8	SELF+D+0.75L+0....	Yes	Y		L1	1	2	.75	4	.75										
9	SELF+D+0.75L+0....	Yes	Y		L1	1	2	.75	5	.75										
10	SELF+D+0.75L+0....	Yes	Y		L1	1	2	.75	6	.75										

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From D...
1	N1	0	0	0	0	
2	N2	0	8.72917	0	0	
3	N3	3.260417	9.35417	0	0	
4	N4	9.15625	10.47917	0	0	
5	N5	15.052083	11.60417	0	0	
6	N6	20.947917	12.739583	0	0	
7	N7	24.03125	13.322917	0	0	
8	N8	0	0	6.083333	0	
9	N9	0	8.72917	6.083333	0	
10	N10	24.03125	13.322917	6.083333	0	
11	N11	0	0	12.166667	0	
12	N12	0	8.72917	12.166667	0	
13	N13	24.03125	13.322917	12.166667	0	
14	N14	0	0	18.25	0	
15	N15	0	8.72917	18.25	0	
16	N16	24.03125	13.322917	18.25	0	
17	N17	0	0	24.333333	0	
18	N18	0	8.72917	24.333333	0	
19	N19	24.03125	13.322917	24.333333	0	
20	N20	0	0	30.416667	0	
21	N21	0	8.72917	30.416667	0	
22	N22	24.03125	13.322917	30.416667	0	
23	N23	0	0	36.5	0	
24	N24	0	8.72917	36.5	0	
25	N25	24.03125	13.322917	36.5	0	
26	N26	0	0	42.583333	0	
27	N27	0	8.72917	42.583333	0	
28	N28	24.03125	13.322917	42.583333	0	
29	N29	0	0	48.666667	0	
30	N30	0	8.72917	48.666667	0	
31	N31	24.03125	13.322917	48.666667	0	
32	N32	0	0	54.75	0	
33	N33	0	8.72917	54.75	0	
34	N34	3.260417	9.35417	54.75	0	
35	N35	9.15625	10.47917	54.75	0	
36	N36	15.052083	11.60417	54.75	0	
37	N37	20.947917	12.739583	54.75	0	
38	N38	24.03125	13.322917	54.75	0	
39	N39	0	6.614583	0	0	
40	N40	24.03125	6.614583	0	0	
41	N41	24.03125	0	0	0	
42	N42	0	6.614583	54.75	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From D...
43	N43	24.03125	6.614583	54.75	0	
44	N44	24.03125	0	54.75	0	
45	N45	3.260417	6.614583	0	0	
46	N46	9.15625	6.614583	0	0	
47	N47	15.052083	6.614583	0	0	
48	N48	20.947917	6.614583	0	0	
49	N49	3.260417	6.614583	54.75	0	
50	N50	9.15625	6.614583	54.75	0	
51	N51	15.052083	6.614583	54.75	0	
52	N52	20.947917	6.614583	54.75	0	
53	N53	0	6.614583	6.083333	0	
54	N54	0	6.614583	12.166667	0	
55	N55	0	6.614583	18.25	0	
56	N56	0	6.614583	24.333333	0	
57	N57	0	6.614583	30.416667	0	
58	N58	0	6.614583	36.5	0	
59	N59	0	6.614583	42.583333	0	
60	N60	0	6.614583	48.666667	0	
61	N61	0	3.94792	0	0	
62	N62	0	3.94792	6.083333	0	
63	N63	0	3.94792	12.166667	0	
64	N64	0	3.94792	18.25	0	
65	N65	0	3.94792	24.333333	0	
66	N66	0	3.94792	30.416667	0	
67	N67	0	3.94792	36.5	0	
68	N68	0	3.94792	42.583333	0	
69	N69	0	3.94792	48.666667	0	
70	N70	0	3.94792	54.75	0	
71	N71	0	3.94792	3.04167	0	
72	N72	0	3.94792	33.45833	0	
73	N73	0	3.94792	51.70833	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			COL	Column	None	ALUMINUM	Default
2	M2	N2	N3			BEAM	Beam	None	ALUMINUM	Default
3	M3	N3	N4			BEAM	Beam	None	ALUMINUM	Default
4	M4	N4	N5			BEAM	Beam	None	ALUMINUM	Default
5	M5	N5	N6			BEAM	Beam	None	ALUMINUM	Default
6	M6	N6	N7			BEAM	Beam	None	ALUMINUM	Default
7	M7	N8	N9			COL	Column	None	ALUMINUM	Default
8	M8	N9	N10			BEAM	Beam	None	ALUMINUM	Default
9	M9	N11	N12			COL	Column	None	ALUMINUM	Default
10	M10	N12	N13			BEAM	Beam	None	ALUMINUM	Default
11	M11	N14	N15			COL	Column	None	ALUMINUM	Default
12	M12	N15	N16			BEAM	Beam	None	ALUMINUM	Default
13	M13	N17	N18			COL	Column	None	ALUMINUM	Default
14	M14	N18	N19			BEAM	Beam	None	ALUMINUM	Default
15	M15	N20	N21			COL	Column	None	ALUMINUM	Default
16	M16	N21	N22			BEAM	Beam	None	ALUMINUM	Default
17	M17	N23	N24			COL	Column	None	ALUMINUM	Default
18	M18	N24	N25			BEAM	Beam	None	ALUMINUM	Default
19	M19	N26	N27			COL	Column	None	ALUMINUM	Default
20	M20	N27	N28			BEAM	Beam	None	ALUMINUM	Default
21	M21	N29	N30			COL	Column	None	ALUMINUM	Default
22	M22	N30	N31			BEAM	Beam	None	ALUMINUM	Default

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
23	M23	N32	N33			COL	Column	None	ALUMINUM	Default
24	M24	N33	N34			BEAM	Beam	None	ALUMINUM	Default
25	M25	N34	N35			BEAM	Beam	None	ALUMINUM	Default
26	M26	N35	N36			BEAM	Beam	None	ALUMINUM	Default
27	M27	N36	N37			BEAM	Beam	None	ALUMINUM	Default
28	M28	N37	N38			BEAM	Beam	None	ALUMINUM	Default
29	M29	N39	N40		90	ConnB	Beam	None	ALUMINUM	Default
30	M30	N42	N43		90	ConnB	Beam	None	ALUMINUM	Default
31	M31	N7	N41			ConnB	Beam	None	ALUMINUM	Default
32	M32	N38	N44			ConnB	Beam	None	ALUMINUM	Default
33	M33	N3	N45			ConnB	Beam	None	ALUMINUM	Default
34	M34	N4	N46			ConnB	Beam	None	ALUMINUM	Default
35	M35	N5	N47			ConnB	Beam	None	ALUMINUM	Default
36	M36	N6	N48			ConnB	Beam	None	ALUMINUM	Default
37	M37	N34	N49			ConnB	Beam	None	ALUMINUM	Default
38	M38	N35	N50			ConnB	Beam	None	ALUMINUM	Default
39	M39	N36	N51			ConnB	Beam	None	ALUMINUM	Default
40	M40	N37	N52			ConnB	Beam	None	ALUMINUM	Default
41	M41	N2	N9			ConnC	Beam	None	ALUMINUM	Default
42	M42	N9	N12			ConnC	Beam	None	ALUMINUM	Default
43	M43	N12	N15			ConnC	Beam	None	ALUMINUM	Default
44	M44	N15	N18			ConnC	Beam	None	ALUMINUM	Default
45	M45	N18	N21			ConnC	Beam	None	ALUMINUM	Default
46	M46	N21	N24			ConnC	Beam	None	ALUMINUM	Default
47	M47	N24	N27			ConnC	Beam	None	ALUMINUM	Default
48	M48	N27	N30			ConnC	Beam	None	ALUMINUM	Default
49	M49	N30	N33			ConnC	Beam	None	ALUMINUM	Default
50	M50	N7	N10			ConnC	Beam	None	ALUMINUM	Default
51	M51	N10	N13			ConnC	Beam	None	ALUMINUM	Default
52	M52	N13	N16			ConnC	Beam	None	ALUMINUM	Default
53	M53	N16	N19			ConnC	Beam	None	ALUMINUM	Default
54	M54	N19	N22			ConnC	Beam	None	ALUMINUM	Default
55	M55	N22	N25			ConnC	Beam	None	ALUMINUM	Default
56	M56	N25	N28			ConnC	Beam	None	ALUMINUM	Default
57	M57	N28	N31			ConnC	Beam	None	ALUMINUM	Default
58	M58	N31	N38			ConnC	Beam	None	ALUMINUM	Default
59	M59	N39	N53			ConnB	Beam	None	ALUMINUM	Default
60	M60	N53	N54			ConnB	Beam	None	ALUMINUM	Default
61	M61	N54	N55			ConnB	Beam	None	ALUMINUM	Default
62	M62	N55	N56			ConnB	Beam	None	ALUMINUM	Default
63	M63	N56	N57			ConnB	Beam	None	ALUMINUM	Default
64	M64	N57	N58			ConnB	Beam	None	ALUMINUM	Default
65	M65	N58	N59			ConnB	Beam	None	ALUMINUM	Default
66	M66	N59	N60			ConnB	Beam	None	ALUMINUM	Default
67	M67	N60	N42			ConnB	Beam	None	ALUMINUM	Default
68	M68	N61	N62			ConnB	Beam	None	ALUMINUM	Default
69	M69	N62	N63			ConnB	Beam	None	ALUMINUM	Default
70	M70	N63	N64			ConnB	Beam	None	ALUMINUM	Default
71	M71	N64	N65			ConnB	Beam	None	ALUMINUM	Default
72	M72	N65	N66			ConnB	Beam	None	ALUMINUM	Default
73	M73	N66	N67			ConnB	Beam	None	ALUMINUM	Default
74	M74	N67	N68			ConnB	Beam	None	ALUMINUM	Default
75	M75	N68	N69			ConnB	Beam	None	ALUMINUM	Default
76	M76	N69	N70			ConnB	Beam	None	ALUMINUM	Default
77	M77	N1	N71			Brace	HBrace	None	ALUMINUM	Default
78	M78	N71	N8			Brace	HBrace	None	ALUMINUM	Default
79	M79	N20	N72			Brace	HBrace	None	ALUMINUM	Default

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
80	M80	N72	N23			Brace	HBrace	None	ALUMINUM	Default
81	M81	N29	N73			Brace	HBrace	None	ALUMINUM	Default
82	M82	N73	N32			Brace	HBrace	None	ALUMINUM	Default

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	N7	Reaction	Reaction	Reaction				
2	N10	Reaction	Reaction	Reaction				
3	N13	Reaction	Reaction	Reaction				
4	N16	Reaction	Reaction	Reaction				
5	N19	Reaction	Reaction	Reaction				
6	N22	Reaction	Reaction	Reaction				
7	N25	Reaction	Reaction	Reaction				
8	N28	Reaction	Reaction	Reaction				
9	N31	Reaction	Reaction	Reaction				
10	N38	Reaction	Reaction	Reaction				
11	N32	Reaction	Reaction	Reaction				
12	N29	Reaction	Reaction	Reaction				
13	N26	Reaction	Reaction	Reaction				
14	N23	Reaction	Reaction	Reaction				
15	N20	Reaction	Reaction	Reaction				
16	N17	Reaction	Reaction	Reaction				
17	N14	Reaction	Reaction	Reaction				
18	N11	Reaction	Reaction	Reaction				
19	N8	Reaction	Reaction	Reaction				
20	N1	Reaction	Reaction	Reaction				
21	N44	Reaction	Reaction	Reaction				
22	N41	Reaction	Reaction	Reaction				

Member Area Loads (BLC 1 : D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N2	N7	N10	N9	Y	Two Way	-.00055
2	N9	N10	N13	N12	Y	Two Way	-.00055
3	N12	N13	N16	N15	Y	Two Way	-.00055
4	N15	N16	N19	N18	Y	Two Way	-.00055
5	N18	N19	N22	N21	Y	Two Way	-.00055
6	N21	N22	N25	N24	Y	Two Way	-.00055
7	N24	N25	N28	N27	Y	Two Way	-.00055
8	N27	N28	N31	N30	Y	Two Way	-.00055
9	N30	N31	N38	N33	Y	Two Way	-.00055

Member Area Loads (BLC 2 : Lr)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N2	N7	N10	N9	Y	Two Way	-.019
2	N9	N10	N13	N12	Y	Two Way	-.019
3	N12	N13	N16	N15	Y	Two Way	-.019
4	N15	N16	N19	N18	Y	Two Way	-.019
5	N18	N19	N22	N21	Y	Two Way	-.019
6	N21	N22	N25	N24	Y	Two Way	-.019
7	N24	N25	N28	N27	Y	Two Way	-.019
8	N27	N28	N31	N30	Y	Two Way	-.019
9	N30	N31	N38	N33	Y	Two Way	-.019

Member Distributed Loads (BLC 1 : D)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M29	Y	-.006	-.006	0	0
2	M30	Y	-.006	-.006	0	0

Member Distributed Loads (BLC 3 : W1)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	.03	.03	0	0
2	M3	Y	.03	.03	0	0
3	M4	Y	.03	.03	0	0
4	M5	Y	.03	.03	0	0
5	M6	Y	.03	.03	0	0
6	M24	Y	.03	.03	0	0
7	M25	Y	.03	.03	0	0
8	M26	Y	.03	.03	0	0
9	M27	Y	.03	.03	0	0
10	M28	Y	.03	.03	0	0
11	M8	Y	.061	.061	0	0
12	M10	Y	.061	.061	0	0
13	M12	Y	.061	.061	0	0
14	M14	Y	.061	.061	0	0
15	M16	Y	.061	.061	0	0
16	M18	Y	.061	.061	0	0
17	M20	Y	.061	.061	0	0
18	M22	Y	.061	.061	0	0

Member Distributed Loads (BLC 4 : W2)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	-.03	-.03	0	0
2	M3	Y	-.03	-.03	0	0
3	M4	Y	-.03	-.03	0	0
4	M5	Y	-.03	-.03	0	0
5	M6	Y	-.03	-.03	0	0
6	M24	Y	-.03	-.03	0	0
7	M25	Y	-.03	-.03	0	0
8	M26	Y	-.03	-.03	0	0
9	M27	Y	-.03	-.03	0	0
10	M28	Y	-.03	-.03	0	0
11	M8	Y	-.061	-.061	0	0
12	M10	Y	-.061	-.061	0	0
13	M12	Y	-.061	-.061	0	0
14	M14	Y	-.061	-.061	0	0
15	M16	Y	-.061	-.061	0	0
16	M18	Y	-.061	-.061	0	0
17	M20	Y	-.061	-.061	0	0
18	M22	Y	-.061	-.061	0	0

Member Distributed Loads (BLC 5 : W3)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	.03	.03	0	0
2	M3	Y	.03	.03	0	0
3	M4	Y	.03	.03	0	0
4	M5	Y	.03	.03	0	0
5	M6	Y	.03	.03	0	0
6	M24	Y	.03	.03	0	0
7	M25	Y	.03	.03	0	0
8	M26	Y	.03	.03	0	0

Member Distributed Loads (BLC 5 : W3) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
9	M27	Y	.03	.03	0	0
10	M28	Y	.03	.03	0	0
11	M8	Y	.061	.061	0	0
12	M10	Y	.061	.061	0	0
13	M12	Y	.061	.061	0	0
14	M14	Y	.061	.061	0	0
15	M16	Y	.061	.061	0	0
16	M18	Y	.061	.061	0	0
17	M20	Y	.061	.061	0	0
18	M22	Y	.061	.061	0	0

Member Distributed Loads (BLC 6 : W4)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	-.03	-.03	0	0
2	M3	Y	-.03	-.03	0	0
3	M4	Y	-.03	-.03	0	0
4	M5	Y	-.03	-.03	0	0
5	M6	Y	-.03	-.03	0	0
6	M24	Y	-.03	-.03	0	0
7	M25	Y	-.03	-.03	0	0
8	M26	Y	-.03	-.03	0	0
9	M27	Y	-.03	-.03	0	0
10	M28	Y	-.03	-.03	0	0
11	M8	Y	-.061	-.061	0	0
12	M10	Y	-.061	-.061	0	0
13	M12	Y	-.061	-.061	0	0
14	M14	Y	-.061	-.061	0	0
15	M16	Y	-.061	-.061	0	0
16	M18	Y	-.061	-.061	0	0
17	M20	Y	-.061	-.061	0	0
18	M22	Y	-.061	-.061	0	0

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	-.001	-.001	.996	1.328
2	M2	Y	-.002	-.002	1.992	2.324
3	M2	Y	-.003	-.003	2.324	2.656
4	M3	Y	-.002	-.002	0	.6
5	M3	Y	-.002	-.002	.6	1.2
6	M3	Y	-.002	-.002	1.2	1.801
7	M3	Y	-.002	-.002	1.801	2.401
8	M3	Y	-.002	-.002	3.001	3.601
9	M3	Y	-.002	-.002	3.601	4.202
10	M3	Y	-.004	-.004	4.802	5.402
11	M4	Y	-.002	-.002	0	.6
12	M4	Y	-.002	-.002	.6	1.2
13	M4	Y	-.002	-.002	1.801	2.401
14	M4	Y	-.002	-.002	2.401	3.001
15	M4	Y	-.002	-.002	3.001	3.601
16	M4	Y	-.002	-.002	3.601	4.202
17	M4	Y	-.002	-.002	4.802	5.402
18	M4	Y	-.002	-.002	5.402	6.002
19	M5	Y	-.002	-.002	0	.6
20	M5	Y	-.002	-.002	.6	1.201
21	M5	Y	-.002	-.002	1.801	2.402
22	M5	Y	-.002	-.002	2.402	3.002
23	M5	Y	-.002	-.002	3.002	3.603

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
24	M5	Y	-.002	-.002	3.603	4.203
25	M5	Y	-.002	-.002	4.803	5.404
26	M5	Y	-.002	-.002	5.404	6.004
27	M6	Y	-.004	-.004	.314	.628
28	M6	Y	-.003	-.003	.941	1.255
29	M6	Y	-.002	-.002	1.883	2.197
30	M6	Y	-.001	-.001	2.51	2.824
31	M8	Y	-.003	-.003	12.233	14.68
32	M8	Y	-.003	-.003	14.68	17.126
33	M8	Y	-.004	-.004	17.126	19.573
34	M8	Y	-.003	-.003	19.573	22.02
35	M8	Y	-.001	-.001	22.02	24.466
36	M50	Y	-.000262822	-.000262822	.608	1.217
37	M50	Y	-.001	-.001	1.217	1.825
38	M50	Y	-.001	-.001	1.825	2.433
39	M50	Y	-.001	-.001	2.433	3.042
40	M50	Y	-.002	-.002	3.042	3.65
41	M50	Y	-.001	-.001	3.65	4.258
42	M50	Y	-.001	-.001	4.258	4.867
43	M50	Y	-.000525645	-.000525645	4.867	5.475
44	M2	Y	-.000481609	-.000481609	.332	.664
45	M8	Y	-.001	-.001	0	2.447
46	M8	Y	-.003	-.003	2.447	4.893
47	M8	Y	-.004	-.004	4.893	7.34
48	M8	Y	-.003	-.003	7.34	9.787
49	M8	Y	-.003	-.003	9.787	12.233
50	M41	Y	-.000525645	-.000525645	.608	1.217
51	M41	Y	-.001	-.001	1.217	1.825
52	M41	Y	-.001	-.001	1.825	2.433
53	M41	Y	-.002	-.002	2.433	3.042
54	M41	Y	-.001	-.001	3.042	3.65
55	M41	Y	-.001	-.001	3.65	4.258
56	M41	Y	-.001	-.001	4.258	4.867
57	M41	Y	-.000262822	-.000262822	4.867	5.475
58	M10	Y	-.003	-.003	12.233	14.68
59	M10	Y	-.003	-.003	14.68	17.126
60	M10	Y	-.004	-.004	17.126	19.573
61	M10	Y	-.003	-.003	19.573	22.02
62	M10	Y	-.001	-.001	22.02	24.466
63	M51	Y	-.000262822	-.000262822	.608	1.217
64	M51	Y	-.001	-.001	1.217	1.825
65	M51	Y	-.001	-.001	1.825	2.433
66	M51	Y	-.001	-.001	2.433	3.042
67	M51	Y	-.002	-.002	3.042	3.65
68	M51	Y	-.001	-.001	3.65	4.258
69	M51	Y	-.001	-.001	4.258	4.867
70	M51	Y	-.000525645	-.000525645	4.867	5.475
71	M10	Y	-.001	-.001	0	2.447
72	M10	Y	-.003	-.003	2.447	4.893
73	M10	Y	-.004	-.004	4.893	7.34
74	M10	Y	-.003	-.003	7.34	9.787
75	M10	Y	-.003	-.003	9.787	12.233
76	M42	Y	-.000525645	-.000525645	.608	1.217
77	M42	Y	-.001	-.001	1.217	1.825
78	M42	Y	-.001	-.001	1.825	2.433
79	M42	Y	-.002	-.002	2.433	3.042
80	M42	Y	-.001	-.001	3.042	3.65

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
81	M42	Y	-.001	-.001	3.65	4.258
82	M42	Y	-.001	-.001	4.258	4.867
83	M42	Y	-.000262822	-.000262822	4.867	5.475
84	M12	Y	-.003	-.003	12.233	14.68
85	M12	Y	-.003	-.003	14.68	17.126
86	M12	Y	-.004	-.004	17.126	19.573
87	M12	Y	-.003	-.003	19.573	22.02
88	M12	Y	-.001	-.001	22.02	24.466
89	M52	Y	-.000262822	-.000262822	.608	1.217
90	M52	Y	-.001	-.001	1.217	1.825
91	M52	Y	-.001	-.001	1.825	2.433
92	M52	Y	-.001	-.001	2.433	3.042
93	M52	Y	-.002	-.002	3.042	3.65
94	M52	Y	-.001	-.001	3.65	4.258
95	M52	Y	-.001	-.001	4.258	4.867
96	M52	Y	-.000525645	-.000525645	4.867	5.475
97	M12	Y	-.001	-.001	0	2.447
98	M12	Y	-.003	-.003	2.447	4.893
99	M12	Y	-.004	-.004	4.893	7.34
100	M12	Y	-.003	-.003	7.34	9.787
101	M12	Y	-.003	-.003	9.787	12.233
102	M43	Y	-.000525645	-.000525645	.608	1.217
103	M43	Y	-.001	-.001	1.217	1.825
104	M43	Y	-.001	-.001	1.825	2.433
105	M43	Y	-.002	-.002	2.433	3.042
106	M43	Y	-.001	-.001	3.042	3.65
107	M43	Y	-.001	-.001	3.65	4.258
108	M43	Y	-.001	-.001	4.258	4.867
109	M43	Y	-.000262822	-.000262822	4.867	5.475
110	M14	Y	-.003	-.003	12.233	14.68
111	M14	Y	-.003	-.003	14.68	17.126
112	M14	Y	-.004	-.004	17.126	19.573
113	M14	Y	-.003	-.003	19.573	22.02
114	M14	Y	-.001	-.001	22.02	24.466
115	M53	Y	-.000262822	-.000262822	.608	1.217
116	M53	Y	-.001	-.001	1.217	1.825
117	M53	Y	-.001	-.001	1.825	2.433
118	M53	Y	-.001	-.001	2.433	3.042
119	M53	Y	-.002	-.002	3.042	3.65
120	M53	Y	-.001	-.001	3.65	4.258
121	M53	Y	-.001	-.001	4.258	4.867
122	M53	Y	-.000525645	-.000525645	4.867	5.475
123	M14	Y	-.001	-.001	0	2.447
124	M14	Y	-.003	-.003	2.447	4.893
125	M14	Y	-.004	-.004	4.893	7.34
126	M14	Y	-.003	-.003	7.34	9.787
127	M14	Y	-.003	-.003	9.787	12.233
128	M44	Y	-.000525645	-.000525645	.608	1.217
129	M44	Y	-.001	-.001	1.217	1.825
130	M44	Y	-.001	-.001	1.825	2.433
131	M44	Y	-.002	-.002	2.433	3.042
132	M44	Y	-.001	-.001	3.042	3.65
133	M44	Y	-.001	-.001	3.65	4.258
134	M44	Y	-.001	-.001	4.258	4.867
135	M44	Y	-.000262822	-.000262822	4.867	5.475
136	M16	Y	-.003	-.003	12.233	14.68
137	M16	Y	-.003	-.003	14.68	17.126

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
138	M16	Y	-.004	-.004	17.126	19.573
139	M16	Y	-.003	-.003	19.573	22.02
140	M16	Y	-.001	-.001	22.02	24.466
141	M54	Y	-.000262822	-.000262822	.608	1.217
142	M54	Y	-.001	-.001	1.217	1.825
143	M54	Y	-.001	-.001	1.825	2.433
144	M54	Y	-.001	-.001	2.433	3.042
145	M54	Y	-.002	-.002	3.042	3.65
146	M54	Y	-.001	-.001	3.65	4.258
147	M54	Y	-.001	-.001	4.258	4.867
148	M54	Y	-.000525645	-.000525645	4.867	5.475
149	M16	Y	-.001	-.001	0	2.447
150	M16	Y	-.003	-.003	2.447	4.893
151	M16	Y	-.004	-.004	4.893	7.34
152	M16	Y	-.003	-.003	7.34	9.787
153	M16	Y	-.003	-.003	9.787	12.233
154	M45	Y	-.000525645	-.000525645	.608	1.217
155	M45	Y	-.001	-.001	1.217	1.825
156	M45	Y	-.001	-.001	1.825	2.433
157	M45	Y	-.002	-.002	2.433	3.042
158	M45	Y	-.001	-.001	3.042	3.65
159	M45	Y	-.001	-.001	3.65	4.258
160	M45	Y	-.001	-.001	4.258	4.867
161	M45	Y	-.000262822	-.000262822	4.867	5.475
162	M18	Y	-.003	-.003	12.233	14.68
163	M18	Y	-.003	-.003	14.68	17.126
164	M18	Y	-.004	-.004	17.126	19.573
165	M18	Y	-.003	-.003	19.573	22.02
166	M18	Y	-.001	-.001	22.02	24.466
167	M55	Y	-.000262822	-.000262822	.608	1.217
168	M55	Y	-.001	-.001	1.217	1.825
169	M55	Y	-.001	-.001	1.825	2.433
170	M55	Y	-.001	-.001	2.433	3.042
171	M55	Y	-.002	-.002	3.042	3.65
172	M55	Y	-.001	-.001	3.65	4.258
173	M55	Y	-.001	-.001	4.258	4.867
174	M55	Y	-.000525645	-.000525645	4.867	5.475
175	M18	Y	-.001	-.001	0	2.447
176	M18	Y	-.003	-.003	2.447	4.893
177	M18	Y	-.004	-.004	4.893	7.34
178	M18	Y	-.003	-.003	7.34	9.787
179	M18	Y	-.003	-.003	9.787	12.233
180	M46	Y	-.000525645	-.000525645	.608	1.217
181	M46	Y	-.001	-.001	1.217	1.825
182	M46	Y	-.001	-.001	1.825	2.433
183	M46	Y	-.002	-.002	2.433	3.042
184	M46	Y	-.001	-.001	3.042	3.65
185	M46	Y	-.001	-.001	3.65	4.258
186	M46	Y	-.001	-.001	4.258	4.867
187	M46	Y	-.000262822	-.000262822	4.867	5.475
188	M20	Y	-.003	-.003	12.233	14.68
189	M20	Y	-.003	-.003	14.68	17.126
190	M20	Y	-.004	-.004	17.126	19.573
191	M20	Y	-.003	-.003	19.573	22.02
192	M20	Y	-.001	-.001	22.02	24.466
193	M56	Y	-.000262822	-.000262822	.608	1.217
194	M56	Y	-.001	-.001	1.217	1.825

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
195	M56	Y	-.001	-.001	1.825	2.433
196	M56	Y	-.001	-.001	2.433	3.042
197	M56	Y	-.002	-.002	3.042	3.65
198	M56	Y	-.001	-.001	3.65	4.258
199	M56	Y	-.001	-.001	4.258	4.867
200	M56	Y	-.000525645	-.000525645	4.867	5.475
201	M20	Y	-.001	-.001	0	2.447
202	M20	Y	-.003	-.003	2.447	4.893
203	M20	Y	-.004	-.004	4.893	7.34
204	M20	Y	-.003	-.003	7.34	9.787
205	M20	Y	-.003	-.003	9.787	12.233
206	M47	Y	-.000525645	-.000525645	.608	1.217
207	M47	Y	-.001	-.001	1.217	1.825
208	M47	Y	-.001	-.001	1.825	2.433
209	M47	Y	-.002	-.002	2.433	3.042
210	M47	Y	-.001	-.001	3.042	3.65
211	M47	Y	-.001	-.001	3.65	4.258
212	M47	Y	-.001	-.001	4.258	4.867
213	M47	Y	-.000262822	-.000262822	4.867	5.475
214	M22	Y	-.003	-.003	12.233	14.68
215	M22	Y	-.003	-.003	14.68	17.126
216	M22	Y	-.004	-.004	17.126	19.573
217	M22	Y	-.003	-.003	19.573	22.02
218	M22	Y	-.001	-.001	22.02	24.466
219	M57	Y	-.000262822	-.000262822	.608	1.217
220	M57	Y	-.001	-.001	1.217	1.825
221	M57	Y	-.001	-.001	1.825	2.433
222	M57	Y	-.001	-.001	2.433	3.042
223	M57	Y	-.002	-.002	3.042	3.65
224	M57	Y	-.001	-.001	3.65	4.258
225	M57	Y	-.001	-.001	4.258	4.867
226	M57	Y	-.000525645	-.000525645	4.867	5.475
227	M22	Y	-.001	-.001	0	2.447
228	M22	Y	-.003	-.003	2.447	4.893
229	M22	Y	-.004	-.004	4.893	7.34
230	M22	Y	-.003	-.003	7.34	9.787
231	M22	Y	-.003	-.003	9.787	12.233
232	M48	Y	-.000525645	-.000525645	.608	1.217
233	M48	Y	-.001	-.001	1.217	1.825
234	M48	Y	-.001	-.001	1.825	2.433
235	M48	Y	-.002	-.002	2.433	3.042
236	M48	Y	-.001	-.001	3.042	3.65
237	M48	Y	-.001	-.001	3.65	4.258
238	M48	Y	-.001	-.001	4.258	4.867
239	M48	Y	-.000262822	-.000262822	4.867	5.475
240	M26	Y	-.002	-.002	3.601	4.202
241	M26	Y	-.002	-.002	4.802	5.402
242	M26	Y	-.002	-.002	5.402	6.002
243	M27	Y	-.002	-.002	0	.6
244	M27	Y	-.002	-.002	.6	1.201
245	M27	Y	-.002	-.002	1.801	2.402
246	M27	Y	-.002	-.002	2.402	3.002
247	M27	Y	-.002	-.002	3.002	3.603
248	M27	Y	-.002	-.002	3.603	4.203
249	M27	Y	-.002	-.002	4.803	5.404
250	M27	Y	-.002	-.002	5.404	6.004
251	M28	Y	-.004	-.004	.314	.628

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
252	M28	Y	-.003	-.003	.941	1.255
253	M28	Y	-.002	-.002	1.883	2.197
254	M28	Y	-.000509503	-.000509503	2.51	2.824
255	M58	Y	-.000262822	-.000262822	.608	1.217
256	M58	Y	-.001	-.001	1.217	1.825
257	M58	Y	-.001	-.001	1.825	2.433
258	M58	Y	-.001	-.001	2.433	3.042
259	M58	Y	-.002	-.002	3.042	3.65
260	M58	Y	-.001	-.001	3.65	4.258
261	M58	Y	-.001	-.001	4.258	4.867
262	M58	Y	-.000525645	-.000525645	4.867	5.475
263	M24	Y	-.000963218	-.000963218	.332	.664
264	M24	Y	-.001	-.001	.996	1.328
265	M24	Y	-.003	-.003	1.992	2.324
266	M24	Y	-.003	-.003	2.324	2.656
267	M25	Y	-.002	-.002	0	.6
268	M25	Y	-.002	-.002	.6	1.2
269	M25	Y	-.002	-.002	1.2	1.801
270	M25	Y	-.002	-.002	1.801	2.401
271	M25	Y	-.002	-.002	3.001	3.601
272	M25	Y	-.002	-.002	3.601	4.202
273	M25	Y	-.004	-.004	4.802	5.402
274	M26	Y	-.002	-.002	0	.6
275	M26	Y	-.002	-.002	.6	1.2
276	M26	Y	-.002	-.002	1.801	2.401
277	M26	Y	-.002	-.002	2.401	3.001
278	M26	Y	-.002	-.002	3.001	3.601
279	M49	Y	-.000525645	-.000525645	.608	1.217
280	M49	Y	-.001	-.001	1.217	1.825
281	M49	Y	-.001	-.001	1.825	2.433
282	M49	Y	-.002	-.002	2.433	3.042
283	M49	Y	-.001	-.001	3.042	3.65
284	M49	Y	-.001	-.001	3.65	4.258
285	M49	Y	-.001	-.001	4.258	4.867
286	M49	Y	-.000262822	-.000262822	4.867	5.475

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	-.05	-.05	.996	1.328
2	M2	Y	-.083	-.083	1.992	2.324
3	M2	Y	-.116	-.116	2.324	2.656
4	M3	Y	-.074	-.074	0	.6
5	M3	Y	-.074	-.074	.6	1.2
6	M3	Y	-.074	-.074	1.2	1.801
7	M3	Y	-.074	-.074	1.801	2.401
8	M3	Y	-.074	-.074	3.001	3.601
9	M3	Y	-.074	-.074	3.601	4.202
10	M3	Y	-.147	-.147	4.802	5.402
11	M4	Y	-.074	-.074	0	.6
12	M4	Y	-.074	-.074	.6	1.2
13	M4	Y	-.074	-.074	1.801	2.401
14	M4	Y	-.074	-.074	2.401	3.001
15	M4	Y	-.074	-.074	3.001	3.601
16	M4	Y	-.074	-.074	3.601	4.202
17	M4	Y	-.074	-.074	4.802	5.402
18	M4	Y	-.074	-.074	5.402	6.002
19	M5	Y	-.074	-.074	0	.6

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
20	M5	Y	-.074	-.074	.6	1.201
21	M5	Y	-.074	-.074	1.801	2.402
22	M5	Y	-.074	-.074	2.402	3.002
23	M5	Y	-.074	-.074	3.002	3.603
24	M5	Y	-.074	-.074	3.603	4.203
25	M5	Y	-.074	-.074	4.803	5.404
26	M5	Y	-.074	-.074	5.404	6.004
27	M6	Y	-.123	-.123	.314	.628
28	M6	Y	-.106	-.106	.941	1.255
29	M6	Y	-.053	-.053	1.883	2.197
30	M6	Y	-.035	-.035	2.51	2.824
31	M8	Y	-.108	-.108	12.233	14.68
32	M8	Y	-.108	-.108	14.68	17.126
33	M8	Y	-.144	-.144	17.126	19.573
34	M8	Y	-.104	-.104	19.573	22.02
35	M8	Y	-.045	-.045	22.02	24.466
36	M50	Y	-.009	-.009	.608	1.217
37	M50	Y	-.036	-.036	1.217	1.825
38	M50	Y	-.036	-.036	1.825	2.433
39	M50	Y	-.045	-.045	2.433	3.042
40	M50	Y	-.054	-.054	3.042	3.65
41	M50	Y	-.036	-.036	3.65	4.258
42	M50	Y	-.036	-.036	4.258	4.867
43	M50	Y	-.018	-.018	4.867	5.475
44	M2	Y	-.017	-.017	.332	.664
45	M8	Y	-.045	-.045	0	2.447
46	M8	Y	-.104	-.104	2.447	4.893
47	M8	Y	-.144	-.144	4.893	7.34
48	M8	Y	-.108	-.108	7.34	9.787
49	M8	Y	-.108	-.108	9.787	12.233
50	M41	Y	-.018	-.018	.608	1.217
51	M41	Y	-.036	-.036	1.217	1.825
52	M41	Y	-.036	-.036	1.825	2.433
53	M41	Y	-.054	-.054	2.433	3.042
54	M41	Y	-.045	-.045	3.042	3.65
55	M41	Y	-.036	-.036	3.65	4.258
56	M41	Y	-.036	-.036	4.258	4.867
57	M41	Y	-.009	-.009	4.867	5.475
58	M10	Y	-.108	-.108	12.233	14.68
59	M10	Y	-.108	-.108	14.68	17.126
60	M10	Y	-.144	-.144	17.126	19.573
61	M10	Y	-.104	-.104	19.573	22.02
62	M10	Y	-.045	-.045	22.02	24.466
63	M51	Y	-.009	-.009	.608	1.217
64	M51	Y	-.036	-.036	1.217	1.825
65	M51	Y	-.036	-.036	1.825	2.433
66	M51	Y	-.045	-.045	2.433	3.042
67	M51	Y	-.054	-.054	3.042	3.65
68	M51	Y	-.036	-.036	3.65	4.258
69	M51	Y	-.036	-.036	4.258	4.867
70	M51	Y	-.018	-.018	4.867	5.475
71	M10	Y	-.045	-.045	0	2.447
72	M10	Y	-.104	-.104	2.447	4.893
73	M10	Y	-.144	-.144	4.893	7.34
74	M10	Y	-.108	-.108	7.34	9.787
75	M10	Y	-.108	-.108	9.787	12.233
76	M42	Y	-.018	-.018	.608	1.217

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
77	M42	Y	-.036	-.036	1.217	1.825
78	M42	Y	-.036	-.036	1.825	2.433
79	M42	Y	-.054	-.054	2.433	3.042
80	M42	Y	-.045	-.045	3.042	3.65
81	M42	Y	-.036	-.036	3.65	4.258
82	M42	Y	-.036	-.036	4.258	4.867
83	M42	Y	-.009	-.009	4.867	5.475
84	M12	Y	-.108	-.108	12.233	14.68
85	M12	Y	-.108	-.108	14.68	17.126
86	M12	Y	-.144	-.144	17.126	19.573
87	M12	Y	-.104	-.104	19.573	22.02
88	M12	Y	-.045	-.045	22.02	24.466
89	M52	Y	-.009	-.009	.608	1.217
90	M52	Y	-.036	-.036	1.217	1.825
91	M52	Y	-.036	-.036	1.825	2.433
92	M52	Y	-.045	-.045	2.433	3.042
93	M52	Y	-.054	-.054	3.042	3.65
94	M52	Y	-.036	-.036	3.65	4.258
95	M52	Y	-.036	-.036	4.258	4.867
96	M52	Y	-.018	-.018	4.867	5.475
97	M12	Y	-.045	-.045	0	2.447
98	M12	Y	-.104	-.104	2.447	4.893
99	M12	Y	-.144	-.144	4.893	7.34
100	M12	Y	-.108	-.108	7.34	9.787
101	M12	Y	-.108	-.108	9.787	12.233
102	M43	Y	-.018	-.018	.608	1.217
103	M43	Y	-.036	-.036	1.217	1.825
104	M43	Y	-.036	-.036	1.825	2.433
105	M43	Y	-.054	-.054	2.433	3.042
106	M43	Y	-.045	-.045	3.042	3.65
107	M43	Y	-.036	-.036	3.65	4.258
108	M43	Y	-.036	-.036	4.258	4.867
109	M43	Y	-.009	-.009	4.867	5.475
110	M14	Y	-.108	-.108	12.233	14.68
111	M14	Y	-.108	-.108	14.68	17.126
112	M14	Y	-.144	-.144	17.126	19.573
113	M14	Y	-.104	-.104	19.573	22.02
114	M14	Y	-.045	-.045	22.02	24.466
115	M53	Y	-.009	-.009	.608	1.217
116	M53	Y	-.036	-.036	1.217	1.825
117	M53	Y	-.036	-.036	1.825	2.433
118	M53	Y	-.045	-.045	2.433	3.042
119	M53	Y	-.054	-.054	3.042	3.65
120	M53	Y	-.036	-.036	3.65	4.258
121	M53	Y	-.036	-.036	4.258	4.867
122	M53	Y	-.018	-.018	4.867	5.475
123	M14	Y	-.045	-.045	0	2.447
124	M14	Y	-.104	-.104	2.447	4.893
125	M14	Y	-.144	-.144	4.893	7.34
126	M14	Y	-.108	-.108	7.34	9.787
127	M14	Y	-.108	-.108	9.787	12.233
128	M44	Y	-.018	-.018	.608	1.217
129	M44	Y	-.036	-.036	1.217	1.825
130	M44	Y	-.036	-.036	1.825	2.433
131	M44	Y	-.054	-.054	2.433	3.042
132	M44	Y	-.045	-.045	3.042	3.65
133	M44	Y	-.036	-.036	3.65	4.258

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
134	M44	Y	-.036	-.036	4.258	4.867
135	M44	Y	-.009	-.009	4.867	5.475
136	M16	Y	-.108	-.108	12.233	14.68
137	M16	Y	-.108	-.108	14.68	17.126
138	M16	Y	-.144	-.144	17.126	19.573
139	M16	Y	-.104	-.104	19.573	22.02
140	M16	Y	-.045	-.045	22.02	24.466
141	M54	Y	-.009	-.009	.608	1.217
142	M54	Y	-.036	-.036	1.217	1.825
143	M54	Y	-.036	-.036	1.825	2.433
144	M54	Y	-.045	-.045	2.433	3.042
145	M54	Y	-.054	-.054	3.042	3.65
146	M54	Y	-.036	-.036	3.65	4.258
147	M54	Y	-.036	-.036	4.258	4.867
148	M54	Y	-.018	-.018	4.867	5.475
149	M16	Y	-.045	-.045	0	2.447
150	M16	Y	-.104	-.104	2.447	4.893
151	M16	Y	-.144	-.144	4.893	7.34
152	M16	Y	-.108	-.108	7.34	9.787
153	M16	Y	-.108	-.108	9.787	12.233
154	M45	Y	-.018	-.018	.608	1.217
155	M45	Y	-.036	-.036	1.217	1.825
156	M45	Y	-.036	-.036	1.825	2.433
157	M45	Y	-.054	-.054	2.433	3.042
158	M45	Y	-.045	-.045	3.042	3.65
159	M45	Y	-.036	-.036	3.65	4.258
160	M45	Y	-.036	-.036	4.258	4.867
161	M45	Y	-.009	-.009	4.867	5.475
162	M18	Y	-.108	-.108	12.233	14.68
163	M18	Y	-.108	-.108	14.68	17.126
164	M18	Y	-.144	-.144	17.126	19.573
165	M18	Y	-.104	-.104	19.573	22.02
166	M18	Y	-.045	-.045	22.02	24.466
167	M55	Y	-.009	-.009	.608	1.217
168	M55	Y	-.036	-.036	1.217	1.825
169	M55	Y	-.036	-.036	1.825	2.433
170	M55	Y	-.045	-.045	2.433	3.042
171	M55	Y	-.054	-.054	3.042	3.65
172	M55	Y	-.036	-.036	3.65	4.258
173	M55	Y	-.036	-.036	4.258	4.867
174	M55	Y	-.018	-.018	4.867	5.475
175	M18	Y	-.045	-.045	0	2.447
176	M18	Y	-.104	-.104	2.447	4.893
177	M18	Y	-.144	-.144	4.893	7.34
178	M18	Y	-.108	-.108	7.34	9.787
179	M18	Y	-.108	-.108	9.787	12.233
180	M46	Y	-.018	-.018	.608	1.217
181	M46	Y	-.036	-.036	1.217	1.825
182	M46	Y	-.036	-.036	1.825	2.433
183	M46	Y	-.054	-.054	2.433	3.042
184	M46	Y	-.045	-.045	3.042	3.65
185	M46	Y	-.036	-.036	3.65	4.258
186	M46	Y	-.036	-.036	4.258	4.867
187	M46	Y	-.009	-.009	4.867	5.475
188	M20	Y	-.108	-.108	12.233	14.68
189	M20	Y	-.108	-.108	14.68	17.126
190	M20	Y	-.144	-.144	17.126	19.573

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
191	M20	Y	-.104	-.104	19.573	22.02
192	M20	Y	-.045	-.045	22.02	24.466
193	M56	Y	-.009	-.009	.608	1.217
194	M56	Y	-.036	-.036	1.217	1.825
195	M56	Y	-.036	-.036	1.825	2.433
196	M56	Y	-.045	-.045	2.433	3.042
197	M56	Y	-.054	-.054	3.042	3.65
198	M56	Y	-.036	-.036	3.65	4.258
199	M56	Y	-.036	-.036	4.258	4.867
200	M56	Y	-.018	-.018	4.867	5.475
201	M20	Y	-.045	-.045	0	2.447
202	M20	Y	-.104	-.104	2.447	4.893
203	M20	Y	-.144	-.144	4.893	7.34
204	M20	Y	-.108	-.108	7.34	9.787
205	M20	Y	-.108	-.108	9.787	12.233
206	M47	Y	-.018	-.018	.608	1.217
207	M47	Y	-.036	-.036	1.217	1.825
208	M47	Y	-.036	-.036	1.825	2.433
209	M47	Y	-.054	-.054	2.433	3.042
210	M47	Y	-.045	-.045	3.042	3.65
211	M47	Y	-.036	-.036	3.65	4.258
212	M47	Y	-.036	-.036	4.258	4.867
213	M47	Y	-.009	-.009	4.867	5.475
214	M22	Y	-.108	-.108	12.233	14.68
215	M22	Y	-.108	-.108	14.68	17.126
216	M22	Y	-.144	-.144	17.126	19.573
217	M22	Y	-.104	-.104	19.573	22.02
218	M22	Y	-.045	-.045	22.02	24.466
219	M57	Y	-.009	-.009	.608	1.217
220	M57	Y	-.036	-.036	1.217	1.825
221	M57	Y	-.036	-.036	1.825	2.433
222	M57	Y	-.045	-.045	2.433	3.042
223	M57	Y	-.054	-.054	3.042	3.65
224	M57	Y	-.036	-.036	3.65	4.258
225	M57	Y	-.036	-.036	4.258	4.867
226	M57	Y	-.018	-.018	4.867	5.475
227	M22	Y	-.045	-.045	0	2.447
228	M22	Y	-.104	-.104	2.447	4.893
229	M22	Y	-.144	-.144	4.893	7.34
230	M22	Y	-.108	-.108	7.34	9.787
231	M22	Y	-.108	-.108	9.787	12.233
232	M48	Y	-.018	-.018	.608	1.217
233	M48	Y	-.036	-.036	1.217	1.825
234	M48	Y	-.036	-.036	1.825	2.433
235	M48	Y	-.054	-.054	2.433	3.042
236	M48	Y	-.045	-.045	3.042	3.65
237	M48	Y	-.036	-.036	3.65	4.258
238	M48	Y	-.036	-.036	4.258	4.867
239	M48	Y	-.009	-.009	4.867	5.475
240	M26	Y	-.074	-.074	3.601	4.202
241	M26	Y	-.074	-.074	4.802	5.402
242	M26	Y	-.074	-.074	5.402	6.002
243	M27	Y	-.074	-.074	0	.6
244	M27	Y	-.074	-.074	.6	1.201
245	M27	Y	-.074	-.074	1.801	2.402
246	M27	Y	-.074	-.074	2.402	3.002
247	M27	Y	-.074	-.074	3.002	3.603

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,d...	Start Location[ft,%]	End Location[ft,%]
248	M27	Y	-.074	-.074	3.603	4.203
249	M27	Y	-.074	-.074	4.803	5.404
250	M27	Y	-.074	-.074	5.404	6.004
251	M28	Y	-.123	-.123	.314	.628
252	M28	Y	-.088	-.088	.941	1.255
253	M28	Y	-.053	-.053	1.883	2.197
254	M28	Y	-.018	-.018	2.51	2.824
255	M58	Y	-.009	-.009	.608	1.217
256	M58	Y	-.036	-.036	1.217	1.825
257	M58	Y	-.036	-.036	1.825	2.433
258	M58	Y	-.045	-.045	2.433	3.042
259	M58	Y	-.054	-.054	3.042	3.65
260	M58	Y	-.036	-.036	3.65	4.258
261	M58	Y	-.036	-.036	4.258	4.867
262	M58	Y	-.018	-.018	4.867	5.475
263	M24	Y	-.033	-.033	.332	.664
264	M24	Y	-.05	-.05	.996	1.328
265	M24	Y	-.1	-.1	1.992	2.324
266	M24	Y	-.116	-.116	2.324	2.656
267	M25	Y	-.074	-.074	0	.6
268	M25	Y	-.074	-.074	.6	1.2
269	M25	Y	-.074	-.074	1.2	1.801
270	M25	Y	-.074	-.074	1.801	2.401
271	M25	Y	-.074	-.074	3.001	3.601
272	M25	Y	-.074	-.074	3.601	4.202
273	M25	Y	-.147	-.147	4.802	5.402
274	M26	Y	-.074	-.074	0	.6
275	M26	Y	-.074	-.074	.6	1.2
276	M26	Y	-.074	-.074	1.801	2.401
277	M26	Y	-.074	-.074	2.401	3.001
278	M26	Y	-.074	-.074	3.001	3.601
279	M49	Y	-.018	-.018	.608	1.217
280	M49	Y	-.036	-.036	1.217	1.825
281	M49	Y	-.036	-.036	1.825	2.433
282	M49	Y	-.054	-.054	2.433	3.042
283	M49	Y	-.045	-.045	3.042	3.65
284	M49	Y	-.036	-.036	3.65	4.258
285	M49	Y	-.036	-.036	4.258	4.867
286	M49	Y	-.009	-.009	4.867	5.475

Joint Loads and Enforced Displacements (BLC 3 : W1)

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	N2	L	X	.415
2	N33	L	X	.415
3	N9	L	X	.831
4	N12	L	X	.831
5	N15	L	X	.831
6	N18	L	X	.831
7	N21	L	X	.831
8	N24	L	X	.831
9	N27	L	X	.831
10	N30	L	X	.831

Joint Loads and Enforced Displacements (BLC 4 : W2)

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	N2	L	X	.415

Joint Loads and Enforced Displacements (BLC 4 : W2) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
2	N33	L	X	.415
3	N9	L	X	.831
4	N12	L	X	.831
5	N15	L	X	.831
6	N18	L	X	.831
7	N21	L	X	.831
8	N24	L	X	.831
9	N27	L	X	.831
10	N30	L	X	.831

Joint Loads and Enforced Displacements (BLC 5 : W3)

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	N33	L	Z	-1.39
2	N38	L	Z	-1.39

Joint Loads and Enforced Displacements (BLC 6 : W4)

	Joint Label	L,D,M	Direction	Magnitude[k,k-ft in,rad k*s^2/ft]
1	N33	L	Z	-1.39
2	N38	L	Z	-1.39

Envelope Member Section Forces

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
1	M1	1	max	1.029	8	.16	3	0	3	.004	5	0	1	.003	5
2			min	-.507	5	-.347	8	-.168	6	-.003	8	0	1	-.002	8
3		2	max	1.039	8	.16	3	0	3	.004	5	0	3	.755	8
4			min	-.497	5	-.347	8	-.168	6	-.003	8	-.366	6	-.348	3
5		3	max	1.054	8	.16	3	.18	6	.004	5	0	8	1.525	8
6			min	-.486	5	-.345	8	0	3	-.003	8	-.587	6	-.705	3
7		4	max	1.063	8	.16	3	.18	6	.004	5	0	8	2.278	8
8			min	-.477	5	-.345	8	0	3	-.003	8	-.195	6	-1.054	3
9		5	max	1.087	8	.239	3	.124	6	.004	5	.064	6	3.35	8
10			min	-.471	5	-.509	8	0	8	-.003	8	0	8	-1.558	3
11	M2	1	max	1.001	8	.857	8	0	8	0	3	.015	5	3.313	8
12			min	-.317	5	-.424	3	-.002	6	-.062	6	-.003	8	-1.539	3
13		2	max	.997	8	.837	8	0	8	0	3	.013	5	2.609	8
14			min	-.312	5	-.396	3	-.002	6	-.062	6	-.003	8	-1.199	3
15		3	max	.992	8	.81	8	0	8	0	3	.011	5	1.927	8
16			min	-.307	5	-.368	3	-.002	6	-.062	6	-.003	8	-.882	3
17		4	max	.982	8	.759	8	0	8	0	3	.009	5	1.269	8
18			min	-.302	5	-.341	3	-.002	6	-.062	6	-.003	8	-.588	3
19		5	max	.977	8	.729	8	0	8	0	3	.007	5	.656	8
20			min	-.296	5	-.313	3	-.002	6	-.062	6	-.003	8	-.316	3
21	M3	1	max	.965	8	.676	8	0	8	0	3	.021	5	.656	8
22			min	-.296	5	-.314	3	-.002	5	-.059	6	-.002	8	-.316	3
23		2	max	.944	8	.564	8	0	8	0	3	.017	5	.124	5
24			min	-.287	5	-.266	3	-.002	5	-.059	6	-.002	8	-.274	8
25		3	max	.929	8	.487	8	0	8	0	3	.014	5	.481	3
26			min	-.278	5	-.216	3	-.002	5	-.059	6	-.002	8	-1.048	8
27		4	max	.911	8	.392	8	0	8	0	3	.01	5	.77	3
28			min	-.269	5	-.167	3	-.002	5	-.059	6	-.002	8	-1.697	8
29		5	max	.893	8	.298	8	0	8	0	3	.007	5	.984	3
30			min	-.259	5	-.118	3	-.002	5	-.059	6	-.002	8	-2.205	8
31	M4	1	max	.893	8	.295	8	0	8	0	3	.02	5	.984	3
32			min	-.265	5	-.147	3	-.002	6	-.057	6	-.002	8	-2.205	8
33		2	max	.875	8	.2	8	0	8	0	3	.016	5	1.169	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
34			min	-.256	5	-.098	3	-.002	6	-.057	6	-.002	8	-2.566	8
35		3	max	.857	8	.106	8	0	8	0	3	.013	5	1.279	3
36			min	-.246	5	-.049	3	-.002	6	-.057	6	-.001	8	-2.805	8
37		4	max	.839	8	.011	8	0	8	0	3	.009	5	1.317	3
38			min	-.237	5	0	3	-.002	6	-.057	6	-.001	8	-2.883	8
39		5	max	.821	8	.049	3	0	8	0	3	.006	5	1.28	3
40			min	-.228	5	-.084	10	-.002	6	-.057	6	-.001	8	-2.838	8
41	M5	1	max	.821	8	.025	3	0	8	0	3	.019	6	1.28	3
42			min	-.232	5	-.092	8	-.002	6	-.054	6	-.001	8	-2.838	8
43		2	max	.803	8	.074	3	0	8	0	3	.015	6	1.207	3
44			min	-.223	5	-.187	8	-.002	6	-.054	6	0	8	-2.619	8
45		3	max	.784	8	.123	3	0	8	0	3	.012	6	1.059	3
46			min	-.214	5	-.281	8	-.002	6	-.054	6	0	8	-2.277	8
47		4	max	.766	8	.172	3	0	8	0	3	.008	6	.838	3
48			min	-.204	5	-.376	8	-.002	6	-.054	6	0	8	-1.774	8
49		5	max	.748	8	.221	3	0	8	0	3	.005	6	.544	3
50			min	-.195	5	-.47	8	-.002	6	-.054	6	0	8	-1.149	8
51	M6	1	max	.748	8	.208	3	0	8	0	3	.017	6	.544	3
52			min	-.198	5	-.478	8	-.002	6	-.052	6	0	8	-1.149	8
53		2	max	.74	8	.234	3	0	8	0	3	.015	6	.37	3
54			min	-.194	5	-.522	8	-.002	6	-.052	6	0	8	-.759	8
55		3	max	.732	8	.26	3	0	8	0	3	.013	6	.177	3
56			min	-.189	5	-.561	8	-.002	6	-.052	6	0	8	-.333	8
57		4	max	.727	8	.286	3	0	8	0	3	.012	6	.117	8
58			min	-.184	5	-.588	8	-.002	6	-.052	6	0	8	-.038	3
59		5	max	.723	8	.313	3	0	8	0	3	.01	6	.588	8
60			min	-.179	5	-.61	8	-.002	6	-.052	6	0	3	-.273	3
61	M7	1	max	2.087	8	.38	3	0	8	.004	10	0	1	0	3
62			min	-1.035	5	-.792	10	-.164	6	0	3	0	1	-.003	10
63		2	max	2.097	8	.38	3	0	8	.004	10	0	8	1.725	10
64			min	-1.025	5	-.792	10	-.164	6	0	3	-.358	6	-.828	3
65		3	max	2.117	8	.381	3	.169	6	.004	10	0	3	3.439	10
66			min	-1.009	5	-.784	10	0	8	0	3	-.577	6	-1.651	3
67		4	max	2.127	8	.381	3	.169	6	.004	10	0	3	5.15	10
68			min	-.999	5	-.784	10	0	8	0	3	-.209	6	-2.483	3
69		5	max	2.148	8	.383	3	.094	6	.004	10	0	10	6.866	10
70			min	-.978	5	-.774	10	0	3	0	3	0	3	-3.332	3
71	M8	1	max	1.762	8	1.729	10	0	3	0	1	.004	10	6.903	10
72			min	-.557	5	-.887	5	0	10	0	1	0	3	-3.35	3
73		2	max	1.635	8	1.067	10	0	3	0	1	.003	10	.909	5
74			min	-.484	5	-.508	5	0	10	0	1	0	3	-1.949	8
75		3	max	1.485	8	.278	10	0	3	0	1	.002	10	2.88	5
76			min	-.413	5	-.135	3	0	10	0	1	0	3	-5.973	10
77		4	max	1.334	8	.239	5	0	3	0	1	.001	10	2.559	5
78			min	-.342	5	-.51	10	0	10	0	1	0	3	-5.347	10
79		5	max	1.208	8	.617	5	0	3	0	1	0	1	.093	10
80			min	-.269	5	-1.172	10	0	10	0	1	0	1	-.047	5
81	M9	1	max	2.093	8	.384	3	0	3	0	1	0	1	0	1
82			min	-1.043	5	-.8	10	-.156	6	0	1	0	1	0	1
83		2	max	2.102	8	.384	3	0	3	0	1	0	3	1.745	10
84			min	-1.033	5	-.8	10	-.156	6	0	1	-.341	6	-.837	3
85		3	max	2.123	8	.385	3	.143	6	0	1	0	3	3.486	10
86			min	-1.012	5	-.792	10	0	2	0	1	-.556	6	-1.674	3
87		4	max	2.133	8	.385	3	.143	6	0	1	0	3	5.215	10
88			min	-1.002	5	-.792	10	0	2	0	1	-.244	6	-2.515	3
89		5	max	2.154	8	.387	3	.111	6	0	1	0	1	6.923	10
90			min	-.981	5	-.782	10	0	3	0	1	0	1	-3.36	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
91	M10	1	max	1.771	8	1.733	10	0	1	0	1	0	1	6.924	10
92			min	-.561	5	-.889	5	0	1	0	1	0	1	-3.36	3
93		2	max	1.644	8	1.072	10	0	1	0	1	0	1	.913	5
94			min	-.489	5	-.511	5	0	1	0	1	0	1	-1.956	8
95		3	max	1.494	8	.283	10	0	1	0	1	0	1	2.897	5
96			min	-.418	5	-.137	3	0	1	0	1	0	1	-6.009	10
97		4	max	1.343	8	.236	5	0	1	0	1	0	1	2.591	5
98			min	-.346	5	-.506	10	0	1	0	1	0	1	-5.41	10
99		5	max	1.217	8	.615	5	0	1	0	1	0	1	.002	10
100			min	-.274	5	-1.168	10	0	1	0	1	0	1	-.001	5
101	M11	1	max	2.093	8	.384	3	0	8	0	1	0	1	0	1
102			min	-1.043	5	-.8	10	-.154	6	0	1	0	1	0	1
103		2	max	2.103	8	.384	3	0	8	0	1	0	8	1.745	10
104			min	-1.033	5	-.8	10	-.154	6	0	1	-.337	6	-.837	3
105		3	max	2.123	8	.385	3	.134	6	0	1	0	3	3.487	10
106			min	-1.012	5	-.792	10	0	8	0	1	-.554	6	-1.675	3
107		4	max	2.133	8	.385	3	.134	6	0	1	0	3	5.216	10
108			min	-1.002	5	-.792	10	0	8	0	1	-.263	6	-2.515	3
109		5	max	2.154	8	.387	3	.12	6	0	1	0	1	6.924	10
110			min	-.981	5	-.782	10	0	3	0	1	0	1	-3.36	3
111	M12	1	max	1.771	8	1.733	10	0	1	0	1	0	1	6.924	10
112			min	-.561	5	-.889	5	0	1	0	1	0	1	-3.36	3
113		2	max	1.645	8	1.072	10	0	1	0	1	0	1	.913	5
114			min	-.489	5	-.511	5	0	1	0	1	0	1	-1.956	8
115		3	max	1.494	8	.283	10	0	1	0	1	0	1	2.898	5
116			min	-.418	5	-.137	3	0	1	0	1	0	1	-6.01	10
117		4	max	1.343	8	.236	5	0	1	0	1	0	1	2.591	5
118			min	-.346	5	-.506	10	0	1	0	1	0	1	-5.411	10
119		5	max	1.217	8	.615	5	0	1	0	1	0	1	0	10
120			min	-.274	5	-1.167	10	0	1	0	1	0	1	0	5
121	M13	1	max	2.093	8	.384	3	0	8	0	1	0	1	0	1
122			min	-1.043	5	-.8	10	-.158	6	0	1	0	1	0	1
123		2	max	2.103	8	.384	3	0	8	0	1	0	8	1.745	10
124			min	-1.033	5	-.8	10	-.158	6	0	1	-.346	6	-.837	3
125		3	max	2.123	8	.385	3	.136	6	0	1	0	8	3.487	10
126			min	-1.012	5	-.792	10	0	8	0	1	-.569	6	-1.675	3
127		4	max	2.133	8	.385	3	.136	6	0	1	0	3	5.216	10
128			min	-1.002	5	-.792	10	0	8	0	1	-.271	6	-2.515	3
129		5	max	2.154	8	.387	3	.124	6	0	1	0	1	6.924	10
130			min	-.981	5	-.782	10	0	3	0	1	0	1	-3.36	3
131	M14	1	max	1.771	8	1.733	10	0	1	0	1	0	1	6.924	10
132			min	-.561	5	-.889	5	0	1	0	1	0	1	-3.36	3
133		2	max	1.645	8	1.072	10	0	1	0	1	0	1	.913	5
134			min	-.489	5	-.511	5	0	1	0	1	0	1	-1.956	8
135		3	max	1.494	8	.283	10	0	1	0	1	0	1	2.898	5
136			min	-.418	5	-.137	3	0	1	0	1	0	1	-6.01	10
137		4	max	1.343	8	.236	5	0	1	0	1	0	1	2.591	5
138			min	-.346	5	-.506	10	0	1	0	1	0	1	-5.412	10
139		5	max	1.217	8	.615	5	0	1	0	1	0	1	0	10
140			min	-.274	5	-1.167	10	0	1	0	1	0	1	0	3
141	M15	1	max	2.093	8	.384	5	0	3	.004	5	0	1	.003	5
142			min	-1.038	5	-.799	10	-.168	6	-.004	8	0	1	-.003	8
143		2	max	2.103	8	.384	5	0	3	.004	5	0	3	1.743	10
144			min	-1.028	5	-.799	10	-.168	6	-.004	8	-.367	6	-.836	3
145		3	max	2.123	8	.385	3	.152	6	.004	5	0	8	3.487	10
146			min	-1.012	5	-.792	10	0	3	-.004	8	-.6	6	-1.675	3
147		4	max	2.133	8	.385	3	.152	6	.004	5	0	8	5.216	10

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
148			min	-1.002	5	-.792	10	0	3	-.004	8	-.268	6	-2.516	3
149		5	max	2.154	8	.387	3	.122	6	.004	5	0	5	6.924	10
150			min	-.981	5	-.782	10	0	8	-.004	8	0	8	-3.36	3
151	M16	1	max	1.771	8	1.734	10	0	8	0	1	.004	5	6.924	10
152			min	-.561	5	-.889	5	0	5	0	1	-.004	8	-3.36	3
153		2	max	1.645	8	1.072	10	0	8	0	1	.003	5	.913	5
154			min	-.489	5	-.511	5	0	5	0	1	-.003	8	-1.956	8
155		3	max	1.494	8	.283	10	0	8	0	1	.002	5	2.898	5
156			min	-.417	5	-.137	3	0	5	0	1	-.002	8	-6.009	10
157		4	max	1.343	8	.236	5	0	8	0	1	.001	5	2.591	5
158			min	-.346	5	-.506	10	0	5	0	1	0	8	-5.411	10
159		5	max	1.217	8	.615	5	0	8	0	1	0	1	0	3
160			min	-.274	5	-1.167	10	0	5	0	1	0	1	0	10
161	M17	1	max	2.093	8	.384	3	0	8	.006	10	0	1	.001	3
162			min	-1.038	5	-.8	10	-.173	6	-.002	3	0	1	-.004	10
163		2	max	2.103	8	.384	3	0	8	.006	10	0	8	1.742	10
164			min	-1.028	5	-.8	10	-.173	6	-.002	3	-.377	6	-.836	3
165		3	max	2.123	8	.385	3	.152	6	.006	10	0	3	3.488	10
166			min	-1.012	5	-.792	10	0	8	-.002	3	-.62	6	-1.675	3
167		4	max	2.133	8	.385	3	.152	6	.006	10	0	3	5.217	10
168			min	-1.002	5	-.792	10	0	8	-.002	3	-.289	6	-2.516	3
169		5	max	2.154	8	.387	5	.132	6	.006	10	.001	10	6.924	10
170			min	-.981	5	-.782	10	0	3	-.002	3	0	3	-3.36	3
171	M18	1	max	1.771	8	1.733	10	0	3	0	1	.006	10	6.924	10
172			min	-.562	5	-.889	5	0	10	0	1	-.002	3	-3.36	3
173		2	max	1.645	8	1.072	10	0	3	0	1	.004	10	.913	5
174			min	-.489	5	-.511	5	0	10	0	1	-.001	3	-1.956	8
175		3	max	1.494	8	.283	10	0	3	0	1	.003	10	2.898	5
176			min	-.418	5	-.137	3	0	10	0	1	0	3	-6.01	10
177		4	max	1.343	8	.236	5	0	3	0	1	.001	10	2.591	5
178			min	-.346	5	-.506	10	0	10	0	1	0	3	-5.411	10
179		5	max	1.217	8	.615	5	0	3	0	1	0	1	0	10
180			min	-.274	5	-1.167	10	0	10	0	1	0	1	0	3
181	M19	1	max	2.093	8	.384	3	0	3	0	1	0	1	0	1
182			min	-1.043	5	-.8	10	-.173	6	0	1	0	1	0	1
183		2	max	2.102	8	.384	3	0	3	0	1	0	3	1.745	10
184			min	-1.033	5	-.8	10	-.173	6	0	1	-.377	6	-.837	3
185		3	max	2.123	8	.385	3	.133	6	0	1	0	8	3.486	10
186			min	-1.012	5	-.792	10	0	3	0	1	-.627	6	-1.674	3
187		4	max	2.133	8	.385	3	.133	6	0	1	0	8	5.215	10
188			min	-1.002	5	-.792	10	0	3	0	1	-.336	6	-2.515	3
189		5	max	2.154	8	.387	3	.155	6	0	1	0	1	6.923	10
190			min	-.981	5	-.782	10	0	8	0	1	0	1	-3.36	3
191	M20	1	max	1.771	8	1.733	10	0	1	0	1	0	1	6.924	10
192			min	-.561	5	-.889	5	0	1	0	1	0	1	-3.36	3
193		2	max	1.644	8	1.072	10	0	1	0	1	0	1	.913	5
194			min	-.489	5	-.511	5	0	1	0	1	0	1	-1.956	8
195		3	max	1.494	8	.283	10	0	1	0	1	0	1	2.897	5
196			min	-.418	5	-.137	3	0	1	0	1	0	1	-6.009	10
197		4	max	1.343	8	.236	5	0	1	0	1	0	1	2.591	5
198			min	-.346	5	-.506	10	0	1	0	1	0	1	-5.41	10
199		5	max	1.217	8	.615	5	0	1	0	1	0	1	.002	10
200			min	-.274	5	-1.168	10	0	1	0	1	0	1	-.001	5
201	M21	1	max	2.087	8	.38	3	0	3	.004	5	0	1	.003	5
202			min	-1.035	5	-.791	10	-.178	6	-.002	8	0	1	-.002	8
203		2	max	2.097	8	.38	3	0	3	.004	5	0	3	1.726	10
204			min	-1.025	5	-.791	10	-.178	6	-.002	8	-.388	6	-.828	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
205		3	max	2.117	8	.381	3	.125	6	.004	5	0	8	3.437	10
206			min	-1.009	5	-.784	10	0	3	-.002	8	-.651	6	-1.651	3
207		4	max	2.127	8	.381	3	.125	6	.004	5	0	8	5.149	10
208			min	-.999	5	-.784	10	0	3	-.002	8	-.379	6	-2.483	3
209		5	max	2.148	8	.383	3	.175	6	.004	5	0	5	6.866	10
210			min	-.978	5	-.774	10	0	8	-.002	8	0	8	-3.332	3
211	M22	1	max	1.762	8	1.729	10	0	8	0	1	.004	5	6.903	10
212			min	-.557	5	-.887	5	0	5	0	1	-.002	8	-3.35	3
213		2	max	1.635	8	1.067	10	0	8	0	1	.003	5	.91	5
214			min	-.484	5	-.508	5	0	5	0	1	-.002	8	-1.949	8
215		3	max	1.485	8	.278	10	0	8	0	1	.002	5	2.88	5
216			min	-.413	5	-.135	3	0	5	0	1	-.001	8	-5.973	10
217		4	max	1.334	8	.239	5	0	8	0	1	.001	5	2.559	5
218			min	-.341	5	-.51	10	0	5	0	1	0	8	-5.347	10
219		5	max	1.208	8	.617	5	0	8	0	1	0	1	.094	10
220			min	-.269	5	-1.172	10	0	5	0	1	0	1	-.047	5
221	M23	1	max	1.034	8	.16	3	0	3	.005	10	0	1	.001	3
222			min	-.507	5	-.347	8	-.178	6	-.001	3	0	1	-.004	10
223		2	max	1.044	8	.16	3	0	3	.005	10	0	3	.756	8
224			min	-.497	5	-.347	8	-.178	6	-.001	3	-.389	6	-.348	3
225		3	max	1.058	8	.16	3	.092	6	.005	10	0	3	1.527	8
226			min	-.486	5	-.345	8	0	8	-.001	3	-.665	6	-.705	3
227		4	max	1.068	8	.16	3	.092	6	.005	10	0	3	2.281	8
228			min	-.476	5	-.345	8	0	8	-.001	3	-.464	6	-1.054	3
229		5	max	1.091	8	.239	3	.265	6	.005	10	.084	6	3.354	8
230			min	-.471	5	-.509	8	0	3	-.001	3	0	3	-1.557	3
231	M24	1	max	1.003	8	.864	8	0	3	0	8	.02	6	3.316	8
232			min	-.318	5	-.424	3	-.003	6	-.082	6	-.001	3	-1.539	3
233		2	max	.998	8	.841	8	0	3	0	8	.017	6	2.608	8
234			min	-.312	5	-.396	3	-.003	6	-.082	6	-.001	3	-1.199	3
235		3	max	.993	8	.813	8	0	3	0	8	.014	6	1.923	8
236			min	-.307	5	-.368	3	-.003	6	-.082	6	-.001	3	-.882	3
237		4	max	.982	8	.758	8	0	3	0	8	.012	6	1.263	8
238			min	-.302	5	-.341	3	-.003	6	-.082	6	-.001	3	-.588	3
239		5	max	.977	8	.729	8	0	3	0	8	.009	6	.651	8
240			min	-.297	5	-.313	3	-.003	6	-.082	6	-.001	3	-.317	3
241	M25	1	max	.966	8	.675	8	0	3	0	8	.028	6	.651	8
242			min	-.297	5	-.314	3	-.003	6	-.078	6	-.001	3	-.317	3
243		2	max	.944	8	.564	8	0	3	0	8	.024	6	.123	5
244			min	-.287	5	-.266	3	-.003	6	-.078	6	-.001	3	-.278	8
245		3	max	.929	8	.486	8	0	3	0	8	.019	6	.481	3
246			min	-.278	5	-.216	3	-.003	6	-.078	6	0	3	-1.051	8
247		4	max	.911	8	.392	8	0	3	0	8	.014	6	.77	3
248			min	-.269	5	-.167	3	-.003	6	-.078	6	0	3	-1.699	8
249		5	max	.893	8	.297	8	0	3	0	8	.01	6	.984	3
250			min	-.26	5	-.119	3	-.003	6	-.078	6	0	3	-2.206	8
251	M26	1	max	.894	8	.294	8	0	3	0	8	.027	6	.984	3
252			min	-.265	5	-.147	3	-.003	6	-.075	6	0	3	-2.206	8
253		2	max	.876	8	.199	8	0	3	0	8	.022	6	1.169	3
254			min	-.256	5	-.098	3	-.003	6	-.075	6	0	3	-2.566	8
255		3	max	.858	8	.105	8	0	3	0	8	.018	6	1.279	3
256			min	-.247	5	-.049	3	-.003	6	-.075	6	0	3	-2.804	8
257		4	max	.84	8	.01	8	0	3	0	8	.013	6	1.317	3
258			min	-.237	5	0	3	-.003	6	-.075	6	0	3	-2.881	8
259		5	max	.821	8	.049	3	0	3	0	8	.009	6	1.28	3
260			min	-.228	5	-.084	10	-.003	6	-.075	6	0	3	-2.835	8
261	M27	1	max	.821	8	.025	3	0	3	0	8	.025	6	1.28	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
262			min	-.233	5	-.093	8	-.003	6	-.071	6	0	3	-2.835	8
263		2	max	.803	8	.074	3	0	3	0	8	.021	6	1.207	3
264			min	-.223	5	-.187	8	-.003	6	-.071	6	0	3	-2.615	8
265		3	max	.784	8	.123	3	0	3	0	8	.016	6	1.059	3
266			min	-.214	5	-.282	8	-.003	6	-.071	6	0	3	-2.272	8
267		4	max	.766	8	.172	3	0	3	0	8	.011	6	.838	3
268			min	-.205	5	-.377	8	-.003	6	-.071	6	0	3	-1.768	8
269		5	max	.748	8	.221	3	0	3	0	8	.007	6	.544	3
270			min	-.195	5	-.471	8	-.003	6	-.071	6	0	3	-1.142	8
271	M28	1	max	.748	8	.208	3	0	3	0	8	.023	6	.544	3
272			min	-.199	5	-.479	8	-.003	6	-.068	6	0	3	-1.142	8
273		2	max	.74	8	.234	3	0	3	0	8	.02	6	.37	3
274			min	-.194	5	-.522	8	-.003	6	-.068	6	0	3	-.752	8
275		3	max	.733	8	.26	3	0	3	0	8	.018	6	.177	3
276			min	-.189	5	-.558	8	-.003	6	-.068	6	0	3	-.326	8
277		4	max	.728	8	.286	3	0	3	0	8	.015	6	.121	8
278			min	-.184	5	-.584	8	-.003	6	-.068	6	0	3	-.038	3
279		5	max	.725	8	.313	3	0	3	0	8	.013	6	.587	8
280			min	-.179	5	-.603	8	-.003	6	-.068	6	0	8	-.273	3
281	M29	1	max	.079	3	.002	6	.009	8	0	3	0	1	0	1
282			min	-.166	8	0	3	-.01	3	-.016	6	0	1	0	1
283		2	max	.079	3	.002	6	.011	3	0	3	.003	5	.001	6
284			min	-.166	8	0	3	-.024	8	-.016	6	-.03	8	0	3
285		3	max	.079	3	.002	6	.001	3	0	3	.043	3	.001	6
286			min	-.166	8	0	3	-.003	8	-.016	6	-.113	8	0	3
287		4	max	.078	3	.002	6	.011	8	0	3	.03	3	0	6
288			min	-.166	8	0	3	-.006	3	-.016	6	-.088	8	0	3
289		5	max	.078	3	.002	6	.019	8	0	3	0	1	0	1
290			min	-.166	8	0	3	-.004	3	-.016	6	0	1	0	1
291	M30	1	max	.079	3	.003	6	.009	8	0	8	0	1	0	1
292			min	-.166	8	0	8	-.01	3	-.019	6	0	1	0	1
293		2	max	.079	3	.003	6	.011	3	0	8	.003	5	.002	5
294			min	-.166	8	0	8	-.024	8	-.019	6	-.031	8	0	8
295		3	max	.079	3	.003	6	.001	3	0	8	.043	3	.002	5
296			min	-.166	8	0	8	-.003	8	-.019	6	-.113	8	0	8
297		4	max	.078	3	.003	6	.011	8	0	8	.03	3	.001	5
298			min	-.166	8	0	8	-.006	3	-.019	6	-.088	8	0	8
299		5	max	.078	3	.003	6	.018	8	0	8	0	1	0	1
300			min	-.166	8	0	8	-.004	3	-.019	6	0	1	0	1
301	M31	1	max	.014	3	.063	3	0	3	0	1	.053	6	.32	3
302			min	.002	8	-.134	8	-.004	6	0	1	0	3	-.683	8
303		2	max	.008	3	.063	3	0	3	0	1	.039	6	.11	3
304			min	-.004	8	-.134	8	-.004	6	0	1	0	3	-.238	8
305		3	max	.002	3	.063	3	0	3	0	1	.026	6	.208	10
306			min	-.01	8	-.134	8	-.004	6	0	1	0	3	-.1	3
307		4	max	.004	8	.032	10	0	3	0	1	.021	6	.108	10
308			min	-.008	3	-.016	3	-.006	6	0	1	0	3	-.052	3
309		5	max	-.002	8	.032	10	0	3	0	1	0	1	0	1
310			min	-.014	3	-.016	3	-.006	6	0	1	0	1	0	1
311	M32	1	max	.014	3	.063	3	0	8	0	1	.07	6	.32	3
312			min	.002	8	-.133	8	-.005	6	0	1	0	8	-.682	8
313		2	max	.008	3	.063	3	0	8	0	1	.052	6	.11	3
314			min	-.004	8	-.133	8	-.005	6	0	1	0	8	-.237	8
315		3	max	.002	3	.063	3	0	8	0	1	.035	6	.208	10
316			min	-.01	8	-.133	8	-.005	6	0	1	0	8	-.1	3
317		4	max	.004	8	.032	10	0	8	0	1	.027	6	.108	10
318			min	-.008	3	-.016	3	-.008	6	0	1	0	8	-.052	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
319		5	max	-.002	8	.032	10	0	8	0	1	0	1	0	1
320			min	-.014	3	-.016	3	-.008	6	0	1	0	1	0	1
321	M33	1	max	-.001	3	0	1	0	1	.015	6	0	1	0	1
322			min	-.055	8	0	1	0	1	0	3	0	1	0	1
323		2	max	-.003	3	0	1	0	1	.015	6	0	1	0	1
324			min	-.057	8	0	1	0	1	0	3	0	1	0	1
325		3	max	-.004	3	0	1	0	1	.015	6	0	1	0	1
326			min	-.058	8	0	1	0	1	0	3	0	1	0	1
327		4	max	-.005	3	0	1	0	1	.015	6	0	1	0	1
328			min	-.059	8	0	1	0	1	0	3	0	1	0	1
329		5	max	-.006	3	0	1	0	1	.015	6	0	1	0	1
330			min	-.06	8	0	1	0	1	0	3	0	1	0	1
331	M34	1	max	.002	8	0	1	0	1	.014	6	0	1	0	1
332			min	-.029	3	0	1	0	1	0	2	0	1	0	1
333		2	max	0	8	0	1	0	1	.014	6	0	1	0	1
334			min	-.031	3	0	1	0	1	0	2	0	1	0	1
335		3	max	-.002	8	0	1	0	1	.014	6	0	1	0	1
336			min	-.033	3	0	1	0	1	0	2	0	1	0	1
337		4	max	-.004	8	0	1	0	1	.014	6	0	1	0	1
338			min	-.035	3	0	1	0	1	0	2	0	1	0	1
339		5	max	-.005	8	0	1	0	1	.014	6	0	1	0	1
340			min	-.036	3	0	1	0	1	0	2	0	1	0	1
341	M35	1	max	-.002	8	0	1	0	1	.013	6	0	1	0	1
342			min	-.025	3	0	1	0	1	0	8	0	1	0	1
343		2	max	-.004	8	0	1	0	1	.013	6	0	1	0	1
344			min	-.027	3	0	1	0	1	0	8	0	1	0	1
345		3	max	-.007	8	0	1	0	1	.013	6	0	1	0	1
346			min	-.029	3	0	1	0	1	0	8	0	1	0	1
347		4	max	-.009	8	0	1	0	1	.013	6	0	1	0	1
348			min	-.031	3	0	1	0	1	0	8	0	1	0	1
349		5	max	-.011	8	0	1	0	1	.013	6	0	1	0	1
350			min	-.033	3	0	1	0	1	0	8	0	1	0	1
351	M36	1	max	-.008	10	0	1	0	1	.012	6	0	1	0	1
352			min	-.014	3	0	1	0	1	0	8	0	1	0	1
353		2	max	-.011	10	0	1	0	1	.012	6	0	1	0	1
354			min	-.017	3	0	1	0	1	0	8	0	1	0	1
355		3	max	-.014	10	0	1	0	1	.012	6	0	1	0	1
356			min	-.019	3	0	1	0	1	0	8	0	1	0	1
357		4	max	-.017	10	0	1	0	1	.012	6	0	1	0	1
358			min	-.022	3	0	1	0	1	0	8	0	1	0	1
359		5	max	-.019	10	0	1	0	1	.012	6	0	1	0	1
360			min	-.025	3	0	1	0	1	0	8	0	1	0	1
361	M37	1	max	-.001	3	0	1	0	1	.02	6	0	1	0	1
362			min	-.055	8	0	1	0	1	0	8	0	1	0	1
363		2	max	-.003	3	0	1	0	1	.02	6	0	1	0	1
364			min	-.056	8	0	1	0	1	0	8	0	1	0	1
365		3	max	-.004	3	0	1	0	1	.02	6	0	1	0	1
366			min	-.058	8	0	1	0	1	0	8	0	1	0	1
367		4	max	-.005	3	0	1	0	1	.02	6	0	1	0	1
368			min	-.059	8	0	1	0	1	0	8	0	1	0	1
369		5	max	-.006	3	0	1	0	1	.02	6	0	1	0	1
370			min	-.06	8	0	1	0	1	0	8	0	1	0	1
371	M38	1	max	.002	8	0	1	0	1	.018	6	0	1	0	1
372			min	-.029	3	0	1	0	1	0	3	0	1	0	1
373		2	max	0	8	0	1	0	1	.018	6	0	1	0	1
374			min	-.031	3	0	1	0	1	0	3	0	1	0	1
375		3	max	-.002	8	0	1	0	1	.018	6	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 Mome...	lc	z-z Mome...	lc
376			min	-.033	3	0	1	0	1	0	3	0	1	0	1
377		4	max	-.004	8	0	1	0	1	.018	6	0	1	0	1
378			min	-.035	3	0	1	0	1	0	3	0	1	0	1
379		5	max	-.005	8	0	1	0	1	.018	6	0	1	0	1
380			min	-.036	3	0	1	0	1	0	3	0	1	0	1
381	M39	1	max	-.002	8	0	1	0	1	.017	6	0	1	0	1
382			min	-.025	3	0	1	0	1	0	3	0	1	0	1
383		2	max	-.004	8	0	1	0	1	.017	6	0	1	0	1
384			min	-.027	3	0	1	0	1	0	3	0	1	0	1
385		3	max	-.007	8	0	1	0	1	.017	6	0	1	0	1
386			min	-.029	3	0	1	0	1	0	3	0	1	0	1
387		4	max	-.009	8	0	1	0	1	.017	6	0	1	0	1
388			min	-.031	3	0	1	0	1	0	3	0	1	0	1
389		5	max	-.011	8	0	1	0	1	.017	6	0	1	0	1
390			min	-.033	3	0	1	0	1	0	3	0	1	0	1
391	M40	1	max	-.009	10	0	1	0	1	.016	6	0	1	0	1
392			min	-.014	3	0	1	0	1	0	3	0	1	0	1
393		2	max	-.011	10	0	1	0	1	.016	6	0	1	0	1
394			min	-.017	3	0	1	0	1	0	3	0	1	0	1
395		3	max	-.014	10	0	1	0	1	.016	6	0	1	0	1
396			min	-.019	3	0	1	0	1	0	3	0	1	0	1
397		4	max	-.017	10	0	1	0	1	.016	6	0	1	0	1
398			min	-.022	3	0	1	0	1	0	3	0	1	0	1
399		5	max	-.019	10	0	1	0	1	.016	6	0	1	0	1
400			min	-.025	3	0	1	0	1	0	3	0	1	0	1
401	M41	1	max	.124	6	.084	2	0	1	.038	10	0	1	0	1
402			min	0	8	-.001	1	0	1	-.019	5	0	1	0	1
403		2	max	.124	6	.063	2	0	1	.038	10	0	1	0	1
404			min	0	8	0	1	0	1	-.019	5	0	1	-.12	2
405		3	max	.124	6	0	1	0	1	.038	10	0	1	0	1
406			min	0	8	-.003	2	0	1	-.019	5	0	1	-.17	2
407		4	max	.124	6	0	1	0	1	.038	10	0	1	.001	1
408			min	0	8	-.064	2	0	1	-.019	5	0	1	-.117	2
409		5	max	.124	6	.002	1	0	1	.038	10	0	1	0	1
410			min	0	8	-.079	2	0	1	-.019	5	0	1	0	1
411	M42	1	max	.214	6	.084	2	0	1	0	10	0	1	0	1
412			min	0	2	-.001	1	0	1	0	5	0	1	0	1
413		2	max	.214	6	.063	2	0	1	0	10	0	1	0	1
414			min	0	2	0	1	0	1	0	5	0	1	-.12	2
415		3	max	.214	6	0	1	0	1	0	10	0	1	0	1
416			min	0	2	-.003	2	0	1	0	5	0	1	-.17	2
417		4	max	.214	6	0	1	0	1	0	10	0	1	.001	1
418			min	0	2	-.064	2	0	1	0	5	0	1	-.117	2
419		5	max	.214	6	.002	1	0	1	0	10	0	1	0	1
420			min	0	2	-.079	2	0	1	0	5	0	1	0	1
421	M43	1	max	.321	6	.084	2	0	1	0	8	0	1	0	1
422			min	0	2	-.001	1	0	1	0	5	0	1	0	1
423		2	max	.321	6	.063	2	0	1	0	8	0	1	0	1
424			min	0	2	0	1	0	1	0	5	0	1	-.12	2
425		3	max	.321	6	0	1	0	1	0	8	0	1	0	1
426			min	0	2	-.003	2	0	1	0	5	0	1	-.17	2
427		4	max	.321	6	0	1	0	1	0	8	0	1	.001	1
428			min	0	2	-.064	2	0	1	0	5	0	1	-.117	2
429		5	max	.321	6	.002	1	0	1	0	8	0	1	0	1
430			min	0	2	-.079	2	0	1	0	5	0	1	0	1
431	M44	1	max	.437	6	.084	2	0	1	0	8	0	1	0	1
432			min	0	2	-.001	1	0	1	0	5	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 Mome...	lc	z-z Mome...	lc
433		2	max	.437	6	.063	2	0	1	0	8	0	1	0	1
434			min	0	2	0	1	0	1	0	5	0	1	-.12	2
435		3	max	.437	6	0	1	0	1	0	8	0	1	0	1
436			min	0	2	-.003	2	0	1	0	5	0	1	-.17	2
437		4	max	.437	6	0	1	0	1	0	8	0	1	.001	1
438			min	0	2	-.064	2	0	1	0	5	0	1	-.117	2
439		5	max	.437	6	.002	1	0	1	0	8	0	1	0	1
440			min	0	2	-.079	2	0	1	0	5	0	1	0	1
441	M45	1	max	.557	6	.084	2	0	1	0	3	0	1	0	1
442			min	0	3	-.001	1	0	1	0	10	0	1	0	1
443		2	max	.557	6	.063	2	0	1	0	3	0	1	0	1
444			min	0	3	0	1	0	1	0	10	0	1	-.12	2
445		3	max	.557	6	0	1	0	1	0	3	0	1	0	1
446			min	0	3	-.003	2	0	1	0	10	0	1	-.17	2
447		4	max	.557	6	0	1	0	1	0	3	0	1	.001	1
448			min	0	3	-.064	2	0	1	0	10	0	1	-.117	2
449		5	max	.557	6	.002	1	0	1	0	3	0	1	0	1
450			min	0	3	-.079	2	0	1	0	10	0	1	0	1
451	M46	1	max	.675	6	.084	2	0	1	0	5	0	1	0	1
452			min	0	8	-.001	1	0	1	0	8	0	1	0	1
453		2	max	.675	6	.063	2	0	1	0	5	0	1	0	1
454			min	0	8	0	1	0	1	0	8	0	1	-.12	2
455		3	max	.675	6	0	1	0	1	0	5	0	1	0	1
456			min	0	8	-.003	2	0	1	0	8	0	1	-.17	2
457		4	max	.675	6	0	1	0	1	0	5	0	1	.001	1
458			min	0	8	-.064	2	0	1	0	8	0	1	-.117	2
459		5	max	.675	6	.002	1	0	1	0	5	0	1	0	1
460			min	0	8	-.079	2	0	1	0	8	0	1	0	1
461	M47	1	max	.803	5	.084	2	0	1	0	3	0	1	0	1
462			min	0	3	-.001	1	0	1	0	10	0	1	0	1
463		2	max	.803	5	.063	2	0	1	0	3	0	1	0	1
464			min	0	3	0	1	0	1	0	10	0	1	-.12	2
465		3	max	.803	5	0	1	0	1	0	3	0	1	0	1
466			min	0	3	-.003	2	0	1	0	10	0	1	-.17	2
467		4	max	.803	5	0	1	0	1	0	3	0	1	.001	1
468			min	0	3	-.064	2	0	1	0	10	0	1	-.117	2
469		5	max	.803	5	.002	1	0	1	0	3	0	1	0	1
470			min	0	3	-.079	2	0	1	0	10	0	1	0	1
471	M48	1	max	.955	5	.084	2	0	1	0	5	0	1	0	1
472			min	0	2	-.001	1	0	1	0	10	0	1	0	1
473		2	max	.955	5	.063	2	0	1	0	5	0	1	0	1
474			min	0	2	0	1	0	1	0	10	0	1	-.12	2
475		3	max	.955	5	0	1	0	1	0	5	0	1	0	1
476			min	0	2	-.003	2	0	1	0	10	0	1	-.17	2
477		4	max	.955	5	0	1	0	1	0	5	0	1	.001	1
478			min	0	2	-.064	2	0	1	0	10	0	1	-.117	2
479		5	max	.955	5	.002	1	0	1	0	5	0	1	0	1
480			min	0	2	-.079	2	0	1	0	10	0	1	0	1
481	M49	1	max	1.129	5	.084	2	0	1	.019	5	0	1	0	1
482			min	0	8	-.001	5	0	1	-.038	10	0	1	0	1
483		2	max	1.129	5	.063	2	0	1	.019	5	0	1	0	5
484			min	0	8	0	5	0	1	-.038	10	0	1	-.12	2
485		3	max	1.129	5	0	4	0	1	.019	5	0	1	0	5
486			min	0	8	-.003	2	0	1	-.038	10	0	1	-.17	2
487		4	max	1.129	5	0	4	0	1	.019	5	0	1	.001	5
488			min	0	8	-.064	2	0	1	-.038	10	0	1	-.117	2
489		5	max	1.129	5	.002	4	0	1	.019	5	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 Mome...	lc	z-z Mome...	lc
490			min	0	8	-.079	2	0	1	-.038	10	0	1	0	1
491	M50	1	max	0	1	.079	2	0	1	.048	5	0	1	0	1
492			min	0	1	-.002	1	0	1	-.096	10	0	1	0	1
493		2	max	0	1	.064	2	0	1	.048	5	0	1	.001	1
494			min	0	1	0	1	0	1	-.096	10	0	1	-.117	2
495		3	max	0	1	.003	2	0	1	.048	5	0	1	0	1
496			min	0	1	0	1	0	1	-.096	10	0	1	-.17	2
497		4	max	0	1	0	1	0	1	.048	5	0	1	0	1
498			min	0	1	-.063	2	0	1	-.096	10	0	1	-.12	2
499		5	max	0	1	.001	1	0	1	.048	5	0	1	0	1
500			min	0	1	-.084	2	0	1	-.096	10	0	1	0	1
501	M51	1	max	0	1	.079	2	0	1	.001	5	0	1	0	1
502			min	0	1	-.002	1	0	1	-.002	10	0	1	0	1
503		2	max	0	1	.064	2	0	1	.001	5	0	1	.001	1
504			min	0	1	0	1	0	1	-.002	10	0	1	-.117	2
505		3	max	0	1	.003	2	0	1	.001	5	0	1	0	1
506			min	0	1	0	1	0	1	-.002	10	0	1	-.17	2
507		4	max	0	1	0	1	0	1	.001	5	0	1	0	1
508			min	0	1	-.063	2	0	1	-.002	10	0	1	-.12	2
509		5	max	0	1	.001	1	0	1	.001	5	0	1	0	1
510			min	0	1	-.084	2	0	1	-.002	10	0	1	0	1
511	M52	1	max	0	1	.079	2	0	1	0	5	0	1	0	1
512			min	0	1	-.002	1	0	1	0	10	0	1	0	1
513		2	max	0	1	.064	2	0	1	0	5	0	1	.001	1
514			min	0	1	0	1	0	1	0	10	0	1	-.117	2
515		3	max	0	1	.003	2	0	1	0	5	0	1	0	1
516			min	0	1	0	1	0	1	0	10	0	1	-.17	2
517		4	max	0	1	0	1	0	1	0	5	0	1	0	1
518			min	0	1	-.063	2	0	1	0	10	0	1	-.12	2
519		5	max	0	1	.001	1	0	1	0	5	0	1	0	1
520			min	0	1	-.084	2	0	1	0	10	0	1	0	1
521	M53	1	max	0	1	.079	2	0	1	0	5	0	1	0	1
522			min	0	1	-.002	1	0	1	0	8	0	1	0	1
523		2	max	0	1	.064	2	0	1	0	5	0	1	.001	1
524			min	0	1	0	1	0	1	0	8	0	1	-.117	2
525		3	max	0	1	.003	2	0	1	0	5	0	1	0	1
526			min	0	1	0	1	0	1	0	8	0	1	-.17	2
527		4	max	0	1	0	1	0	1	0	5	0	1	0	1
528			min	0	1	-.063	2	0	1	0	8	0	1	-.12	2
529		5	max	0	1	.001	1	0	1	0	5	0	1	0	1
530			min	0	1	-.084	2	0	1	0	8	0	1	0	1
531	M54	1	max	0	1	.079	2	0	1	0	10	0	1	0	1
532			min	0	1	-.002	1	0	1	0	3	0	1	0	1
533		2	max	0	1	.064	2	0	1	0	10	0	1	.001	1
534			min	0	1	0	1	0	1	0	3	0	1	-.117	2
535		3	max	0	1	.003	2	0	1	0	10	0	1	0	1
536			min	0	1	0	1	0	1	0	3	0	1	-.17	2
537		4	max	0	1	0	1	0	1	0	10	0	1	0	1
538			min	0	1	-.063	2	0	1	0	3	0	1	-.12	2
539		5	max	0	1	.001	1	0	1	0	10	0	1	0	1
540			min	0	1	-.084	2	0	1	0	3	0	1	0	1
541	M55	1	max	0	1	.079	2	0	1	0	8	0	1	0	1
542			min	0	1	-.002	1	0	1	0	5	0	1	0	1
543		2	max	0	1	.064	2	0	1	0	8	0	1	.001	1
544			min	0	1	0	1	0	1	0	5	0	1	-.117	2
545		3	max	0	1	.003	2	0	1	0	8	0	1	0	1
546			min	0	1	0	1	0	1	0	5	0	1	-.17	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
547		4	max	0	1	0	1	0	1	0	8	0	1	0	1
548			min	0	1	-.063	2	0	1	0	5	0	1	-.12	2
549		5	max	0	1	.001	1	0	1	0	8	0	1	0	1
550			min	0	1	-.084	2	0	1	0	5	0	1	0	1
551	M56	1	max	0	1	.079	2	0	1	0	10	0	1	0	1
552			min	0	1	-.002	1	0	1	0	3	0	1	0	1
553		2	max	0	1	.064	2	0	1	0	10	0	1	.001	1
554			min	0	1	0	1	0	1	0	3	0	1	-.117	2
555		3	max	0	1	.003	2	0	1	0	10	0	1	0	1
556			min	0	1	0	1	0	1	0	3	0	1	-.17	2
557		4	max	0	1	0	1	0	1	0	10	0	1	0	1
558			min	0	1	-.063	2	0	1	0	3	0	1	-.12	2
559		5	max	0	1	.001	1	0	1	0	10	0	1	0	1
560			min	0	1	-.084	2	0	1	0	3	0	1	0	1
561	M57	1	max	0	1	.079	2	0	1	.002	10	0	1	0	1
562			min	0	1	-.002	1	0	1	-.001	5	0	1	0	1
563		2	max	0	1	.064	2	0	1	.002	10	0	1	.001	1
564			min	0	1	0	1	0	1	-.001	5	0	1	-.117	2
565		3	max	0	1	.003	2	0	1	.002	10	0	1	0	1
566			min	0	1	0	1	0	1	-.001	5	0	1	-.17	2
567		4	max	0	1	0	1	0	1	.002	10	0	1	0	1
568			min	0	1	-.063	2	0	1	-.001	5	0	1	-.12	2
569		5	max	0	1	.001	1	0	1	.002	10	0	1	0	1
570			min	0	1	-.084	2	0	1	-.001	5	0	1	0	1
571	M58	1	max	0	1	.079	2	0	1	.096	10	0	1	0	1
572			min	0	1	-.002	1	0	1	-.048	5	0	1	0	1
573		2	max	0	1	.064	2	0	1	.096	10	0	1	.001	1
574			min	0	1	0	1	0	1	-.048	5	0	1	-.117	2
575		3	max	0	1	.003	2	0	1	.096	10	0	1	0	1
576			min	0	1	0	1	0	1	-.048	5	0	1	-.17	2
577		4	max	0	1	0	1	0	1	.096	10	0	1	0	1
578			min	0	1	-.063	2	0	1	-.048	5	0	1	-.12	2
579		5	max	0	1	.001	1	0	1	.096	10	0	1	0	1
580			min	0	1	-.084	2	0	1	-.048	5	0	1	0	1
581	M59	1	max	.055	5	-.005	1	0	1	.028	8	0	1	0	1
582			min	0	3	-.005	1	0	1	-.014	5	0	1	0	1
583		2	max	.055	5	-.003	1	0	1	.028	8	0	1	.006	1
584			min	0	3	-.003	1	0	1	-.014	5	0	1	.006	1
585		3	max	.055	5	0	1	0	1	.028	8	0	1	.008	1
586			min	0	3	0	1	0	1	-.014	5	0	1	.008	1
587		4	max	.055	5	.003	1	0	1	.028	8	0	1	.006	1
588			min	0	3	.003	1	0	1	-.014	5	0	1	.006	1
589		5	max	.055	5	.005	1	0	1	.028	8	0	1	0	1
590			min	0	3	.005	1	0	1	-.014	5	0	1	0	1
591	M60	1	max	.13	5	-.005	1	0	1	0	8	0	1	0	1
592			min	0	8	-.005	1	0	1	0	5	0	1	0	1
593		2	max	.13	5	-.003	1	0	1	0	8	0	1	.006	1
594			min	0	8	-.003	1	0	1	0	5	0	1	.006	1
595		3	max	.13	5	0	1	0	1	0	8	0	1	.008	1
596			min	0	8	0	1	0	1	0	5	0	1	.008	1
597		4	max	.13	5	.003	1	0	1	0	8	0	1	.006	1
598			min	0	8	.003	1	0	1	0	5	0	1	.006	1
599		5	max	.13	5	.005	1	0	1	0	8	0	1	0	1
600			min	0	8	.005	1	0	1	0	5	0	1	0	1
601	M61	1	max	.164	5	-.005	1	0	1	0	8	0	1	0	1
602			min	0	8	-.005	1	0	1	0	5	0	1	0	1
603		2	max	.164	5	-.003	1	0	1	0	8	0	1	.006	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 Mome...	lc	z-z Mome...	lc
604			min	0	8	-.003	1	0	1	0	5	0	1	.006	1
605		3	max	.164	5	0	1	0	1	0	8	0	1	.008	1
606			min	0	8	0	1	0	1	0	5	0	1	.008	1
607		4	max	.164	5	.003	1	0	1	0	8	0	1	.006	1
608			min	0	8	.003	1	0	1	0	5	0	1	.006	1
609		5	max	.164	5	.005	1	0	1	0	8	0	1	0	1
610			min	0	8	.005	1	0	1	0	5	0	1	0	1
611	M62	1	max	.179	5	-.005	1	0	1	0	8	0	1	0	1
612			min	0	8	-.005	1	0	1	0	5	0	1	0	1
613		2	max	.179	5	-.003	1	0	1	0	8	0	1	.006	1
614			min	0	8	-.003	1	0	1	0	5	0	1	.006	1
615		3	max	.179	5	0	1	0	1	0	8	0	1	.008	1
616			min	0	8	0	1	0	1	0	5	0	1	.008	1
617		4	max	.179	5	.003	1	0	1	0	8	0	1	.006	1
618			min	0	8	.003	1	0	1	0	5	0	1	.006	1
619		5	max	.179	5	.005	1	0	1	0	8	0	1	0	1
620			min	0	8	.005	1	0	1	0	5	0	1	0	1
621	M63	1	max	.194	5	-.005	1	0	1	0	3	0	1	0	1
622			min	0	8	-.005	1	0	1	0	10	0	1	0	1
623		2	max	.194	5	-.003	1	0	1	0	3	0	1	.006	1
624			min	0	8	-.003	1	0	1	0	10	0	1	.006	1
625		3	max	.194	5	0	1	0	1	0	3	0	1	.008	1
626			min	0	8	0	1	0	1	0	10	0	1	.008	1
627		4	max	.194	5	.003	1	0	1	0	3	0	1	.006	1
628			min	0	8	.003	1	0	1	0	10	0	1	.006	1
629		5	max	.194	5	.005	1	0	1	0	3	0	1	0	1
630			min	0	8	.005	1	0	1	0	10	0	1	0	1
631	M64	1	max	.225	5	-.005	1	0	1	0	6	0	1	0	1
632			min	0	3	-.005	1	0	1	0	8	0	1	0	1
633		2	max	.225	5	-.003	1	0	1	0	6	0	1	.006	1
634			min	0	3	-.003	1	0	1	0	8	0	1	.006	1
635		3	max	.225	5	0	1	0	1	0	6	0	1	.008	1
636			min	0	3	0	1	0	1	0	8	0	1	.008	1
637		4	max	.225	5	.003	1	0	1	0	6	0	1	.006	1
638			min	0	3	.003	1	0	1	0	8	0	1	.006	1
639		5	max	.225	5	.005	1	0	1	0	6	0	1	0	1
640			min	0	3	.005	1	0	1	0	8	0	1	0	1
641	M65	1	max	.245	5	-.005	1	0	1	0	3	0	1	0	1
642			min	0	8	-.005	1	0	1	0	6	0	1	0	1
643		2	max	.245	5	-.003	1	0	1	0	3	0	1	.006	1
644			min	0	8	-.003	1	0	1	0	6	0	1	.006	1
645		3	max	.245	5	0	1	0	1	0	3	0	1	.008	1
646			min	0	8	0	1	0	1	0	6	0	1	.008	1
647		4	max	.245	5	.003	1	0	1	0	3	0	1	.006	1
648			min	0	8	.003	1	0	1	0	6	0	1	.006	1
649		5	max	.245	5	.005	1	0	1	0	3	0	1	0	1
650			min	0	8	.005	1	0	1	0	6	0	1	0	1
651	M66	1	max	.225	5	-.005	1	0	1	0	5	0	1	0	1
652			min	0	8	-.005	1	0	1	0	10	0	1	0	1
653		2	max	.225	5	-.003	1	0	1	0	5	0	1	.006	1
654			min	0	8	-.003	1	0	1	0	10	0	1	.006	1
655		3	max	.225	5	0	1	0	1	0	5	0	1	.008	1
656			min	0	8	0	1	0	1	0	10	0	1	.008	1
657		4	max	.225	5	.003	1	0	1	0	5	0	1	.006	1
658			min	0	8	.003	1	0	1	0	10	0	1	.006	1
659		5	max	.225	5	.005	1	0	1	0	5	0	1	0	1
660			min	0	8	.005	1	0	1	0	10	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 Mome...	lc	z-z Mome...	lc
661	M67	1	max	.175	6	-.005	1	0	1	.014	5	0	1	0	1
662			min	0	3	-.005	1	0	1	-.028	8	0	1	0	1
663		2	max	.175	6	-.003	1	0	1	.014	5	0	1	.006	1
664			min	0	3	-.003	1	0	1	-.028	8	0	1	.006	1
665		3	max	.175	6	0	1	0	1	.014	5	0	1	.008	1
666			min	0	3	0	1	0	1	-.028	8	0	1	.008	1
667		4	max	.175	6	.003	1	0	1	.014	5	0	1	.006	1
668			min	0	3	.003	1	0	1	-.028	8	0	1	.006	1
669		5	max	.175	6	.005	1	0	1	.014	5	0	1	0	1
670			min	0	3	.005	1	0	1	-.028	8	0	1	0	1
671	M68	1	max	0	3	0	5	.001	6	.008	3	0	1	0	1
672			min	-.346	6	-.005	8	0	8	-.015	10	0	1	0	1
673		2	max	0	3	.002	5	.001	6	.008	3	.002	6	.005	8
674			min	-.346	6	-.002	8	0	8	-.015	10	0	8	0	5
675		3	max	.763	6	.005	5	.001	5	.008	3	.003	6	.006	8
676			min	0	8	0	8	0	8	-.015	10	-.004	5	-.006	5
677		4	max	.763	6	.002	8	.001	5	.006	3	0	8	.005	8
678			min	0	8	-.002	5	0	8	-.011	10	-.002	5	0	5
679		5	max	.763	6	.005	8	.001	5	.006	3	0	1	0	1
680			min	0	8	0	5	0	8	-.011	10	0	1	0	1
681	M69	1	max	.433	6	-.005	1	0	1	0	5	0	1	0	1
682			min	0	3	-.005	1	0	1	0	8	0	1	0	1
683		2	max	.433	6	-.003	1	0	1	0	5	0	1	.006	1
684			min	0	3	-.003	1	0	1	0	8	0	1	.006	1
685		3	max	.433	6	0	1	0	1	0	5	0	1	.008	1
686			min	0	3	0	1	0	1	0	8	0	1	.008	1
687		4	max	.433	6	.003	1	0	1	0	5	0	1	.006	1
688			min	0	3	.003	1	0	1	0	8	0	1	.006	1
689		5	max	.433	6	.005	1	0	1	0	5	0	1	0	1
690			min	0	3	.005	1	0	1	0	8	0	1	0	1
691	M70	1	max	.135	6	-.005	1	0	1	0	5	0	1	0	1
692			min	0	3	-.005	1	0	1	0	8	0	1	0	1
693		2	max	.135	6	-.003	1	0	1	0	5	0	1	.006	1
694			min	0	3	-.003	1	0	1	0	8	0	1	.006	1
695		3	max	.135	6	0	1	0	1	0	5	0	1	.008	1
696			min	0	3	0	1	0	1	0	8	0	1	.008	1
697		4	max	.135	6	.003	1	0	1	0	5	0	1	.006	1
698			min	0	3	.003	1	0	1	0	8	0	1	.006	1
699		5	max	.135	6	.005	1	0	1	0	5	0	1	0	1
700			min	0	3	.005	1	0	1	0	8	0	1	0	1
701	M71	1	max	0	8	-.005	1	0	1	0	5	0	1	0	1
702			min	-.15	6	-.005	1	0	1	0	8	0	1	0	1
703		2	max	0	8	-.003	1	0	1	0	5	0	1	.006	1
704			min	-.15	6	-.003	1	0	1	0	8	0	1	.006	1
705		3	max	0	8	0	1	0	1	0	5	0	1	.008	1
706			min	-.15	6	0	1	0	1	0	8	0	1	.008	1
707		4	max	0	8	.003	1	0	1	0	5	0	1	.006	1
708			min	-.15	6	.003	1	0	1	0	8	0	1	.006	1
709		5	max	0	8	.005	1	0	1	0	5	0	1	0	1
710			min	-.15	6	.005	1	0	1	0	8	0	1	0	1
711	M72	1	max	0	8	-.005	1	0	1	0	5	0	1	0	1
712			min	-.443	6	-.005	1	0	1	0	8	0	1	0	1
713		2	max	0	8	-.003	1	0	1	0	5	0	1	.006	1
714			min	-.443	6	-.003	1	0	1	0	8	0	1	.006	1
715		3	max	0	8	0	1	0	1	0	5	0	1	.008	1
716			min	-.443	6	0	1	0	1	0	8	0	1	.008	1
717		4	max	0	8	.003	1	0	1	0	5	0	1	.006	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 Mome...	lc	z-z Mome...	lc
718			min	-.443	6	.003	1	0	1	0	8	0	1	.006	1
719		5	max	0	8	.005	1	0	1	0	5	0	1	0	1
720			min	-.443	6	.005	1	0	1	0	8	0	1	0	1
721	M73	1	max	0	3	0	5	0	6	.001	3	0	1	0	1
722			min	-.761	6	-.005	8	0	3	-.003	10	0	1	0	1
723		2	max	0	3	.002	5	0	6	.001	3	.001	6	.006	8
724			min	-.761	6	-.003	8	0	3	-.003	10	0	3	-.001	5
725		3	max	0	3	0	8	0	6	.003	8	.003	6	.008	8
726			min	-.761	6	-.005	5	0	2	-.003	10	-.003	5	-.007	5
727		4	max	.334	6	.003	8	0	6	.003	10	0	2	.006	8
728			min	0	8	-.002	5	0	2	-.001	3	-.001	6	-.001	5
729		5	max	.334	6	.005	8	0	6	.003	10	0	1	0	1
730			min	0	8	0	5	0	2	-.001	3	0	1	0	1
731	M74	1	max	.012	6	-.005	1	0	1	0	10	0	1	0	1
732			min	0	3	-.005	1	0	1	0	3	0	1	0	1
733		2	max	.012	6	-.003	1	0	1	0	10	0	1	.006	1
734			min	0	3	-.003	1	0	1	0	3	0	1	.006	1
735		3	max	.012	6	0	1	0	1	0	10	0	1	.008	1
736			min	0	3	0	1	0	1	0	3	0	1	.008	1
737		4	max	.012	6	.003	1	0	1	0	10	0	1	.006	1
738			min	0	3	.003	1	0	1	0	3	0	1	.006	1
739		5	max	.012	6	.005	1	0	1	0	10	0	1	0	1
740			min	0	3	.005	1	0	1	0	3	0	1	0	1
741	M75	1	max	0	8	-.005	1	0	1	0	10	0	1	0	1
742			min	-.292	6	-.005	1	0	1	0	3	0	1	0	1
743		2	max	0	8	-.003	1	0	1	0	10	0	1	.006	1
744			min	-.292	6	-.003	1	0	1	0	3	0	1	.006	1
745		3	max	0	8	0	1	0	1	0	10	0	1	.008	1
746			min	-.292	6	0	1	0	1	0	3	0	1	.008	1
747		4	max	0	8	.003	1	0	1	0	10	0	1	.006	1
748			min	-.292	6	.003	1	0	1	0	3	0	1	.006	1
749		5	max	0	8	.005	1	0	1	0	10	0	1	0	1
750			min	-.292	6	.005	1	0	1	0	3	0	1	0	1
751	M76	1	max	0	3	0	5	.001	5	.011	10	0	1	0	1
752			min	-.592	6	-.005	8	0	3	-.006	3	0	1	0	1
753		2	max	0	3	.002	5	.001	5	.011	10	.002	5	.005	8
754			min	-.592	6	-.002	8	0	3	-.006	3	0	3	0	5
755		3	max	0	3	0	8	.001	10	.015	10	.003	5	.006	8
756			min	-.592	6	-.005	5	0	3	-.008	3	-.004	10	-.006	5
757		4	max	.269	6	.002	8	.001	10	.015	10	0	3	.005	8
758			min	0	8	-.002	5	0	3	-.008	3	-.002	10	0	5
759		5	max	.269	6	.005	8	.001	10	.015	10	0	1	0	1
760			min	0	8	0	5	0	3	-.008	3	0	1	0	1
761	M77	1	max	.9	6	-.002	3	0	1	.004	8	0	1	0	1
762			min	-.011	3	-.002	5	0	1	-.004	5	0	1	0	1
763		2	max	.901	6	0	3	0	1	.004	8	0	1	.002	5
764			min	-.01	3	0	5	0	1	-.004	5	0	1	.002	3
765		3	max	.902	6	0	1	0	1	.004	8	0	1	.002	5
766			min	-.009	3	0	1	0	1	-.004	5	0	1	.002	3
767		4	max	.903	6	0	3	0	1	.004	8	0	1	.002	5
768			min	-.008	3	0	5	0	1	-.004	5	0	1	.002	3
769		5	max	.904	6	.002	3	0	1	.004	8	0	1	0	1
770			min	-.007	3	.002	5	0	1	-.004	5	0	1	0	1
771	M78	1	max	-.002	8	-.002	3	0	1	.001	3	0	1	0	1
772			min	-.913	6	-.002	10	0	1	-.005	10	0	1	0	1
773		2	max	-.003	8	0	3	0	1	.001	3	0	1	.002	10
774			min	-.914	6	0	10	0	1	-.005	10	0	1	.002	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	lc	y Shear[k]	lc	z Shear[k]	lc	Torque[k-ft]	lc	y-y Mome...	lc	z-z Mome...	lc
775		3	max	-.005	8	0	1	0	1	.001	3	0	1	.002	10
776			min	-.915	6	0	1	0	1	-.005	10	0	1	.002	3
777		4	max	-.006	8	0	3	0	1	.001	3	0	1	.002	10
778			min	-.916	6	0	10	0	1	-.005	10	0	1	.002	3
779		5	max	-.007	8	.002	3	0	1	.001	3	0	1	0	1
780			min	-.917	6	.002	10	0	1	-.005	10	0	1	0	1
781	M79	1	max	.889	6	-.002	1	0	1	.004	8	0	1	0	1
782			min	-.012	3	-.002	5	0	1	-.006	5	0	1	0	1
783		2	max	.89	6	0	1	0	1	.004	8	0	1	.002	5
784			min	-.011	3	0	5	0	1	-.006	5	0	1	.002	1
785		3	max	.891	6	0	1	0	1	.004	8	0	1	.002	5
786			min	-.009	3	0	1	0	1	-.006	5	0	1	.002	1
787		4	max	.892	6	0	1	0	1	.004	8	0	1	.002	5
788			min	-.008	3	0	5	0	1	-.006	5	0	1	.002	1
789		5	max	.893	6	.002	1	0	1	.004	8	0	1	0	1
790			min	-.007	3	.002	5	0	1	-.006	5	0	1	0	1
791	M80	1	max	-.001	8	-.002	2	0	1	.002	3	0	1	0	1
792			min	-.901	6	-.002	6	0	1	-.007	10	0	1	0	1
793		2	max	-.002	8	0	2	0	1	.002	3	0	1	.002	6
794			min	-.902	6	0	6	0	1	-.007	10	0	1	.002	2
795		3	max	-.004	8	0	1	0	1	.002	3	0	1	.002	6
796			min	-.903	6	0	1	0	1	-.007	10	0	1	.002	2
797		4	max	-.005	8	0	2	0	1	.002	3	0	1	.002	6
798			min	-.904	6	0	6	0	1	-.007	10	0	1	.002	2
799		5	max	-.006	8	.002	2	0	1	.002	3	0	1	0	1
800			min	-.905	6	.002	6	0	1	-.007	10	0	1	0	1
801	M81	1	max	.696	6	-.002	1	0	1	.002	8	0	1	0	1
802			min	-.011	3	-.002	2	0	1	-.005	5	0	1	0	1
803		2	max	.698	6	0	1	0	1	.002	8	0	1	.002	2
804			min	-.01	3	0	2	0	1	-.005	5	0	1	.002	1
805		3	max	.699	6	0	1	0	1	.002	8	0	1	.002	2
806			min	-.009	3	0	1	0	1	-.005	5	0	1	.002	1
807		4	max	.7	6	0	1	0	1	.002	8	0	1	.002	2
808			min	-.008	3	0	2	0	1	-.005	5	0	1	.002	1
809		5	max	.701	6	.002	1	0	1	.002	8	0	1	0	1
810			min	-.007	3	.002	2	0	1	-.005	5	0	1	0	1
811	M82	1	max	-.002	8	-.002	1	0	1	.002	3	0	1	0	1
812			min	-.709	6	-.002	6	0	1	-.006	10	0	1	0	1
813		2	max	-.003	8	0	1	0	1	.002	3	0	1	.002	6
814			min	-.711	6	0	6	0	1	-.006	10	0	1	.002	1
815		3	max	-.005	8	0	1	0	1	.002	3	0	1	.002	6
816			min	-.712	6	0	1	0	1	-.006	10	0	1	.002	1
817		4	max	-.006	8	0	1	0	1	.002	3	0	1	.002	6
818			min	-.713	6	0	6	0	1	-.006	10	0	1	.002	1
819		5	max	-.007	8	.002	1	0	1	.002	3	0	1	0	1
820			min	-.714	6	.002	6	0	1	-.006	10	0	1	0	1

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	N7	max	.172	5	.573	10	.006	5	0	1	0	1	0	1
2		min	-.689	8	-.366	3	0	8	0	1	0	1	0	1
3	N10	max	.38	5	1.165	10	0	5	0	1	0	1	0	1
4		min	-1.406	8	-.714	3	0	10	0	1	0	1	0	1
5	N13	max	.384	5	1.158	10	0	5	0	1	0	1	0	1
6		min	-1.414	8	-.711	3	0	10	0	1	0	1	0	1
7	N16	max	.384	5	1.158	10	0	5	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [k]	lc	Y [k]	lc	Z [k]	lc	MX [k-ft]	lc	MY [k-ft]	lc	MZ [k-ft]	lc
8		min	-1.414	8	-.711	3	0	10	0	1	0	1	0	1
9	N19	max	.384	5	1.158	10	0	5	0	1	0	1	0	1
10		min	-1.414	8	-.711	3	0	10	0	1	0	1	0	1
11	N22	max	.384	5	1.158	10	0	5	0	1	0	1	0	1
12		min	-1.414	8	-.711	3	0	10	0	1	0	1	0	1
13	N25	max	.385	5	1.158	10	0	5	0	1	0	1	0	1
14		min	-1.414	8	-.711	3	0	10	0	1	0	1	0	1
15	N28	max	.384	5	1.158	10	0	5	0	1	0	1	0	1
16		min	-1.414	8	-.711	3	0	10	0	1	0	1	0	1
17	N31	max	.38	5	1.165	10	0	5	0	1	0	1	0	1
18		min	-1.406	8	-.714	3	0	10	0	1	0	1	0	1
19	N38	max	.172	5	.569	10	1.398	6	0	1	0	1	0	1
20		min	-.689	8	-.366	3	0	3	0	1	0	1	0	1
21	N32	max	.346	8	1.027	8	.256	6	0	1	0	1	0	1
22		min	-.16	3	-1.06	5	.003	8	0	1	0	1	0	1
23	N29	max	.783	10	2.391	10	.248	6	0	1	0	1	0	1
24		min	-.381	3	-.884	3	-.006	3	0	1	0	1	0	1
25	N26	max	.793	10	2.093	8	0	3	0	1	0	1	0	1
26		min	-.385	3	-1.043	5	-.173	6	0	1	0	1	0	1
27	N23	max	.796	10	2.087	8	.378	6	0	1	0	1	0	1
28		min	-.385	3	-1.74	5	.002	8	0	1	0	1	0	1
29	N20	max	.791	8	2.513	10	.375	6	0	1	0	1	0	1
30		min	-.385	3	-.887	3	-.006	3	0	1	0	1	0	1
31	N17	max	.793	10	2.093	8	0	8	0	1	0	1	0	1
32		min	-.385	3	-1.043	5	-.159	6	0	1	0	1	0	1
33	N14	max	.793	10	2.093	8	0	8	0	1	0	1	0	1
34		min	-.385	3	-1.043	5	-.155	6	0	1	0	1	0	1
35	N11	max	.793	10	2.093	8	0	3	0	1	0	1	0	1
36		min	-.385	3	-1.043	5	-.156	6	0	1	0	1	0	1
37	N8	max	.787	10	2.081	8	.394	6	0	1	0	1	0	1
38		min	-.381	3	-1.745	5	.003	8	0	1	0	1	0	1
39	N1	max	.345	8	1.507	10	.383	6	0	1	0	1	0	1
40		min	-.16	3	-.445	3	-.006	3	0	1	0	1	0	1
41	N44	max	.032	10	-.002	8	0	8	0	1	0	1	0	1
42		min	-.016	3	-.014	3	-.008	6	0	1	0	1	0	1
43	N41	max	.032	10	-.002	8	0	3	0	1	0	1	0	1
44		min	-.016	3	-.014	3	-.006	6	0	1	0	1	0	1
45	Totals:	max	0	5	28.118	10	2.78	6						
46		min	-7.478	4	-14.434	5	0	1						

Envelope Joint Displacements

	Joint		X [in]	lc	Y [in]	lc	Z [in]	lc	X Rotation ...	lc	Y Rotation ...	lc	Z Rotation [...	lc
1	N1	max	0	3	0	3	0	3	5.142e-4	6	2.968e-5	3	1.7e-3	10
2		min	0	8	0	10	0	6	0	3	-1.168e-3	6	-8.22e-4	3
3	N2	max	.007	8	.001	5	0	3	3.11e-7	3	1.941e-5	3	1.699e-3	3
4		min	-.002	5	-.003	8	-.199	6	-3.869e-3	6	-1.174e-3	6	-3.76e-3	8
5	N3	max	.047	8	.097	3	.001	8	1.551e-6	3	1.164e-5	3	2.896e-3	3
6		min	-.02	5	-.215	8	-.181	6	-3.697e-3	6	-1.191e-3	6	-6.356e-3	8
7	N4	max	.123	8	.285	3	.002	8	3.124e-6	3	1.792e-6	3	1.854e-3	3
8		min	-.055	5	-.625	8	-.141	6	-3.393e-3	6	-1.267e-3	6	-4.036e-3	8
9	N5	max	.134	8	.315	3	.002	8	4.03e-6	3	9.973e-6	8	2.494e-3	8
10		min	-.06	5	-.69	8	-.092	6	-3.102e-3	6	-1.342e-3	6	-1.115e-3	3
11	N6	max	.058	8	.139	3	0	8	4.293e-6	3	1.708e-5	8	7.753e-3	8
12		min	-.026	5	-.302	8	-.034	6	-2.823e-3	6	-1.411e-3	6	-3.552e-3	3
13	N7	max	0	8	0	3	0	8	4.176e-6	3	1.81e-5	8	8.152e-3	8
14		min	0	5	0	10	0	5	-2.681e-3	6	-1.457e-3	6	-3.757e-3	3

Envelope Joint Displacements (Continued)

	Joint		X [in]	lc	Y [in]	lc	Z [in]	lc	X Rotation ...	lc	Y Rotation ...	lc	Z Rotation [...	lc
15	N8	max	0	3	0	5	0	8	4.767e-4	6	4.205e-5	8	3.901e-3	10
16		min	0	10	0	8	0	6	0	8	-1.375e-3	6	-1.94e-3	3
17	N9	max	.013	8	.003	5	0	3	3.834e-7	8	2.836e-5	8	3.938e-3	5
18		min	-.004	5	-.006	8	-.2	6	-3.969e-3	6	-1.4e-3	6	-8.197e-3	8
19	N10	max	0	8	0	3	0	10	8.209e-6	8	5.755e-6	3	1.942e-2	8
20		min	0	5	0	10	0	5	-3.954e-3	6	-1.475e-3	6	-9.386e-3	5
21	N11	max	0	3	0	5	0	6	3.983e-4	6	0	3	3.948e-3	10
22		min	0	10	0	8	0	3	0	3	-1.467e-3	6	-1.962e-3	3
23	N12	max	.013	8	.003	5	0	3	2.721e-8	3	0	3	3.979e-3	5
24		min	-.004	5	-.006	8	-.201	6	-4.023e-3	6	-1.467e-3	6	-8.279e-3	8
25	N13	max	0	8	0	3	0	10	2.721e-8	3	0	3	1.968e-2	8
26		min	0	5	0	10	0	5	-4.023e-3	6	-1.467e-3	6	-9.519e-3	5
27	N14	max	0	3	0	5	0	6	3.774e-4	6	0	3	3.949e-3	10
28		min	0	10	0	8	0	8	0	3	-1.488e-3	6	-1.962e-3	3
29	N15	max	.013	8	.003	5	0	3	3.153e-8	3	0	3	3.98e-3	5
30		min	-.004	5	-.006	8	-.204	6	-4.089e-3	6	-1.488e-3	6	-8.281e-3	8
31	N16	max	0	8	0	3	0	10	3.153e-8	3	0	3	1.969e-2	8
32		min	0	5	0	10	0	5	-4.089e-3	6	-1.488e-3	6	-9.522e-3	5
33	N17	max	0	3	0	5	0	6	4.101e-4	6	0	3	3.949e-3	10
34		min	0	10	0	8	0	8	0	8	-1.515e-3	6	-1.962e-3	3
35	N18	max	.013	8	.003	5	0	3	3.96e-8	3	0	3	3.98e-3	5
36		min	-.004	5	-.006	8	-.207	6	-4.177e-3	6	-1.515e-3	6	-8.281e-3	8
37	N19	max	0	8	0	3	0	10	3.96e-8	3	0	3	1.969e-2	8
38		min	0	5	0	10	0	5	-4.177e-3	6	-1.515e-3	6	-9.522e-3	5
39	N20	max	0	3	0	3	0	3	4.977e-4	6	3.61e-5	3	3.946e-3	10
40		min	0	8	0	10	0	6	0	3	-1.523e-3	6	-1.961e-3	3
41	N21	max	.013	8	.003	5	0	3	4.109e-7	3	2.436e-5	3	3.979e-3	5
42		min	-.004	5	-.006	8	-.21	6	-4.287e-3	6	-1.531e-3	6	-8.28e-3	8
43	N22	max	0	8	0	3	0	10	7.125e-6	3	2.239e-5	8	1.969e-2	8
44		min	0	5	0	10	0	5	-4.283e-3	6	-1.557e-3	6	-9.522e-3	5
45	N23	max	0	3	0	5	0	8	5.407e-4	6	7.507e-5	8	3.945e-3	10
46		min	0	10	0	8	0	6	-1.519e-8	8	-1.499e-3	5	-1.961e-3	3
47	N24	max	.013	8	.003	5	0	8	8.72e-7	8	5.065e-5	8	3.979e-3	5
48		min	-.004	5	-.006	8	-.215	6	-4.437e-3	6	-1.528e-3	6	-8.28e-3	8
49	N25	max	0	8	0	3	0	10	1.483e-5	8	1.076e-5	3	1.969e-2	8
50		min	0	5	0	10	0	5	-4.419e-3	6	-1.623e-3	6	-9.521e-3	5
51	N26	max	0	3	0	5	0	6	5.391e-4	6	2.508e-8	8	3.948e-3	10
52		min	0	10	0	8	0	3	0	3	-1.65e-3	6	-1.962e-3	3
53	N27	max	.013	8	.003	5	0	8	9.481e-8	8	2.508e-8	8	3.979e-3	5
54		min	-.004	5	-.006	8	-.22	6	-4.635e-3	6	-1.65e-3	6	-8.279e-3	8
55	N28	max	0	8	0	3	0	10	9.481e-8	8	2.508e-8	8	1.968e-2	8
56		min	0	5	0	10	0	5	-4.635e-3	6	-1.65e-3	6	-9.519e-3	5
57	N29	max	0	3	0	3	0	3	5.912e-4	6	1.923e-5	3	3.902e-3	10
58		min	0	10	0	10	0	6	0	3	-1.67e-3	6	-1.94e-3	3
59	N30	max	.013	8	.003	5	0	8	1.461e-7	3	1.297e-5	3	3.938e-3	5
60		min	-.004	5	-.006	8	-.227	6	-4.872e-3	6	-1.686e-3	6	-8.197e-3	8
61	N31	max	0	8	0	3	0	10	3.726e-6	3	1.26e-5	8	1.942e-2	8
62		min	0	5	0	10	0	5	-4.863e-3	6	-1.733e-3	6	-9.386e-3	5
63	N32	max	0	3	0	5	0	8	6.089e-4	6	6.251e-5	8	1.702e-3	10
64		min	0	8	0	8	0	6	0	8	-1.389e-3	5	-8.219e-4	3
65	N33	max	.007	8	.001	5	0	8	6.42e-7	8	4.139e-5	8	1.699e-3	3
66		min	-.002	5	-.003	8	-.235	6	-5.098e-3	6	-1.41e-3	6	-3.765e-3	8
67	N34	max	.047	8	.097	3	0	3	3.208e-6	8	2.519e-5	8	2.896e-3	3
68		min	-.02	5	-.215	8	-.216	6	-4.87e-3	6	-1.45e-3	6	-6.356e-3	8
69	N35	max	.123	8	.285	3	.001	3	6.58e-6	8	4.091e-6	8	1.854e-3	3
70		min	-.055	5	-.625	8	-.171	6	-4.467e-3	6	-1.57e-3	6	-4.029e-3	8
71	N36	max	.134	8	.315	3	0	3	8.603e-6	8	4.595e-6	3	2.498e-3	8

Envelope Joint Displacements (Continued)

	Joint		X [in]	lc	Y [in]	lc	Z [in]	lc	X Rotation ...	lc	Y Rotation ...	lc	Z Rotation [...	lc
72		min	-.06	5	-.689	8	-.112	6	-4.081e-3	6	-1.682e-3	6	-1.115e-3	3
73	N37	max	.058	8	.139	3	0	3	9.222e-6	8	7.791e-6	3	7.745e-3	8
74		min	-.026	5	-.302	8	-.042	6	-3.714e-3	6	-1.779e-3	6	-3.552e-3	3
75	N38	max	0	8	0	3	0	3	8.979e-6	8	8.247e-6	3	8.137e-3	8
76		min	0	5	0	10	0	6	-3.528e-3	6	-1.841e-3	6	-3.758e-3	3
77	N39	max	.029	3	.001	5	0	8	4.033e-8	8	2.19e-5	3	6.098e-4	5
78		min	-.057	10	-.002	8	-.102	6	-3.626e-3	6	-1.172e-3	6	-1.37e-3	8
79	N40	max	.027	3	0	3	.089	6	1.458e-4	6	1.81e-5	8	1.2e-3	3
80		min	-.053	10	0	8	0	3	-4.827e-7	3	-1.457e-3	6	-2.565e-3	8
81	N41	max	0	3	0	3	0	6	1.604e-3	6	1.81e-5	8	2.275e-3	10
82		min	0	10	0	8	0	3	-2.266e-6	3	-1.457e-3	6	-1.113e-3	3
83	N42	max	.029	3	.001	5	0	3	1.072e-8	3	4.65e-5	8	6.094e-4	5
84		min	-.057	10	-.002	8	-.109	6	-4.392e-3	6	-1.403e-3	6	-1.372e-3	8
85	N43	max	.027	3	0	3	.117	6	2.088e-4	6	8.247e-6	3	1.2e-3	3
86		min	-.053	10	0	8	0	8	-1.037e-6	8	-1.841e-3	6	-2.561e-3	8
87	N44	max	0	3	0	3	0	6	2.096e-3	6	8.247e-6	3	2.276e-3	10
88		min	0	10	0	8	0	8	-4.874e-6	8	-1.841e-3	6	-1.113e-3	3
89	N45	max	.029	3	.097	3	0	8	1.752e-7	8	7.537e-6	3	2.645e-3	3
90		min	-.056	10	-.215	8	-.074	6	-3.115e-3	6	-7.644e-4	6	-5.984e-3	8
91	N46	max	.028	3	.285	3	.001	8	4.192e-7	8	2.043e-6	3	1.938e-3	3
92		min	-.055	10	-.625	8	-.025	5	-2.189e-3	6	-7.319e-4	6	-4.171e-3	8
93	N47	max	.028	3	.315	3	.023	6	6.632e-7	8	5.567e-6	8	2.539e-3	8
94		min	-.055	10	-.69	8	0	3	-1.264e-3	6	-6.863e-4	6	-1.164e-3	3
95	N48	max	.028	3	.139	3	.067	6	9.071e-7	8	1.072e-5	8	7.714e-3	8
96		min	-.054	10	-.302	8	0	3	-3.382e-4	6	-6.474e-4	6	-3.457e-3	3
97	N49	max	.029	3	.097	3	0	3	7.489e-8	3	1.592e-5	8	2.645e-3	3
98		min	-.056	10	-.215	8	-.077	6	-3.768e-3	6	-9.031e-4	6	-5.985e-3	8
99	N50	max	.028	3	.285	3	0	3	1.909e-7	3	4.295e-6	8	1.938e-3	3
100		min	-.055	10	-.625	8	-.018	6	-2.639e-3	6	-8.727e-4	6	-4.164e-3	8
101	N51	max	.028	3	.315	3	.037	5	3.069e-7	3	2.65e-6	3	2.543e-3	8
102		min	-.055	10	-.689	8	-.001	8	-1.51e-3	6	-8.236e-4	6	-1.164e-3	3
103	N52	max	.028	3	.139	3	.09	6	4.23e-7	3	5.126e-6	3	7.705e-3	8
104		min	-.054	10	-.302	8	0	8	-3.815e-4	6	-7.784e-4	6	-3.457e-3	3
105	N53	max	.068	3	.002	5	0	3	7.047e-8	3	3.168e-5	8	1.454e-3	5
106		min	-.13	10	-.004	8	-.102	6	-3.615e-3	6	-1.394e-3	6	-3.071e-3	8
107	N54	max	.068	3	.002	5	0	3	1.666e-8	3	0	3	1.474e-3	5
108		min	-.132	10	-.004	8	-.103	6	-3.602e-3	6	-1.467e-3	6	-3.112e-3	8
109	N55	max	.068	3	.002	5	0	8	1.52e-8	3	0	3	1.475e-3	5
110		min	-.132	10	-.004	8	-.103	6	-3.633e-3	6	-1.488e-3	6	-3.113e-3	8
111	N56	max	.068	3	.002	5	0	8	1.413e-8	3	0	3	1.475e-3	5
112		min	-.132	10	-.004	8	-.104	6	-3.706e-3	6	-1.515e-3	6	-3.113e-3	8
113	N57	max	.068	3	.002	5	0	8	1.732e-7	8	2.72e-5	3	1.475e-3	5
114		min	-.132	10	-.004	8	-.105	6	-3.824e-3	6	-1.529e-3	6	-3.112e-3	8
115	N58	max	.068	3	.002	5	0	3	7.412e-8	3	5.657e-5	8	1.474e-3	5
116		min	-.132	10	-.004	8	-.106	6	-3.937e-3	6	-1.52e-3	6	-3.112e-3	8
117	N59	max	.068	3	.002	5	0	3	4.451e-8	8	2.508e-8	8	1.474e-3	5
118		min	-.132	10	-.004	8	-.108	6	-4.046e-3	6	-1.65e-3	6	-3.112e-3	8
119	N60	max	.068	3	.002	5	0	8	1.588e-7	8	1.448e-5	3	1.454e-3	5
120		min	-.13	10	-.004	8	-.109	6	-4.206e-3	6	-1.682e-3	6	-3.071e-3	8
121	N61	max	.032	3	0	5	0	8	0	3	2.504e-5	3	6.238e-4	10
122		min	-.065	10	-.001	8	-.01	6	-1.709e-3	6	-1.171e-3	6	-3.229e-4	3
123	N62	max	.074	3	.001	5	0	8	2.345e-8	8	3.586e-5	8	1.426e-3	10
124		min	-.148	10	-.003	8	-.011	6	-1.698e-3	6	-1.387e-3	6	-7.517e-4	3
125	N63	max	.075	3	.001	5	0	8	0	3	0	3	1.443e-3	10
126		min	-.15	10	-.003	8	-.013	6	-1.673e-3	6	-1.467e-3	6	-7.606e-4	3
127	N64	max	.075	3	.001	5	0	8	0	8	0	3	1.444e-3	10
128		min	-.15	10	-.003	8	-.014	6	-1.672e-3	6	-1.488e-3	6	-7.608e-4	3

Envelope Joint Displacements (Continued)

	Joint		X [in]	lc	Y [in]	lc	Z [in]	lc	X Rotation ...	lc	Y Rotation ...	lc	Z Rotation [...	lc
129	N65	max	.075	3	.001	5	0	8	1.946e-8	8	0	3	1.444e-3	10
130		min	-.15	10	-.003	8	-.013	6	-1.692e-3	6	-1.515e-3	6	-7.608e-4	3
131	N66	max	.075	3	.001	5	0	3	1.199e-8	3	3.079e-5	3	1.444e-3	10
132		min	-.15	10	-.003	8	-.011	6	-1.733e-3	6	-1.526e-3	6	-7.613e-4	3
133	N67	max	.075	3	.001	5	0	8	3.295e-8	8	6.403e-5	8	1.445e-3	10
134		min	-.15	10	-.003	8	-.01	6	-1.754e-3	6	-1.51e-3	6	-7.613e-4	3
135	N68	max	.075	3	.001	5	0	3	0	3	2.508e-8	8	1.443e-3	10
136		min	-.15	10	-.003	8	-.01	6	-1.755e-3	6	-1.65e-3	6	-7.606e-4	3
137	N69	max	.074	3	.001	5	0	3	1.65e-8	3	1.64e-5	3	1.425e-3	10
138		min	-.148	10	-.003	8	-.009	6	-1.77e-3	6	-1.677e-3	6	-7.517e-4	3
139	N70	max	.032	3	0	5	0	3	0	3	5.296e-5	8	6.251e-4	10
140		min	-.065	10	-.001	8	-.008	6	-1.756e-3	6	-1.394e-3	6	-3.229e-4	3
141	N71	max	.053	3	0	5	0	8	1.808e-5	8	5.824e-4	3	1.088e-3	10
142		min	-.106	10	0	8	-.009	6	-9.024e-6	5	-1.16e-3	10	-5.654e-4	3
143	N72	max	.075	3	0	5	0	3	0	3	1.16e-8	8	1.529e-3	10
144		min	-.15	10	0	8	-.009	6	0	5	-3.195e-5	6	-8.013e-4	3
145	N73	max	.053	3	0	5	0	3	9.025e-6	5	1.113e-3	10	1.08e-3	10
146		min	-.107	10	0	8	-.007	6	-1.801e-5	8	-5.99e-4	5	-5.654e-4	3