Permit #: 2015-916743-LT
RSN: 966198

City of Aurora Public Works Department

BUILDING PERMIT APPLICATION

Building Division • 15151 E. Alameda Parkway, Ste 2400 • Aurora, CO 80012 • 303-739-7420 • Fax: 303-739-7412
Email: ***permitcounter@auroragov.org***

Project Address 1501 S. POTOMAC ST. AURORA, CO 80012			**Unit #**
Project Name: MEDICAL CENTER OF AURORA RENOVATION			
Contractor Company Name LAYTON COMPANIES		**Phone**	**Fax**
Contact Person TRIP DEMOSS		**Phone** 615-801-4782	
Email TDEMOSS@LAYTONCONSTRUCTION.COM			**Fax**
Architect and/or Engineer Contact information for correction items			
Architect or Engineer name EARL SWENSSON ASSOCIATES		**Email** MATTN@ESARCH.COM *sherry mendel	
Phone 615-329-9445		**Fax** 615-329-0046	
Owner (Required for Certificate of Occupancy) only MEDICAL CENTER of AURORA			
Owner address 1501 S. POTOMAC ST. AURORA, CO 80012			
Email			
Valuation / FDA:$ $10,500,000.00		**Materials Cost: $**	

FDA = Fee Determination Assessment. (Also known as the value of project) has no relationship to the construction costs for the building which can vary greatly. Rather, The assessment is used only to determine the appropriate level of fees to fund our code compliance activities.

Describe The Work You Will Be Doing: RENOVATING OPERATING ROOMS, CENTRAL STERIL, AND MECHANICAL AND ELECTRICAL ROOMS

I declare under penalty that this application has been examined by me and that the statements made herein are made in good faith pursuant to City of Aurora tax and licensing regulations; and to the best of my knowledge and belief are true, correct and complete.

Print Name TRIP DEMOSS **Signature** Edward Nedloss III **Date** 1/20/15

BOARD OF APPEALS: Contractor's Appeals and Standards Board. Applicants have the right to have the board hear appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of the building code. Any application for appeal to the board shall be based on a claim that the true intent of the code or the rules legally adopted there under have been incorrectly interpreted, the provisions of the building code do not fully apply or an equally good or better form of construction is proposed.

THIS SPACE FOR OFFICE USE ONLY

Fee Determination Assessment: $ _____

Change of occupancy/use: ☐ Yes ☐ No

REVIEWS	INSPECTIONS
☒ Structural	☒ Structural
☒ Mechanical	☒ Mechanical
☒ Plumbing	☒ Plumbing
☒ Electrical	☒ Electrical
☐ Fire-Life Safety	☒ Life Safety
☒ Building Life Safety	☐ Gate/Hazard

Intake Date: 1/26/15

Balance Due: $ _____

PRE APPROVAL Initial _____ ☐ Zoning ☐ Water

Exterior changes? ☐ Yes ☐ No

Homeowner verified: ☐ Yes ☐ No

Permit Type: ET

Mid roof / Ave Bldg Height: _____

Parent Permit RSN: _____

Plans Examiner: RL

Subtype: TI

RSN: 966198

Plans Picked Up By: _____

Company Name: _____

Phone Number _____

Permit #: 2015-916743-LT
RSN: 966198

PlumBinh

ESa

Earl Swensson Associates, Inc.
richard l. miller, architect

Architecture

May 4, 2015

Mr. Tim Strasser
Plans Examiner
City of Aurora – Building Division
15151 East Alameda Parkway
Aurora, CO 80012

RE: THE MEDICAL CENTER OF AURORA RENOVATIONS
ESA NO. 14077.00
CITY OF AURORA RSN: 966198

Dear Mr. Strasser,
Please find attached response to plumbing comment three dated February 12, 2015.

Plumbing comments:

Comment No. 3: Please provide plumbing fixture calculations for renovated area. 2009 IPC 403.1.1, Table 403.1.

✓ **Response No. 3:** **Note there is no true change to the use of the renovated areas. Please see the required and provided fixture count and the breakdown of work by phase below.**

Occupant calculation:

Phase	SF	SF/OCC	Occupants
I	3696	300	12.3
II-VIIB	38569	240	160.7
TOTAL OCC.	--	--	**173**

Fixtures required (I-2 employee):
Water closets 173 / 25 = 6.9
Lavatories 173 / 35 = 4.9
Drinking fountains 173 / 100 = 1.7

Fixtures provided in the renovated space:
Water closets = 18
Lavatories = 58
Drinking fountains = 5 (piped water dispenser units provided in each lounge, and piped ice and water dispensers in nourishment, pacu and clean supply spaces, satisfying the required drinking fixtures).

Phase I: 3696 SF. Removes vacant/storage space to create new equipment storage and infrastructure rooms (elect, comm, CO2 manifold). This is staff support space and not normally occupied. It would be calculated in the IBC as accessory storage/mechanical at 300SF/occupant.

Phase II: 4732 SF. Removes an OR, storage, patient treatment and office space to create two new OR's, storage, and patient treatment space. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as a mix of inpatient treatment and accessory storage. For simplicity we will calculate it all as the more stringent inpatient treatment at 240SF/occupant.

Phase III: 2719 SF. Removes two OR's and support space, to create two new operating rooms and support space. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as inpatient treatment at 240SF/occupant.

Phase IV: 7126 SF. Removes three OR's and support space, to create two new OR's, support space and finish only upgrades to existing locker rooms, lounge and offices. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as inpatient treatment at 240SF/occupant.

Phase V: 7687 SF. Removes a mechanical room, and sterile processing to create a new OR and sterile processing department. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as a mix of inpatient treatment and accessory storage. For simplicity we will calculate it all as the more stringent inpatient treatment at 240SF/occupant.

Phase VI: 5063 SF. Removes five OR's and support space, to create three new OR's, support space and finish only upgrades to existing locker rooms and lounge. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as inpatient treatment at 240SF/occupant.

Phase VIIA: 4032 SF. Finish only upgrades to the existing PACU and an operating room. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as inpatient treatment at 240SF/occupant.

Phase VIIB: 7210 SF. Finish only upgrades to the existing pre-op holding. This is all space that is staff and non-ambulatory patient use. It would be calculated in the IBC as inpatient treatment at 240SF/occupant.

Sincerely,

EARL SWENSSON ASSOCIATES, INC
richard I. miller, architect

Christopher E. Perez

Digitally signed by Christopher E. Perez
DN: C=US, E=chrisp@esarch.com, O="Earl Swensson Associates, Inc.", CN=Christopher E. Perez
Date: 2015.05.05 10:00:52-05'00'

Christopher E. Perez, AIA, NCARB

Permit #: 2015-916743-LT
RSN: 966198

The Medical Center of Aurora Renovations

Aurora, Colorado

Structural Calculations

Prepared by:

Structural Design Group

220 Great Circle Road, Suite 106
Nashville, TN 37228
SDG Project No.: 2014-205

Engineer's Seal :



Permit #: 2015-916743-LT
RSN: 966198

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Relocated Column MC-1

Boom Supports BS-1

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Design Criteria

Permit #: 2015-916743-LT
RSN: 966198

Structural Design Group
220 Great Circle Road
Suite 106
Nashville, Tennessee 37228
615.255.5537
615.255.1486
www.sdg-structure.com

PROJECT DESIGN CRITERIA

PROJECT NAME:	The Medical Center of Aurora Renovations
SDG PROJECT No.:	2014-205
ENGINEER:	KAM
RISK CATEGORY:	IV
DESIGN CODE:	IBC 2009
LOCAL AMENDMENTS:	City of Aurora
REFERENCES:	ASCE 7-05
Concrete:	ACI 318-08
Steel:	AISC 13th Ed.
Masonry:	TMS 402-08/ACI530-08

PROJECT LOCATION:

City, State:	Aurora, Colorado
Latitude:	39.6900823
Longitude:	-104.8323774

WIND CRITERIA:

Nominal Wind Speed, V_{asd} (mph):	100	
Exposure:	B	
Enclosure Classification:	Enclosed	Open
Internal Pressure Coefficient:	0.18	0.00

SNOW LOADS:

Importance Factor, I_s:	1.20
Ground Snow Load (psf):	34.0
Terrain Category:	B
Exposure, C_e	1.0
Thermal Factor, C_t	1.0
Flat Roofs, p_f (psf):	28.6
Sloped Roofs, p_s (psf):	N/A
Code Minimum Roof Load, p_f (psf):	30

EARTHQUAKE LOADS:

Importance Factor, I_e:	1.50
Short Period Spectral Response, S_S:	0.209
1-sec Period Spectral Response S_1:	0.055
Design Short Period Spectral Response, S_{DS}:	0.223
Design 1-sec Period Spectral Response, S_{D1}:	0.088
Site Class:	D
Seismic Design Category:	C

FOUNDATIONS:

Foundation System:	Soil Bearing	
Soil Bearing	***1986 Addition***	***1997 Addition***
Isolated (ksf):	3.0	2.0
Continuous (ksf):	3.0	2.0

Permit #: 2015-916743-LT
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Structural Design Group

GRAVITY LOADS

BASED ON ASCE 7-05 and IBC 2009

Project: The Medical Center of Aurora Renovations
Project No.: 2014-205
Engineer: KAM

Comments:

Live Loads:	Use (psf)	LL (psf)	Notes:
---------- ROOF ----------			
Roof		20	
Catwalks		40	
-- CORRIDORS - HOSP., OFFICES, SCH., LIBR. --			
Corridors Above 1st Floor	81	81	

Dead Loads:	Use (psf)	DL (psf)	Notes:
---------- ROOFS ----------			
Steel Joists		4	
Rigid Insulation (1 lb/in)		4	
Adhered/Fastened Membrane		1	
Steel Deck		2	
MPE, Ceiling		10	
Typical Joist Roof Total	20	20	
Steel Beams		7	
Typical Beam Roof Total	25	25	
---------- FLOORS ----------			
5-1/4" LW Conc. Slab w/ 2" Comp. Steel Deck		45	
1" LW Concrete Overrun		10	
MPE, Ceiling		10	
Steel Beams		7	
Total Floor Load	72	72	
---------- CLADDING ----------			
Metal Panel		15	

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SNOW LOAD CALCULATIONS

BASED ON ASCE 7-05 CHAPTER 7 FOR FLAT, SLOPED AND CURVED ROOFS

Project:	The Medical Center of Aurora Renovations
Project No.:	2014-205
Engineer:	KAM

Comments:

Importance Factor, I_s:	1.2	
Ground Snow Load (psf):	34	
Terrain Category:	B	
Exposure of Roof:	Partially Exposed	*Table 7-2*
Exposure, C_e	1	
Thermal Factor, C_t	1	*Table 7-3*
Roof Type:	Monoslope	
Slope Angle (deg or slope):	0.00	
Eave to Ridge, W (ft):	0.0	
Tangent of Slope (rad):	0.0000	
Rain Surcharge (psf):	N/A	*7.10*
Snow Density, γ (pcf):	18.42	
Flat Snow Height, h_b (ft):	1.55	

FLAT ROOFS (ROOF WITH ANGLE ≤ 5° OR 1: 12)

Flat Roof p_f (psf): 28.6 *=0.7*Ce*Ct*Is*pg*

SLOPED ROOFS (ROOF WITH ANGLE > 5° OR 1: 12)

Slope Factor, C_s: 0 *Figure 7-2 Unobstructed, Slippery*

Sloped Roof p_s (psf): 0.0 *=Cs*pf*

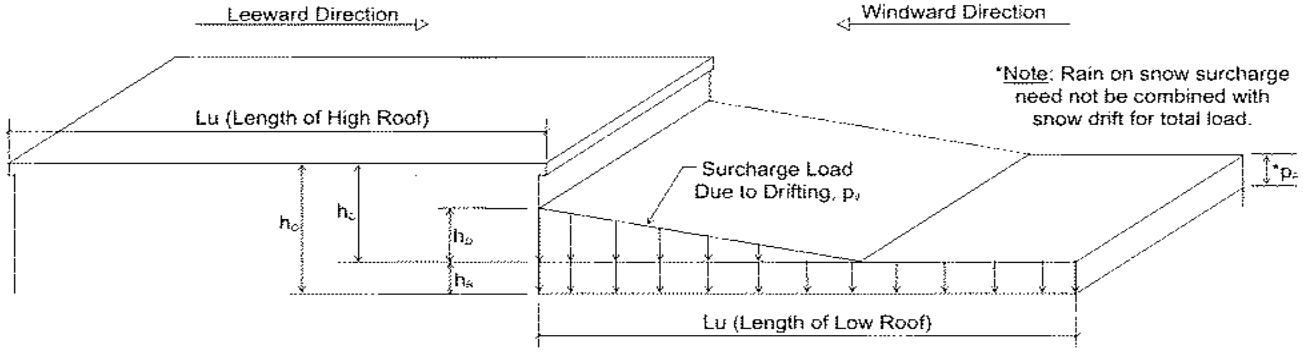
MINIMUM BALANCED SNOW LOAD (MONOSLOPE, HIP AND GABLE ROOFS WITH SLOPE < 15° AND CURVED ROOFS WITH SLOPE < 10°)

Minimum Balanced p_m (psf): 24.0 *7.3.4*

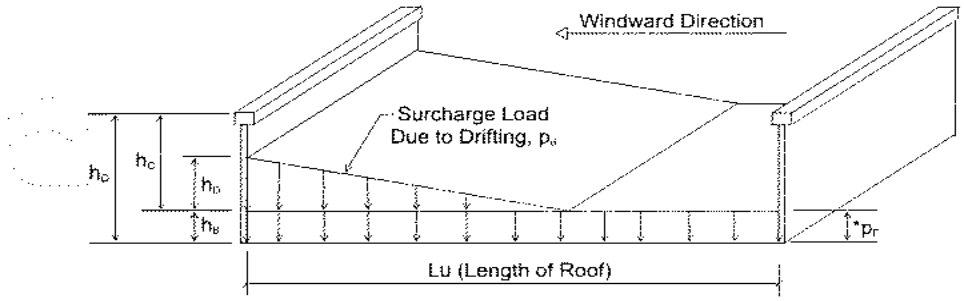
CONTROLLING FOR FLAT ROOFS p_f (psf):	28.6
CONTROLLING FOR SLOPED ROOFS p_s (psf):	N/A
CODE MINIMUM ROOF LOAD p_f (psf):	30

SNOW DRIFT LOADS

Projection Type:	Roof Projection, (h_b+h_c):	Roof Length, L_u (ft)		Horizontal Separation of Adj. Str., s (ft)	h_c, (ft)	Design Drift Height, h_d (ft)	Snow Drift Width, W (ft)	Drift Surcharge, p_d (psf)	Total Intensity at Peak (psf)	Intensity at Point (max at x= zero), (psf)			
		Leeward	Windward							x1 (ft)=	p_{x1} (psf)	x2 (ft)=	p_{x2} (psf)



Drift at Low Roofs



Drift at Parapets

Permit #: 2015-916743-LT
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Structural Design Group

Project:	The Medical Center of Aurora Renovations
Project No.:	2014-205
Engineer:	KAM

SEISMIC DESIGN CATEGORY

BASED ON ASCE 7-05, Chapter 11

Comments:

GENERAL PARAMETERS

Importance Factor, I_e:		1.5	
Latitude:		39.6900823	
Longitude:		-104.8323774	
Spectral Response Accelerations:	S_s:	0.209	
	S_1:	0.055	
Site Class:		D	
T_L (sec):		4	
F_a:		1.6	*Table 11.4-1*
F_v:		2.4	*Table 11.4-2*
S_{ms}:		0.334	*= Fa*Ss (Eq. 11.4-1)*
S_{m1}:		0.132	*= Fv*S1 (Eq. 11.4-2)*
S_{ds}:		**0.223**	*= 2/3*Sms (Eq. 11.4-3)*
S_{d1}:		**0.088**	*= 2/3*Sm1 (Eq. 11.4-4)*
Seismic Deisgn Category:		**C**	

Site Class:

	A	B	C	D	E	F
F_a:	0.800	1.000	1.200	1.600	2.500	Site Specific
F_v:	0.800	1.000	1.700	2.400	3.500	Site Specific
S_{ms}:	0.167	0.209	0.251	0.334	0.523	Site Specific
S_{m1}:	0.044	0.055	0.094	0.132	0.193	Site Specific
S_{ds}:	0.111	0.139	0.167	0.223	0.348	Site Specific
S_{d1}:	0.029	0.037	0.062	0.088	0.128	Site Specific
Seismic Deisgn Category:	**A**	**A**	**C**	**C**	**D**	**Site Specific**
				Use		

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SEISMIC BASE SHEAR - SINGLE-LEVEL BUILDINGS

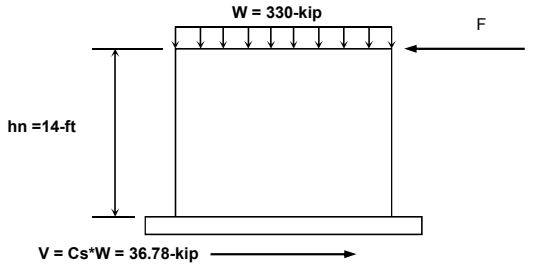
Based on ASCE 7-05, Chapter 12 (Regular Building Configurations Only)

Project:	The Medical Center of Aurora Renovations
Project No.:	2014-205
Engineer:	KAM

Comments: 1986 Addition: RTU #2

BUILDING SYSTEM

Risk Category:	IV	
Importance Factor, I_e:	1.50	
S_{ds}:	0.223	
S_{d1}:	0.088	
Seismic Deisgn Category:	C	
Seismic Force Resisting System:	H1	*Table 12.2-1*
Steel systems not specifically detailed for seismic resistance		
Response Modification Factor, R:	3	*Table 12.2-1*
Overstrength Factor, Ω_0:	3	*Table 12.2-1*
Deflection Amplification Factor, C_d:	3	*Table 12.2-1*
T_L (sec):	4	*Figures 22-12 - 22-16*
Redundancy Factor, ρ:	1	*12.3.4*
Period from Analysis, T (sec):		
Height of Structure, h_n (ft):	14.00	*Modeled Building Height*
Seismic Weight, W (kips):	330.00	*12.7.2*
Snow to Include in Sesimic Weight (psf):	N/A	*12.7.2*
Average Story Height, h_{avg} (ft):	14.00	
Period Coefficient, C_t:	0.02	*Table 12.8-2*
Period Exponent, x:	0.75	*Table 12.8-2*
Upper Limit $T_{a,1}$ (sec):	0.145	*12.8-7*
Upper Limit $T_{a,2}$ (sec):	N/A	*12.8-8*
Upper Limit Coefficient, C_u:	1.70	*Table 12.8-1*
Design Period, T (sec):	0.145	*Minimum of T and Max($T_{a,1}$, $T_{a,2}$)*
Seismic Response Coefficient, C_s:	**0.111**	*12.8.1.1*



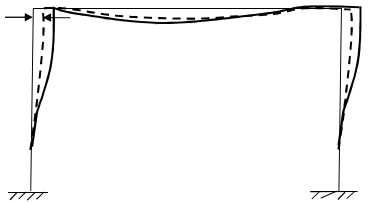
SEISMIC BASE SHEAR

Seismic Base Shear, V (kips):	**36.78**	*12.8-1*

SEISMIC DRIFT

Allowable Story Drift Ratio, Δ_a/h_n:	**0.015**	*Table 12.12-1*
Allowable Story Drift from Elastic Analsys, Δ_a (in):	**1.260**	*12.8.6*

Allowable Story Drift, Δ_a = 1.26-in



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Structural Design Group

SEISMIC BASE SHEAR - MULTI-LEVEL BUILDINGS

Based on ASCE 7-10, Chapter 12 (Regular Building Configurations Only)

Project: e Medical Center of Aurora Renovatio
Project No.: 2014-205
Engineer: KAM

Comments: 1997 Addition: RTU #1

BUILDING SYSTEM

Risk Category:	IV	
Importance Factor, I_e:	1.50	
S_{ds}:	0.223	
S_{d1}:	0.088	
Seismic Deisgn Category:	C	
Seismic Force Resisting System:	H1	*Table 12.2-1*
Steel systems not specifically detailed for seismic resistance		
Response Modification Factor, R:	3	*Table 12.2-1*
Overstrength Factor, Ω_0:	3	*Table 12.2-1*
Deflection Amplification Factor, C_d:	3	*Table 12.2-1*
T_L (sec):	4	*Figures 22-12 - 22-16*
Redundancy Factor, ρ:	1	*12.3.4*
Period from Analysis, T (sec):		
Number of Seismic Levels =	3	
Height of Structure, h_n (ft):	30.92	*Modeled Building Height*
Seismic Weight, ΣW_x (kips):	912.00	*12.7.2*
Snow to Include in Sesimic Weight(psf):	N/A	*12.7.2*
Average Story Height, havg (ft):	10.31	
Period Coefficient, C_t:	0.02	*Table 12.8-2*
Period Exponent, x:	0.75	*Table 12.8-2*
Upper Limit $T_{a,1}$ (sec):	0.262	*12.8-7*
Upper Limit $T_{a,2}$ (sec):		*12.8-8*
Upper Limit Coefficient, C_u:	1.70	*Table 12.8-1*
Design T (sec):	0.262	*Minimum of T and Max($T_{a,1}$, $T_{a,2}$)*
Seismic Response Coefficient, C_s:	**0.111**	*12.8.1.1*

SEISMIC BASE SHEAR

Seismic Base Shear, V (kips):	**101.66**	*12.8-1*

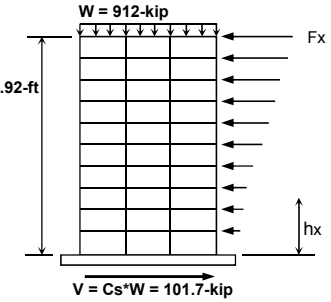
SEISMIC SHEAR VERTICAL DISTRIBUTION

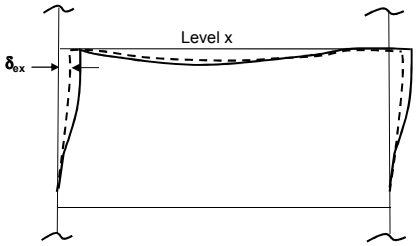
Distribution Exponent, k =	**1.00**	*12.8.3*

SEISMIC DRIFT

Allowable Story Drift Ratio, Δ_a/h_n:	**0.015**	*Table 12.12-1*

Seismic Level x	Change in Height, h_x (ft)	Weight, W_x (kips)	Elevation, H_x (ft)	Vertical Distribution Factor C_{vx}	F_x	Elastic Story Drift, δ_e (in)	Allowable Story Drift, Δ_a (in)
3	4.25	64.0	30.92	0.10	10.18		**0.383**
2	12.67	467.0	26.67	0.63	64.05		**1.140**
1	14.00	381.0	14.00	0.27	27.43		**1.260**
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
			0.00				
Σ=	30.92	912.0			101.7		





ASCE 7-05 Solid Sign Wind Loading

Project: Aurora Screenwall **Project #:** 2014-205
Engineer: KM

Wind Force Parameters	
Velocity (mph):	100
Exposure:	B
Topo. Factor, K_{zt}:	1
Wind Dir. Factor, K_d:	0.85

Solid Sign Parameters	
Top of Sign, h:	28.5
Sign vert. Dim., s:	11
Gust Factor, G:	0.85
Imprt Factor, I:	1.15

Wind Parameters	
Clearance Ratio,s/h:	0.39
Vel. Pressure Coef, K_z:	0.70
Vel. Pressure, q_z:	17.53
Sign on top of a Struct?	Yes

Note: * C_f values shown are pre reduction factors

Screenwall Sign Segment #1			Case A & B	Case C				
Horz. Dim., B:	33.50		Whole Face	0 to s	s to 2s	2s to 3s	3s to 4s	4s to 5s
Return Corner,L_r :	75.00	*C_f	1.755	2.614	1.709	1.157	1.100	-
Solid/Gross Area,ε:	0.50	psf	**16.91**	**25.18**	**16.46**	**11.14**	**10.60**	**-**
Aspect Ratio, B/s:	3.05		Case C Cont.					
Return Ratio, L_r/s:	6.82		5s to 6s	6s to 7s	7s to 8s	8s to 9s	9s to 10s	> 10s
Reduction Factors		*C_f	-	-	-	-	-	-
Fig 6-20 Note 2:	**0.646**	psf	**-**	**-**	**-**	**-**	**-**	**-**
Fig 6-20 Note 4:	**1.000**							
Return corner:	**0.600**							

Screenwall Sign Segment #2			Case A & B	Case C				
Horz. Dim., B:	75.00		Whole Face	0 to s	s to 2s	2s to 3s	3s to 4s	4s to 5s
Return Corner,L_r :	33.50	*C_f	1.755	3.382	2.232	1.632	1.050	1.050
Solid/Gross Area,ε:	0.50	psf	**16.91**	**19.55**	**21.50**	**15.72**	**10.11**	**10.11**
Aspect Ratio, B/s:	6.82		Case C Cont.					
Return Ratio, L_r/s:	3.05		5s to 6s	6s to 7s	7s to 8s	8s to 9s	9s to 10s	> 10s
Reduction Factors		*C_f	1.050	1.050	-	-	-	-
Fig 6-20 Note 2:	**0.646**	psf	**10.11**	**10.11**	**-**	**-**	**-**	**-**
Fig 6-20 Note 4:	**1.000**							
Return corner:	**0.600**							

Parapet Sign Segment #3			Case A & B	Case C				
Horz. Dim., B:	-		Whole Face	0 to s	s to 2s	2s to 3s	3s to 4s	4s to 5s
Return Corner,L_r :	-	*C_f	-	-	-	-	-	-
Solid/Gross Area,ε:	-	psf	**-**	**-**	**-**	**-**	**-**	**-**
Aspect Ratio, B/s:	-		Case C Cont.					
Return Ratio, L_r/s:	-		5s to 6s	6s to 7s	7s to 8s	8s to 9s	9s to 10s	> 10s
Reduction Factors		*C_f	-	-	-	-	-	-
Fig 6-20 Note 2:	**-**	psf	**-**	**-**	**-**	**-**	**-**	**-**
Fig 6-20 Note 4:	**-**							
Return corner:	**-**							

Parapet Sign Segment #4			Case A & B	Case C				
Horz. Dim., B:	-		Whole Face	0 to s	s to 2s	2s to 3s	3s to 4s	4s to 5s
Return Corner,L_r :	-	*C_f	-	-	-	-	-	-
Solid/Gross Area,ε:	-	psf	**-**	**-**	**-**	**-**	**-**	**-**
Aspect Ratio, B/s:	-		Case C Cont.					
Return Ratio, L_r/s:	-		5s to 6s	6s to 7s	7s to 8s	8s to 9s	9s to 10s	> 10s
Reduction Factors		*C_f	-	-	-	-	-	-
Fig 6-20 Note 2:	**-**	psf	**-**	**-**	**-**	**-**	**-**	**-**
Fig 6-20 Note 4:	**-**							
Return corner:	**-**							

Sign Segment #5			Case A & B	Case C				
Horz. Dim., B:	-		Whole Face	0 to s	s to 2s	2s to 3s	3s to 4s	4s to 5s
Return Corner,L_r :	-	*C_f	-	-	-	-	-	-
Solid/Gross Area,ε:	-	psf	**-**	**-**	**-**	**-**	**-**	**-**
Aspect Ratio, B/s:	-		Case C Cont.					
Return Ratio, L_r/s:	-		5s to 6s	6s to 7s	7s to 8s	8s to 9s	9s to 10s	> 10s
Reduction Factors		*C_f	-	-	-	-	-	-
Fig 6-20 Note 2:	**-**	psf	**-**	**-**	**-**	**-**	**-**	**-**
Fig 6-20 Note 4:	**-**							
Return corner:	**-**							

WIND LOADING ANALYSIS - Components and Cladding

Per ASCE 7-05 Code for Buildings of Any Height
Using Method 2: Analytical Procedure (Section 6.5)

Job Name:	Medical Center Aurora		
Job Number:	2014-205	Desiger:	KAM

Notation:

q_z =	velocity pressure evaluated at height z above ground, in pounds per square foot
q_h =	velocity pressure evaluated at height z = h, in pounds per square foot
p_z =	pressure varies with height in accordance with the velocity pressure q_z evaluated at height z
p_h =	pressure that is uniform with respect to height as determined by the velocity pressure qh evaluated at mean roof height h
I =	importance factor (see ASCE 7 table 6-1)
V =	basic wind speed obtained from ASCE 7 Fig. 6-1, in miles per hour
G_f =	gust effect factor of flexible buildings and other structures
C_p =	external pressure coefficient to be used in the determination of wind loads for buildings (see ASCE 7 Figure 6-6)
Kz =	velocity pressure exposure coefficient evaluated at height z (see ASCE 7 Table 6-3)
Kzt =	topographic factor (see ASCE 7 sec. 6.5.3 for further explanation)
h =	Mean Roof height
	alpha & zg = ASCE 7 Table 6-2

Least Horz Dim.	370	ft		
V =	100	mph	**Exposure A:**	
Iw =	1.15		Kza <100 ft =	0.99
Exposure	B		Kza >100 ft =	0.56
alpha =	7.00	(7.0=Exp B, 9.5=Exp C, 11.5=Exp D)	**Exposure B:**	
zg =	1200	(1200=Exp B, 900=Exp C, 700=Exp D)	Kzb <30 ft =	0.70
h =	14	ft	Kzb >30 ft =	0.56
K_d	0.85		**Exposure C:**	
K_{zt}	1		Kzc <15 ft =	0.57
K_z	0.70	(Table 6-3, Case I)	Kzc >15 ft =	0.56
Reduce GCp by 10%	Y	Fig. 6-11A, GCp is reduced by 10% for roof angle <=10 deg.		
Parapet > 3 FT	N		**Exposure D:**	
Gcpi =	0.18	(.18/ 0.55)	Kzd <15 ft =	0.57
qh =	**17.53**	psf $q_h = 0.00256*K_z*K_{zt}*Kd*V^2*I$	Kzd >15 ft =	0.56
a =	14.8	ft		

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ASCE 7 Components and Cladding Pressure

Gcpi =	0.18	Flat Roofs h<= 60'-0": 0 deg - 7 deg.					
Height =	**14.00**	**ft**					
Zone 1,2, & 3 Positive Pressures (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		0.30	0.27	0.23	0.20	0.20	0.20
Gcp+Gcpi		0.48	0.45	0.41	0.38	0.38	0.38
q_z =	**17.53**						
Pressure (psf)		**8.4**	**7.9**	**7.2**	**6.7**	**6.7**	**6.7**
Zone 1 Negative Pressures NO overhang (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-1.00	-0.97	-0.93	-0.90	-0.90	-0.90
Gcp-Gcpi		-1.18	-1.15	-1.11	-1.08	-1.08	-1.08
q_z =	**17.53**						
Pressure (psf)		**-20.7**	**-20.2**	**-19.5**	**-18.9**	**-18.9**	**-18.9**
Zone 2 Negative Pressures NO overhang (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-1.80	-1.59	-1.31	-1.10	-1.10	-1.10
Gcp-Gcpi		-1.98	-1.77	-1.49	-1.28	-1.28	-1.28
q_z =	**17.53**						
Pressure (psf)		**-34.7**	**-31.0**	**-26.1**	**-22.4**	**-22.4**	**-22.4**
Zone 3 Negative Pressures NO overhang (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-2.80	-2.29	-1.61	-1.10	-1.10	-1.10
Gcp-Gcpi		-2.98	-2.47	-1.79	-1.28	-1.28	-1.28
q_z =	**17.53**						
Pressure (psf)		**-52.2**	**-43.3**	**-31.4**	**-22.4**	**-22.4**	**-22.4**
Zones 1 & 2 Negative Pressures with overhang (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-1.70	-1.67	-1.63	-1.60	-1.38	-1.10
Gcp-Gcpi		-1.88	-1.85	-1.81	-1.78	-1.56	-1.28
q_z =	**17.53**						
Pressure (psf)		**-33.0**	**-32.4**	**-31.7**	**-31.2**	**-27.4**	**-22.4**
Zone 3 Negative Pressures with overhang (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-2.80	-2.20	-1.40	-0.80	-0.80	-0.80
Gcp-Gcpi		-2.98	-2.38	-1.58	-0.98	-0.98	-0.98
q_z =	**17.53**						
Pressure (psf)		**-52.2**	**-41.7**	**-27.7**	**-17.2**	**-17.2**	**-17.2**
NOTE: All pressures are Gross Pressures.							

ASCE 7 Components and Cladding Pressure

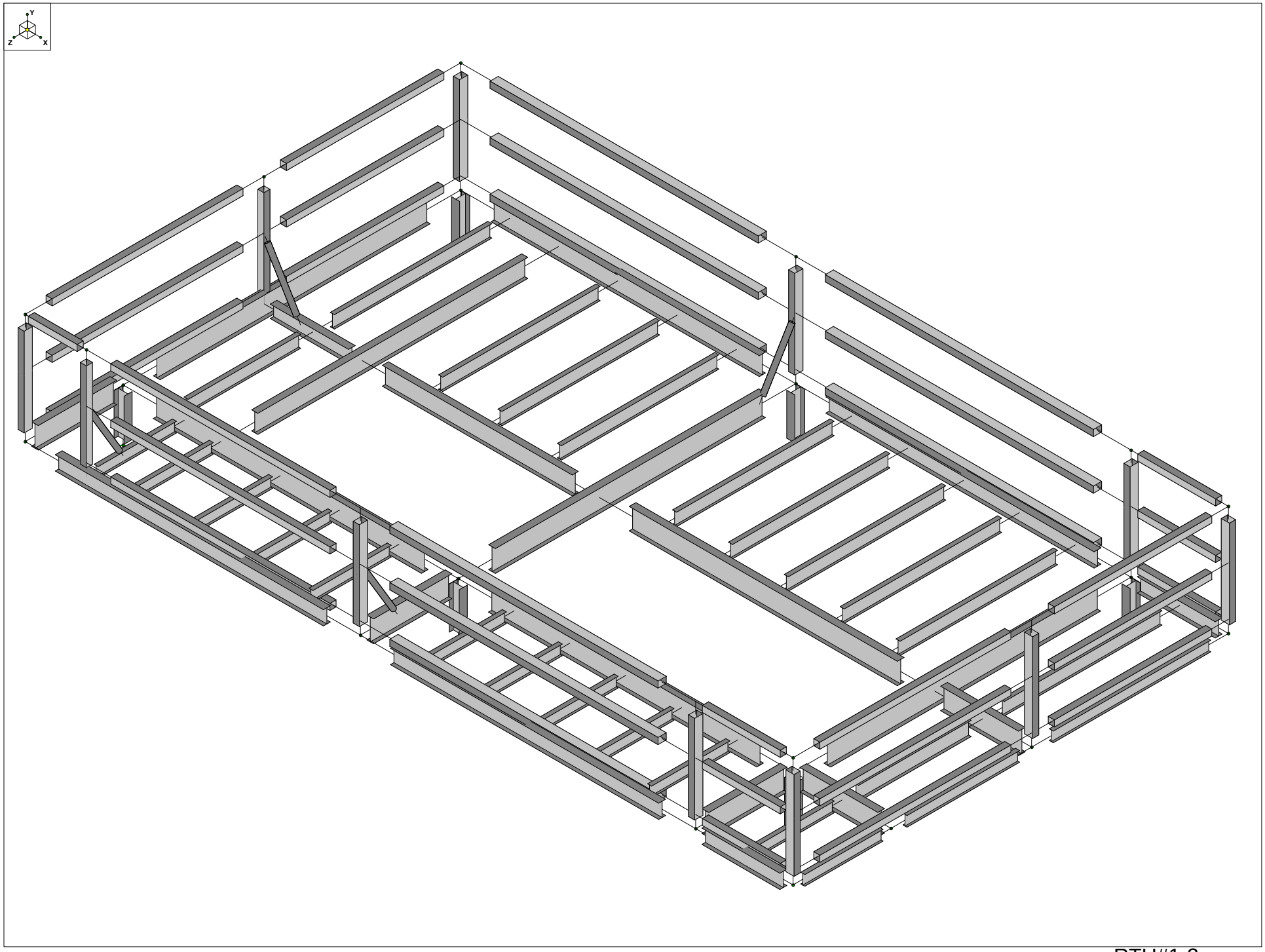
Gcpi =	0.18	Walls for Buildings h<= 60'-0"					
Height =	**14.00**	**ft**					
Zone 4 & 5 Positive Pressures (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		0.90	0.85	0.79	0.74	0.69	0.63
Gcp+Gcpi		1.08	1.03	0.97	0.92	0.87	0.81
q_z =	17.53						
Pressure (psf)		**18.9**	**18.1**	**17.0**	**16.1**	**15.3**	**14.2**
Zone 4 Negative Pressures (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-0.99	-0.94	-0.88	-0.83	-0.78	-0.72
Gcp-Gcpi		-1.17	-1.12	-1.06	-1.01	-0.96	-0.90
q_z =	17.53						
Pressure (psf)		**-20.5**	**-19.7**	**-18.6**	**-17.7**	**-16.9**	**-15.8**
Zone 5 Negative Pressures (psf)							
a =	15	ft					
Effective Area (ft^2)		1-10	20	50	100	200	500-1000
Gcp		-1.26	-1.16	-1.04	-0.94	-0.85	-0.72
Gcp-Gcpi		-1.44	-1.34	-1.22	-1.12	-1.03	-0.90
q_z =	17.53						
Pressure (psf)		**-25.2**	**-23.6**	**-21.4**	**-19.7**	**-18.0**	**-15.8**
Fig. 6-11A, GCp is reduced by 10% for roof angle <=10 deg.							

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RTU #1 Calculations

RTU #1 is located on the 1997 Expansion, a two story composite floor and roof structure with R=3 moment frames. The mechanical platform is supported on existing w10 columns and elevated high enough to prevent snow drift on the surrounding roof. The gravity loads with the addition were checked to the foundation (2000psf bearing) with no strengthening required. The new platform is less than 10% of the weight of the existing structure, so no strengthening of the lateral system is required.

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RTU#1-2

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Structural Design Group

1997 Addition (South West Part of Expansion w/ New RTU)

Composite Floor 59' x 110' x 72 psf = 467 k

Roof w/ Beams 69' x 137' x 25 psf = 231 k
69' x 52' x 25 psf = 91 k
52' x 35' x 25 psf = 49 k

Total Building Weight = 850 k

Unit + Platform = 64 k

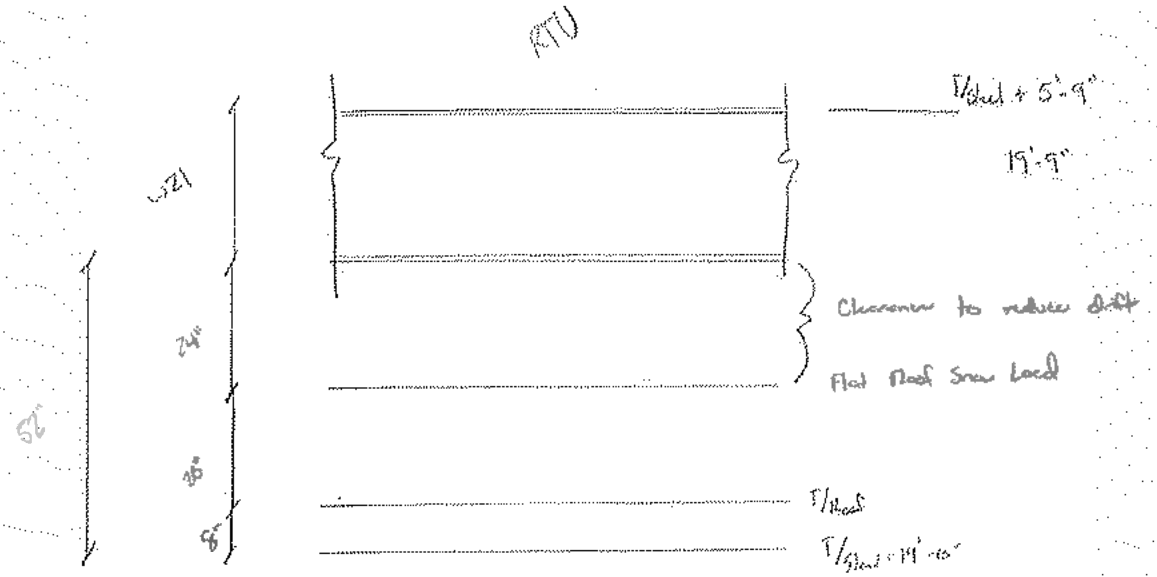
<10% change

V = .11(920 k) = 100 k $C_s = .223/(8/1.5) = 0.11$

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Structural Design Group

No snow drift assumed around mechanical platforms



* Assume 24" Clear to Avoid snow drift

Project _____ Project No. _____

By _____ Date _____ Sheet _____ of _____

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Structural Design Group

Check Existing

RTU # 2

Footing Bearing ✓

Footing Strength ✓

Base Plate 14x15-15 ✓

Beams / Joists for snow ✓ Platform raised to provide clearance + ground diff

RTU # 1

Footing Bearing ✓

Footing Strength ✓

Base plate ✓

Beams for snow ✓ Platform raised to provide clearance + ground diff

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Structural Design Group

1957

D+L
D+RL
D+S
D+.75L+.75 RL
D+.75L+.75 S

- Roof
  - Beams 7psf
  - Roof Deck 2psf
  - Built up Roof 6psf
  - MPE 8psf
  - 23psf

Use 25psf DL
20psf RLL
30psf SL

- Composite Floor
  - 5¼" LW 42.5psf
  - 2" Deck 2.5psf
  - ≈1" Ponding 10psf
  - MPE 10psf
  - Beams 7psf

72psf DL
81psf LL

Footing M1.5-6D

6.0×6.0×2000 psf. 72K

Existing
A_t 350ft²

D+RL = 350×25 + 350×16.2 = 16.1K

D+S = 350×25 + 350×30 = 21.5K

$D_{pedestal}$ = 35psf × 2 × 2 = 12.6 = 8K

D+.75L+.75S = 58.3K <72K ✓

D+S = 54.5K

Platform
A_t 300ft²

D+L = 11K + 300×40 psf reducible = 28K

D+S = 16K + 9K = 25K

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Structural Design Group

Footing 4.5 - 4.0

10.0 x 10.0 x 2000 = 200^K

Existing
A_s = 710ft²

D+RL 710 x 25 + 710 x 12 = 26.3^K
D+S 710 x 25 + 710 x 30 = 39.1^K
P_{pedal} 150pcf x 2 x 2 x 12.67 = 9^K reduced

D+.75L+.75S = 93.2^K < 200 ✓
D+S = 93.1^K

Platform
A_s = 415ft²

D+L 32.2^K + 415 x 23.8 = 43.5^K reduced
D+S 32.2^K + 14.3^K = 46.5^K

Footing M4.5 - C.1

7.0 x 7.0 x 2000 = 98^K

Existing
A_s = 410ft²

D+RL 410 x 25 + 410 x 15.8 = 16.7^K
D+S 410 x 25 + 410 x 30 = 22.6^K
D+L 410 x 72 + 410 x 50.3 = 50.1^K Reduced 50%
P_{pedal} 150pcf x 2 x 2.5 x 12.67 = 9.5^K

D+.75L+.75S = 105^K
D+S = 58.2^K < 98^K
D+L = 63.6^K

Platform
A_s = 410ft²

D+L 13.8^K + 410 x 24.8 = 24^K reduced
D+S 13.8^K + 12.3^K = 26.1^K

Additional wall footing: ✓
D.C.R.

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Structural Design Group

Footing L4.5-L1

11.0×11.0×2000 = 242^K

Existing

A_s = 605ft²

D+RL: 815×25 + 815×12 = 30.2^K

D+S: 815×25 + 815×30 = 44.8^K

D+L: 815×72 + 815×41.5 = 92.5^K (reduced)

$D_{pedestal}$: 150pcf × 2×2×12.67 = 8^K

D+.75L+.75S = 183.4^K

D+S = 99.5^K

D+L = 142.2^K

< 242^K ✓

Platform

A_s = 630ft²

D+L: 27.8^K + 630×22 (reduced) = 41.7^K

D+S: 27.8^K + 18.9^K = 46.7^K

Footing M4.5-L2

7.0×7.0×2000 = 98^K

Existing

A_s = 410ft²

D+RL: 410×25 + 410×15.8 = 16.7^K

D+S: 410×25 + 410×30 = 22.6^K

D+L: 410×72 + 410×50.5 = 50.1 (reduced)

$D_{pedestal}$: 150pcf × 2×2.5×12.67 = 9.5^K

D+.75L+.75S = 95.3^K

D+S = 49.9^K

D+L = 75.9^K

< 98^K ✓

Platform

A_s = 205ft²

D+L: 10.6^K + 205×46 = 18.8^K

D+S: 10.6^K + 6.2^K = 16.8^K

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Structural Design Group

Footing L6.5-C2

11×11 ×2000 = 292^k

Existing

A_s = 815ft²

D+RL 815×.25 + 815×12 = 36.2^k

D+S 815×.25 + 815×.30 = 44.8^k

D+L 815×.72 + 815×41.5 = 92.5^k (Reduced)

$D_{pedest.}$ 150 pcf × 2×2×12.67 = 8^k

D+.75L+.75S = 165.5^k < 292 ✓

D+S = 80.3^k

D+L = 131.1^k

Platform

A_s = 310ft²

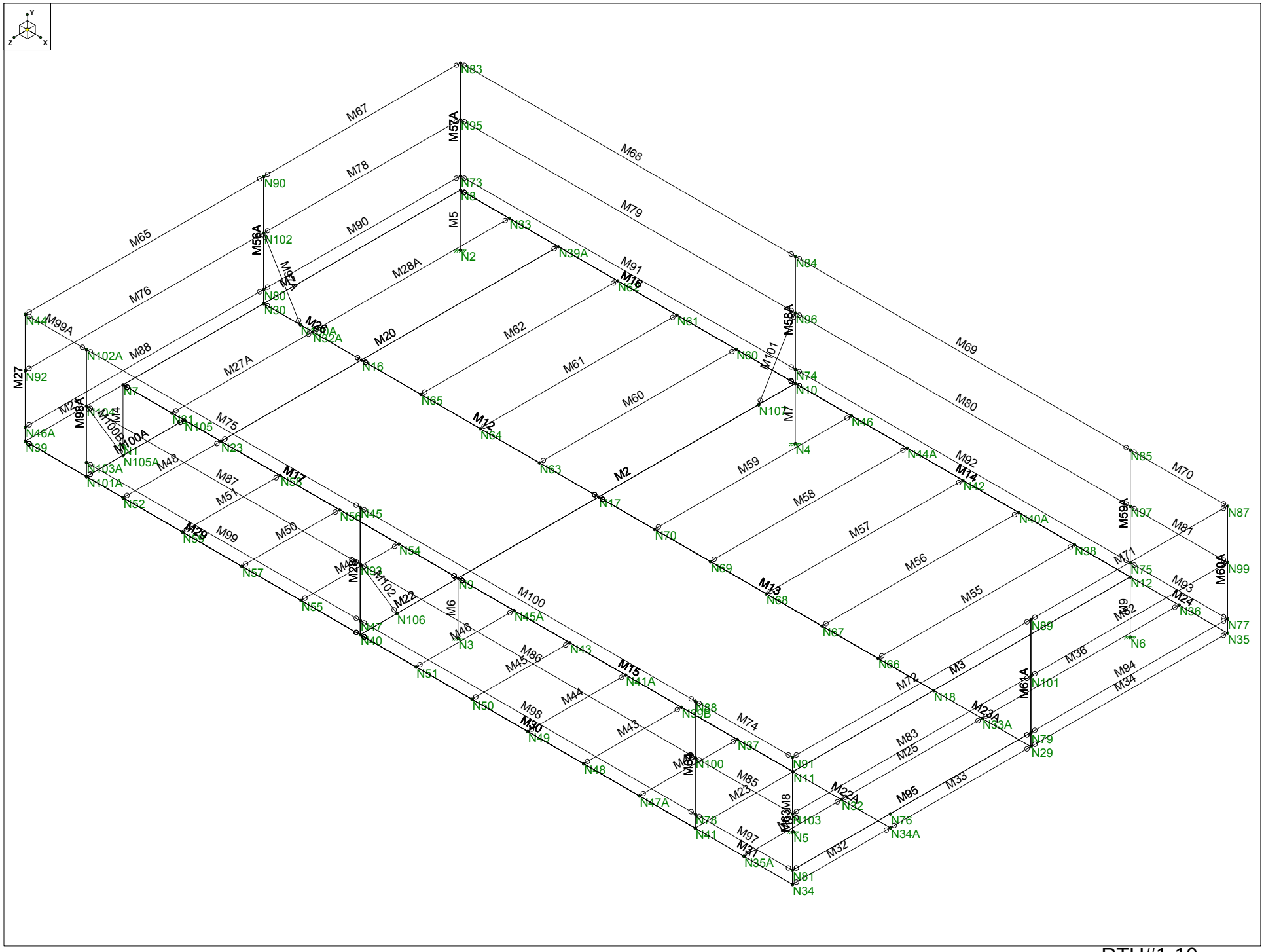
D+L 18.2^k + 310×40 = 30.6^k

D+S 18.2^k + 7.3^k = 29.5^k

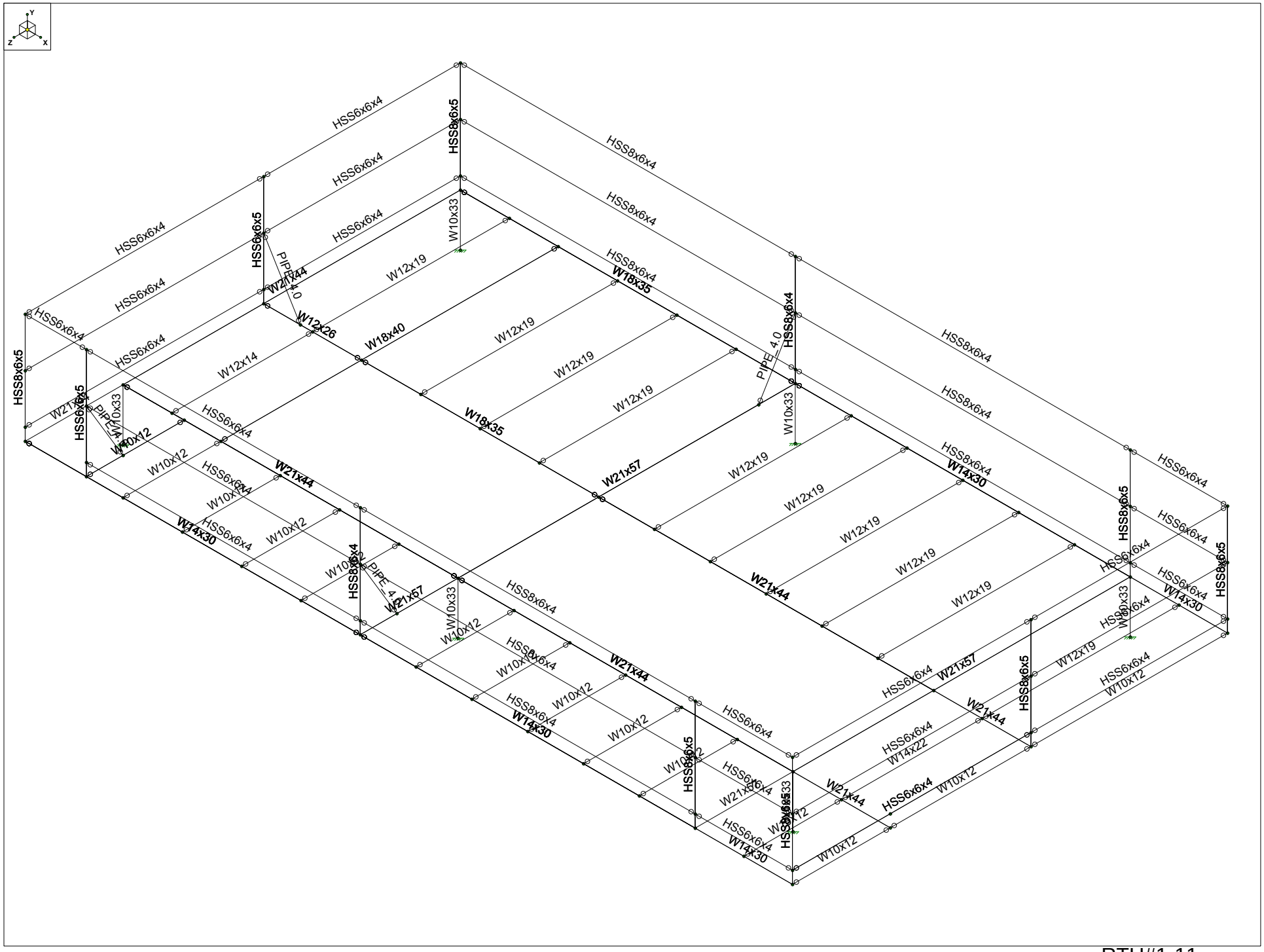
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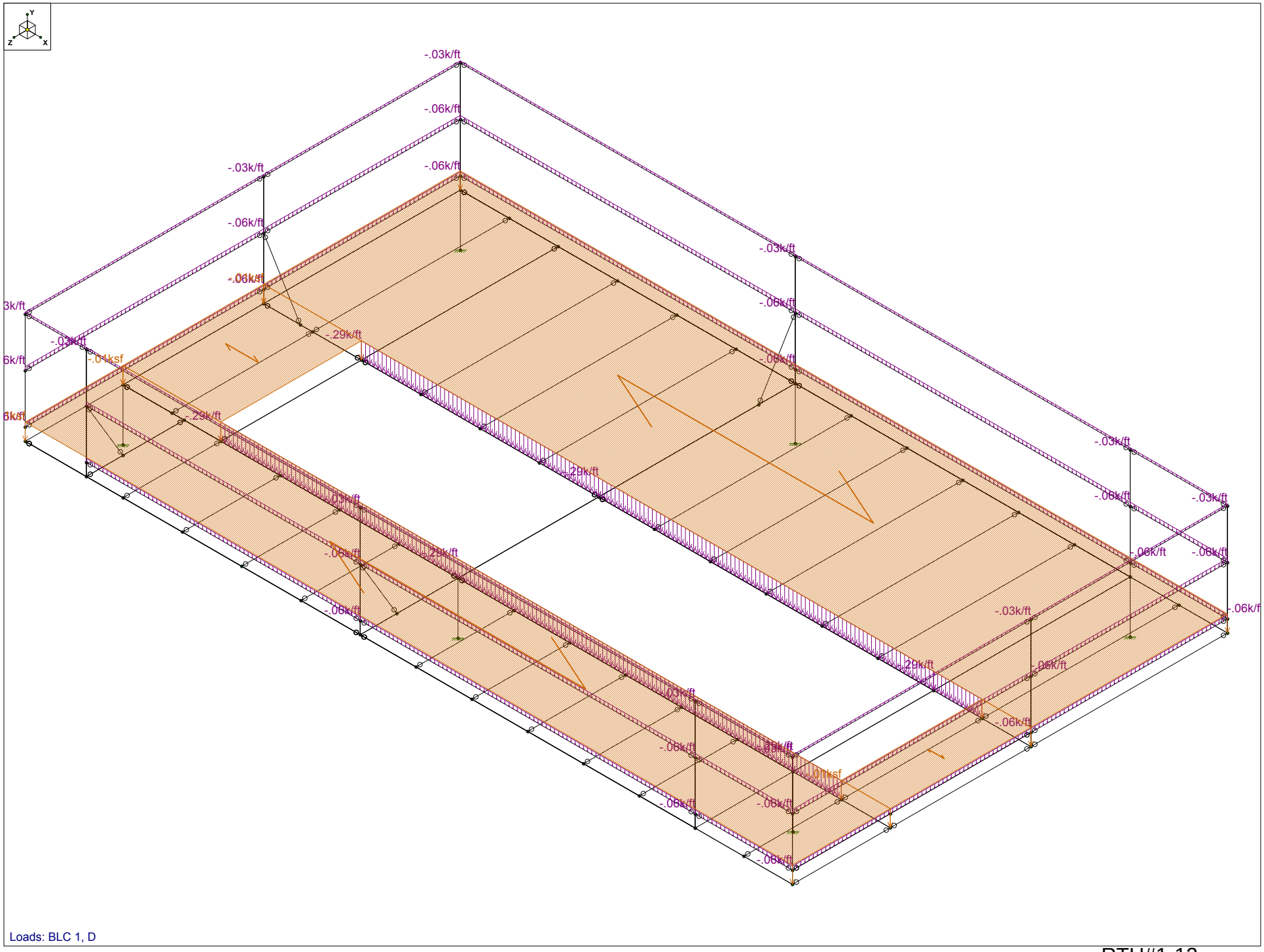
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RTU#1-10

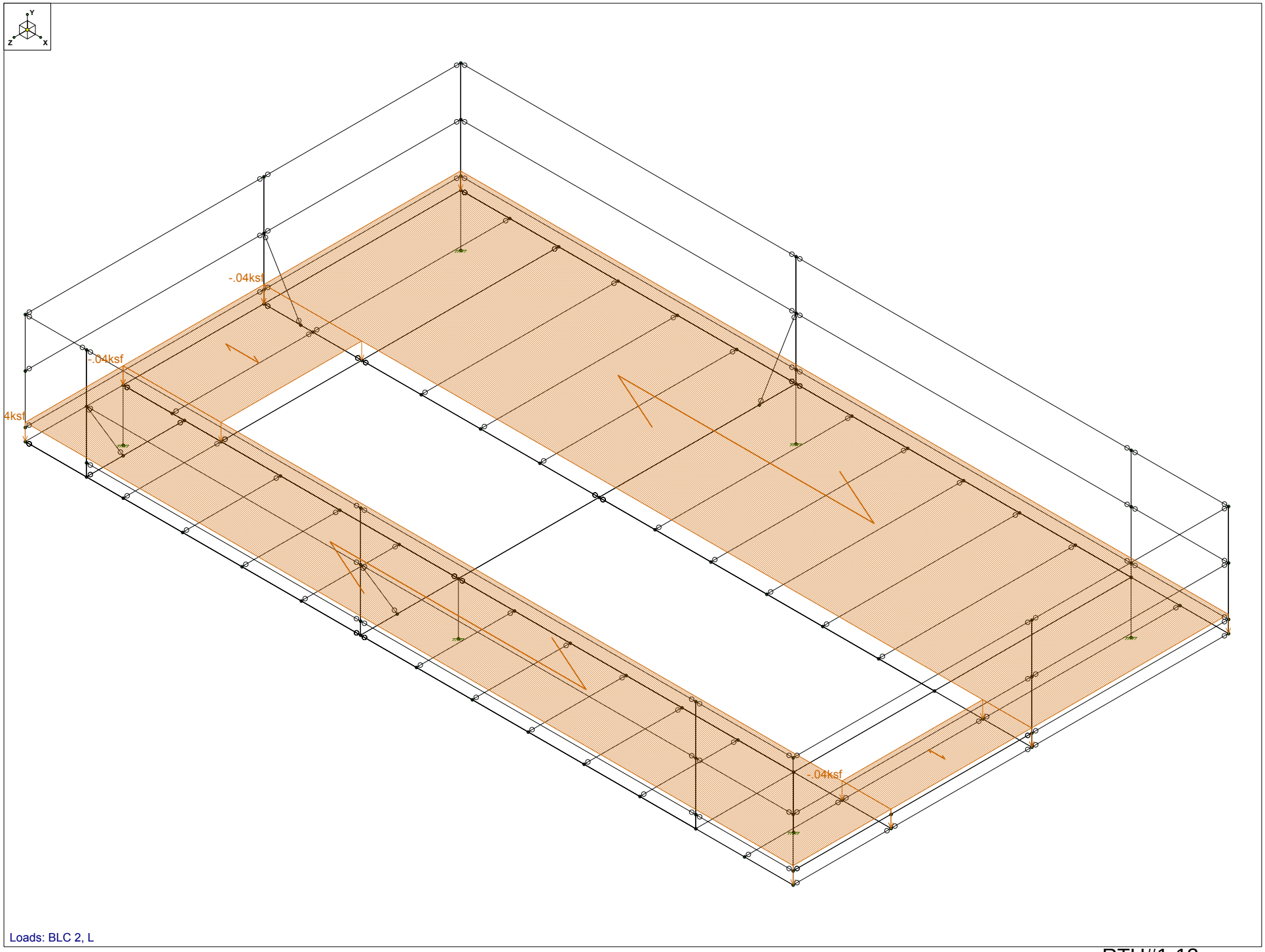

HSS6x6x4
HSS8x6x5
HSS8x6x4
W10x33
W12x19
W18x35
W18x40
W12x26
W21x44
W12x14
W21x57
W10x12
W14x30
PIPE 4.0
PIPE 4
W21x62
W14x22
W10x22
W10x12

RTU#1-11



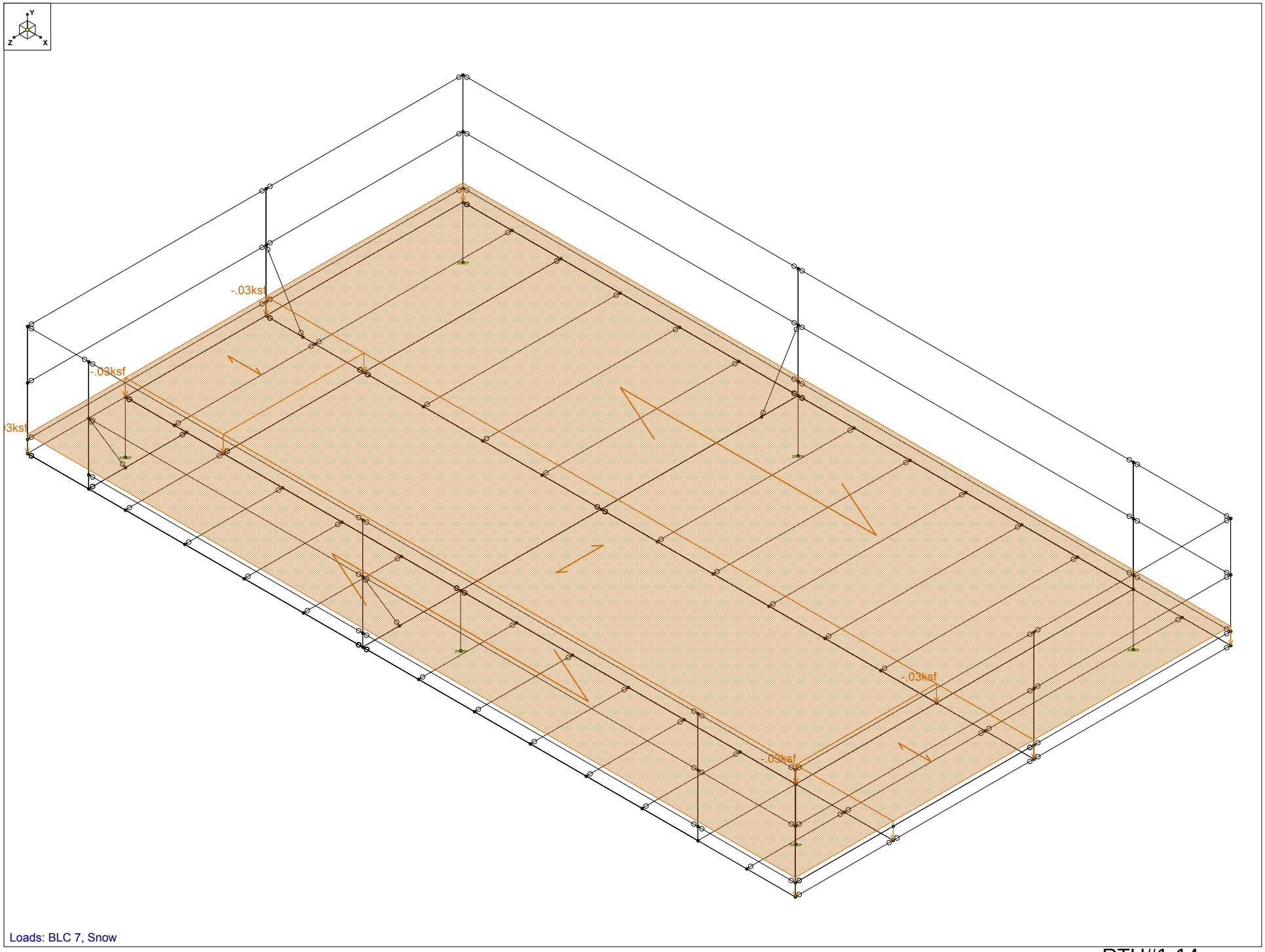
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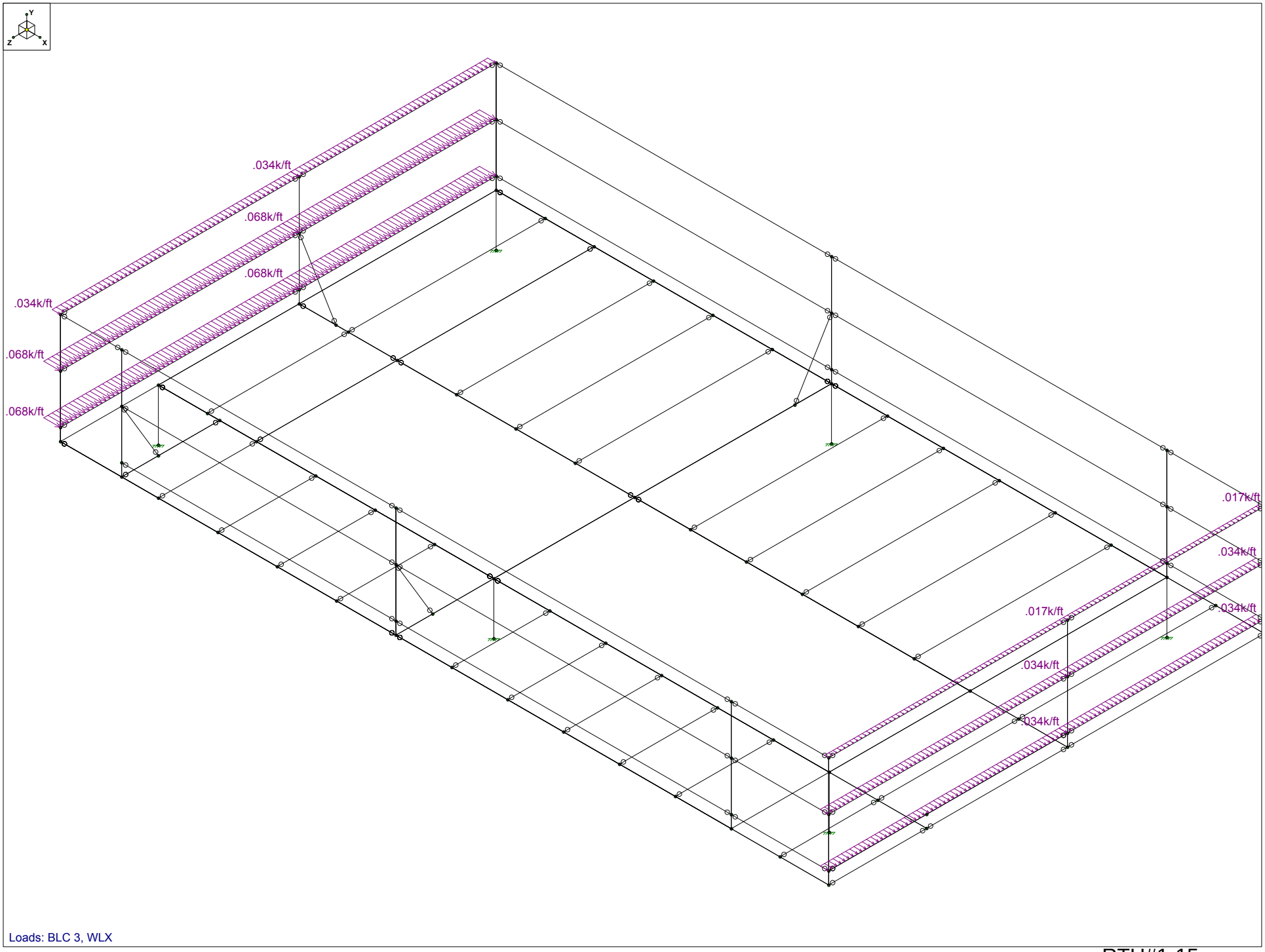
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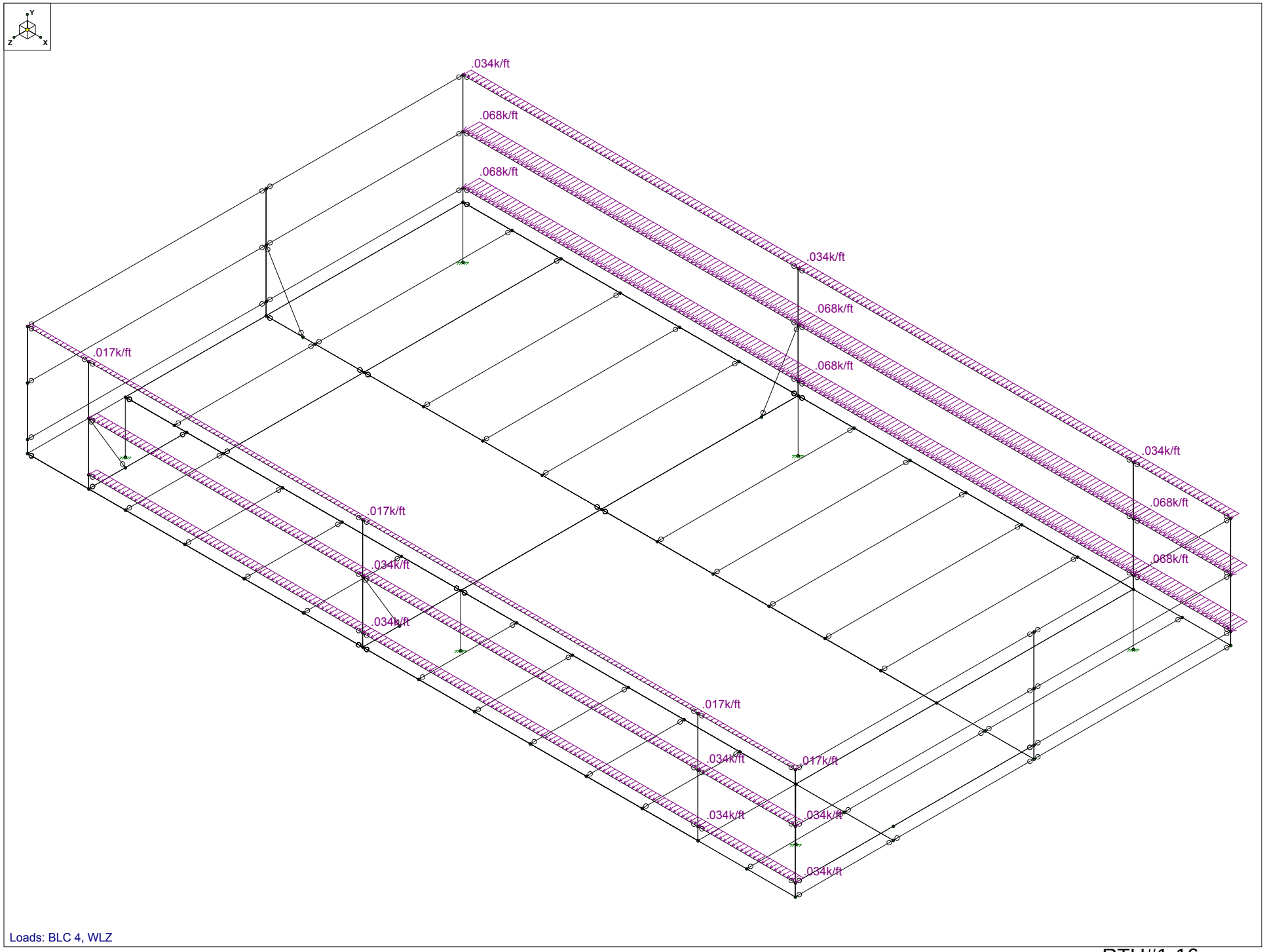


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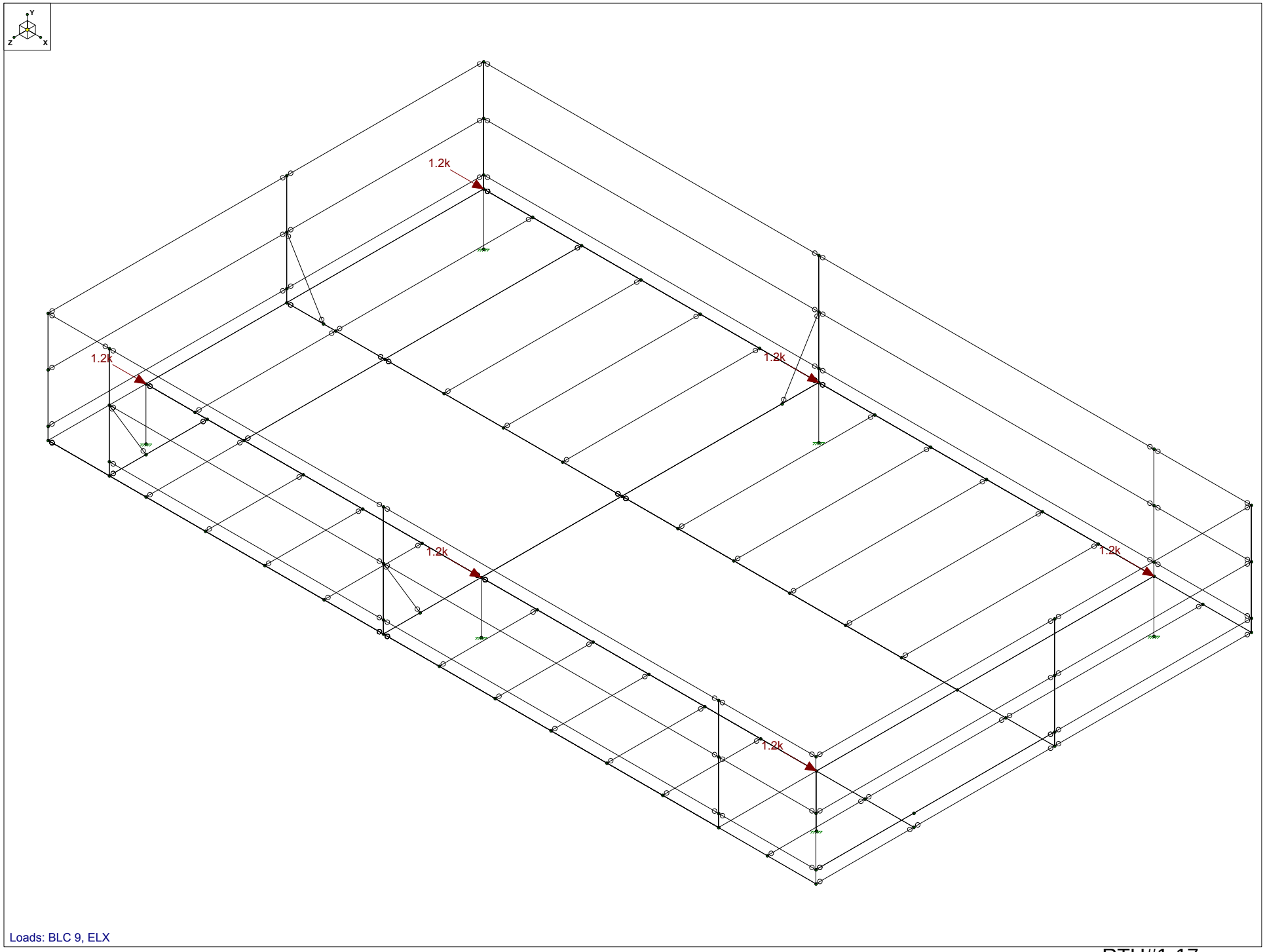


RTU#1-15


Y
Z
X
.034k/ft
.068k/ft
.068k/ft
.034k/ft
.068k/ft
.017k/ft
.068k/ft
.034k/ft
.068k/ft
.017k/ft
.034k/ft
.034k/ft
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.017k/ft
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.034k/ft
Loads: BLC 4, WLZ

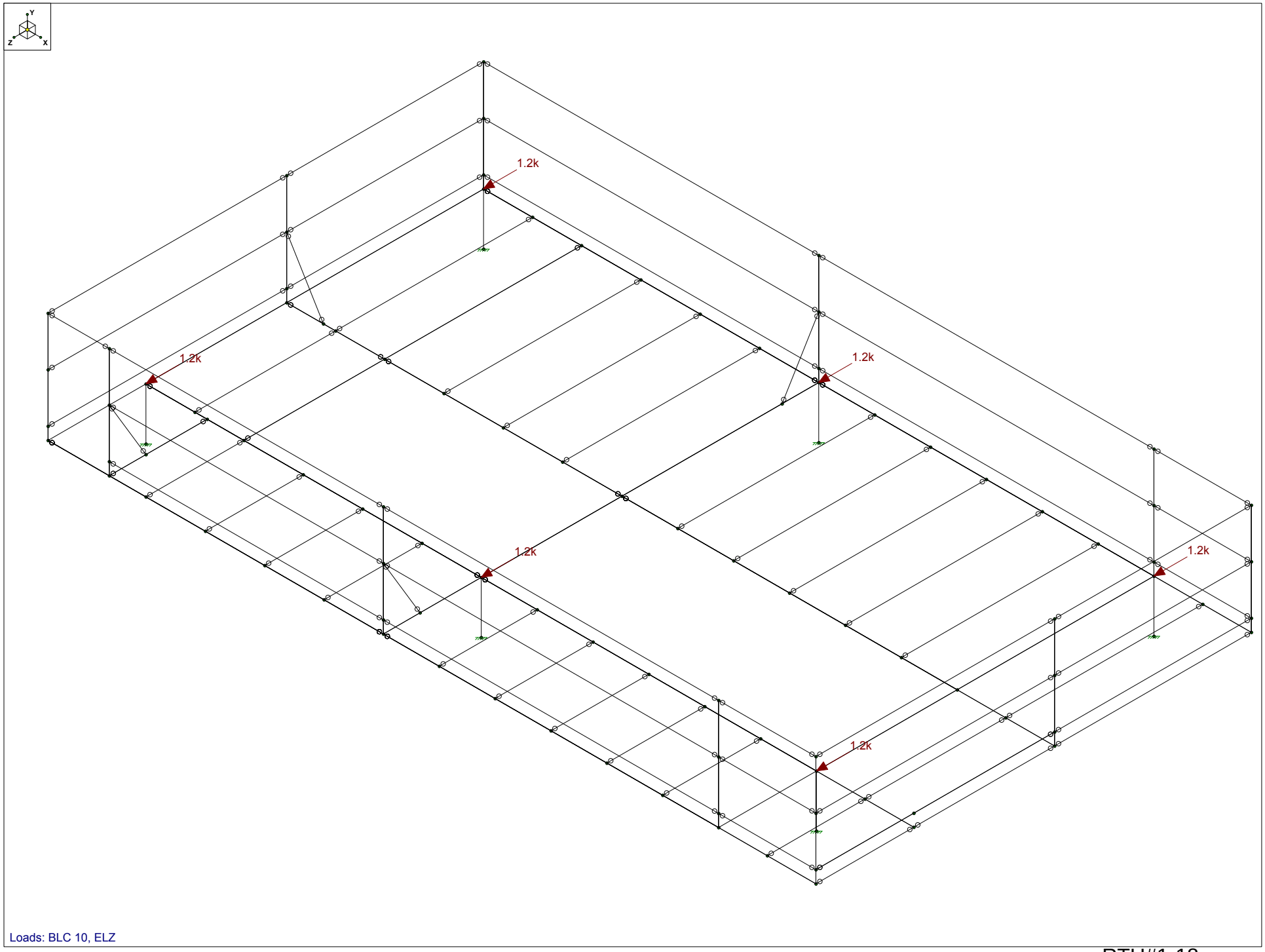
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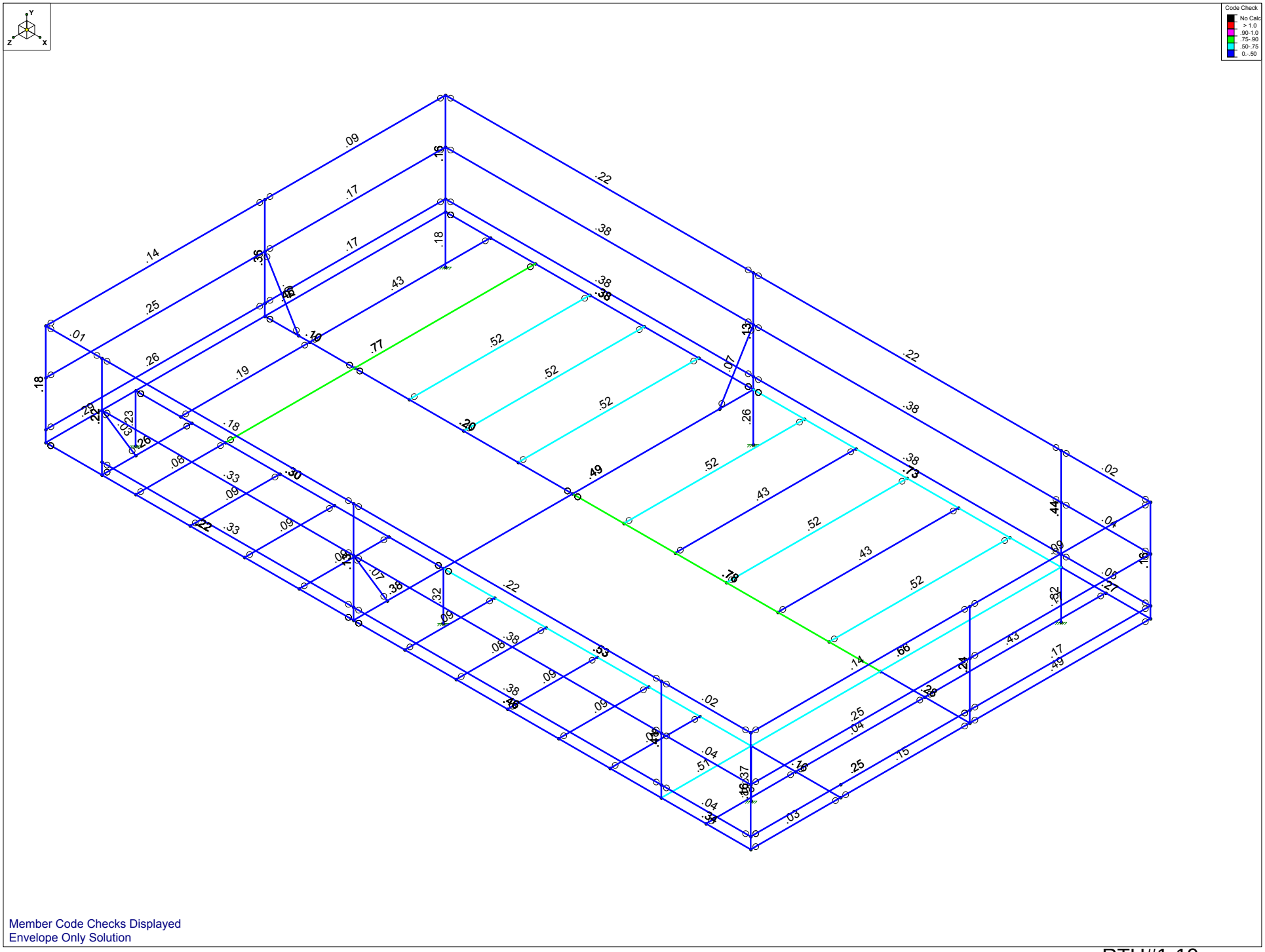
RTU#1-17

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RTU#1-18

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RTU#1-19

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 26, 2015

Checked By:_____

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	Yes
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 13th(360-05): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): LRFD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AF&PA NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

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Global, Continued

Seismic Code	ASCE 7-05
Seismic Base Elevation (ft)	0
Add Base Weight?	Yes
Ct Z	.028
Ct X	.028
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	3
R X	3
Ct Exp. Z	.8
Ct Exp. X	.8
SD1	.088
SDS	.233
S1	.055
TL (sec)	4
Occupancy Cat	IV
Om Z	3
Om X	3
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft..	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3

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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N7	N8			W21x44	Beam	Wide Flange	A992	Typical
2	M2	N9	N10			W21x57	Beam	Wide Flange	A992	Typical
3	M3	N11	N12			W21x57	Beam	Wide Flange	A992	Typical
4	M4	N1	N7			W10x33	Column	Wide Flange	A992	Typical
5	M5	N2	N8		90	W10x33	Column	Wide Flange	A992	Typical
6	M6	N3	N9			W10x33	Column	Wide Flange	A992	Typical
7	M7	N4	N10		90	W10x33	Column	Wide Flange	A992	Typical
8	M8	N5	N11			W10x33	Column	Wide Flange	A992	Typical
9	M9	N6	N12		90	W10x33	Column	Wide Flange	A992	Typical
10	M12	N16	N17			W18x35	Beam	Wide Flange	A992	Typical
11	M13	N17	N18			W21x44	Beam	Wide Flange	A992	Typical
12	M14	N10	N12			W14x30	Beam	Wide Flange	A992	Typical
13	M15	N9	N11			W21x44	Beam	Wide Flange	A992	Typical
14	M16	N8	N10			W18x35	Beam	Wide Flange	A992	Typical
15	M17	N7	N9			W21x44	Beam	Wide Flange	A992	Typical
16	M20	N23	N39A			W18x40	Beam	Wide Flange	A992	Typical
17	M27	N39	N44		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
18	M28	N40	N45		90	HSS8x6x4	Column	Tube	A500 Gr.46	Typical
19	M21	N7	N39			W21x44	Beam	Wide Flange	A992	Typical
20	M22	N9	N40			W21x57	Beam	Wide Flange	A992	Typical
21	M23	N11	N41			W21x57	Beam	Wide Flange	A992	Typical
22	M22A	N11	N34A			W21x44	Beam	Wide Flange	A992	Typical
23	M23A	N18	N29			W21x44	Beam	Wide Flange	A992	Typical
24	M24	N12	N35			W14x30	Beam	Wide Flange	A992	Typical
25	M25	N32	N33A			W14x22	Beam	Wide Flange	A992	Typical
26	M26	N16	N30			W12x26	Beam	Wide Flange	A992	Typical
27	M27A	N31	N32A			W12x14	Beam	Wide Flange	A992	Typical
28	M28A	N32A	N33			W12x19	Beam	Wide Flange	A992	Typical
29	M29	N39	N40			W14x30	Beam	Wide Flange	A992	Typical
30	M30	N40	N41			W14x30	Beam	Wide Flange	A992	Typical
31	M31	N41	N34			W14x30	Beam	Wide Flange	A992	Typical
32	M32	N34	N34A			W10x12	Beam	Wide Flange	A992	Typical
33	M33	N34A	N29			W10x12	Beam	Wide Flange	A992	Typical
34	M34	N29	N35			W10x12	Beam	Wide Flange	A992	Typical
35	M35	N32	N35A			W10x12	Beam	Wide Flange	A992	Typical
36	M36	N33A	N36			W12x19	Beam	Wide Flange	A992	Typical
37	M42	N37	N47A			W10x12	Beam	Wide Flange	A992	Typical
38	M43	N39B	N48			W10x12	Beam	Wide Flange	A992	Typical
39	M44	N41A	N49			W10x12	Beam	Wide Flange	A992	Typical
40	M45	N43	N50			W10x12	Beam	Wide Flange	A992	Typical
41	M46	N45A	N51			W10x12	Beam	Wide Flange	A992	Typical
42	M48	N52	N23			W10x12	Beam	Wide Flange	A992	Typical
43	M49	N54	N55			W10x12	Beam	Wide Flange	A992	Typical
44	M50	N56	N57			W10x12	Beam	Wide Flange	A992	Typical
45	M51	N58	N59			W10x12	Beam	Wide Flange	A992	Typical
46	M55	N66	N38			W12x19	Beam	Wide Flange	A992	Typical
47	M56	N67	N40A			W12x19	Beam	Wide Flange	A992	Typical
48	M57	N68	N42			W12x19	Beam	Wide Flange	A992	Typical
49	M58	N69	N44A			W12x19	Beam	Wide Flange	A992	Typical
50	M59	N70	N46			W12x19	Beam	Wide Flange	A992	Typical
51	M60	N63	N60			W12x19	Beam	Wide Flange	A992	Typical
52	M61	N64	N61			W12x19	Beam	Wide Flange	A992	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
53	M62	N65	N62			W12x19	Beam	Wide Flange	A992	Typical
54	M56A	N30	N90			HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
55	M57A	N8	N83		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
56	M58A	N10	N84		90	HSS8x6x4	Column	Tube	A500 Gr.46	Typical
57	M59A	N12	N85		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
58	M60A	N35	N87			HSS8x6x5	Column	Tube	A500 Gr.46	Typical
59	M61A	N29	N89			HSS8x6x5	Column	Tube	A500 Gr.46	Typical
60	M63	N34	N91			HSS8x6x5	Column	Tube	A500 Gr.46	Typical
61	M64	N41	N88		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
62	M65	N44	N90			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
63	M67	N90	N83			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
64	M68	N83	N84		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
65	M69	N84	N85		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
66	M70	N85	N87			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
67	M71	N87	N89			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
68	M72	N89	N91			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
69	M74	N91	N88			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
70	M75	N45	N102A			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
71	M76	N92	N102			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
72	M78	N102	N95			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
73	M79	N95	N96		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
74	M80	N96	N97		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
75	M81	N97	N99			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
76	M82	N99	N101			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
77	M83	N101	N103			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
78	M85	N103	N100			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
79	M86	N100	N93		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
80	M87	N93	N104			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
81	M88	N46A	N80			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
82	M90	N80	N73			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
83	M91	N73	N74		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
84	M92	N74	N75		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
85	M93	N75	N77			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
86	M94	N77	N79			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
87	M95	N79	N81			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
88	M97	N81	N78			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
89	M98	N78	N47		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
90	M99	N47	N103A			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
91	M100	N88	N45		90	HSS8x6x4	Beam	SquareTube	A500 Gr.46	Typical
92	M97A	N100A	N102			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
93	M98A	N101A	N102A		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
94	M99A	N102A	N44			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
95	M100A	N101A	N105			W10x12	Beam	Wide Flange	A992	Typical
96	M100B	N105A	N104			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
97	M101	N107	N96			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
98	M102	N106	N93			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	0	0	Yes
2	N2	0	0	-27.5833	0	Yes
3	N3	27.395833	0	0	0	Yes
4	N4	27.395833	0	-27.5833	0	Yes
5	N5	54.791637	0	0	0	Yes
6	N6	54.791637	0	-27.5833	0	Yes
7	N7	0	4.25	0	0	Yes
8	N8	0	4.25	-27.5833	0	Yes
9	N9	27.395833	4.25	0	0	
10	N10	27.395833	4.25	-27.5833	0	Yes
11	N11	54.791637	4.25	0	0	
12	N12	54.791637	4.25	-27.5833	0	Yes
13	N16	8	4.25	-11.5	0	
14	N17	27.395833	4.25	-11.5	0	
15	N18	54.791637	4.25	-11.5	0	
16	N23	8	4.25	0	0	
17	N32	58.750037	4.25	0	0	Yes
18	N33A	58.750037	4.25	-11.5	0	Yes
19	N34A	62.750037	4.25	0	0	Yes
20	N35	62.750037	4.25	-27.5833	0	Yes
21	N39	0	4.25	8	0	Yes
22	N40	27.395833	4.25	8	0	Yes
23	N41	54.791637	4.25	8	0	Yes
24	N44	0	13.25	8	0	Yes
25	N45	27.395833	13.25	8	0	Yes
26	N46A	0	5.25	8	0	Yes
27	N47	27.395833	5.25	8	0	Yes
28	N39A	8	4.25	-27.5833	0	Yes
29	N29	62.750037	4.25	-11.5	0	Yes
30	N30	0	4.25	-11.5	0	Yes
31	N31	4	4.25	0	0	Yes
32	N32A	4	4.25	-11.5	0	Yes
33	N33	4	4.25	-27.5833	0	Yes
34	N34	62.750037	4.25	8	0	Yes
35	N35A	58.770837	4.25	8	0	Yes
36	N36	58.770837	4.25	-27.5833	0	Yes
37	N37	50.225637	4.25	0	0	Yes
38	N38	50.225637	4.25	-27.5833	0	Yes
39	N39B	45.659637	4.25	0	0	Yes
40	N40A	45.659637	4.25	-27.5833	0	Yes
41	N41A	41.093637	4.25	0	0	Yes
42	N42	41.093637	4.25	-27.5833	0	Yes
43	N43	36.527637	4.25	0	0	Yes
44	N44A	36.527637	4.25	-27.5833	0	Yes
45	N45A	31.961637	4.25	0	0	Yes
46	N46	31.961637	4.25	-27.5833	0	Yes
47	N47A	50.225637	4.25	8	0	Yes
48	N48	45.659637	4.25	8	0	Yes
49	N49	41.093637	4.25	8	0	Yes
50	N50	36.527637	4.25	8	0	Yes
51	N51	31.961637	4.25	8	0	Yes
52	N52	8	4.25	8	0	Yes

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
53	N54	22.546833	4.25	0	0	Yes
54	N55	22.546833	4.25	8	0	Yes
55	N56	17.697833	4.25	0	0	Yes
56	N57	17.697833	4.25	8	0	Yes
57	N58	12.848833	4.25	0	0	Yes
58	N59	12.848833	4.25	8	0	Yes
59	N60	22.546833	4.25	-27.5833	0	Yes
60	N61	17.697833	4.25	-27.5833	0	Yes
61	N62	12.848833	4.25	-27.5833	0	Yes
62	N63	22.546833	4.25	-11.5	0	Yes
63	N64	17.697833	4.25	-11.5	0	Yes
64	N65	12.848833	4.25	-11.5	0	Yes
65	N66	50.225637	4.25	-11.5	0	Yes
66	N67	45.659637	4.25	-11.5	0	Yes
67	N68	41.093637	4.25	-11.5	0	Yes
68	N69	36.527637	4.25	-11.5	0	Yes
69	N70	31.961637	4.25	-11.5	0	Yes
70	N73	0	5.25	-27.5833	0	Yes
71	N74	27.395833	5.25	-27.5833	0	Yes
72	N75	54.791637	5.25	-27.5833	0	Yes
73	N76	62.750037	5.25	0	0	Yes
74	N77	62.750037	5.25	-27.5833	0	Yes
75	N78	54.791637	5.25	8	0	Yes
76	N79	62.750037	5.25	-11.5	0	Yes
77	N80	0	5.25	-11.5	0	Yes
78	N81	62.750037	5.25	8	0	Yes
79	N83	0	13.25	-27.5833	0	Yes
80	N84	27.395833	13.25	-27.5833	0	Yes
81	N85	54.791637	13.25	-27.5833	0	Yes
82	N87	62.750037	13.25	-27.5833	0	Yes
83	N88	54.791637	13.25	8	0	Yes
84	N89	62.750037	13.25	-11.5	0	Yes
85	N90	0	13.25	-11.5	0	Yes
86	N91	62.750037	13.25	8	0	Yes
87	N92	0	9.25	8	0	Yes
88	N93	27.395833	9.25	8	0	Yes
89	N95	0	9.25	-27.5833	0	Yes
90	N96	27.395833	9.25	-27.5833	0	Yes
91	N97	54.791637	9.25	-27.5833	0	Yes
92	N99	62.750037	9.25	-27.5833	0	Yes
93	N100	54.791637	9.25	8	0	Yes
94	N101	62.750037	9.25	-11.5	0	Yes
95	N102	0	9.25	-11.5	0	Yes
96	N103	62.750037	9.25	8	0	Yes
97	N100A	3	4.25	-11.5	0	Yes
98	N101A	5	4.25	8	0	Yes
99	N102A	5	13.25	8	0	Yes
100	N103A	5	5.25	8	0	Yes
101	N104	5	9.25	8	0	Yes
102	N105	5	4.25	0	0	Yes
103	N105A	5	4.25	5	0	Yes
104	N106	27.395833	4.25	5	0	Yes

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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia..
105	N107	27.395833	4.25	-24.5833	0	Yes

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	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
2	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
3	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
4	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
5	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
6	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	

Member Distributed Loads (BLC 1 : D)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M12	Y	-.29	-.29	0	0
2	M13	Y	-.29	-.29	0	0
3	M17	Y	-.29	-.29	8	0
4	M15	Y	-.29	-.29	0	0
5	M23A	Y	-.29	-.29	0	3.958
6	M22A	Y	-.29	-.29	0	3.958
7	M65	Y	-.03	-.03	0	0
8	M67	Y	-.03	-.03	0	0
9	M68	Y	-.03	-.03	0	0
10	M69	Y	-.03	-.03	0	0
11	M70	Y	-.03	-.03	0	0
12	M71	Y	-.03	-.03	0	0
13	M72	Y	-.03	-.03	0	0
14	M75	Y	-.03	-.03	0	0
15	M100	Y	-.03	-.03	0	0
16	M74	Y	-.03	-.03	0	0
17	M76	Y	-.06	-.06	0	0
18	M78	Y	-.06	-.06	0	0
19	M88	Y	-.06	-.06	0	0
20	M90	Y	-.06	-.06	0	0
21	M79	Y	-.06	-.06	0	0
22	M91	Y	-.06	-.06	0	0
23	M80	Y	-.06	-.06	0	0
24	M92	Y	-.06	-.06	0	0
25	M81	Y	-.06	-.06	0	0
26	M82	Y	-.06	-.06	0	0
27	M93	Y	-.06	-.06	0	0
28	M94	Y	-.06	-.06	0	0
29	M83	Y	-.06	-.06	0	0
30	M95	Y	-.06	-.06	0	0
31	M85	Y	-.06	-.06	0	0
32	M97	Y	-.06	-.06	0	0
33	M86	Y	-.06	-.06	0	0
34	M98	Y	-.06	-.06	0	0
35	M87	Y	-.06	-.06	0	0
36	M99	Y	-.06	-.06	0	0

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Member Distributed Loads (BLC 1 : D) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
37	M99A	Y	-.03	-.03	0	5

Member Distributed Loads (BLC 3 : WLX)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M65	X	.034	.034	0	0
2	M67	X	.034	.034	0	0
3	M82	X	.034	.034	0	0
4	M94	X	.034	.034	0	0
5	M83	X	.034	.034	0	0
6	M95	X	.034	.034	0	0
7	M78	X	.068	.068	0	0
8	M90	X	.068	.068	0	0
9	M76	X	.068	.068	0	0
10	M88	X	.068	.068	0	0
11	M71	X	.017	.017	0	0
12	M72	X	.017	.017	0	0

Member Distributed Loads (BLC 4 : WLZ)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M79	Z	.068	.068	0	0
2	M91	Z	.068	.068	0	0
3	M80	Z	.068	.068	0	0
4	M92	Z	.068	.068	0	0
5	M93	Z	.068	.068	0	0
6	M81	Z	.068	.068	0	0
7	M70	Z	.034	.034	0	0
8	M69	Z	.034	.034	0	0
9	M68	Z	.034	.034	0	0
10	M99	Z	.034	.034	0	0
11	M98	Z	.034	.034	0	0
12	M97	Z	.034	.034	0	0
13	M85	Z	.034	.034	0	0
14	M86	Z	.034	.034	0	0
15	M87	Z	.034	.034	0	0
16	M74	Z	.017	.017	0	0
17	M75	Z	.017	.017	0	0
18	M100	Z	.017	.017	0	27.396
19	M99A	Z	.017	.017	0	5

Member Distributed Loads (BLC 5 : WL-X)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M67	X	-.017	-.017	0	0
2	M65	X	-.017	-.017	0	0
3	M71	X	-.034	-.034	0	0
4	M72	X	-.034	-.034	0	0
5	M78	X	-.034	-.034	0	0
6	M76	X	-.034	-.034	0	0
7	M88	X	-.034	-.034	0	0
8	M90	X	-.034	-.034	0	0
9	M82	X	-.068	-.068	0	0

Member Distributed Loads (BLC 5 : WL-X) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
10	M94	X	-.068	-.068	0	0
11	M83	X	-.068	-.068	0	0
12	M95	X	-.068	-.068	0	0

Member Distributed Loads (BLC 6 : WL-Z)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M69	Z	-.017	-.017	0	0
2	M68	Z	-.017	-.017	0	0
3	M70	Z	-.017	-.017	0	0
4	M81	Z	-.034	-.034	0	0
5	M93	Z	-.034	-.034	0	0
6	M92	Z	-.034	-.034	0	0
7	M80	Z	-.034	-.034	0	0
8	M79	Z	-.034	-.034	0	0
9	M91	Z	-.034	-.034	0	0
10	M100	Z	-.034	-.034	0	0
11	M75	Z	-.034	-.034	0	0
12	M86	Z	-.068	-.068	0	0
13	M85	Z	-.068	-.068	0	0
14	M87	Z	-.068	-.068	0	0
15	M99	Z	-.068	-.068	0	0
16	M98	Z	-.068	-.068	0	0
17	M74	Z	-.034	-.034	0	0
18	M99A	Z	-.034	-.034	0	5

Member Distributed Loads (BLC 8 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M21	Y	-.024	-.024	4.441e-16	8
2	M22	Y	-.048	-.048	2.22e-16	8
3	M23	Y	-.048	-.048	1.832e-15	8
4	M32	Y	-.016	-.016	0	8
5	M35	Y	-.04	-.04	3.775e-15	8
6	M42	Y	-.04	-.04	1.055e-15	8
7	M43	Y	-.048	-.048	2.442e-15	8
8	M44	Y	-.048	-.048	3.164e-15	8
9	M45	Y	-.04	-.04	2.387e-15	8
10	M46	Y	-.048	-.048	1.388e-15	8
11	M48	Y	-.04	-.04	1.832e-15	8
12	M49	Y	-.048	-.048	1.61e-15	8
13	M50	Y	-.048	-.048	1.166e-15	8
14	M51	Y	-.048	-.048	4.441e-16	8
15	M100A	Y	-.04	-.04	2.609e-15	8
16	M1	Y	-.024	-.024	9.437e-16	11.5
17	M20	Y	-.024	-.024	6.106e-16	11.5
18	M27A	Y	-.032	-.032	4.996e-16	11.5
19	M1	Y	-.02	-.02	11.5	27.583
20	M2	Y	-.04	-.04	11.5	27.583
21	M3	Y	-.04	-.04	11.5	27.583
22	M20	Y	-.04	-.04	11.5	27.583
23	M28A	Y	-.04	-.04	3.775e-15	16.083
24	M34	Y	-.02	-.02	0	16.083

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Member Distributed Loads (BLC 8 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
25	M36	Y	-.04	-.04	2.365e-14	16.083
26	M55	Y	-.051	-.051	1.776e-14	16.083
27	M56	Y	-.04	-.04	6.55e-15	16.083
28	M57	Y	-.051	-.051	1.266e-14	16.083
29	M58	Y	-.04	-.04	6.55e-15	16.083
30	M59	Y	-.051	-.051	8.105e-15	16.083
31	M60	Y	-.051	-.051	8.66e-15	16.083
32	M61	Y	-.051	-.051	2.109e-15	16.083
33	M62	Y	-.051	-.051	6.106e-15	16.083
34	M25	Y	-.02	-.02	1.552e-14	11.5
35	M33	Y	-.02	-.02	1.787e-14	11.5

Member Distributed Loads (BLC 11 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M21	Y	-.097	-.097	4.441e-16	8
2	M22	Y	-.193	-.193	2.22e-16	8
3	M23	Y	-.193	-.193	1.832e-15	8
4	M32	Y	-.064	-.064	0	8
5	M35	Y	-.161	-.161	3.775e-15	8
6	M42	Y	-.161	-.161	1.055e-15	8
7	M43	Y	-.193	-.193	2.442e-15	8
8	M44	Y	-.193	-.193	3.164e-15	8
9	M45	Y	-.161	-.161	2.387e-15	8
10	M46	Y	-.193	-.193	1.388e-15	8
11	M48	Y	-.161	-.161	1.832e-15	8
12	M49	Y	-.193	-.193	1.61e-15	8
13	M50	Y	-.193	-.193	1.166e-15	8
14	M51	Y	-.193	-.193	4.441e-16	8
15	M100A	Y	-.161	-.161	2.609e-15	8
16	M1	Y	-.096	-.096	9.437e-16	11.5
17	M20	Y	-.096	-.096	6.106e-16	11.5
18	M27A	Y	-.128	-.128	4.996e-16	11.5
19	M1	Y	-.081	-.081	11.5	27.583
20	M2	Y	-.162	-.162	11.5	27.583
21	M3	Y	-.162	-.162	11.5	27.583
22	M20	Y	-.162	-.162	11.5	27.583
23	M28A	Y	-.162	-.162	3.775e-15	16.083
24	M34	Y	-.081	-.081	0	16.083
25	M36	Y	-.162	-.162	2.365e-14	16.083
26	M55	Y	-.202	-.202	1.776e-14	16.083
27	M56	Y	-.162	-.162	6.55e-15	16.083
28	M57	Y	-.202	-.202	1.266e-14	16.083
29	M58	Y	-.162	-.162	6.55e-15	16.083
30	M59	Y	-.202	-.202	8.105e-15	16.083
31	M60	Y	-.202	-.202	8.66e-15	16.083
32	M61	Y	-.202	-.202	2.109e-15	16.083
33	M62	Y	-.202	-.202	6.106e-15	16.083
34	M25	Y	-.08	-.08	1.552e-14	11.5
35	M33	Y	-.08	-.08	1.787e-14	11.5

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Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut..	Area(Me..	Surface(...
1	D	DL		-1				37	4	
2	L	LL							4	
3	WLX	WL+X						12		
4	WLZ	WL+Z						19		
5	WL-X	WL-X						12		
6	WL-Z	WL-Z						18		
7	Snow	SL							5	
8	BLC 1 Transient A..	None						35		
9	ELX	ELX				6				
10	ELZ	ELZ				6				
11	BLC 2 Transient A..	None						35		

Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		DL	1														
2	L		Y		LL	1														
3	Snow		Y		SL	1														
4	D+L		Y		DL	1	LL	1												
5	D+S		Y		DL	1	SL	1												
6	WX		Y		WL...	1														
7	WZ		Y		WL...	1														
8	WX-		Y		WL...	1														
9	WZ-		Y		WL...	1														
10	IBC 16-1	Yes	Y		DL	1.4														
11	IBC 16-2 (a)	Yes	Y		DL	1.2	LL	1.6												
12	IBC 16-3 (b) (a)	Yes	Y		DL	1.2	WL...	.8												
13	IBC 16-3 (b) (b)	Yes	Y		DL	1.2	WL...	.8												
14	IBC 16-3 (b) (c)	Yes	Y		DL	1.2	WL...	.8												
15	IBC 16-3 (b) (d)	Yes	Y		DL	1.2	WL...	.8												
16	IBC 16-4 (a) (a)	Yes	Y		DL	1.2	WL...	1.6	LL	.5										
17	IBC 16-4 (a) (b)	Yes	Y		DL	1.2	WL...	1.6	LL	.5										
18	IBC 16-4 (a) (c)	Yes	Y		DL	1.2	WL...	1.6	LL	.5										
19	IBC 16-4 (a) (d)	Yes	Y		DL	1.2	WL...	1.6	LL	.5										
20	IBC 16-6 (a)	Yes	Y		DL	.9	WL...	1.6												
21	IBC 16-6 (b)	Yes	Y		DL	.9	WL...	1.6												
22	IBC 16-6 (c)	Yes	Y		DL	.9	WL...	1.6												
23	IBC 16-6 (d)	Yes	Y		DL	.9	WL...	1.6												
24	IBC 16-5 (a)	Yes	Y		DL	1.2	ELX	1	LL	.5										
25	IBC 16-5 (b)	Yes	Y		DL	1.2	ELZ	1	LL	.5										
26	IBC 16-5 (c)	Yes	Y		DL	1.2	ELX	-1	LL	.5										
27	IBC 16-5 (d)	Yes	Y		DL	1.2	ELZ	-1	LL	.5										
28	IBC 16-7 (a)	Yes	Y		DL	.9	ELX	1												
29	IBC 16-7 (b)	Yes	Y		DL	.9	ELZ	1												
30	IBC 16-7 (c)	Yes	Y		DL	.9	ELX	-1												
31	IBC 16-7 (d)	Yes	Y		DL	.9	ELZ	-1												

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Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	4.45	18	37.106	11	.935	20	1.255	31	.415	18	8.281	20
2		min	-1.803	20	14.331	23	-1.036	17	-3.656	17	-.413	20	-18.802	18
3	N2	max	1.241	26	21.819	11	2.58	19	4.08	23	.073	14	7.115	20
4		min	-1.037	28	7.682	21	-3.402	21	-13.871	17	.009	11	-3.896	18
5	N4	max	1.17	26	31.733	11	11.392	19	23.489	23	.099	20	7.354	20
6		min	-1.053	28	8.705	21	-7.575	21	-30.05	17	.012	11	-3.979	18
7	N3	max	4.573	18	53.417	11	3.062	23	7.242	23	.024	19	8.38	20
8		min	-1.816	20	21.152	23	-5.104	17	-12.158	17	-.006	22	-19.187	18
9	N6	max	1.982	22	34.244	11	7.556	19	9.786	23	.157	17	9.042	16
10		min	-2.188	16	11.591	21	-4.445	21	-24.923	17	-.08	23	-5.244	22
11	N5	max	3.142	22	59.529	11	.372	23	1.396	23	.024	19	14.051	20
12		min	-8.692	16	25.424	23	-5.341	17	-12.099	17	-.006	22	-16.912	18
13	Totals:	max	14.518	22	237.847	11	23.648	19						
14		min	-14.518	16	99.223	23	-25.058	21						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M1	1	max	8.177	11	10.806	11	.238	22	-.041	22	2.19	20	72.511	11
2			min	2.111	23	3.134	20	-.223	16	-.151	11	-2.225	18	22.283	23
3		2	max	8.177	11	9.182	11	.238	22	-.041	22	.657	20	8.28	16
4			min	2.111	23	2.71	20	-.223	16	-.151	11	-.582	18	-1.839	23
5		3	max	.371	23	.682	21	.019	20	.104	11	.436	18	-.808	20
6			min	-2.748	17	-1.511	19	-.037	22	.017	28	-.275	20	-22.383	11
7		4	max	.371	23	.282	21	.019	20	.104	11	.184	18	-1.883	23
8			min	-2.748	17	-2.324	19	-.037	22	.017	28	-.148	20	-13.357	17
9		5	max	.371	23	-.118	21	.019	20	.104	11	-.009	11	13.375	19
10			min	-2.748	17	-3.529	11	-.037	22	.017	28	-.073	14	-10.34	21
11	M2	1	max	0	19	17.345	11	0	19	.002	22	0	20	123.654	11
12			min	0	20	4.489	23	0	20	-.036	16	0	19	17.292	23
13		2	max	0	19	16.875	11	0	19	.002	22	0	19	16.296	17
14			min	0	20	4.136	23	0	20	-.036	16	0	20	-12.444	23
15		3	max	7.657	19	1.171	21	-.001	11	.002	22	.295	12	-19.426	20
16			min	-.766	22	-4.759	19	-.028	12	-.036	16	.007	11	-64.735	11
17		4	max	7.657	19	.567	21	-.001	11	.002	22	.114	21	6.084	23
18			min	-.766	22	-6.122	19	-.028	12	-.036	16	-.009	19	-44.787	17
19		5	max	10.93	19	.35	23	.003	19	.031	16	.037	11	27.33	19
20			min	-6.293	21	-12.801	17	-.038	21	-.016	22	-.061	28	-6.114	21
21	M3	1	max	.001	19	23.422	11	0	19	-.008	22	0	20	153.248	11
22			min	0	20	8.847	23	0	20	-.036	10	0	19	48.974	23
23		2	max	.001	19	22.951	11	0	19	-.008	22	0	19	9.067	21
24			min	0	20	8.494	23	0	20	-.036	10	0	20	-13.013	19
25		3	max	4.853	19	-1.146	21	.033	17	0	11	.503	20	-35.958	22
26			min	-.577	20	-6.477	11	-.099	20	-.037	20	-.034	18	-97.699	11
27		4	max	4.853	19	-1.75	21	.033	17	0	11	.305	21	-6.321	23
28			min	-.577	20	-9.069	11	-.099	20	-.037	20	-.252	23	-44.916	17
29		5	max	4.853	19	-2.353	21	.033	17	0	11	.531	17	38.72	19
30			min	-.577	20	-11.661	11	-.099	20	-.037	20	-.864	20	-18.323	21
31	M4	1	max	37.106	11	1.81	20	.933	20	.415	18	3.656	17	8.281	20
32			min	14.331	23	-4.479	18	-1.057	17	-.413	20	-1.255	31	-18.802	18

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 26, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
33		2	max	37.064	11	1.81	20	.933	20	.415	18	2.533	17	6.357	20
34			min	14.299	23	-4.479	18	-1.057	17	-.413	20	-.592	23	-14.043	18
35		3	max	37.022	11	1.81	20	.933	20	.415	18	1.41	17	4.434	20
36			min	14.267	23	-4.479	18	-1.057	17	-.413	20	.017	23	-9.283	18
37		4	max	36.98	11	1.81	20	.933	20	.415	18	2.297	16	2.511	20
38			min	14.236	23	-4.479	18	-1.057	17	-.413	20	.04	29	-4.524	18
39		5	max	36.938	11	1.81	20	.933	20	.415	18	3.224	16	.743	16
40			min	14.204	23	-4.479	18	-1.057	17	-.413	20	-.983	21	.082	22
41	M5	1	max	21.819	11	2.58	19	1.243	26	.073	14	7.115	20	4.08	23
42			min	7.682	21	-3.407	21	-1.05	28	.009	11	-3.896	18	-13.871	17
43		2	max	21.777	11	2.58	19	1.243	26	.073	14	6.416	20	1.404	23
44			min	7.651	21	-3.407	21	-1.05	28	.009	11	-2.956	18	-10.305	17
45		3	max	21.735	11	2.58	19	1.243	26	.073	14	5.718	20	-1.135	20
46			min	7.619	21	-3.407	21	-1.05	28	.009	11	-2.015	18	-6.74	17
47		4	max	21.693	11	2.58	19	1.243	26	.073	14	5.235	16	-.241	20
48			min	7.587	21	-3.407	21	-1.05	28	.009	11	-1.254	22	-6.631	11
49		5	max	21.651	11	2.58	19	1.243	26	.073	14	4.812	16	2.304	21
50			min	7.556	21	-3.407	21	-1.05	28	.009	11	-.609	22	-8.552	19
51	M6	1	max	53.417	11	1.828	20	3.085	23	.024	19	12.158	17	8.38	20
52			min	21.152	23	-4.617	18	-5.177	17	-.006	22	-7.242	23	-19.187	18
53		2	max	53.375	11	1.828	20	3.085	23	.024	19	6.658	17	6.438	20
54			min	21.121	23	-4.617	18	-5.177	17	-.006	22	-3.964	23	-14.281	18
55		3	max	53.333	11	1.828	20	3.085	23	.024	19	1.157	17	4.496	20
56			min	21.089	23	-4.617	18	-5.177	17	-.006	22	-.687	23	-9.375	18
57		4	max	53.291	11	1.828	20	3.085	23	.024	19	2.59	23	2.554	20
58			min	21.057	23	-4.617	18	-5.177	17	-.006	22	-4.343	17	-4.469	18
59		5	max	53.248	11	1.828	20	3.085	23	.024	19	5.868	23	.794	16
60			min	21.026	23	-4.617	18	-5.177	17	-.006	22	-9.844	17	.257	22
61	M7	1	max	31.733	11	11.41	19	1.173	26	.099	20	7.354	20	23.489	23
62			min	8.705	21	-7.589	21	-1.069	28	.012	11	-3.979	18	-30.05	17
63		2	max	31.691	11	11.41	19	1.173	26	.099	20	6.466	20	12.027	23
64			min	8.674	21	-7.589	21	-1.069	28	.012	11	-2.984	18	-22.603	17
65		3	max	31.648	11	11.41	19	1.173	26	.099	20	5.578	20	.564	23
66			min	8.642	21	-7.589	21	-1.069	28	.012	11	-1.988	18	-15.156	17
67		4	max	31.606	11	11.41	19	1.173	26	.099	20	4.774	16	-3.075	29
68			min	8.61	21	-7.589	21	-1.069	28	.012	11	-1.042	22	-15.133	19
69		5	max	31.564	11	11.41	19	1.173	26	.099	20	4.08	16	4.565	21
70			min	8.579	21	-7.589	21	-1.069	28	.012	11	-.262	22	-27.256	19
71	M8	1	max	59.529	11	8.71	16	.38	23	.024	19	12.099	17	14.051	20
72			min	25.424	23	-3.168	22	-5.416	17	-.006	22	-1.396	23	-16.912	18
73		2	max	59.486	11	8.71	16	.38	23	.024	19	6.344	17	5.815	20
74			min	25.392	23	-3.168	22	-5.416	17	-.006	22	-.992	23	-14.531	18
75		3	max	59.444	11	8.71	16	.38	23	.024	19	.71	21	-2.42	20
76			min	25.361	23	-3.168	22	-5.416	17	-.006	22	-.712	19	-12.149	18
77		4	max	59.402	11	8.71	16	.38	23	.024	19	-.186	23	-6.23	22
78			min	25.329	23	-3.168	22	-5.416	17	-.006	22	-5.165	17	-14.212	16
79		5	max	59.36	11	8.71	16	.38	23	.024	19	.218	23	-2.864	22
80			min	25.298	23	-3.168	22	-5.416	17	-.006	22	-10.92	17	-23.466	16
81	M9	1	max	34.244	11	7.556	19	1.993	22	.157	17	9.042	16	9.786	23
82			min	11.591	21	-4.461	21	-2.238	16	-.08	23	-5.244	22	-24.923	17
83		2	max	34.202	11	7.556	19	1.993	22	.157	17	6.745	20	3.032	23
84			min	11.559	21	-4.461	21	-2.238	16	-.08	23	-3.291	18	-21.427	17

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
85		3	max	34.16	11	7.556	19	1.993	22	.157	17	4.893	20	-3.721	23
86			min	11.527	21	-4.461	21	-2.238	16	-.08	23	-1.659	18	-18.357	11
87		4	max	34.117	11	7.556	19	1.993	22	.157	17	3.311	10	-7.055	29
88			min	11.496	21	-4.461	21	-2.238	16	-.08	23	-3.057	11	-22.717	11
89		5	max	34.075	11	7.556	19	1.993	22	.157	17	4.643	30	-3.276	21
90			min	11.464	21	-4.461	21	-2.238	16	-.08	23	-4.606	11	-27.077	11
91	M12	1	max	0	17	8.696	11	.009	20	0	21	0	10	0	10
92			min	0	20	3.592	20	-.008	18	-.003	11	0	10	0	10
93		2	max	0	20	3.529	11	.005	18	0	21	.044	20	-13.979	22
94			min	0	17	1.67	20	-.005	20	-.003	11	-.04	18	-37.584	11
95		3	max	0	16	-.252	22	.002	21	0	21	.02	20	-18.639	22
96			min	0	21	-1.638	11	-.006	19	-.003	11	-.017	18	-50.111	11
97		4	max	0	20	-2.174	22	.004	19	0	21	.008	20	-13.98	22
98			min	0	19	-6.805	11	-.002	20	-.003	11	-.018	19	-37.583	11
99		5	max	0	20	-3.592	22	.004	19	0	21	0	10	0	10
100			min	0	19	-8.696	11	-.002	20	-.003	11	0	10	0	10
101	M13	1	max	0	19	10.301	11	.007	21	0	19	0	10	0	10
102			min	0	21	3.552	20	-.011	19	0	21	0	10	0	10
103		2	max	0	16	4.278	11	.006	19	0	19	.04	21	-16.121	20
104			min	0	21	.988	20	0	29	0	21	-.036	19	-53.666	11
105		3	max	0	16	-.975	22	.01	19	0	19	.093	21	-13.869	20
106			min	0	21	-4.402	11	-.011	21	0	21	-.062	19	-61.427	11
107		4	max	0	19	-3.465	22	.075	21	0	19	.216	21	7.904	20
108			min	0	21	-9.806	11	-.058	19	0	21	-.15	19	-18.252	18
109		5	max	0	21	-6.029	22	.198	19	0	19	.622	19	75.719	11
110			min	0	19	-15.828	11	-.279	21	0	21	-.888	21	19.802	22
111	M14	1	max	1.758	22	5.973	11	.005	17	0	21	0	10	0	10
112			min	-.045	11	.466	20	0	20	0	16	0	10	0	10
113		2	max	1.758	22	2.45	11	.008	21	0	21	.037	17	-1.405	20
114			min	-.045	11	-.224	20	-.013	19	0	16	-.012	23	-32.584	11
115		3	max	1.758	22	-.551	22	.022	21	0	21	.06	21	2.724	20
116			min	-.045	11	-3.73	11	-.017	19	0	16	-.034	19	-36.388	11
117		4	max	1.758	22	-1.168	22	.051	19	0	21	.015	17	13.538	20
118			min	-.045	11	-6.634	11	-.064	21	0	16	-.004	20	-4.48	18
119		5	max	1.758	22	-1.857	22	.29	21	0	21	1.19	21	57.308	11
120			min	-.045	11	-10.157	11	-.205	19	0	16	-.813	19	8.176	22
121	M15	1	max	0	10	7.514	11	.019	22	.001	11	0	10	0	10
122			min	0	22	3.67	20	-.019	20	0	23	0	10	0	10
123		2	max	0	10	3.242	11	.015	22	.001	11	.12	22	-17.583	20
124			min	0	22	1.393	20	-.015	20	0	23	-.12	20	-38.573	11
125		3	max	0	10	-.478	22	.037	20	.001	11	.296	22	-19.204	20
126			min	0	22	-2.311	11	-.037	22	0	23	-.296	20	-45.521	11
127		4	max	0	11	-2.755	22	.247	18	.001	11	.692	22	-4.304	20
128			min	-.002	18	-6.583	11	-.245	16	0	23	-.688	16	-20.941	18
129		5	max	.003	18	-5.003	22	.893	16	.001	11	2.829	16	43.537	11
130			min	0	11	-10.611	11	-.898	22	0	23	-2.845	22	10.238	22
131	M16	1	max	.31	22	12.375	11	.255	19	0	23	0	10	0	10
132			min	-.331	11	2.704	22	-.135	17	-.002	17	0	10	0	10
133		2	max	.31	22	9.431	11	.119	21	0	23	.321	23	-16.553	22
134			min	-.331	11	2.057	22	-.246	19	-.002	17	-.206	17	-76.209	11
135		3	max	.307	22	-.596	22	0	20	0	23	.022	20	-18.457	22
136			min	-.331	11	-2.681	11	0	19	-.002	17	-.02	18	-88.309	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
137		4	max	.307	22	-1.316	22	.005	19	0	23	.018	20	-12.197	22
138			min	-.331	11	-6.244	11	-.002	20	-.002	17	-.015	18	-59.629	11
139		5	max	.307	22	-2.036	22	.002	21	0	23	0	10	0	10
140			min	-.331	11	-9.807	11	-.006	19	-.002	17	0	10	0	10
141	M17	1	max	3.908	18	14.536	11	.223	23	.001	19	0	10	0	10
142			min	-1.276	20	4.57	21	-.127	17	0	22	0	10	0	10
143		2	max	3.904	18	11.41	11	.427	21	.001	19	.392	23	-29.737	22
144			min	-1.272	20	3.938	22	-.989	19	0	22	-.404	17	-91.709	11
145		3	max	0	29	-.454	22	.008	19	.001	19	.043	20	-37.593	22
146			min	0	19	-3.037	11	-.009	20	0	22	-.042	19	-101.414	11
147		4	max	0	20	-2.731	22	.002	23	.001	19	.008	20	-26.812	22
148			min	0	19	-7.309	11	-.001	17	0	22	-.006	18	-66.862	11
149		5	max	0	20	-5.008	22	.001	18	.001	19	0	10	0	10
150			min	0	19	-11.581	11	-.002	20	0	22	0	10	0	10
151	M20	1	max	0	10	9.285	11	0	10	0	15	0	10	0	10
152			min	0	10	2.22	22	0	10	-.004	11	0	10	0	10
153		2	max	0	10	7.695	11	0	10	0	15	0	20	-13.935	22
154			min	0	10	1.822	22	0	10	-.004	11	0	19	-58.547	11
155		3	max	.109	21	-.933	22	0	11	0	15	.17	12	-19.765	22
156			min	-.24	19	-3.644	11	-.012	12	-.004	11	.003	11	-84.099	11
157		4	max	.109	21	-1.433	22	0	11	0	15	.085	12	-11.608	22
158			min	-.24	19	-6.098	11	-.012	12	-.004	11	.001	11	-50.51	11
159		5	max	.109	21	-1.934	22	0	11	0	15	0	10	0	10
160			min	-.24	19	-8.552	11	-.012	12	-.004	11	0	10	0	10
161	M27	1	max	3.267	10	8.031	11	.934	18	0	10	.626	16	12.262	11
162			min	2.095	20	2.146	23	-1.362	20	0	10	.041	22	3.271	21
163		2	max	2.126	10	1.361	11	.414	18	0	10	.606	22	3.922	19
164			min	1.362	20	.148	21	-.302	20	0	10	-1.441	16	-2.108	21
165		3	max	2.045	10	1.361	11	.414	18	0	10	1.419	18	1.458	23
166			min	1.309	20	.148	21	-.302	20	0	10	-2.004	20	-2.59	17
167		4	max	.901	10	-.013	23	.889	16	0	10	.644	18	1.084	23
168			min	.575	20	-.597	17	-.237	22	0	10	-1.167	20	-1.801	17
169		5	max	.82	10	-.013	23	.889	16	0	10	.994	11	1.114	23
170			min	.522	20	-.597	17	-.237	22	0	10	.093	22	-.457	17
171	M28	1	max	11.206	17	1.081	23	2.469	20	-.062	22	.668	16	1.453	23
172			min	-4.624	23	-.574	17	-2.251	18	-.151	16	.222	22	-1.213	17
173		2	max	8.773	17	.838	21	.135	18	-.062	22	2.466	16	1.972	23
174			min	-6.45	23	-1.69	19	-.428	20	-.151	16	-1.714	22	-1.353	17
175		3	max	8.716	17	.838	21	.135	18	-.062	22	1.525	16	5.722	19
176			min	-6.493	23	-1.69	19	-.428	20	-.151	16	-1.437	22	-3.179	21
177		4	max	1.794	10	1.357	23	.335	22	0	10	.791	16	3.461	19
178			min	1.152	20	-.684	17	-.351	16	0	10	-.753	22	-1.906	21
179		5	max	1.728	10	1.357	23	.335	22	0	10	0	10	.407	19
180			min	1.11	20	-.684	17	-.351	16	0	10	0	10	-.373	21
181	M21	1	max	8.021	11	11.632	11	.325	20	.626	16	2.64	18	73.226	11
182			min	2.46	23	3.985	23	-.33	18	.041	22	-2.603	20	23.517	23
183		2	max	8.021	11	11.159	11	.325	20	.626	16	1.98	18	50.434	11
184			min	2.46	23	3.862	23	-.33	18	.041	22	-1.952	20	15.669	23
185		3	max	8.021	11	10.686	11	.325	20	.626	16	1.32	18	28.588	11
186			min	2.46	23	3.739	23	-.33	18	.041	22	-1.301	20	8.067	23
187		4	max	8.021	11	10.213	11	.325	20	.626	16	.66	18	10.109	17
188			min	2.46	23	3.616	23	-.33	18	.041	22	-.651	20	.712	23

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
189		5	max	8.021	11	9.74	11	.325	20	.626	16	0	10	-3.263	21
190			min	2.46	23	3.493	23	-.33	18	.041	22	0	10	-12.265	11
191	M22	1	max	6.764	23	16.808	11	.993	20	.758	16	7.976	18	119.954	11
192			min	-3.379	21	7.026	23	-.997	18	.259	22	-7.945	20	23.159	23
193		2	max	6.764	23	15.938	11	.993	20	.758	16	5.982	18	87.209	11
194			min	-3.379	21	6.837	23	-.997	18	.259	22	-5.959	20	9.295	23
195		3	max	6.764	23	15.068	11	.993	20	.758	16	3.988	18	57.602	17
196			min	-3.379	21	6.648	23	-.997	18	.259	22	-3.973	20	-4.19	23
197		4	max	1.075	23	15.267	17	.993	20	.668	16	1.925	22	31.303	17
198			min	-.531	17	-3.065	23	-.997	18	.222	22	-2.136	16	-7.774	23
199		5	max	1.075	23	14.822	17	.993	20	.668	16	-.062	22	1.214	17
200			min	-.531	17	-3.254	23	-.997	18	.222	22	-.151	16	-1.455	23
201	M23	1	max	4.562	23	19.717	11	2.683	16	.748	16	12.381	22	144.003	11
202			min	-2.712	17	8.854	22	-2.666	22	.311	22	-12.439	16	49.192	23
203		2	max	4.562	23	18.847	11	2.683	16	.748	16	7.048	22	105.439	11
204			min	-2.712	17	8.664	22	-2.666	22	.311	22	-7.073	16	31.118	23
205		3	max	4.562	23	17.977	11	2.683	16	.748	16	1.716	22	68.615	11
206			min	-2.712	17	8.475	22	-2.666	22	.311	22	-1.706	16	13.422	23
207		4	max	4.562	23	17.107	11	2.683	16	.748	16	3.661	16	39.38	17
208			min	-2.712	17	8.286	22	-2.666	22	.311	22	-3.617	22	-3.896	23
209		5	max	4.562	23	16.237	11	2.683	16	.748	16	9.027	16	13.304	17
210			min	-2.712	17	8.097	22	-2.666	22	.311	22	-8.949	22	-20.835	23
211	M22A	1	max	.012	16	5.611	11	.639	16	0	16	4.502	21	25.518	11
212			min	0	21	2.015	20	-.794	21	0	22	-3.211	23	7.023	20
213		2	max	.012	16	4.813	11	.639	16	0	16	2.923	21	15.148	11
214			min	0	21	1.416	20	-.794	21	0	22	-2.11	19	3.606	23
215		3	max	0	17	1.715	11	.255	19	0	10	1.353	21	6.409	11
216			min	-.001	22	.424	23	-.34	21	0	10	-1.015	19	1.374	22
217		4	max	0	17	1.61	11	.255	19	0	10	.676	21	3.101	11
218			min	-.001	22	.345	23	-.34	21	0	10	-.508	19	.609	22
219		5	max	0	17	1.504	11	.255	19	0	10	0	10	.005	16
220			min	-.001	22	.266	23	-.34	21	0	10	0	10	.002	22
221	M23A	1	max	4.839	18	12.417	11	.604	16	.037	23	4.505	21	75.73	11
222			min	-2.419	20	5.86	22	-.796	21	-.077	17	-3.209	23	19.806	22
223		2	max	4.839	18	11.619	11	.604	16	.037	23	2.922	21	51.818	11
224			min	-2.419	20	5.262	22	-.796	21	-.077	17	-2.109	19	8.742	22
225		3	max	4.839	22	7.145	11	.256	19	.037	23	1.349	21	34.987	16
226			min	-2.42	16	4.02	20	-.339	21	-.077	17	-1.017	19	-1.117	22
227		4	max	4.839	22	7.04	11	.256	19	.037	23	.674	21	23.321	16
228			min	-2.42	16	3.941	20	-.339	21	-.077	17	-.508	19	-9.04	22
229		5	max	4.839	22	6.934	11	.256	19	.037	23	0	10	11.864	16
230			min	-2.42	16	3.861	20	-.339	21	-.077	17	0	10	-16.805	22
231	M24	1	max	8.353	11	7.509	11	.356	16	.2	19	1.864	21	39.427	11
232			min	3.334	22	3.284	20	-.243	22	-.209	17	-1.632	19	14.586	22
233		2	max	8.353	11	7.437	11	.356	16	.2	19	1.879	21	24.559	11
234			min	3.334	22	3.23	20	-.243	22	-.209	17	-1.464	23	8.094	22
235		3	max	8.353	11	7.365	11	.356	16	.2	19	1.905	17	10.48	16
236			min	3.334	22	3.176	20	-.243	22	-.209	17	-1.305	23	1.71	22
237		4	max	8.353	11	4.643	11	.328	23	.2	19	.952	17	2.606	16
238			min	3.333	22	2.695	20	-.479	17	-.209	17	-.652	23	-3.712	22
239		5	max	8.353	11	4.572	11	.328	23	.2	19	0	10	-2.943	20
240			min	3.333	22	2.641	20	-.479	17	-.209	17	0	10	-11.242	18

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
241	M25	1	max	1.123	16	1.026	11	0	10	0	22	0	10	0	10
242			min	-1.037	22	.218	22	0	10	-.004	10	0	10	0	10
243		2	max	1.123	16	.513	11	0	10	0	22	0	10	-.47	22
244			min	-1.037	22	.109	22	0	10	-.004	10	0	10	-2.213	11
245		3	max	1.123	16	0	10	0	10	0	22	0	10	-.626	22
246			min	-1.037	22	0	10	0	10	-.004	10	0	10	-2.951	11
247		4	max	1.123	16	-.109	20	0	10	0	22	0	10	-.47	22
248			min	-1.037	22	-.513	11	0	10	-.004	10	0	10	-2.213	11
249		5	max	1.123	16	-.218	20	0	10	0	22	0	10	0	10
250			min	-1.037	22	-1.026	11	0	10	-.004	10	0	10	0	10
251	M26	1	max	4.607	16	2.86	16	.156	21	.017	16	0	10	0	10
252			min	-2.158	18	-1.262	22	-.296	19	-.002	22	0	10	0	10
253		2	max	4.607	16	2.798	16	.156	21	.017	16	.312	21	2.571	22
254			min	-2.158	18	-1.309	22	-.296	19	-.002	22	-.592	19	-5.658	16
255		3	max	4.607	16	2.735	16	.305	19	.017	16	.625	21	5.236	22
256			min	-2.158	18	-3.512	11	-.146	21	-.002	22	-1.184	19	-11.199	16
257		4	max	2.258	11	2.509	18	.305	19	.003	22	.296	21	4.955	18
258			min	.391	28	-4.049	20	-.148	21	-.019	16	-.61	19	-8.145	20
259		5	max	2.258	11	2.446	18	.305	19	.003	22	0	10	0	10
260			min	.391	28	-4.096	20	-.148	21	-.019	16	0	10	0	10
261	M27A	1	max	1.101	19	1.496	11	0	10	0	22	0	10	0	10
262			min	-.557	21	.239	20	0	10	-.004	11	0	10	0	10
263		2	max	1.101	19	.748	11	0	10	0	22	0	10	-.515	20
264			min	-.557	21	.119	20	0	10	-.004	11	0	10	-3.226	11
265		3	max	1.101	19	0	10	0	10	0	22	0	10	-.687	20
266			min	-.557	21	0	10	0	10	-.004	11	0	10	-4.301	11
267		4	max	1.101	19	-.119	22	0	10	0	22	0	10	-.515	20
268			min	-.557	21	-.748	11	0	10	-.004	11	0	10	-3.226	11
269		5	max	1.101	19	-.239	22	0	10	0	22	0	10	0	10
270			min	-.557	21	-1.496	11	0	10	-.004	11	0	10	0	10
271	M28A	1	max	.5	19	2.657	11	0	10	.005	16	0	10	0	10
272			min	-.254	21	.43	21	0	10	.001	22	0	10	0	10
273		2	max	.5	19	1.329	11	0	10	.005	16	0	10	-1.297	21
274			min	-.254	21	.215	21	0	10	.001	22	0	10	-8.013	11
275		3	max	.5	19	0	10	0	10	.005	16	0	10	-1.73	21
276			min	-.254	21	0	10	0	10	.001	22	0	10	-10.684	11
277		4	max	.5	19	-.215	20	0	10	.005	16	0	10	-1.297	21
278			min	-.254	21	-1.329	11	0	10	.001	22	0	10	-8.013	11
279		5	max	.5	19	-.43	20	0	10	.005	16	0	10	0	10
280			min	-.254	21	-2.657	11	0	10	.001	22	0	10	0	10
281	M29	1	max	1.042	20	6.923	11	.313	23	.017	19	0	10	0	10
282			min	-.632	18	1.39	23	-.186	17	-.007	21	0	10	0	10
283		2	max	5.119	20	2.163	11	.309	17	.001	21	.511	23	-9.687	22
284			min	-4.213	11	-.259	20	-.571	23	-.003	19	-.358	17	-31.744	11
285		3	max	5.119	20	-.299	22	.007	20	.001	21	.005	18	-9.772	22
286			min	-4.213	11	-1.09	16	-.005	18	-.003	19	-.006	20	-37.203	11
287		4	max	5.119	20	-.7	22	.003	18	.001	21	.011	20	-6.474	22
288			min	-4.213	11	-2.62	11	-.003	20	-.003	19	-.016	19	-26.148	11
289		5	max	5.119	20	-1.101	22	.003	19	.001	21	0	10	0	10
290			min	-4.213	11	-4.384	11	-.001	20	-.003	19	0	10	0	10
291	M30	1	max	1.632	20	2.383	11	.017	22	0	11	0	10	0	10
292			min	-3.763	11	-.196	20	-.017	20	0	23	0	10	0	10

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
293		2	max	1.632	20	.613	11	.02	22	0	11	.122	22	2.475	20
294			min	-3.763	11	-.599	20	-.02	20	0	23	-.122	20	-11.997	11
295		3	max	1.631	20	-.531	22	.072	18	0	11	.186	22	8.068	20
296			min	-3.763	11	-2.432	11	-.071	16	0	23	-.187	20	-9.526	11
297		4	max	1.633	20	-.934	22	.211	16	0	11	.031	22	20.071	16
298			min	-3.763	11	-4.206	11	-.212	22	0	23	-.031	20	3.809	22
299		5	max	1.628	20	-1.307	22	.933	22	0	11	3.806	18	47.001	11
300			min	-3.763	11	-5.742	11	-.927	16	0	23	-3.784	16	11.698	22
301	M31	1	max	6.949	16	5.744	11	1.572	22	.184	23	5.243	16	33.112	11
302			min	3.12	22	3.224	21	-1.601	16	-.192	17	-5.143	22	14.778	22
303		2	max	6.949	16	5.672	11	1.572	22	.184	23	2.058	16	21.756	11
304			min	3.12	22	3.17	21	-1.601	16	-.192	17	-2.015	22	8.407	22
305		3	max	6.962	16	5.6	11	1.572	22	.184	23	1.872	21	10.795	16
306			min	3.123	22	3.116	21	-1.601	16	-.192	17	-1.411	19	2.146	22
307		4	max	6.962	16	4.481	10	.355	19	.184	23	.936	21	2.846	16
308			min	3.123	22	2.872	20	-.471	21	-.192	17	-.706	19	-3.647	22
309		5	max	6.962	16	4.397	10	.355	19	.184	23	0	10	-3.53	20
310			min	3.123	22	2.818	20	-.471	21	-.192	17	0	10	-10.805	18
311	M32	1	max	.306	23	.547	11	0	10	.004	16	0	10	0	10
312			min	-.433	17	.101	22	0	10	.001	22	0	10	0	10
313		2	max	.306	23	.273	11	0	10	.004	16	0	10	-.152	22
314			min	-.433	17	.051	22	0	10	.001	22	0	10	-.82	11
315		3	max	.306	23	0	10	0	10	.004	16	0	10	-.203	22
316			min	-.433	17	0	10	0	10	.001	22	0	10	-1.094	11
317		4	max	.306	23	-.051	20	0	10	.004	16	0	10	-.152	22
318			min	-.433	17	-.273	11	0	10	.001	22	0	10	-.82	11
319		5	max	.306	23	-.101	20	0	10	.004	16	0	10	0	10
320			min	-.433	17	-.547	11	0	10	.001	22	0	10	0	10
321	M33	1	max	.151	22	.957	11	0	10	0	22	0	10	0	10
322			min	-.093	17	.166	20	0	10	-.001	16	0	10	0	10
323		2	max	.151	22	.479	11	0	10	0	22	0	10	-.358	20
324			min	-.093	17	.083	20	0	10	-.001	16	0	10	-2.064	11
325		3	max	.151	22	0	10	0	10	0	22	0	10	-.477	20
326			min	-.093	17	0	10	0	10	-.001	16	0	10	-2.752	11
327		4	max	.151	22	-.083	22	0	10	0	22	0	10	-.358	20
328			min	-.093	17	-.479	11	0	10	-.001	16	0	10	-2.064	11
329		5	max	.151	22	-.166	22	0	10	0	22	0	10	0	10
330			min	-.093	17	-.957	11	0	10	-.001	16	0	10	0	10
331	M34	1	max	.448	21	1.353	11	0	10	0	11	0	10	0	10
332			min	-.511	19	.234	20	0	10	0	20	0	10	0	10
333		2	max	.448	21	.677	11	0	10	0	11	0	10	-.705	20
334			min	-.511	19	.117	20	0	10	0	20	0	10	-4.081	11
335		3	max	.448	21	0	10	0	10	0	11	0	10	-.94	20
336			min	-.511	19	0	10	0	10	0	20	0	10	-5.442	11
337		4	max	.448	21	-.117	30	0	10	0	11	0	10	-.705	20
338			min	-.511	19	-.677	11	0	10	0	20	0	10	-4.081	11
339		5	max	.448	21	-.234	30	0	10	0	11	0	10	0	10
340			min	-.511	19	-1.353	11	0	10	0	20	0	10	0	10
341	M35	1	max	1.886	16	1.281	11	0	10	.004	16	0	10	0	10
342			min	-1.852	22	.188	20	0	10	.002	22	0	10	0	10
343		2	max	1.886	16	.64	11	0	10	.004	16	0	10	-.282	20
344			min	-1.852	22	.094	20	0	10	.002	22	0	10	-1.921	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
345		3	max	1.886	16	0	10	0	10	.004	16	0	10	-.376	20
346			min	-1.852	22	0	10	0	10	.002	22	0	10	-2.561	11
347		4	max	1.886	16	-.094	23	0	10	.004	16	0	10	-.282	20
348			min	-1.852	22	-.64	11	0	10	.002	22	0	10	-1.921	11
349		5	max	1.886	16	-.188	23	0	10	.004	16	0	10	0	10
350			min	-1.852	22	-1.281	11	0	10	.002	22	0	10	0	10
351	M36	1	max	.479	17	2.657	11	0	10	0	11	0	10	0	10
352			min	-.27	22	.43	20	0	10	-.002	16	0	10	0	10
353		2	max	.479	17	1.329	11	0	10	0	11	0	10	-1.297	20
354			min	-.27	22	.215	20	0	10	-.002	16	0	10	-8.013	11
355		3	max	.479	17	0	10	0	10	0	11	0	10	-1.73	20
356			min	-.27	22	0	10	0	10	-.002	16	0	10	-10.684	11
357		4	max	.479	17	-.215	22	0	10	0	11	0	10	-1.297	20
358			min	-.27	22	-1.329	11	0	10	-.002	16	0	10	-8.013	11
359		5	max	.479	17	-.43	22	0	10	0	11	0	10	0	10
360			min	-.27	22	-2.657	11	0	10	-.002	16	0	10	0	10
361	M42	1	max	1.145	22	1.281	11	0	10	.002	10	0	10	0	10
362			min	-1.138	16	.188	21	0	10	0	22	0	10	0	10
363		2	max	1.145	22	.64	11	0	10	.002	10	0	10	-.282	21
364			min	-1.138	16	.094	21	0	10	0	22	0	10	-1.921	11
365		3	max	1.145	22	0	10	0	10	.002	10	0	10	-.376	21
366			min	-1.138	16	0	10	0	10	0	22	0	10	-2.561	11
367		4	max	1.145	22	-.094	23	0	10	.002	10	0	10	-.282	21
368			min	-1.138	16	-.64	11	0	10	0	22	0	10	-1.921	11
369		5	max	1.145	22	-.188	23	0	10	.002	10	0	10	0	10
370			min	-1.138	16	-1.281	11	0	10	0	22	0	10	0	10
371	M43	1	max	.282	16	1.525	11	0	10	0	10	0	10	0	10
372			min	-.283	22	.217	21	0	10	0	11	0	10	0	10
373		2	max	.282	16	.763	11	0	10	0	10	0	10	-.326	21
374			min	-.283	22	.109	21	0	10	0	11	0	10	-2.288	11
375		3	max	.282	16	0	10	0	10	0	10	0	10	-.434	21
376			min	-.283	22	0	10	0	10	0	11	0	10	-3.05	11
377		4	max	.282	16	-.109	23	0	10	0	10	0	10	-.326	21
378			min	-.283	22	-.763	11	0	10	0	11	0	10	-2.288	11
379		5	max	.282	16	-.217	23	0	10	0	10	0	10	0	10
380			min	-.283	22	-1.525	11	0	10	0	11	0	10	0	10
381	M44	1	max	.068	22	1.525	11	0	10	0	23	0	10	0	10
382			min	-.067	20	.217	22	0	10	0	11	0	10	0	10
383		2	max	.068	22	.763	11	0	10	0	23	0	10	-.326	22
384			min	-.067	20	.109	22	0	10	0	11	0	10	-2.288	11
385		3	max	.068	22	0	10	0	10	0	23	0	10	-.434	22
386			min	-.067	20	0	10	0	10	0	11	0	10	-3.05	11
387		4	max	.068	22	-.109	23	0	10	0	23	0	10	-.326	22
388			min	-.067	20	-.763	11	0	10	0	11	0	10	-2.288	11
389		5	max	.068	22	-.217	23	0	10	0	23	0	10	0	10
390			min	-.067	20	-1.525	11	0	10	0	11	0	10	0	10
391	M45	1	max	.016	16	1.281	11	0	10	0	22	0	10	0	10
392			min	-.016	18	.188	21	0	10	-.001	10	0	10	0	10
393		2	max	.016	16	.64	11	0	10	0	22	0	10	-.282	21
394			min	-.016	18	.094	21	0	10	-.001	10	0	10	-1.921	11
395		3	max	.016	16	0	10	0	10	0	22	0	10	-.376	21
396			min	-.016	18	0	10	0	10	-.001	10	0	10	-2.561	11

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
397		4	max	.016	16	-.094	23	0	10	0	22	0	10	-.282	21
398			min	-.016	18	-.64	11	0	10	-.001	10	0	10	-1.921	11
399		5	max	.016	16	-.188	23	0	10	0	22	0	10	0	10
400			min	-.016	18	-1.281	11	0	10	-.001	10	0	10	0	10
401	M46	1	max	.004	23	1.525	11	0	10	0	11	0	10	0	10
402			min	-.004	20	.217	21	0	10	-.002	10	0	10	0	10
403		2	max	.004	23	.763	11	0	10	0	11	0	10	-.326	21
404			min	-.004	20	.109	21	0	10	-.002	10	0	10	-2.288	11
405		3	max	.004	23	0	10	0	10	0	11	0	10	-.434	21
406			min	-.004	20	0	10	0	10	-.002	10	0	10	-3.05	11
407		4	max	.004	23	-.109	23	0	10	0	11	0	10	-.326	21
408			min	-.004	20	-.763	11	0	10	-.002	10	0	10	-2.288	11
409		5	max	.004	23	-.217	23	0	10	0	11	0	10	0	10
410			min	-.004	20	-1.525	11	0	10	-.002	10	0	10	0	10
411	M48	1	max	.602	23	1.281	11	0	10	0	17	0	10	0	10
412			min	-.307	17	.188	23	0	10	0	23	0	10	0	10
413		2	max	.602	23	.64	11	0	10	0	17	0	10	-.282	23
414			min	-.307	17	.094	23	0	10	0	23	0	10	-1.921	11
415		3	max	.602	23	0	10	0	10	0	17	0	10	-.376	23
416			min	-.307	17	0	10	0	10	0	23	0	10	-2.561	11
417		4	max	.602	23	-.094	21	0	10	0	17	0	10	-.282	23
418			min	-.307	17	-.64	11	0	10	0	23	0	10	-1.921	11
419		5	max	.602	23	-.188	21	0	10	0	17	0	10	0	10
420			min	-.307	17	-1.281	11	0	10	0	23	0	10	0	10
421	M49	1	max	.002	20	1.525	11	0	10	0	23	0	10	0	10
422			min	-.002	17	.217	21	0	10	0	17	0	10	0	10
423		2	max	.002	20	.763	11	0	10	0	23	0	10	-.326	21
424			min	-.002	17	.109	21	0	10	0	17	0	10	-2.288	11
425		3	max	.002	20	0	10	0	10	0	23	0	10	-.434	21
426			min	-.002	17	0	10	0	10	0	17	0	10	-3.05	11
427		4	max	.002	20	-.109	23	0	10	0	23	0	10	-.326	21
428			min	-.002	17	-.763	11	0	10	0	17	0	10	-2.288	11
429		5	max	.002	20	-.217	23	0	10	0	23	0	10	0	10
430			min	-.002	17	-1.525	11	0	10	0	17	0	10	0	10
431	M50	1	max	.008	18	1.525	11	0	10	0	22	0	10	0	10
432			min	-.01	20	.217	21	0	10	0	17	0	10	0	10
433		2	max	.008	18	.763	11	0	10	0	22	0	10	-.326	21
434			min	-.01	20	.109	21	0	10	0	17	0	10	-2.288	11
435		3	max	.008	18	0	10	0	10	0	22	0	10	-.434	21
436			min	-.01	20	0	10	0	10	0	17	0	10	-3.05	11
437		4	max	.008	18	-.109	23	0	10	0	22	0	10	-.326	21
438			min	-.01	20	-.763	11	0	10	0	17	0	10	-2.288	11
439		5	max	.008	18	-.217	23	0	10	0	22	0	10	0	10
440			min	-.01	20	-1.525	11	0	10	0	17	0	10	0	10
441	M51	1	max	.04	20	1.525	11	0	10	0	11	0	10	0	10
442			min	-.037	19	.217	21	0	10	0	23	0	10	0	10
443		2	max	.04	20	.763	11	0	10	0	11	0	10	-.326	21
444			min	-.037	19	.109	21	0	10	0	23	0	10	-2.288	11
445		3	max	.04	20	0	10	0	10	0	11	0	10	-.434	21
446			min	-.037	19	0	10	0	10	0	23	0	10	-3.05	11
447		4	max	.04	20	-.109	23	0	10	0	11	0	10	-.326	21
448			min	-.037	19	-.763	11	0	10	0	23	0	10	-2.288	11

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
449		5	max	.04	20	-.217	23	0	10	0	11	0	10	0	10
450			min	-.037	19	-1.525	11	0	10	0	23	0	10	0	10
451	M55	1	max	.256	19	3.276	11	0	10	.002	11	0	10	0	10
452			min	-.355	21	.503	20	0	10	-.001	20	0	10	0	10
453		2	max	.256	19	1.638	11	0	10	.002	11	0	10	-1.518	20
454			min	-.355	21	.252	20	0	10	-.001	20	0	10	-9.878	11
455		3	max	.256	19	0	10	0	10	.002	11	0	10	-2.024	20
456			min	-.355	21	0	10	0	10	-.001	20	0	10	-13.171	11
457		4	max	.256	19	-.252	20	0	10	.002	11	0	10	-1.518	20
458			min	-.355	21	-1.638	11	0	10	-.001	20	0	10	-9.878	11
459		5	max	.256	19	-.503	20	0	10	.002	11	0	10	0	10
460			min	-.355	21	-3.276	11	0	10	-.001	20	0	10	0	10
461	M56	1	max	.086	21	2.657	11	0	10	.002	11	0	10	0	10
462			min	-.067	19	.43	21	0	10	0	20	0	10	0	10
463		2	max	.086	21	1.329	11	0	10	.002	11	0	10	-1.297	21
464			min	-.067	19	.215	21	0	10	0	20	0	10	-8.013	11
465		3	max	.086	21	0	10	0	10	.002	11	0	10	-1.73	21
466			min	-.067	19	0	10	0	10	0	20	0	10	-10.684	11
467		4	max	.086	21	-.215	20	0	10	.002	11	0	10	-1.297	21
468			min	-.067	19	-1.329	11	0	10	0	20	0	10	-8.013	11
469		5	max	.086	21	-.43	20	0	10	.002	11	0	10	0	10
470			min	-.067	19	-2.657	11	0	10	0	20	0	10	0	10
471	M57	1	max	.018	19	3.276	11	0	10	0	11	0	10	0	10
472			min	-.02	21	.503	20	0	10	0	22	0	10	0	10
473		2	max	.018	19	1.638	11	0	10	0	11	0	10	-1.518	20
474			min	-.02	21	.252	20	0	10	0	22	0	10	-9.878	11
475		3	max	.018	19	0	10	0	10	0	11	0	10	-2.024	20
476			min	-.02	21	0	10	0	10	0	22	0	10	-13.171	11
477		4	max	.018	19	-.252	20	0	10	0	11	0	10	-1.518	20
478			min	-.02	21	-1.638	11	0	10	0	22	0	10	-9.878	11
479		5	max	.018	19	-.503	20	0	10	0	11	0	10	0	10
480			min	-.02	21	-3.276	11	0	10	0	22	0	10	0	10
481	M58	1	max	.006	21	2.657	11	0	10	.001	20	0	10	0	10
482			min	-.015	19	.43	20	0	10	0	11	0	10	0	10
483		2	max	.006	21	1.329	11	0	10	.001	20	0	10	-1.297	20
484			min	-.015	19	.215	20	0	10	0	11	0	10	-8.013	11
485		3	max	.006	21	0	10	0	10	.001	20	0	10	-1.73	20
486			min	-.015	19	0	10	0	10	0	11	0	10	-10.684	11
487		4	max	.006	21	-.215	20	0	10	.001	20	0	10	-1.297	20
488			min	-.015	19	-1.329	11	0	10	0	11	0	10	-8.013	11
489		5	max	.006	21	-.43	20	0	10	.001	20	0	10	0	10
490			min	-.015	19	-2.657	11	0	10	0	11	0	10	0	10
491	M59	1	max	.017	19	3.276	11	0	10	.001	20	0	10	0	10
492			min	-.004	21	.503	20	0	10	-.002	11	0	10	0	10
493		2	max	.017	19	1.638	11	0	10	.001	20	0	10	-1.518	20
494			min	-.004	21	.252	20	0	10	-.002	11	0	10	-9.878	11
495		3	max	.017	19	0	10	0	10	.001	20	0	10	-2.024	20
496			min	-.004	21	0	10	0	10	-.002	11	0	10	-13.171	11
497		4	max	.017	19	-.252	20	0	10	.001	20	0	10	-1.518	20
498			min	-.004	21	-1.638	11	0	10	-.002	11	0	10	-9.878	11
499		5	max	.017	19	-.503	20	0	10	.001	20	0	10	0	10
500			min	-.004	21	-3.276	11	0	10	-.002	11	0	10	0	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 Moment[k...	LC	z-z Moment[k-ft]	LC
501	M60	1	max	.01	19	3.276	11	0	10	0	11	0	10	0	10
502			min	0	21	.503	21	0	10	-.001	12	0	10	0	10
503		2	max	.01	19	1.638	11	0	10	0	11	0	10	-1.518	21
504			min	0	21	.252	21	0	10	-.001	12	0	10	-9.878	11
505		3	max	.01	19	0	10	0	10	0	11	0	10	-2.024	21
506			min	0	21	0	10	0	10	-.001	12	0	10	-13.171	11
507		4	max	.01	19	-.252	20	0	10	0	11	0	10	-1.518	21
508			min	0	21	-1.638	11	0	10	-.001	12	0	10	-9.878	11
509		5	max	.01	19	-.503	20	0	10	0	11	0	10	0	10
510			min	0	21	-3.276	11	0	10	-.001	12	0	10	0	10
511	M61	1	max	.002	20	3.276	11	0	10	0	22	0	10	0	10
512			min	-.006	19	.503	20	0	10	-.001	16	0	10	0	10
513		2	max	.002	20	1.638	11	0	10	0	22	0	10	-1.518	20
514			min	-.006	19	.252	20	0	10	-.001	16	0	10	-9.878	11
515		3	max	.002	20	0	10	0	10	0	22	0	10	-2.024	20
516			min	-.006	19	0	10	0	10	-.001	16	0	10	-13.171	11
517		4	max	.002	20	-.252	20	0	10	0	22	0	10	-1.518	20
518			min	-.006	19	-1.638	11	0	10	-.001	16	0	10	-9.878	11
519		5	max	.002	20	-.503	20	0	10	0	22	0	10	0	10
520			min	-.006	19	-3.276	11	0	10	-.001	16	0	10	0	10
521	M62	1	max	.013	18	3.276	11	0	10	0	22	0	10	0	10
522			min	-.014	20	.503	20	0	10	-.003	11	0	10	0	10
523		2	max	.013	18	1.638	11	0	10	0	22	0	10	-1.518	20
524			min	-.014	20	.252	20	0	10	-.003	11	0	10	-9.878	11
525		3	max	.013	18	0	10	0	10	0	22	0	10	-2.024	20
526			min	-.014	20	0	10	0	10	-.003	11	0	10	-13.171	11
527		4	max	.013	18	-.252	20	0	10	0	22	0	10	-1.518	20
528			min	-.014	20	-1.638	11	0	10	-.003	11	0	10	-9.878	11
529		5	max	.013	18	-.503	20	0	10	0	22	0	10	0	10
530			min	-.014	20	-3.276	11	0	10	-.003	11	0	10	0	10
531	M56A	1	max	10.322	18	2.377	11	-2.04	23	.007	22	15.985	17	.255	11
532			min	-2.397	20	.304	22	-10.707	17	-.061	16	.956	23	.064	28
533		2	max	8.599	18	2.352	11	.054	23	.007	22	3.663	17	.238	20
534			min	-3.689	20	-.579	20	-1.293	17	-.061	16	-1.017	23	-.414	18
535		3	max	8.54	18	2.352	11	.054	23	.007	22	.817	21	1.541	20
536			min	-3.734	20	-.579	20	-1.293	17	-.061	16	-.961	19	-5.668	11
537		4	max	1.26	10	.981	16	.256	19	0	10	.172	21	1.028	20
538			min	.81	21	-.483	22	-.076	21	0	10	-.576	19	-2.936	11
539		5	max	1.191	10	.981	16	.256	19	0	10	0	10	-.464	28
540			min	.766	21	-.483	22	-.076	21	0	10	0	10	-2.967	11
541	M57A	1	max	6.701	10	2.497	19	1.184	11	0	10	4.754	16	4.824	19
542			min	4.307	21	-1.072	21	-.763	20	0	10	-.638	22	-8.051	17
543		2	max	4.19	10	.41	23	.502	11	0	10	2.434	16	2.428	23
544			min	2.693	21	-1.546	17	-.467	20	0	10	-1.015	22	-5.509	17
545		3	max	4.109	10	.41	23	.502	11	0	10	1.848	11	1.505	23
546			min	2.641	21	-1.546	17	-.467	20	0	10	-.523	22	-2.032	17
547		4	max	1.598	10	.333	19	.631	18	0	10	.7	16	.792	19
548			min	1.027	21	-.214	21	.048	20	0	10	-.432	22	-.802	21
549		5	max	1.516	10	.333	19	.631	18	0	10	1.973	11	.079	23
550			min	.975	21	-.214	21	.048	20	0	10	.302	28	-.358	17
551	M58A	1	max	12.725	19	.479	23	.324	11	.11	16	4.049	16	.214	23
552			min	-4.882	21	-1.303	17	-1.302	30	-.03	22	-.246	22	-1.684	17

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
553		2	max	10.005	19	1.713	21	.073	22	.11	16	2.511	16	.893	23
554			min	-6.921	21	-1.041	19	-.654	16	-.03	22	-.882	22	-2.225	17
555		3	max	9.949	19	1.713	21	.073	22	.11	16	1.038	16	3.164	23
556			min	-6.964	21	-1.041	19	-.654	16	-.03	22	-.719	22	-6.022	17
557		4	max	2.022	10	.747	23	.175	22	0	10	.437	16	1.953	19
558			min	1.3	21	-1.499	17	-.194	16	0	10	-.394	22	-3.61	17
559		5	max	1.956	10	.747	23	.175	22	0	10	0	10	.274	19
560			min	1.257	21	-1.499	17	-.194	16	0	10	0	10	-.24	21
561	M59A	1	max	5.567	10	2.419	19	.433	22	0	10	14.38	16	13.598	19
562			min	3.564	22	-4.85	17	-9.863	11	0	10	-3.178	22	-21.391	21
563		2	max	3.478	10	1.449	23	.546	22	0	10	3.535	16	7.318	19
564			min	2.234	22	-2.908	17	-1.079	16	0	10	-2.063	22	-11.354	21
565		3	max	3.397	10	1.449	23	.546	22	0	10	1.107	16	4.058	19
566			min	2.182	22	-2.908	17	-1.079	16	0	10	-.834	22	-4.829	21
567		4	max	1.325	10	.482	23	.14	22	0	10	.319	16	1.66	19
568			min	.851	20	-.97	17	-.142	16	0	10	-.316	22	-1.867	21
569		5	max	1.243	10	.482	23	.14	22	0	10	0	10	.576	19
570			min	.799	20	-.97	17	-.142	16	0	10	0	10	-.054	22
571	M60A	1	max	3.727	10	-3.335	22	.832	19	0	10	.209	17	-2.942	20
572			min	2.383	20	-8.351	11	-.928	17	0	10	-.2	19	-11.242	18
573		2	max	2.356	10	.131	20	.539	19	0	10	.676	17	2.34	16
574			min	1.514	20	-1.279	18	-.441	17	0	10	-.791	19	-3.96	22
575		3	max	2.274	10	.131	20	.539	19	0	10	.421	19	2.318	16
576			min	1.462	20	-1.279	18	-.441	17	0	10	-.317	17	-1.377	22
577		4	max	.887	10	.571	16	.348	19	0	10	.109	23	1.307	16
578			min	.57	22	.106	22	-.071	17	0	10	-.106	17	-.382	22
579		5	max	.806	10	.571	16	.348	19	0	10	.892	19	.094	26
580			min	.517	22	.106	22	-.071	17	0	10	-.265	17	-.621	22
581	M61A	1	max	5.394	10	2.435	16	.164	21	0	10	.077	17	11.865	16
582			min	3.467	21	-4.847	18	-.283	19	0	10	-.037	23	-16.805	22
583		2	max	3.374	10	1.466	16	.082	23	0	10	.132	17	6.751	16
584			min	2.169	21	-2.914	18	-.084	17	0	10	-.211	23	-9.172	22
585		3	max	3.293	10	1.466	16	.082	23	0	10	-.004	22	3.452	16
586			min	2.117	21	-2.914	18	-.084	17	0	10	-.056	17	-2.62	22
587		4	max	1.273	10	.491	16	.024	17	0	10	.008	23	1.476	16
588			min	.818	21	-.973	18	-.004	23	0	10	-.055	17	-.832	22
589		5	max	1.191	10	.491	16	.024	17	0	10	0	10	1.487	18
590			min	.766	21	-.973	18	-.004	23	0	10	0	10	.205	30
591	M63	1	max	4.2	10	-3.119	22	.662	23	0	10	.192	17	-3.526	20
592			min	2.687	20	-6.936	16	-.911	17	0	10	-.184	23	-10.803	18
593		2	max	2.654	10	.221	11	.384	23	0	10	.658	17	2.635	16
594			min	1.704	20	-.91	14	-.509	17	0	10	-.696	23	-4.535	22
595		3	max	2.573	10	.221	11	.384	23	0	10	.167	23	2.756	16
596			min	1.652	20	-.91	14	-.509	17	0	10	-.487	17	-2.518	22
597		4	max	1.002	10	.892	16	.052	10	0	10	.049	23	1.614	16
598			min	.644	22	-.143	22	-.306	17	0	10	-.153	17	-1.057	22
599		5	max	.921	10	.892	16	.052	10	0	10	.127	10	-.198	23
600			min	.592	22	-.143	22	-.306	17	0	10	-.841	17	-.899	18
601	M64	1	max	5.58	10	4.392	19	-.199	22	0	10	14.437	11	20.65	23
602			min	3.564	22	-2.444	17	-10.621	11	0	10	-2.769	22	-13.112	17
603		2	max	3.48	10	2.896	19	.398	22	0	10	3.611	16	11.184	23
604			min	2.233	22	-1.461	17	-1.121	11	0	10	-2.47	22	-7.038	17

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
605		3	max	3.399	10	2.896	19	.398	22	0	10	1.523	20	4.669	23
606			min	2.181	22	-1.461	17	-1.121	11	0	10	-1.6	18	-3.751	17
607		4	max	1.324	10	.966	19	.393	18	0	10	.692	20	1.798	23
608			min	.849	20	-.487	17	-.307	20	0	10	-.883	18	-1.514	17
609		5	max	1.243	10	.966	19	.393	18	0	10	0	10	.116	10
610			min	.797	20	-.487	17	-.307	20	0	10	0	10	-.419	17
611	M65	1	max	.527	17	.653	10	.265	18	-.093	22	0	10	0	10
612			min	.095	30	.42	20	-.53	16	-.994	11	0	10	0	10
613		2	max	.527	17	.326	10	.133	18	-.093	22	.97	18	-1.535	20
614			min	.095	30	.21	20	-.265	16	-.994	11	-1.939	16	-2.387	10
615		3	max	.527	17	0	10	0	10	-.093	22	1.293	18	-2.046	20
616			min	.095	30	0	10	0	10	-.994	11	-2.586	16	-3.183	10
617		4	max	.527	17	-.21	20	.265	16	-.093	22	.97	18	-1.535	20
618			min	.095	30	-.326	10	-.133	18	-.994	11	-1.939	16	-2.387	10
619		5	max	.527	17	-.42	20	.53	16	-.093	22	0	10	0	10
620			min	.095	30	-.653	10	-.265	18	-.994	11	0	10	0	10
621	M67	1	max	.557	17	.538	10	.219	18	1.973	11	0	10	0	10
622			min	-.063	23	.346	20	-.437	20	.302	28	0	10	0	10
623		2	max	.557	17	.269	10	.109	18	1.973	11	.66	18	-1.044	20
624			min	-.063	23	.173	20	-.219	20	.302	28	-1.319	20	-1.624	10
625		3	max	.557	17	0	10	0	10	1.973	11	.879	18	-1.392	20
626			min	-.063	23	0	10	0	10	.302	28	-1.759	20	-2.165	10
627		4	max	.557	17	-.173	20	.219	16	1.973	11	.66	18	-1.044	20
628			min	-.063	23	-.269	10	-.109	22	.302	28	-1.319	20	-1.624	10
629		5	max	.557	17	-.346	20	.437	16	1.973	11	0	10	0	10
630			min	-.063	23	-.538	10	-.219	22	.302	28	0	10	0	10
631	M68	1	max	.666	16	.373	19	-.629	20	.079	23	0	10	0	10
632			min	.128	28	-.745	17	-.978	10	-.358	17	0	10	0	10
633		2	max	.666	16	.186	19	-.314	20	.079	23	-3.229	20	3.828	17
634			min	.128	28	-.373	17	-.489	10	-.358	17	-5.023	10	-1.914	19
635		3	max	.666	16	0	10	0	10	.079	23	-4.306	20	5.104	17
636			min	.128	28	0	10	0	10	-.358	17	-6.698	10	-2.552	19
637		4	max	.666	16	.373	17	.489	10	.079	23	-3.229	20	3.828	17
638			min	.128	28	-.186	19	.314	20	-.358	17	-5.023	10	-1.914	19
639		5	max	.666	16	.745	17	.978	10	.079	23	0	10	0	10
640			min	.128	28	-.373	19	.629	20	-.358	17	0	10	0	10
641	M69	1	max	.533	18	.373	19	-.629	20	.346	23	0	10	0	10
642			min	.142	28	-.745	17	-.978	10	-.596	17	0	10	0	10
643		2	max	.533	18	.186	19	-.314	20	.346	23	-3.229	20	3.828	17
644			min	.142	28	-.373	17	-.489	10	-.596	17	-5.023	10	-1.914	19
645		3	max	.533	18	0	10	0	10	.346	23	-4.306	20	5.104	17
646			min	.142	28	0	10	0	10	-.596	17	-6.698	10	-2.552	19
647		4	max	.533	18	.373	17	.489	10	.346	23	-3.229	20	3.828	17
648			min	.142	28	-.186	19	.314	20	-.596	17	-5.023	10	-1.914	19
649		5	max	.533	18	.745	17	.978	10	.346	23	0	10	0	10
650			min	.142	28	-.373	19	.629	20	-.596	17	0	10	0	10
651	M70	1	max	.658	18	.266	10	.108	19	.892	19	0	10	0	10
652			min	.179	28	.171	20	-.216	17	-.265	17	0	10	0	10
653		2	max	.658	18	.133	10	.054	19	.892	19	.162	19	-.256	20
654			min	.179	28	.086	20	-.108	17	-.265	17	-.323	17	-.398	10
655		3	max	.658	18	0	10	0	10	.892	19	.215	19	-.341	20
656			min	.179	28	0	10	0	10	-.265	17	-.431	17	-.53	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 Moment[k...	LC	z-z Moment[k-ft]	LC
657		4	max	.658	18	-.086	22	.108	17	.892	19	.162	19	-.256	20
658			min	.179	28	-.133	10	-.054	19	-.265	17	-.323	17	-.398	10
659		5	max	.658	18	-.171	22	.216	17	.892	19	0	10	0	10
660			min	.179	28	-.266	10	-.108	19	-.265	17	0	10	0	10
661	M71	1	max	.234	19	.538	10	.219	16	.094	26	0	10	0	10
662			min	-.061	10	.346	20	-.437	18	-.621	22	0	10	0	10
663		2	max	.234	19	.269	10	.109	16	.094	26	.66	16	-1.044	20
664			min	-.061	10	.173	20	-.219	18	-.621	22	-1.319	18	-1.624	10
665		3	max	.234	19	0	10	0	10	.094	26	.879	16	-1.392	20
666			min	-.061	10	0	10	0	10	-.621	22	-1.759	18	-2.165	10
667		4	max	.234	19	-.173	21	.219	18	.094	26	.66	16	-1.044	20
668			min	-.061	10	-.269	10	-.109	16	-.621	22	-1.319	18	-1.624	10
669		5	max	.234	19	-.346	21	.437	18	.094	26	0	10	0	10
670			min	-.061	10	-.538	10	-.219	16	-.621	22	0	10	0	10
671	M72	1	max	.226	19	.653	10	.265	16	.899	18	0	10	0	10
672			min	-.054	10	.42	23	-.53	18	.198	23	0	10	0	10
673		2	max	.226	19	.326	10	.133	16	.899	18	.97	16	-1.535	23
674			min	-.054	10	.21	23	-.265	18	.198	23	-1.939	18	-2.387	10
675		3	max	.226	19	0	10	0	10	.899	18	1.293	16	-2.046	23
676			min	-.054	10	0	10	0	10	.198	23	-2.586	18	-3.183	10
677		4	max	.226	19	-.21	20	.265	18	.899	18	.97	16	-1.535	20
678			min	-.054	10	-.326	10	-.133	20	.198	23	-1.939	18	-2.387	10
679		5	max	.226	19	-.42	20	.53	18	.899	18	0	10	0	10
680			min	-.054	10	-.653	10	-.265	20	.198	23	0	10	0	10
681	M74	1	max	.62	16	.266	10	.108	17	.127	10	0	10	0	10
682			min	.18	21	.171	22	-.216	19	-.841	17	0	10	0	10
683		2	max	.62	16	.133	10	.054	17	.127	10	.162	17	-.256	22
684			min	.18	21	.086	22	-.108	19	-.841	17	-.323	19	-.398	10
685		3	max	.62	16	0	10	0	10	.127	10	.215	17	-.341	22
686			min	.18	21	0	10	0	10	-.841	17	-.431	19	-.53	10
687		4	max	.62	16	-.086	20	.108	19	.127	10	.162	17	-.256	22
688			min	.18	21	-.133	10	-.054	17	-.841	17	-.323	19	-.398	10
689		5	max	.62	16	-.171	20	.216	19	.127	10	0	10	0	10
690			min	.18	21	-.266	10	-.108	17	-.841	17	0	10	0	10
691	M75	1	max	1.21	16	.75	10	.305	17	.057	23	0	10	0	10
692			min	-.289	22	.482	20	-.609	19	-.162	11	0	10	0	10
693		2	max	1.21	16	.375	10	.152	17	.057	23	1.279	17	-2.024	20
694			min	-.289	22	.241	20	-.305	19	-.162	11	-2.558	19	-3.149	10
695		3	max	1.21	16	0	10	0	10	.057	23	1.705	17	-2.699	20
696			min	-.289	22	0	10	0	10	-.162	11	-3.411	19	-4.198	10
697		4	max	1.21	16	-.241	20	.305	19	.057	23	1.279	17	-2.024	20
698			min	-.289	22	-.375	10	-.152	17	-.162	11	-2.558	19	-3.149	10
699		5	max	1.21	16	-.482	20	.609	19	.057	23	0	10	0	10
700			min	-.289	22	-.75	10	-.305	17	-.162	11	0	10	0	10
701	M76	1	max	-.679	21	1.062	10	.53	18	-.186	21	0	10	0	10
702			min	-1.6	11	.683	20	-1.061	16	-1.397	11	0	10	0	10
703		2	max	-.679	21	.531	10	.265	18	-.186	21	1.939	18	-2.497	20
704			min	-1.6	11	.341	20	-.53	16	-1.397	11	-3.879	16	-3.884	10
705		3	max	-.679	21	0	10	0	10	-.186	21	2.586	18	-3.329	20
706			min	-1.6	11	0	10	0	10	-1.397	11	-5.171	16	-5.179	10
707		4	max	-.679	21	-.341	20	.53	16	-.186	21	1.939	18	-2.497	20
708			min	-1.6	11	-.531	10	-.265	18	-1.397	11	-3.879	16	-3.884	10

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 26, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
709		5	max	-.679	21	-.683	20	1.061	16	-.186	21	0	10	0	10
710			min	-1.6	11	-1.062	10	-.53	18	-1.397	11	0	10	0	10
711	M78	1	max	.307	21	.876	10	.437	18	2.536	11	0	10	0	10
712			min	-.845	16	.563	20	-.875	16	.381	28	0	10	0	10
713		2	max	.307	21	.438	10	.219	18	2.536	11	1.319	18	-1.699	20
714			min	-.845	16	.282	20	-.437	16	.381	28	-2.638	16	-2.642	10
715		3	max	.307	21	0	10	0	10	2.536	11	1.759	18	-2.265	20
716			min	-.845	16	0	10	0	10	.381	28	-3.518	16	-3.523	10
717		4	max	.307	21	-.282	20	.437	16	2.536	11	1.319	18	-1.699	20
718			min	-.845	16	-.438	10	-.219	18	.381	28	-2.638	16	-2.642	10
719		5	max	.307	21	-.563	20	.875	16	2.536	11	0	10	0	10
720			min	-.845	16	-.876	10	-.437	18	.381	28	0	10	0	10
721	M79	1	max	.37	16	.745	19	-.999	20	.039	20	0	10	0	10
722			min	-.679	18	-1.49	17	-1.553	10	-.129	17	0	10	0	10
723		2	max	.37	16	.373	19	-.499	20	.039	20	-5.129	20	7.655	17
724			min	-.679	18	-.745	17	-.777	10	-.129	17	-7.979	10	-3.828	19
725		3	max	.37	16	0	10	0	10	.039	20	-6.839	20	10.207	17
726			min	-.679	18	0	10	0	10	-.129	17	-10.638	10	-5.104	19
727		4	max	.37	16	.745	17	.777	10	.039	20	-5.129	20	7.655	17
728			min	-.679	18	-.373	19	.499	20	-.129	17	-7.979	10	-3.828	19
729		5	max	.37	16	1.49	17	1.553	10	.039	20	0	10	0	10
730			min	-.679	18	-.745	19	.999	20	-.129	17	0	10	0	10
731	M80	1	max	-.067	20	.745	19	-.999	20	.391	23	0	10	0	10
732			min	-.95	10	-1.49	17	-1.553	10	-.762	17	0	10	0	10
733		2	max	-.067	20	.373	19	-.499	20	.391	23	-5.129	20	7.655	17
734			min	-.95	10	-.745	17	-.777	10	-.762	17	-7.979	10	-3.828	19
735		3	max	-.067	20	0	10	0	10	.391	23	-6.839	20	10.207	17
736			min	-.95	10	0	10	0	10	-.762	17	-10.638	10	-5.104	19
737		4	max	-.067	20	.745	17	.777	10	.391	23	-5.129	20	7.655	17
738			min	-.95	10	-.373	19	.499	20	-.762	17	-7.979	10	-3.828	19
739		5	max	-.067	20	1.49	17	1.553	10	.391	23	0	10	0	10
740			min	-.95	10	-.745	19	.999	20	-.762	17	0	10	0	10
741	M81	1	max	-.378	22	.434	10	.216	19	1.189	19	0	10	0	10
742			min	-1.172	10	.279	20	-.433	17	-.556	17	0	10	0	10
743		2	max	-.378	22	.217	10	.108	19	1.189	19	.323	19	-.416	20
744			min	-1.172	10	.139	20	-.216	17	-.556	17	-.646	17	-.647	10
745		3	max	-.378	22	0	10	0	10	1.189	19	.431	19	-.555	20
746			min	-1.172	10	0	10	0	10	-.556	17	-.861	17	-.863	10
747		4	max	-.378	22	-.139	22	.216	17	1.189	19	.323	19	-.416	20
748			min	-1.172	10	-.217	10	-.108	19	-.556	17	-.646	17	-.647	10
749		5	max	-.378	22	-.279	22	.433	17	1.189	19	0	10	0	10
750			min	-1.172	10	-.434	10	-.216	19	-.556	17	0	10	0	10
751	M82	1	max	.069	17	.876	10	.437	16	.123	26	0	10	0	10
752			min	-.031	23	.563	20	-.875	18	-.607	22	0	10	0	10
753		2	max	.069	17	.438	10	.219	16	.123	26	1.319	16	-1.699	20
754			min	-.031	23	.282	20	-.437	18	-.607	22	-2.638	18	-2.642	10
755		3	max	.069	17	0	10	0	10	.123	26	1.759	16	-2.265	20
756			min	-.031	23	0	10	0	10	-.607	22	-3.518	18	-3.523	10
757		4	max	.069	17	-.282	20	.437	18	.123	26	1.319	16	-1.699	20
758			min	-.031	23	-.438	10	-.219	16	-.607	22	-2.638	18	-2.642	10
759		5	max	.069	17	-.563	20	.875	18	.123	26	0	10	0	10
760			min	-.031	23	-.876	10	-.437	16	-.607	22	0	10	0	10

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RSN: 966198

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
761	M83	1	max	.049	19	1.062	10	.53	16	.935	18	0	10	0	10
762			min	-.024	21	.683	20	-1.061	18	.2	23	0	10	0	10
763		2	max	.049	19	.531	10	.265	16	.935	18	1.939	16	-2.497	20
764			min	-.024	21	.341	20	-.53	18	.2	23	-3.879	18	-3.884	10
765		3	max	.049	19	0	10	0	10	.935	18	2.586	16	-3.329	20
766			min	-.024	21	0	10	0	10	.2	23	-5.171	18	-5.179	10
767		4	max	.049	19	-.341	20	.53	18	.935	18	1.939	16	-2.497	20
768			min	-.024	21	-.531	10	-.265	16	.2	23	-3.879	18	-3.884	10
769		5	max	.049	19	-.683	20	1.061	18	.935	18	0	10	0	10
770			min	-.024	21	-1.062	10	-.53	16	.2	23	0	10	0	10
771	M85	1	max	.327	18	.434	10	.216	17	.303	23	0	10	0	10
772			min	-1.508	20	.279	22	-.433	19	-1.123	17	0	10	0	10
773		2	max	.327	18	.217	10	.108	17	.303	23	.323	17	-.416	22
774			min	-1.508	20	.139	22	-.216	19	-1.123	17	-.646	19	-.647	10
775		3	max	.327	18	0	10	0	10	.303	23	.431	17	-.555	22
776			min	-1.508	20	0	10	0	10	-1.123	17	-.861	19	-.863	10
777		4	max	.327	18	-.139	20	.216	19	.303	23	.323	17	-.416	22
778			min	-1.508	20	-.217	10	-.108	17	-1.123	17	-.646	19	-.647	10
779		5	max	.327	18	-.279	20	.433	19	.303	23	0	10	0	10
780			min	-1.508	20	-.434	10	-.216	17	-1.123	17	0	10	0	10
781	M86	1	max	1.146	11	.745	17	-.999	20	.581	19	0	10	0	10
782			min	-1.236	20	-1.49	19	-1.553	10	-.476	21	0	10	0	10
783		2	max	1.146	11	.373	17	-.499	20	.581	19	-5.129	20	7.655	19
784			min	-1.236	20	-.745	19	-.777	10	-.476	21	-7.979	10	-3.828	17
785		3	max	1.146	11	0	10	0	10	.581	19	-6.839	20	10.207	19
786			min	-1.236	20	0	10	0	10	-.476	21	-10.638	10	-5.104	17
787		4	max	1.146	11	.745	19	.777	10	.581	19	-5.129	20	7.655	19
788			min	-1.236	20	-.373	17	.499	20	-.476	21	-7.979	10	-3.828	17
789		5	max	1.146	11	1.49	19	1.553	10	.581	19	0	10	0	10
790			min	-1.236	20	-.745	17	.999	20	-.476	21	0	10	0	10
791	M87	1	max	1.098	11	1.22	10	.609	17	.023	21	0	10	0	10
792			min	-1.152	20	.784	20	-1.218	19	-.162	11	0	10	0	10
793		2	max	1.098	11	.61	10	.305	17	.023	21	2.558	17	-3.294	20
794			min	-1.152	20	.392	20	-.609	19	-.162	11	-5.116	19	-5.124	10
795		3	max	1.098	11	0	10	0	10	.023	21	3.411	17	-4.392	20
796			min	-1.152	20	0	10	0	10	-.162	11	-6.821	19	-6.832	10
797		4	max	1.098	11	-.392	20	.609	19	.023	21	2.558	17	-3.294	20
798			min	-1.152	20	-.61	10	-.305	17	-.162	11	-5.116	19	-5.124	10
799		5	max	1.098	11	-.784	20	1.218	19	.023	21	0	10	0	10
800			min	-1.152	20	-1.22	10	-.609	17	-.162	11	0	10	0	10
801	M88	1	max	-1.354	23	1.062	10	.53	18	-.101	20	0	10	0	10
802			min	-6.856	17	.683	20	-1.061	16	-1.672	11	0	10	0	10
803		2	max	-1.354	23	.531	10	.265	18	-.101	20	1.939	18	-2.497	20
804			min	-6.856	17	.341	20	-.53	16	-1.672	11	-3.879	16	-3.884	10
805		3	max	-1.354	23	0	10	0	10	-.101	20	2.586	18	-3.329	20
806			min	-6.856	17	0	10	0	10	-1.672	11	-5.171	16	-5.179	10
807		4	max	-1.354	23	-.341	20	.53	16	-.101	20	1.939	18	-2.497	20
808			min	-6.856	17	-.531	10	-.265	18	-1.672	11	-3.879	16	-3.884	10
809		5	max	-1.354	23	-.683	20	1.061	16	-.101	20	0	10	0	10
810			min	-6.856	17	-1.062	10	-.53	18	-1.672	11	0	10	0	10
811	M90	1	max	2.643	11	.876	10	.437	18	3.012	11	0	10	0	10
812			min	-.137	20	.563	20	-.875	16	.472	28	0	10	0	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 Moment[k...	LC	z-z Moment[k-ft]	LC
813		2	max	2.643	11	.438	10	.219	18	3.012	11	1.319	18	-1.699	20
814			min	-.137	20	.282	20	-.437	16	.472	28	-2.638	16	-2.642	10
815		3	max	2.643	11	0	10	0	10	3.012	11	1.759	18	-2.265	20
816			min	-.137	20	0	10	0	10	.472	28	-3.518	16	-3.523	10
817		4	max	2.643	11	-.282	20	.437	16	3.012	11	1.319	18	-1.699	20
818			min	-.137	20	-.438	10	-.219	18	.472	28	-2.638	16	-2.642	10
819		5	max	2.643	11	-.563	20	.875	16	3.012	11	0	10	0	10
820			min	-.137	20	-.876	10	-.437	18	.472	28	0	10	0	10
821	M91	1	max	.802	16	.745	19	-.999	20	-.014	23	0	10	0	10
822			min	-.399	22	-1.49	17	-1.553	10	-.172	11	0	10	0	10
823		2	max	.802	16	.373	19	-.499	20	-.014	23	-5.129	20	7.655	17
824			min	-.399	22	-.745	17	-.777	10	-.172	11	-7.979	10	-3.828	19
825		3	max	.802	16	0	10	0	10	-.014	23	-6.839	20	10.207	17
826			min	-.399	22	0	10	0	10	-.172	11	-10.638	10	-5.104	19
827		4	max	.802	16	.745	17	.777	10	-.014	23	-5.129	20	7.655	17
828			min	-.399	22	-.373	19	.499	20	-.172	11	-7.979	10	-3.828	19
829		5	max	.802	16	1.49	17	1.553	10	-.014	23	0	10	0	10
830			min	-.399	22	-.745	19	.999	20	-.172	11	0	10	0	10
831	M92	1	max	1.269	11	.745	19	-.999	20	.09	23	0	10	0	10
832			min	-1.2	22	-1.49	17	-1.553	10	-.405	17	0	10	0	10
833		2	max	1.269	11	.373	19	-.499	20	.09	23	-5.129	20	7.655	17
834			min	-1.2	22	-.745	17	-.777	10	-.405	17	-7.979	10	-3.828	19
835		3	max	1.269	11	0	10	0	10	.09	23	-6.839	20	10.207	17
836			min	-1.2	22	0	10	0	10	-.405	17	-10.638	10	-5.104	19
837		4	max	1.269	11	.745	17	.777	10	.09	23	-5.129	20	7.655	17
838			min	-1.2	22	-.373	19	.499	20	-.405	17	-7.979	10	-3.828	19
839		5	max	1.269	11	1.49	17	1.553	10	.09	23	0	10	0	10
840			min	-1.2	22	-.745	19	.999	20	-.405	17	0	10	0	10
841	M93	1	max	-1.313	22	.434	10	.216	19	2.097	19	0	10	0	10
842			min	-7.789	11	.279	20	-.433	17	-1.947	17	0	10	0	10
843		2	max	-1.313	22	.217	10	.108	19	2.097	19	.323	19	-.416	20
844			min	-7.789	11	.139	20	-.216	17	-1.947	17	-.646	17	-.647	10
845		3	max	-1.313	22	0	10	0	10	2.097	19	.431	19	-.555	20
846			min	-7.789	11	0	10	0	10	-1.947	17	-.861	17	-.863	10
847		4	max	-1.313	22	-.139	22	.216	17	2.097	19	.323	19	-.416	20
848			min	-7.789	11	-.217	10	-.108	19	-1.947	17	-.646	17	-.647	10
849		5	max	-1.313	22	-.279	22	.433	17	2.097	19	0	10	0	10
850			min	-7.789	11	-.434	10	-.216	19	-1.947	17	0	10	0	10
851	M94	1	max	.088	19	.876	10	.437	16	.1	11	0	10	0	10
852			min	-.064	17	.563	20	-.875	18	-.296	22	0	10	0	10
853		2	max	.088	19	.438	10	.219	16	.1	11	1.319	16	-1.699	20
854			min	-.064	17	.282	20	-.437	18	-.296	22	-2.638	18	-2.642	10
855		3	max	.088	19	0	10	0	10	.1	11	1.759	16	-2.265	20
856			min	-.064	17	0	10	0	10	-.296	22	-3.518	18	-3.523	10
857		4	max	.088	19	-.282	20	.437	18	.1	11	1.319	16	-1.699	20
858			min	-.064	17	-.438	10	-.219	16	-.296	22	-2.638	18	-2.642	10
859		5	max	.088	19	-.563	20	.875	18	.1	11	0	10	0	10
860			min	-.064	17	-.876	10	-.437	16	-.296	22	0	10	0	10
861	M95	1	max	.194	17	1.062	10	.53	20	.729	18	0	10	0	10
862			min	-.284	19	.682	23	-1.061	18	.302	23	0	10	0	10
863		2	max	.194	17	.531	10	.265	20	.729	18	1.938	20	-2.494	23
864			min	-.284	19	.341	23	-.531	18	.302	23	-3.879	18	-3.884	10

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
865		3	max	.194	17	0	17	0	10	.729	18	2.584	20	-3.323	23
866			min	-.284	19	0	19	0	18	.302	23	-5.173	18	-5.178	10
867		4	max	.194	17	-.341	23	.531	18	.729	18	1.938	20	-2.492	23
868			min	-.284	19	-.531	10	-.265	20	.302	23	-3.88	18	-3.884	10
869		5	max	.194	17	-.682	23	1.061	18	.729	18	0	10	0	10
870			min	-.284	19	-1.062	10	-.53	20	.302	23	0	10	0	10
871	M97	1	max	-1.165	22	.434	10	.216	17	1.654	23	0	10	0	10
872			min	-7.42	16	.279	22	0	10	-2.013	17	0	10	0	10
873		2	max	-1.165	22	.217	10	.108	17	1.654	23	.323	17	-.416	22
874			min	-7.42	16	.139	22	0	10	-2.013	17	0	10	-.647	10
875		3	max	-1.165	22	0	10	0	10	1.654	23	.431	17	-.555	22
876			min	-7.42	16	0	10	0	10	-2.013	17	0	10	-.863	10
877		4	max	-1.165	22	-.139	20	0	10	1.654	23	.323	17	-.416	22
878			min	-7.42	16	-.217	10	-.108	17	-2.013	17	0	10	-.647	10
879		5	max	-1.165	22	-.279	20	0	10	1.654	23	0	10	0	10
880			min	-7.42	16	-.434	10	-.216	17	-2.013	17	0	10	0	10
881	M98	1	max	2.467	11	.745	17	-.999	20	.209	19	0	10	0	10
882			min	-.842	23	-1.49	19	-1.553	10	-.219	21	0	10	0	10
883		2	max	2.467	11	.373	17	-.499	20	.209	19	-5.129	20	7.655	19
884			min	-.842	23	-.745	19	-.777	10	-.219	21	-7.979	10	-3.828	17
885		3	max	2.467	11	0	10	0	10	.209	19	-6.839	20	10.207	19
886			min	-.842	23	0	10	0	10	-.219	21	-10.638	10	-5.104	17
887		4	max	2.467	11	.745	19	.777	10	.209	19	-5.129	20	7.655	19
888			min	-.842	23	-.373	17	.499	20	-.219	21	-7.979	10	-3.828	17
889		5	max	2.467	11	1.49	19	1.553	10	.209	19	0	10	0	10
890			min	-.842	23	-.745	17	.999	20	-.219	21	0	10	0	10
891	M99	1	max	2.919	11	1.22	10	.609	17	.102	21	0	10	0	10
892			min	-2.784	20	.784	20	-1.218	19	-.289	19	0	10	0	10
893		2	max	2.919	11	.61	10	.305	17	.102	21	2.558	17	-3.294	20
894			min	-2.784	20	.392	20	-.609	19	-.289	19	-5.116	19	-5.124	10
895		3	max	2.919	11	0	10	0	10	.102	21	3.411	17	-4.392	20
896			min	-2.784	20	0	10	0	10	-.289	19	-6.821	19	-6.832	10
897		4	max	2.919	11	-.392	20	.609	19	.102	21	2.558	17	-3.294	20
898			min	-2.784	20	-.61	10	-.305	17	-.289	19	-5.116	19	-5.124	10
899		5	max	2.919	11	-.784	20	1.218	19	.102	21	0	10	0	10
900			min	-2.784	20	-1.22	10	-.609	17	-.289	19	0	10	0	10
901	M100	1	max	.871	16	.373	17	-.629	20	.421	19	0	10	0	10
902			min	.045	22	-.745	19	-.978	10	-.423	21	0	10	0	10
903		2	max	.871	16	.186	17	-.314	20	.421	19	-3.229	20	3.828	19
904			min	.045	22	-.373	19	-.489	10	-.423	21	-5.023	10	-1.914	17
905		3	max	.871	16	0	10	0	10	.421	19	-4.306	20	5.104	19
906			min	.045	22	0	10	0	10	-.423	21	-6.698	10	-2.552	17
907		4	max	.871	16	.373	19	.489	10	.421	19	-3.229	20	3.828	19
908			min	.045	22	-.186	17	.314	20	-.423	21	-5.023	10	-1.914	17
909		5	max	.871	16	.745	19	.978	10	.421	19	0	10	0	10
910			min	.045	22	-.373	17	.629	20	-.423	21	0	10	0	10
911	M97A	1	max	6.826	20	.021	10	0	10	.071	16	0	10	0	10
912			min	-6.595	18	.014	20	0	10	-.008	22	0	10	0	10
913		2	max	6.815	20	.011	10	0	10	.071	16	0	10	-.015	20
914			min	-6.61	18	.007	20	0	10	-.008	22	0	10	-.023	10
915		3	max	6.804	20	0	10	0	10	.071	16	0	10	-.02	20
916			min	-6.625	18	0	10	0	10	-.008	22	0	10	-.031	10

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
917		4	max	6.792	20	-.007	28	0	10	.071	16	0	10	-.015	20
918			min	-6.64	18	-.011	10	0	10	-.008	22	0	10	-.023	10
919		5	max	6.781	20	-.014	28	0	10	.071	16	0	10	0	10
920			min	-6.655	18	-.021	10	0	10	-.008	22	0	10	0	10
921	M98A	1	max	5.367	17	.677	19	3.793	11	.035	18	9.896	20	.019	19
922			min	-1.851	23	-.285	21	-4.092	20	-.038	20	-8.054	18	-.008	21
923		2	max	4.261	17	.342	17	.981	18	.035	18	4.171	20	.309	19
924			min	-2.678	23	-.557	23	-1.307	20	-.038	20	-3.251	18	-.233	21
925		3	max	4.202	17	.342	17	.981	18	.035	18	1.37	16	1.549	23
926			min	-2.722	23	-.557	23	-1.307	20	-.038	20	-1.175	22	-.993	17
927		4	max	.987	10	.748	19	.214	22	0	10	.5	16	.643	19
928			min	.633	22	-.377	17	-.222	16	0	10	-.482	22	-.499	21
929		5	max	.918	10	.748	19	.214	22	0	10	0	10	.363	17
930			min	.588	22	-.377	17	-.222	16	0	10	0	10	-1.057	23
931	M99A	1	max	1.424	16	.167	10	.068	21	1.114	23	0	10	0	10
932			min	-.503	22	.108	20	-.136	19	-.457	17	0	10	0	10
933		2	max	1.424	16	.084	10	.034	21	1.114	23	.064	21	-.101	20
934			min	-.503	22	.054	20	-.068	19	-.457	17	-.127	19	-.157	10
935		3	max	1.424	16	0	10	0	10	1.114	23	.085	21	-.135	20
936			min	-.503	22	0	10	0	10	-.457	17	-.17	19	-.209	10
937		4	max	1.424	16	-.054	23	.068	23	1.114	23	.064	21	-.101	20
938			min	-.503	22	-.084	10	-.034	17	-.457	17	-.127	19	-.157	10
939		5	max	1.424	16	-.108	23	.136	23	1.114	23	0	10	0	10
940			min	-.503	22	-.167	10	-.068	17	-.457	17	0	10	0	10
941	M100A	1	max	.244	17	3.214	19	.011	19	.013	18	0	10	0	10
942			min	-.217	23	-1.163	21	-.006	17	-.014	20	0	10	0	10
943		2	max	.244	17	2.928	19	.011	19	.013	18	.021	19	2.419	21
944			min	-.217	23	-1.257	21	-.006	17	-.014	20	-.012	17	-6.142	19
945		3	max	2.308	19	.819	17	.005	20	.009	20	.026	19	2.865	21
946			min	-1.107	21	-1.59	23	-.006	19	-.008	18	-.018	20	-7.485	19
947		4	max	2.308	19	.716	21	.005	20	.009	20	.013	19	1.339	21
948			min	-1.107	21	-1.871	19	-.006	19	-.008	18	-.009	20	-4.029	19
949		5	max	2.308	19	.622	21	.005	20	.009	20	0	10	0	10
950			min	-1.107	21	-2.158	19	-.006	19	-.008	18	0	10	0	10
951	M100B	1	max	4.928	23	.021	10	0	10	.045	20	0	10	0	10
952			min	-2.559	17	.014	20	0	10	-.041	18	0	10	0	10
953		2	max	4.916	23	.011	10	0	10	.045	20	0	10	-.015	20
954			min	-2.574	17	.007	20	0	10	-.041	18	0	10	-.023	10
955		3	max	4.905	23	0	10	0	10	.045	20	0	10	-.02	20
956			min	-2.589	17	0	10	0	10	-.041	18	0	10	-.031	10
957		4	max	4.894	23	-.007	30	0	10	.045	20	0	10	-.015	20
958			min	-2.605	17	-.011	10	0	10	-.041	18	0	10	-.023	10
959		5	max	4.882	23	-.014	30	0	10	.045	20	0	10	0	10
960			min	-2.62	17	-.021	10	0	10	-.041	18	0	10	0	10
961	M101	1	max	12.053	21	.021	10	0	10	.035	22	0	10	0	10
962			min	-6.336	19	.014	21	0	10	-.129	16	0	10	0	10
963		2	max	12.042	21	.011	10	0	10	.035	22	0	10	-.015	21
964			min	-6.352	19	.007	21	0	10	-.129	16	0	10	-.023	10
965		3	max	12.031	21	0	10	0	10	.035	22	0	10	-.02	21
966			min	-6.367	19	0	10	0	10	-.129	16	0	10	-.031	10
967		4	max	12.019	21	-.007	29	0	10	.035	22	0	10	-.015	21
968			min	-6.382	19	-.011	10	0	10	-.129	16	0	10	-.023	10

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
969		5	max	12.008	21	-.014	29	0	10	.035	22	0	10	0	10
970			min	-6.397	19	-.021	10	0	10	-.129	16	0	10	0	10
971	M102	1	max	11.211	19	.021	10	0	10	.176	16	0	10	0	10
972			min	-5.571	21	.014	21	0	10	.072	22	0	10	0	10
973		2	max	11.196	19	.011	10	0	10	.176	16	0	10	-.015	21
974			min	-5.583	21	.007	21	0	10	.072	22	0	10	-.023	10
975		3	max	11.181	19	0	10	0	10	.176	16	0	10	-.02	21
976			min	-5.594	21	0	10	0	10	.072	22	0	10	-.031	10
977		4	max	11.165	19	-.007	28	0	10	.176	16	0	10	-.015	21
978			min	-5.605	21	-.011	10	0	10	.072	22	0	10	-.023	10
979		5	max	11.15	19	-.014	28	0	10	.176	16	0	10	0	10
980			min	-5.617	21	-.021	10	0	10	.072	22	0	10	0	10

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M1	W21x44	.460	0	11	.063	8.62	y	11	112.37	585	38.215	185.375	2.832	H1-1b
2	M2	W21x57	.488	0	11	.068	0	y	11	166.112	751.5	55.5	253.769	2.259	H1-1b
3	M3	W21x57	.661	0	11	.091	0	y	11	166.112	751.5	55.5	232.349	2.068	H1-1b
4	M4	W10x33	.230	0	18	.064	2.125	y	18	415.451	436.95	52.5	145.5	1.681	H1-1b
5	M5	W10x33	.175	0	16	.042	2.125	y	21	415.451	436.95	52.5	145.5	1.413	H1-1b
6	M6	W10x33	.325	0	17	.055	2.125	y	18	415.451	436.95	52.5	145.5	1.787	H1-1b
7	M7	W10x33	.264	0	17	.136	2.125	y	19	415.451	436.95	52.5	145.5	1.657	H1-1b
8	M8	W10x33	.368	4.25	11	.103	2.125	y	16	415.451	436.95	52.5	145.5	1.547	H1-1b
9	M9	W10x33	.315	4.25	11	.091	2.125	y	19	415.451	436.95	52.5	145.5	1.347	H1-1b
10	M12	W18x35	.201	9.698	11	.056	19.3...	y	11	365.682	463.5	30.225	249.375	1	H1-1b
11	M13	W21x44	.780	27.3...	11	.073	27.3...	y	11	452.467	585	38.215	97.199	1.471	H1-1b
12	M14	W14x30	.728	27.3...	11	.091	27.3...	y	11	301.065	398.25	33.713	78.958	1.798	H1-1b
13	M15	W21x44	.529	27.3...	11	.049	27.3...	y	11	452.467	585	38.215	82.41	1.247	H1-1b
14	M16	W18x35	.376	12.8...	11	.078	0	y	11	349.111	463.5	30.225	240.928	1	H1-1b
15	M17	W21x44	.296	7.99	11	.067	0	y	11	452.467	585	38.215	357.75	1	H1-1b
16	M20	W18x40	.773	11.4...	11	.056	0	y	11	103.684	531	37.5	118.302	1	H1-1b
17	M27	HSS8x6x5	.185	0	11	.078	0	y	11	274.28	314.226	58.305	71.07	3	H1-1b
18	M28	HSS8x6x4	.126	4.969	23	.043	0	z	20	223.628	255.438	45.18	58.305	1.463	H1-1b
19	M21	W21x44	.290	0	16	.064	3.333	y	11	361.962	585	38.215	357.75	2.008	H1-1b
20	M22	W21x57	.378	0	16	.080	3.333	y	11	505.402	751.5	55.5	483.75	1.708	H1-1b
21	M23	W21x57	.511	0	16	.087	3.167	y	11	505.402	751.5	55.5	483.75	1.699	H1-1b
22	M22A	W21x44	.158	0	17	.026	0	y	11	363.222	585	38.215	357.75	2.314	H1-1b
23	M23A	W21x44	.281	0	17	.065	0	y	11	363.222	585	38.215	357.75	1.795	H1-1b
24	M24	W14x30	.266	0	17	.067	0	y	11	285.902	398.25	33.713	177.375	2.282	H1-1b
25	M25	W14x22	.040	5.75	11	.012	11.5	y	11	83.039	292.05	16.462	73.38	1.136	H1-1b
26	M26	W12x26	.101	5	20	.058	8	y	16	247.572	344.25	30.637	139.5	1.362	H1-1b
27	M27A	W12x14	.190	5.75	11	.029	11.5	y	11	27.996	187.2	7.125	22.666	1.136	H1-1b
28	M28A	W12x19	.425	8.042	11	.034	16.0...	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
29	M29	W14x30	.219	12.8...	11	.063	0	y	11	301.065	398.25	33.713	177.375	1	H1-1b
30	M30	W14x30	.459	27.3...	16	.051	27.3...	y	11	301.065	398.25	33.713	123.351	2.809	H1-1b
31	M31	W14x30	.335	0	16	.054	3.73	y	17	285.902	398.25	33.713	177.375	1.984	H1-1b
32	M32	W10x12	.033	4	11	.014	0	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
33	M33	W10x12	.152	5.75	11	.018	11.5	y	11	25.861	159.3	6.458	18.095	1.136	H1-1b
34	M34	W10x12	.493	8.042	11	.024	16.0...	y	11	13.222	159.3	6.458	11.041	1.136	H1-1b
35	M35	W10x12	.078	4	11	.027	0	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b

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Envelope AISC 13th(360-05): LRFD Steel Code Checks (Continued)

	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z [	Cb	Eqn
36	M36	W12x19	.426	8.042	11	.031	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
37	M42	W10x12	.078	4	11	.024	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
38	M43	W10x12	.093	4	11	.027	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
39	M44	W10x12	.093	4	11	.028	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
40	M45	W10x12	.078	4	11	.024	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
41	M46	W10x12	.093	4	11	.028	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
42	M48	W10x12	.078	4	11	.023	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
43	M49	W10x12	.093	4	11	.027	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
44	M50	W10x12	.093	4	11	.027	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
45	M51	W10x12	.093	4	11	.027	8	y	11	53.438	159.3	6.458	32.723	1.136	H1-1b
46	M55	W12x19	.525	8.042	11	.039	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
47	M56	W12x19	.425	8.042	11	.032	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
48	M57	W12x19	.524	8.042	11	.039	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
49	M58	W12x19	.425	8.042	11	.031	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
50	M59	W12x19	.524	8.042	11	.039	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
51	M60	W12x19	.524	8.042	11	.038	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
52	M61	W12x19	.524	8.042	11	.039	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
53	M62	W12x19	.524	8.042	11	.040	16.0	y	11	22.804	250.65	11.175	25.126	1.136	H1-1b
54	M56A	HSS6x6x5	.358	0	17	.146	0	z	17	229.791	266.202	46.92	46.92	1.72	H1-1b
55	M57A	HSS8x6x5	.162	0	17	.024	0	y	19	274.28	314.226	58.305	71.07	2.134	H1-1b
56	M58A	HSS8x6x4	.131	4.969	21	.022	0	z	30	223.628	255.438	45.18	58.305	1.46	H1-1b
57	M59A	HSS8x6x5	.440	0	17	.133	0	z	11	274.28	314.226	58.305	71.07	2.381	H1-1b
58	M60A	HSS8x6x5	.164	0	18	.081	0	y	11	274.28	314.226	58.305	71.07	3	H1-1b
59	M61A	HSS8x6x5	.243	0	22	.047	0	y	18	274.28	314.226	58.305	71.07	2.546	H1-1b
60	M63	HSS8x6x5	.159	0	18	.067	0	y	16	274.28	314.226	58.305	71.07	2.581	H1-1b
61	M64	HSS8x6x5	.412	0	19	.143	0	z	11	274.28	314.226	58.305	71.07	2.364	H1-1b
62	M65	HSS6x6x4	.138	9.75	16	.040	0	y	11	110.471	216.936	38.64	38.64	1.136	H1-1b
63	M67	HSS6x6x4	.094	8.042	16	.069	0	y	11	137.075	216.936	38.64	38.64	1.136	H1-1b
64	M68	HSS8x6x4	.217	13.6	17	.022	27.3	z	17	76.087	255.438	45.18	58.305	1.136	H1-1b
65	M69	HSS8x6x4	.217	13.6	17	.027	27.3	z	17	76.087	255.438	45.18	58.305	1.136	H1-1b
66	M70	HSS6x6x4	.024	3.979	17	.032	0	y	19	193.872	216.936	38.64	38.64	1.136	H1-1b
67	M71	HSS6x6x4	.094	8.042	18	.026	0	z	22	137.075	216.936	38.64	38.64	1.136	H1-1b
68	M72	HSS6x6x4	.138	9.75	18	.037	0	y	18	110.471	216.936	38.64	38.64	1.136	H1-1b
69	M74	HSS6x6x4	.024	3.979	19	.030	0	y	17	193.872	216.936	38.64	38.64	1.136	H1-1b
70	M75	HSS6x6x4	.183	11.1	19	.016	22.3	y	10	89.071	216.936	38.64	38.64	1.136	H1-1b
71	M76	HSS6x6x4	.252	9.75	16	.058	0	y	11	110.471	216.936	38.64	38.64	1.136	H1-1b
72	M78	HSS6x6x4	.171	8.042	16	.091	16.0	y	11	137.075	216.936	38.64	38.64	1.136	H1-1b
73	M79	HSS8x6x4	.378	13.6	17	.026	27.3	z	10	76.087	255.438	45.18	58.305	1.136	H1-1b
74	M80	HSS8x6x4	.378	13.6	17	.039	27.3	z	17	76.087	255.438	45.18	58.305	1.136	H1-1b
75	M81	HSS6x6x4	.044	3.979	17	.043	0	y	19	193.872	216.936	38.64	38.64	1.136	H1-1b
76	M82	HSS6x6x4	.169	8.042	18	.033	16.0	z	22	137.075	216.936	38.64	38.64	1.136	H1-1b
77	M83	HSS6x6x4	.249	9.75	18	.046	0	z	18	110.471	216.936	38.64	38.64	1.136	H1-1b
78	M85	HSS6x6x4	.044	3.979	19	.041	0	y	17	193.872	216.936	38.64	38.64	1.136	H1-1b
79	M86	HSS8x6x4	.378	13.6	19	.035	27.3	z	19	76.087	255.438	45.18	58.305	1.136	H1-1b
80	M87	HSS6x6x4	.329	11.1	19	.025	22.3	z	19	89.071	216.936	38.64	38.64	1.136	H1-1b
81	M88	HSS6x6x4	.262	9.75	16	.067	0	y	11	110.471	216.936	38.64	38.64	1.136	H1-1b
82	M90	HSS6x6x4	.171	8.042	16	.106	0	y	11	137.075	216.936	38.64	38.64	1.136	H1-1b
83	M91	HSS8x6x4	.378	13.6	17	.026	27.3	z	10	76.087	255.438	45.18	58.305	1.136	H1-1b
84	M92	HSS8x6x4	.377	13.6	17	.031	27.3	z	17	76.087	255.438	45.18	58.305	1.136	H1-1b
85	M93	HSS6x6x4	.055	3.979	17	.071	0	y	19	193.872	216.936	38.64	38.64	1.136	H1-1b
86	M94	HSS6x6x4	.169	8.042	18	.023	16.0	z	22	137.075	216.936	38.64	38.64	1.136	H1-1b
87	M95	HSS6x6x4	.249	9.75	18	.040	19.5	z	18	110.471	216.936	38.64	38.64	1.136	H1-1b

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Envelope AISC 13th(360-05): LRFD Steel Code Checks (Continued)

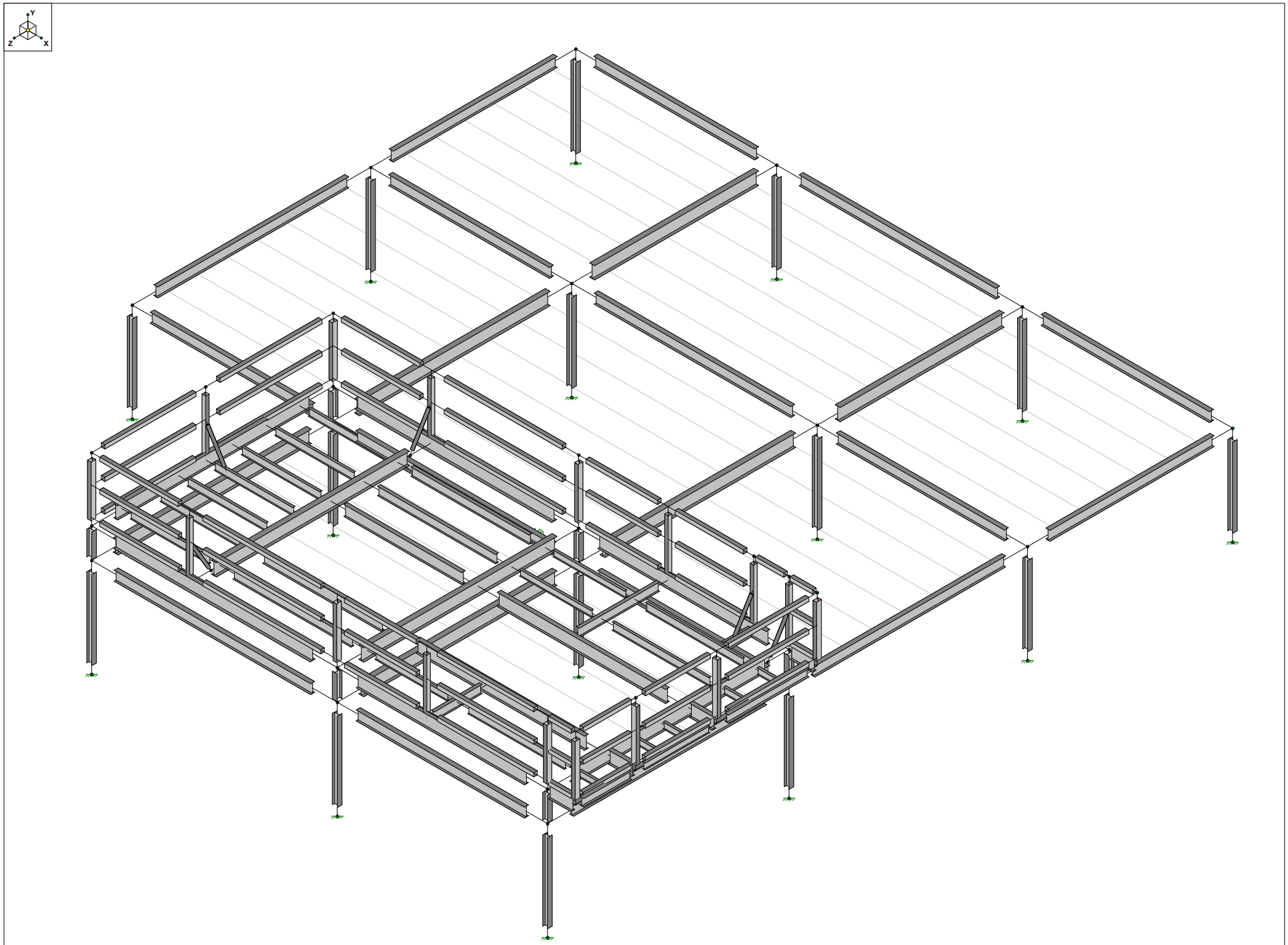
	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z [	Cb	Eqn
88	M97	HSS6x6x4	.043	3.979	17	.069	0	y	17	193.872	216.936	38.64	38.64	1.136	H1-1b
89	M98	HSS8x6x4	.377	13.6	19	.027	27.3	z	17	76.087	255.438	45.18	58.305	1.136	H1-1b
90	M99	HSS6x6x4	.329	11.1	19	.029	22.3	z	19	89.071	216.936	38.64	38.64	1.136	H1-1b
91	M100	HSS8x6x4	.216	13.6	19	.023	27.3	z	17	76.087	255.438	45.18	58.305	1.136	H1-1b
92	M97A	PIPE_4.0	.041	2.794	20	.008	5.831		16	85.754	95.904	10.935	10.935	1.136	H1-1b
93	M98A	HSS6x6x5	.216	0	20	.056	0	z	20	229.791	266.202	46.92	46.92	1.266	H1-1b
94	M99A	HSS6x6x4	.010	2.5	19	.037	5	z	23	207.521	216.936	38.64	38.64	1.136	H1-1b
95	M100A	W10x12	.257	3	19	.058	0	y	19	53.438	159.3	6.458	39.048	1.356	H1-1b
96	M100B	PIPE_4.0	.031	2.794	19	.005	5.831		20	85.754	95.904	10.935	10.935	1.136	H1-1b
97	M101	PIPE_4.0	.072	2.794	17	.014	5.831		16	85.754	95.904	10.935	10.935	1.136	H1-1b
98	M102	PIPE_4.0	.068	2.794	19	.019	5.831		16	85.754	95.904	10.935	10.935	1.136	H1-1b

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RTU #2 Calculations

RTU #2 is located on the 1986 Expansion, a single story roof joist structure with R=3 moment frames. The mechanical platform is supported on existing w8 columns and elevated high enough to prevent snow drift on the surrounding roof. The gravity loads with the addition were checked to the foundation (3000psf bearing) with no strengthening required. The new platform is greater than 10% of the weight of the existing structure, so the existing lateral system capacity was checked using current design criteria for the total base shear of the existing structure and new platform. The existing beams and columns have adequate capacity, so no strengthening of the lateral system is required.

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RTU#2-2

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Structural Design Group

1986 Addition Roof w/ joists

Weights

1985 8 5/8" 15' × 29.5' × 8 = 35^K
21 × 29.83 × 8 = 5^K

1987 10.5 5/8" 21 × 31.08 × 10.5 = 2.7^K

Roof psf × 10.17 × 94.67' = 210^K

Loads 12^K
21^K

Total Weight = 260^K

Unit + Partition Weight = 70^K >10% Change - Verify Lateral System

Existing Base Shear V = .11(260^K) = 28.6^K

New Base Shear V = .11 (330^K) = 36.3^K $C_s = .223/(2/1.5) = 0.11$

Middle Column Roof Live Load KLL A_t = 4(32.33 × 17.125') = 2215 ft²

$L = 40\left(.25 + \frac{15}{2215}\right) = 22.7$ psf

Project _____ Project No. _____

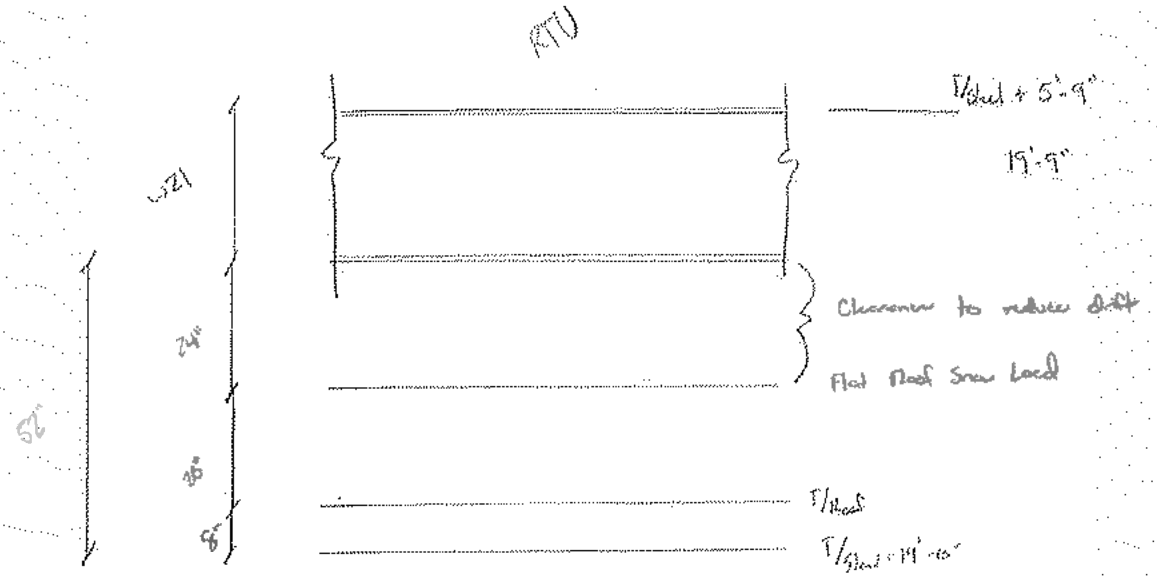
By _____ Date _____ Sheet _____ of _____

RTU#2-3

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Structural Design Group

No snow drift assumed around mechanical platforms



* Assume 24" Clear to Avoid snow drift

Project _____ Project No. _____

By _____ Date _____ Sheet _____ of _____

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Structural Design Group

Check Existing

RTU # 2

Footing Bearing ✓

Footing Strength ✓

Base Plate 14x15-15 ✓

Beams / Joists for snow ✓ Platform raised to provide clearance + ground lift

RTU # 1

Footing Bearing ✓

Footing Strength ✓

Base plate ✓

Beams for snow ✓ Platform raised to provide clearance + ground lift

Project _____ Project No. _____

By _____ Date _____ Sheet _____ of _____

Structural Design Group

Existing DL

Joist SW = 3psf

Roof Deck = 2psf

Pull Up Roof = 6psf

MPE = 8psf / 19psf ; Use 20psf

SL = 30psf

RLL = 20psf

D+L
D+RL
D+S
D+.75L+.75RL
D+.75L+.75S

1986

Footing A.4 - 13.5

3.5 x 3.5 x 3000psf = 37 K

Existing Load
A_t 255ft²

D+RL = 255 x 20 + 255 x 18.9 = 9.9K (reduced 20psf RLL)

D+S = 255x20 + 255 x 30 = 12.8K

Platform
A_t = 325ft²

D+L = 21K + 325x40 psf = 34K (not reducible)

D+S = 21K + 9.8K = 30.8K

D+.75L+.75S = 48.9K > 37K < 62K ✓

D+S = 43.6K

Assume 1'-6" of wall existing also

2x2.75x1.5x3000 = 25K

A.4 - 11.9

4 x4 x 3000 = 48K

Existing Load
A_t 510ft²

D+RL = 510 x 20 + 510 x 17.3 = 16.5K

D+S = 510 x 20 + 510 x 30 = 25.5K

Platform
A_t 325ft²

D+L = 20K + 325 x 40 psf = 33K (not reducible)

D+S = 20K + 9.8K = 29.8K

D+.75L+.75S = 58.8K

D+S = 55.3K > 48 < 73K ✓

Assume 1'-6" of wall

= 25K

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By _____ Date _____ Sheet _____ of _____

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Structural Design Group

Footing A.3-13.5

4.5×4.5× 3000 psf = 60^K

Existing

A_1 = 555ft² D+RL 555×20+655×13.3 = 18.5^K

D+S 555×20+655×30 = 27.8^K

D+.75L+.75S = 73.7^K

Platform

A_2 = 555ft² D+L 28^K + 555×22.7 reduced = 40.6^K

D+S 28^K + 16.7^K = 44.7^K

D+S = 72.5^K > 60^K < 85^K ✓

Assume 1'-6" of wall 25^K

Footing A.3-11.9

L.L×3000 = 108^K

Existing

A_1 = 1100ft² D+RL 1100×20 + 1100×12 = 35.2^K

D+S 1100×20 + 1100×30 = 55^K

D+.75L+.75S = 93^K < 108 ✓

Platform

A_2 = 555ft² D+L 24.2^K + 555×22.7 reduced = 36.8^K

D+S 24.2^K + 16.7^K = 40.9^K

D+S = 95.9^K

Footing A.2-13.5

4.5×4.5×300psf = 60^K

Existing

A_1 = 395ft² D+RL 395×20 + 395×16.1 = 14.3^K

D+S 395×20 + 395×30 = 19.8^K

D+.75L+.75S = 47.5^K < 60^K ✓

Platform

A_2 = 300ft² D+L 17^K + 300×40psf reduced = 29^K

D+S 17^K + 9^K = 26^K

D+S 45.8^K

Project _____ Project No. _____

By _____ Date _____ Sheet _____ of _____

Structural Design Group

Footing A.2 -11.9

L.L. = 3000 psf = 108^k

Existing

A_t = 945 ft²

D + L 945 x 20 + 945 x 12 = 36.3^k

D + S 945 x 20 + 945 x 30 = 47.3^k

D: .75(L+.75S) = 73.1^k < 108^k ✓

D + S 73.5^k

Platform

A_t = 300 ft²

not included

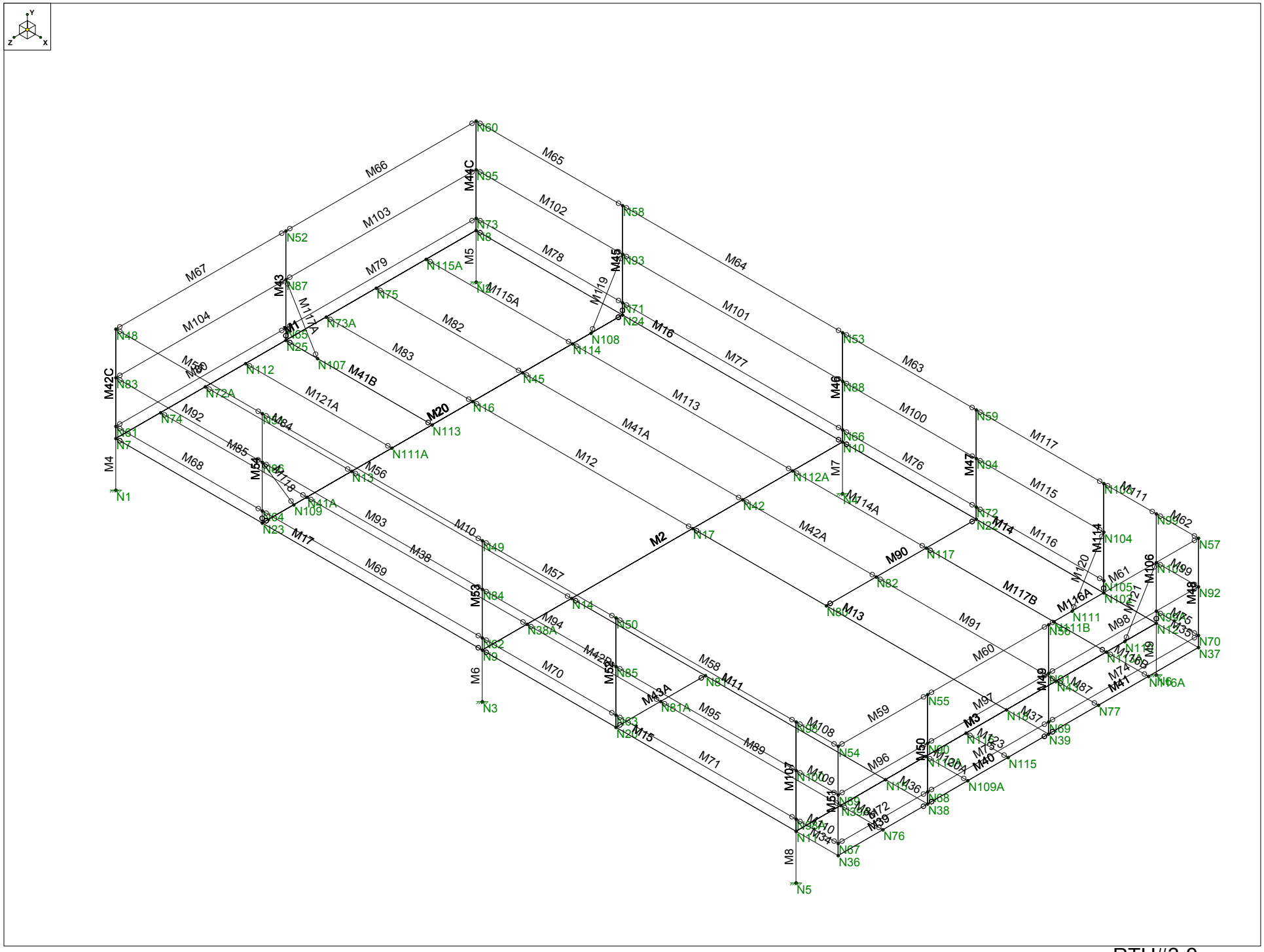
D + L 17.2^k + 300 x 40 psf = 71.2^k

D + S 17.2^k + 9^k = 26.2^k

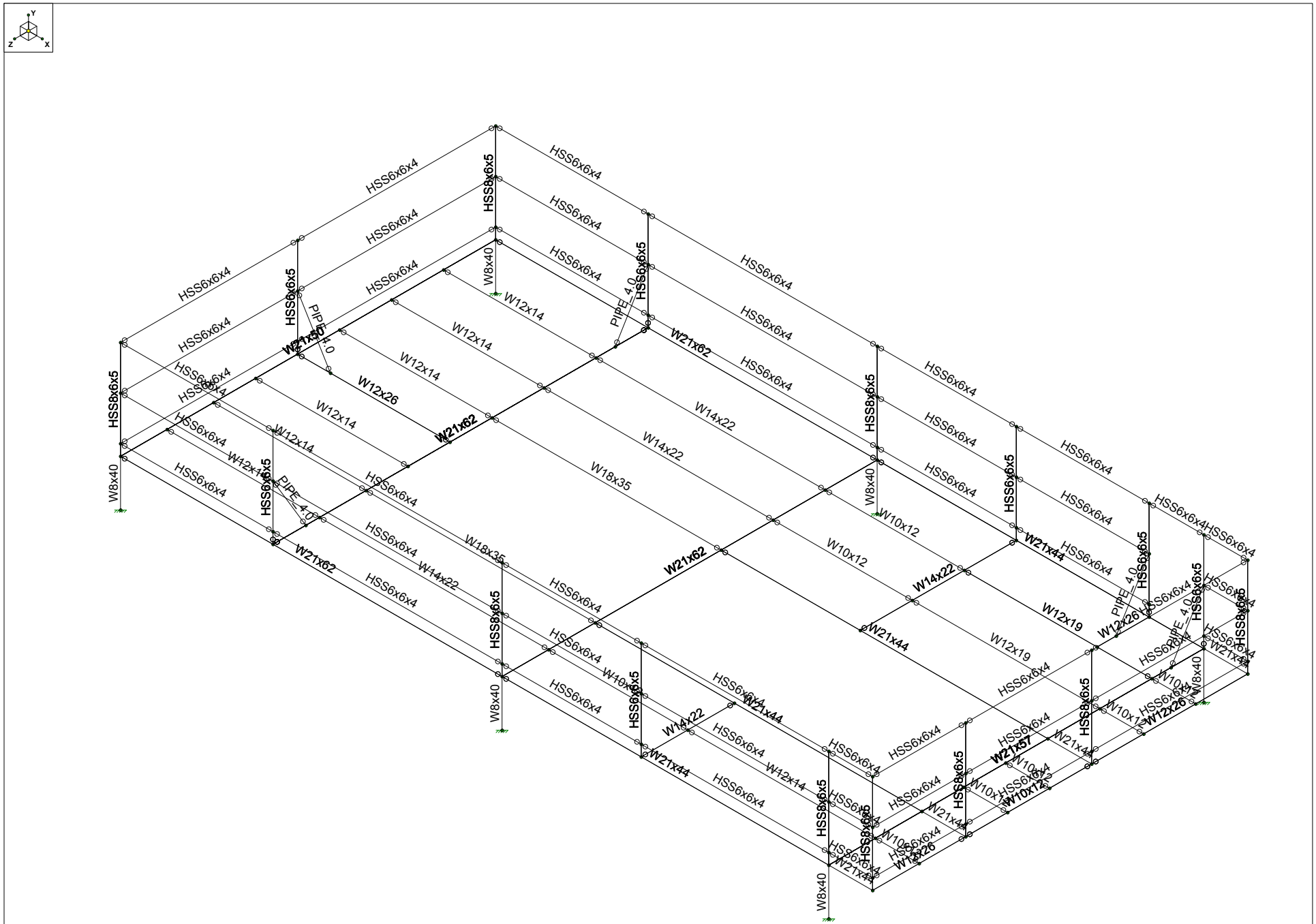
Project _____ Project No. _____

By _____ Date _____ Sheet _____ of _____

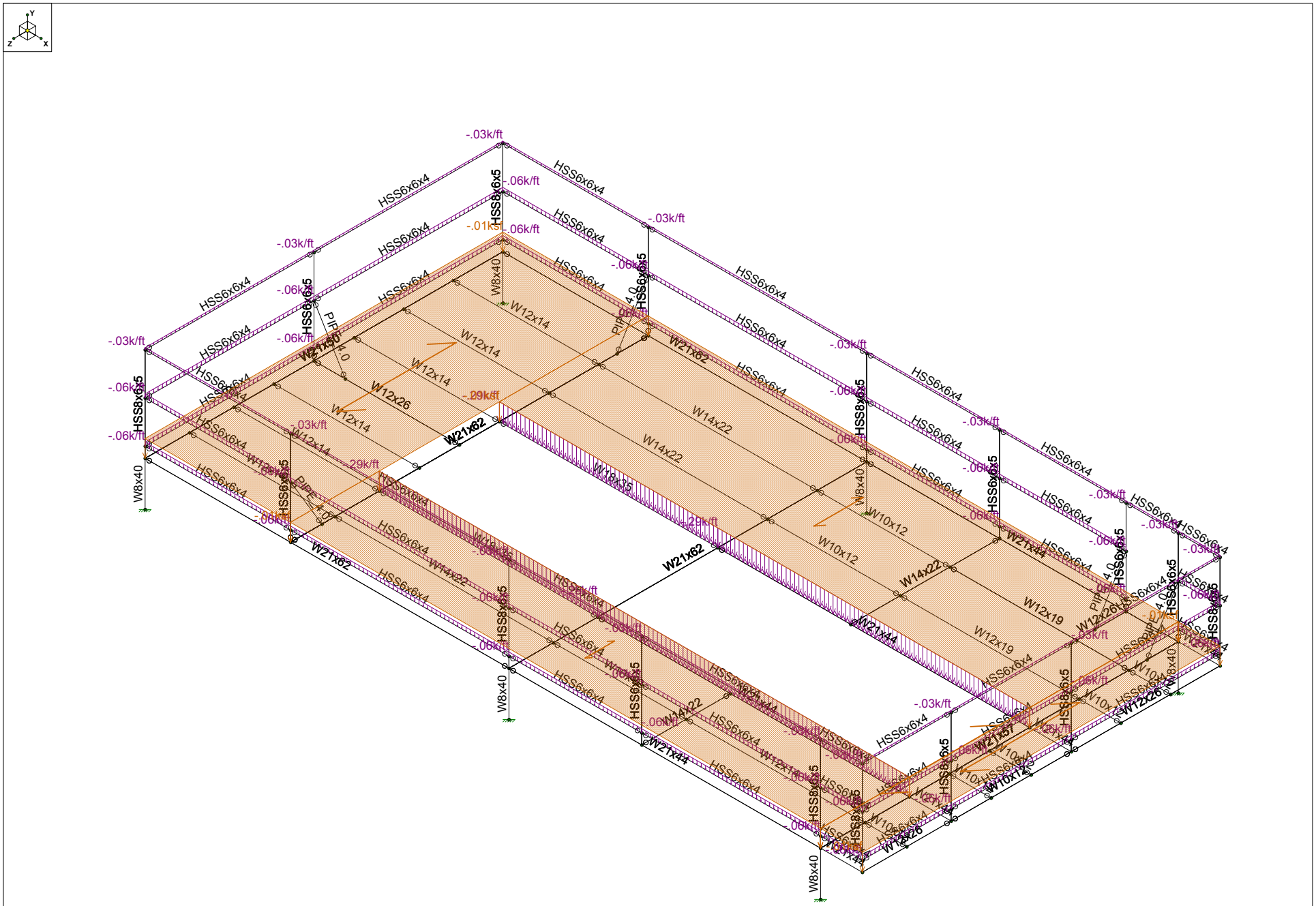
Permit #: 2015-916743-LT
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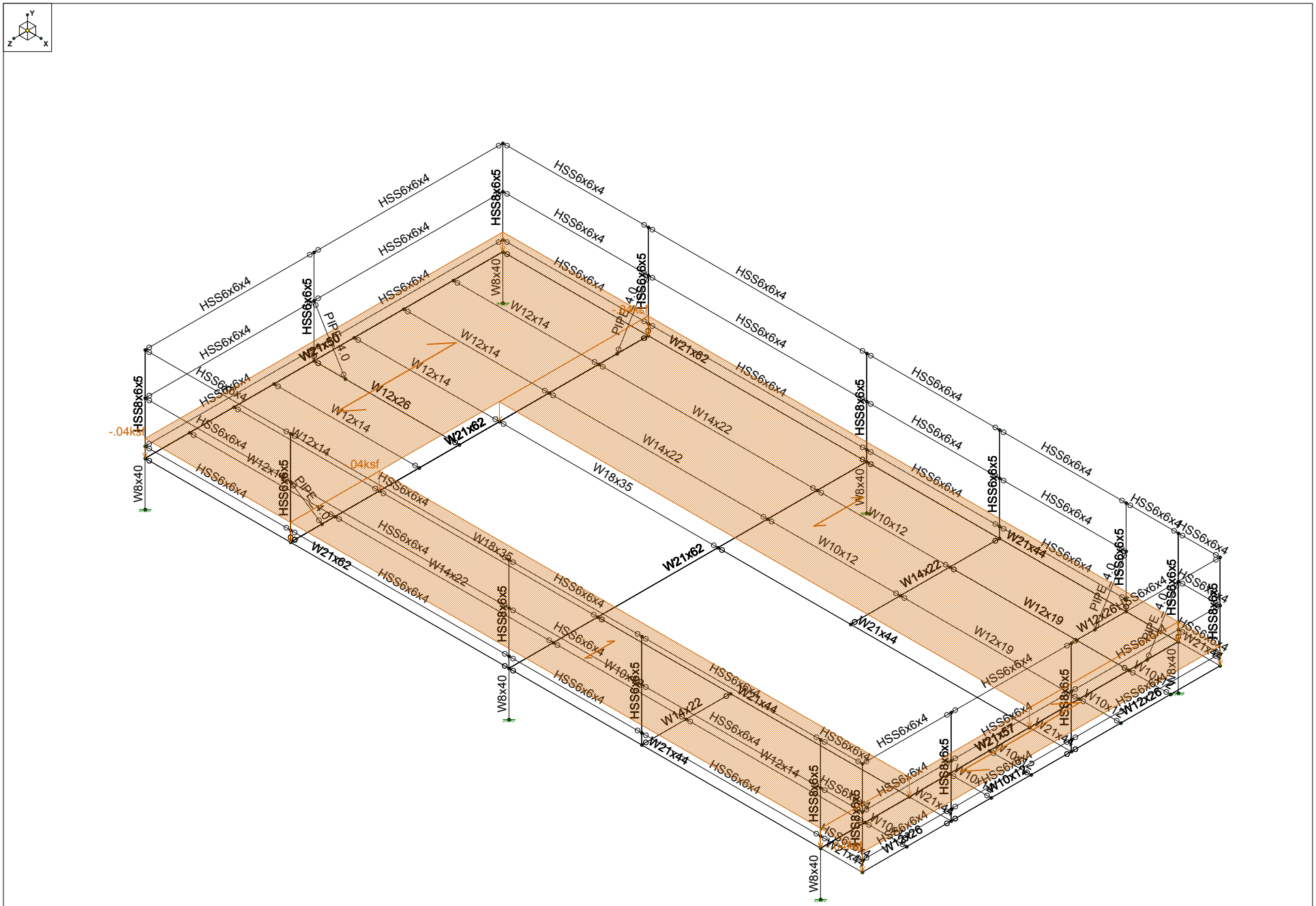
RTU#2-9


HSS6x6x4
HSS8x6x5
HSS6x6x5
W8x40
W12x14
W12x26
W21x62
W14x22
W18x35
W10x12
W21x44
W12x19
W21x57
W21x50
PIPE_4.0

RTU#2-10



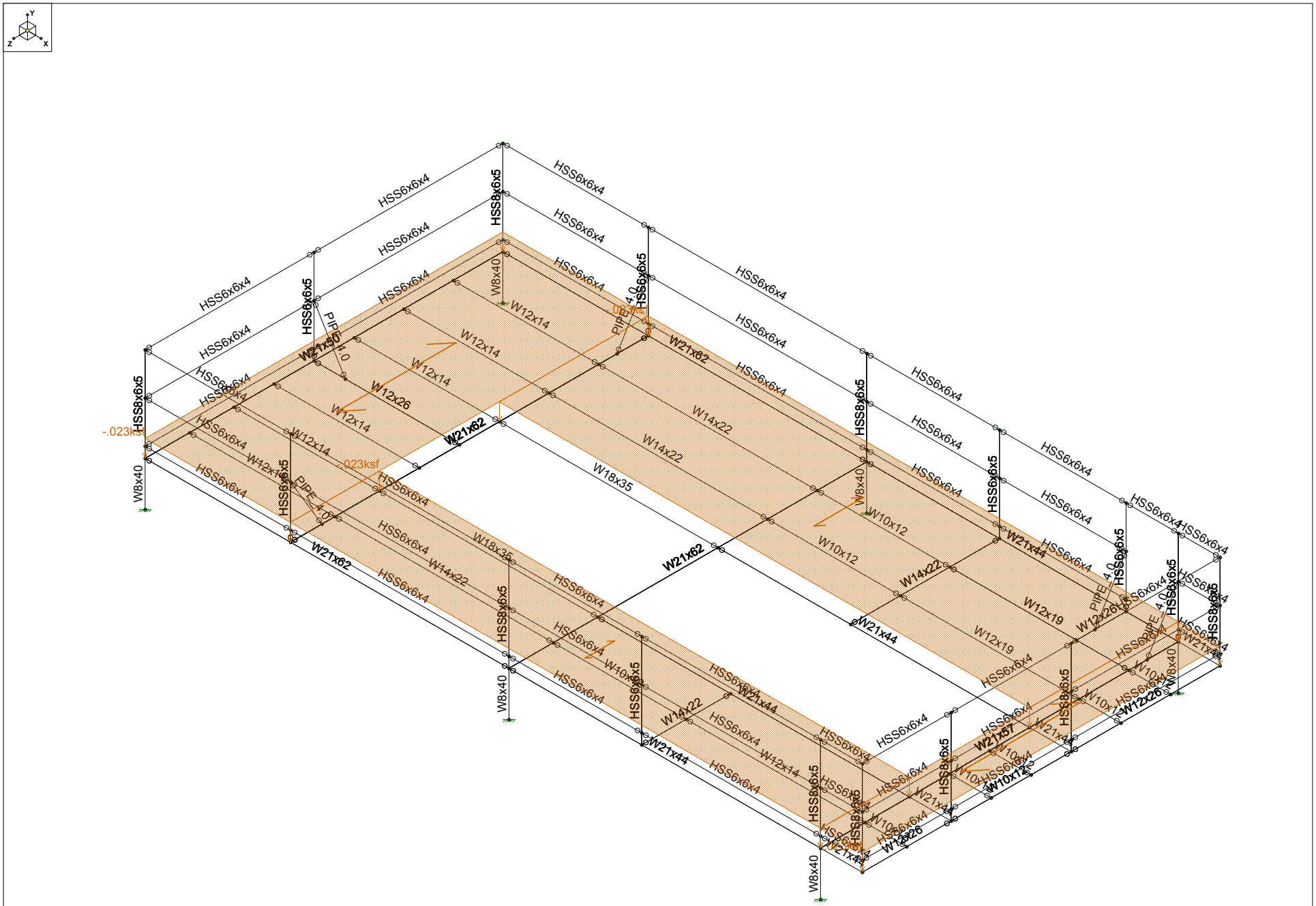
RTU#2-11



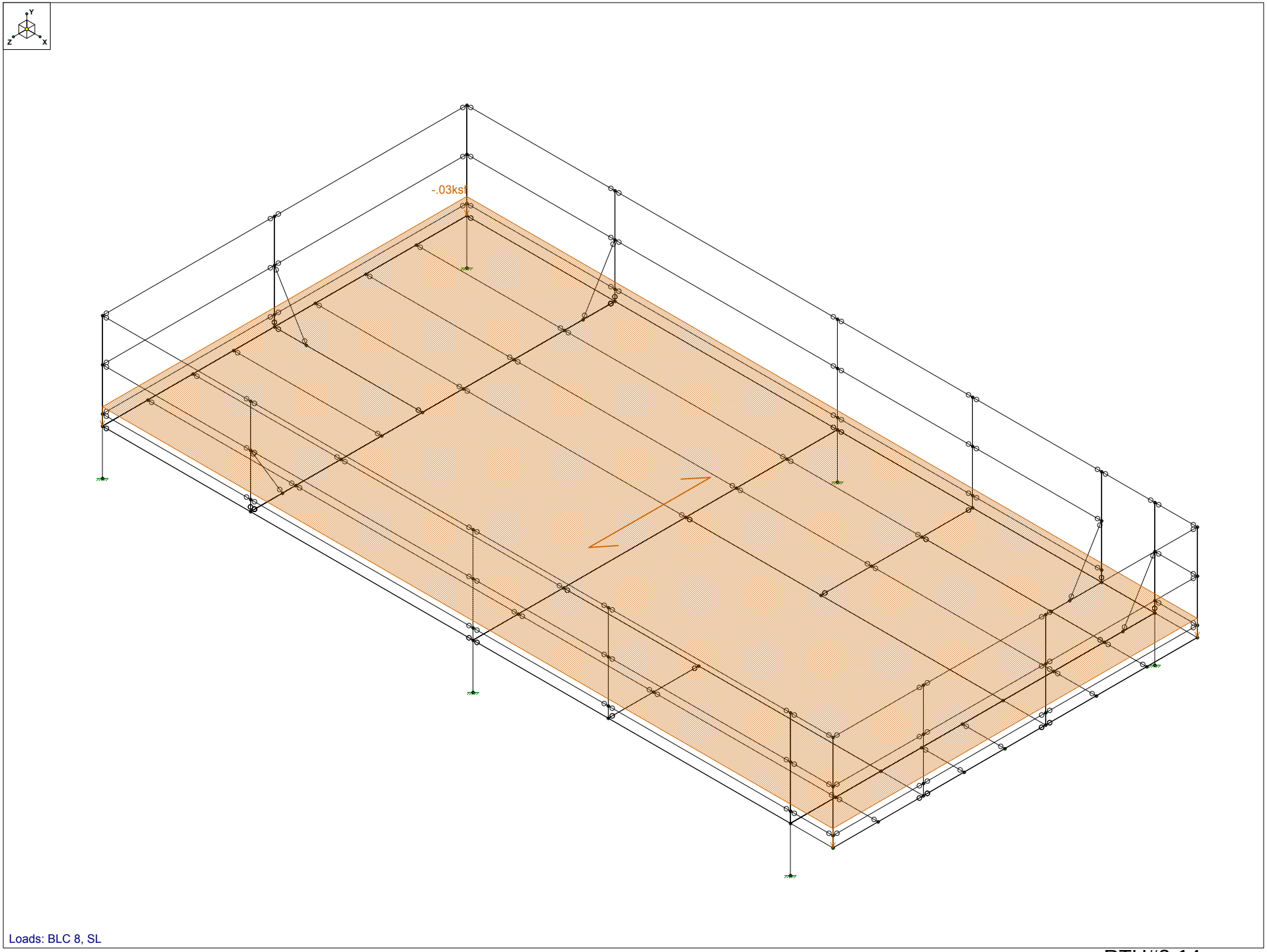
Loads: BLC 2, LL40

RTU#2-12

Permit #: 2015-916743-LT
RSN: 966198

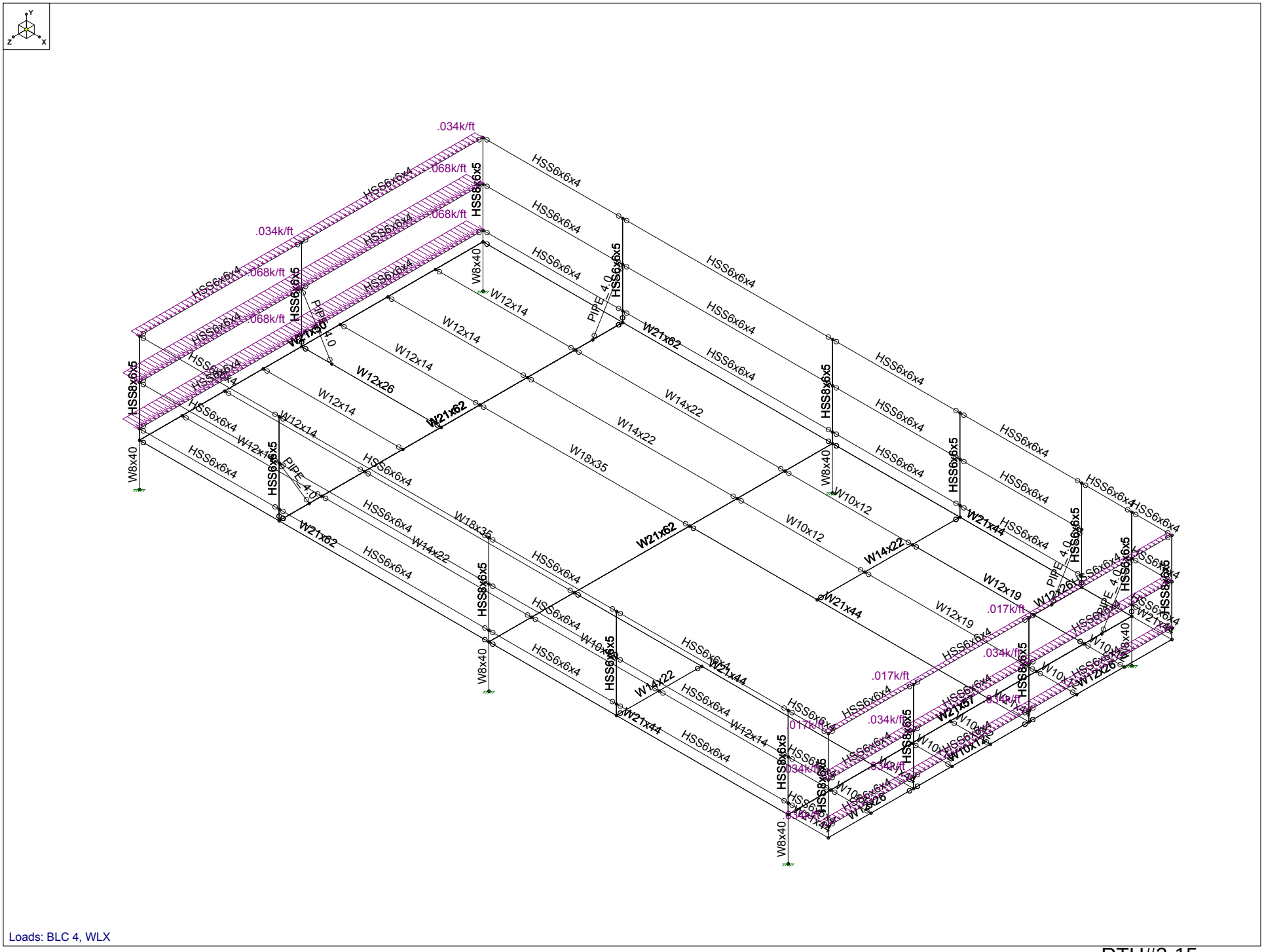


RTU#2-13



RTU#2-14

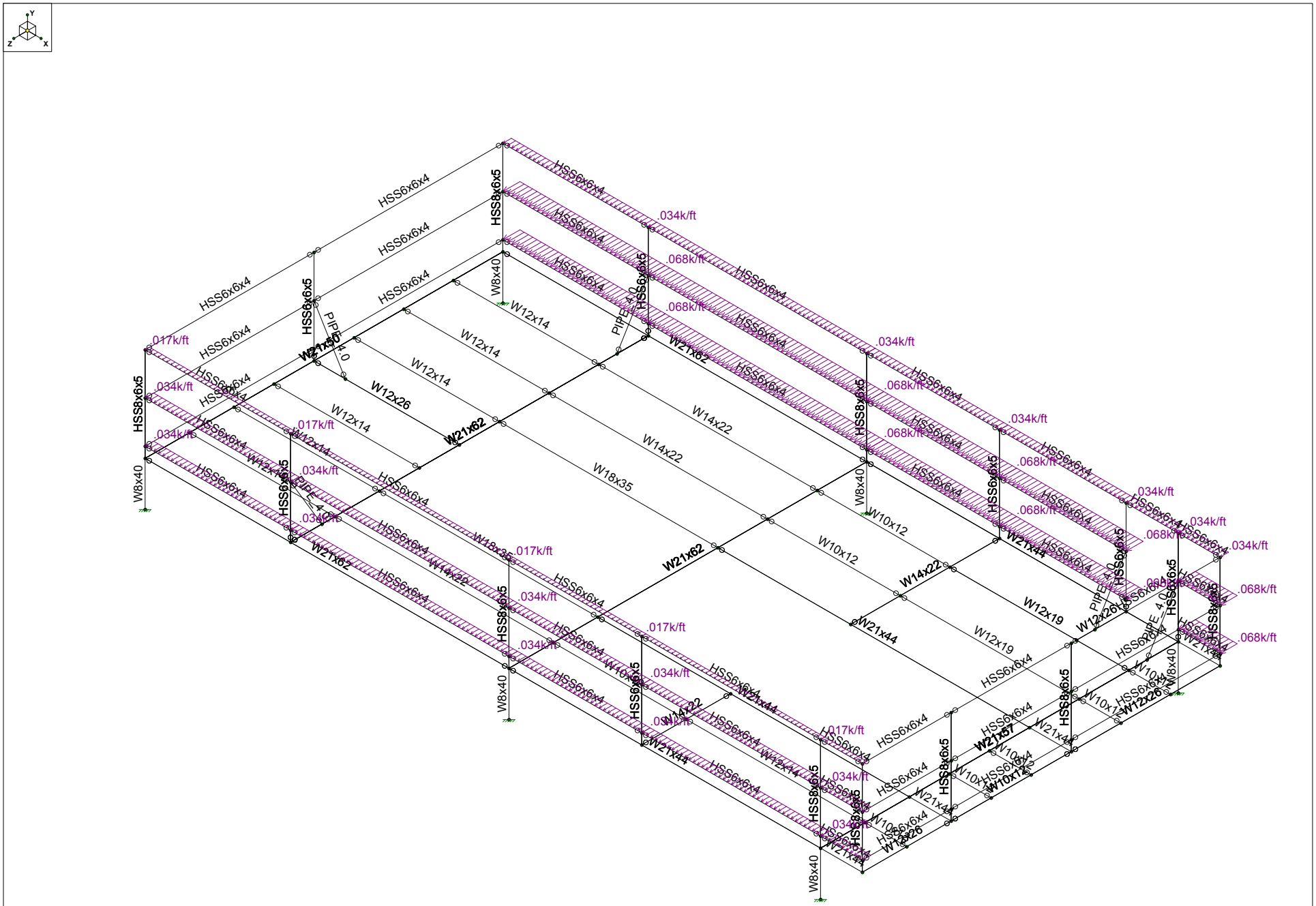
Permit #: 2015-916743-LT
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Loads: BLC 4, WLX

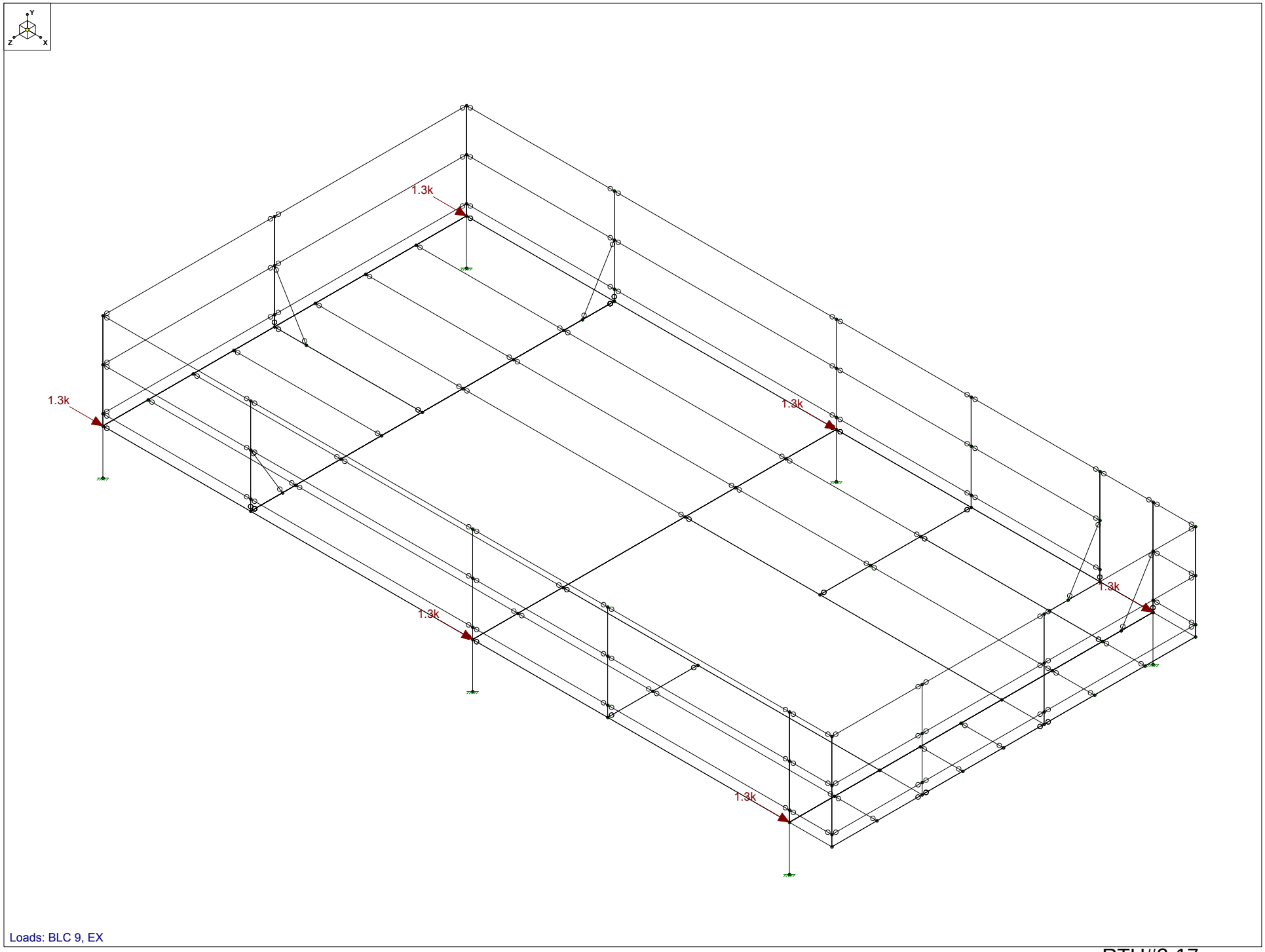
RTU#2-15

Permit #: 2015-916743-LT
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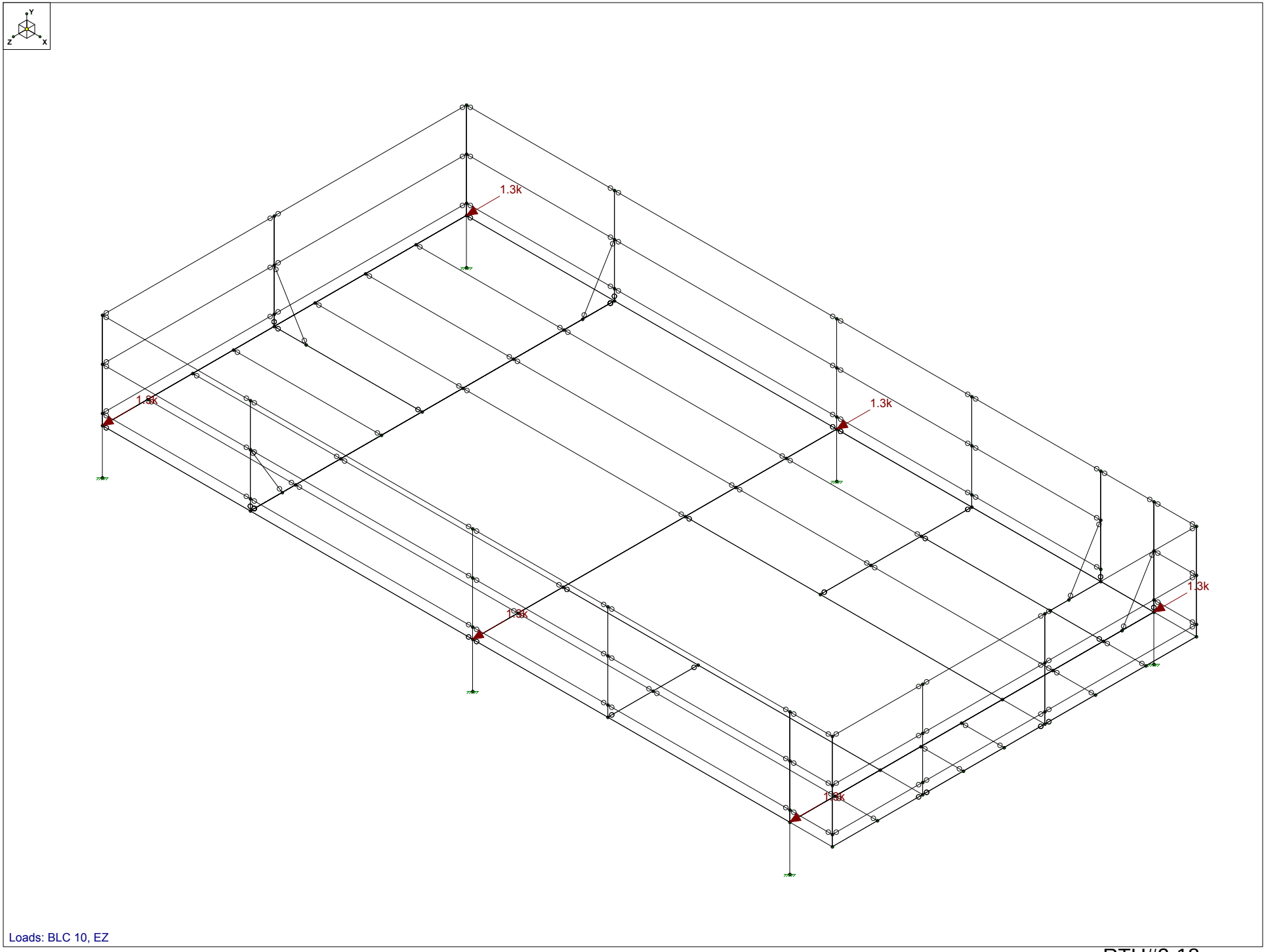
Loads: BLC 5, WLZ

RTU#2-16



RTU#2-17

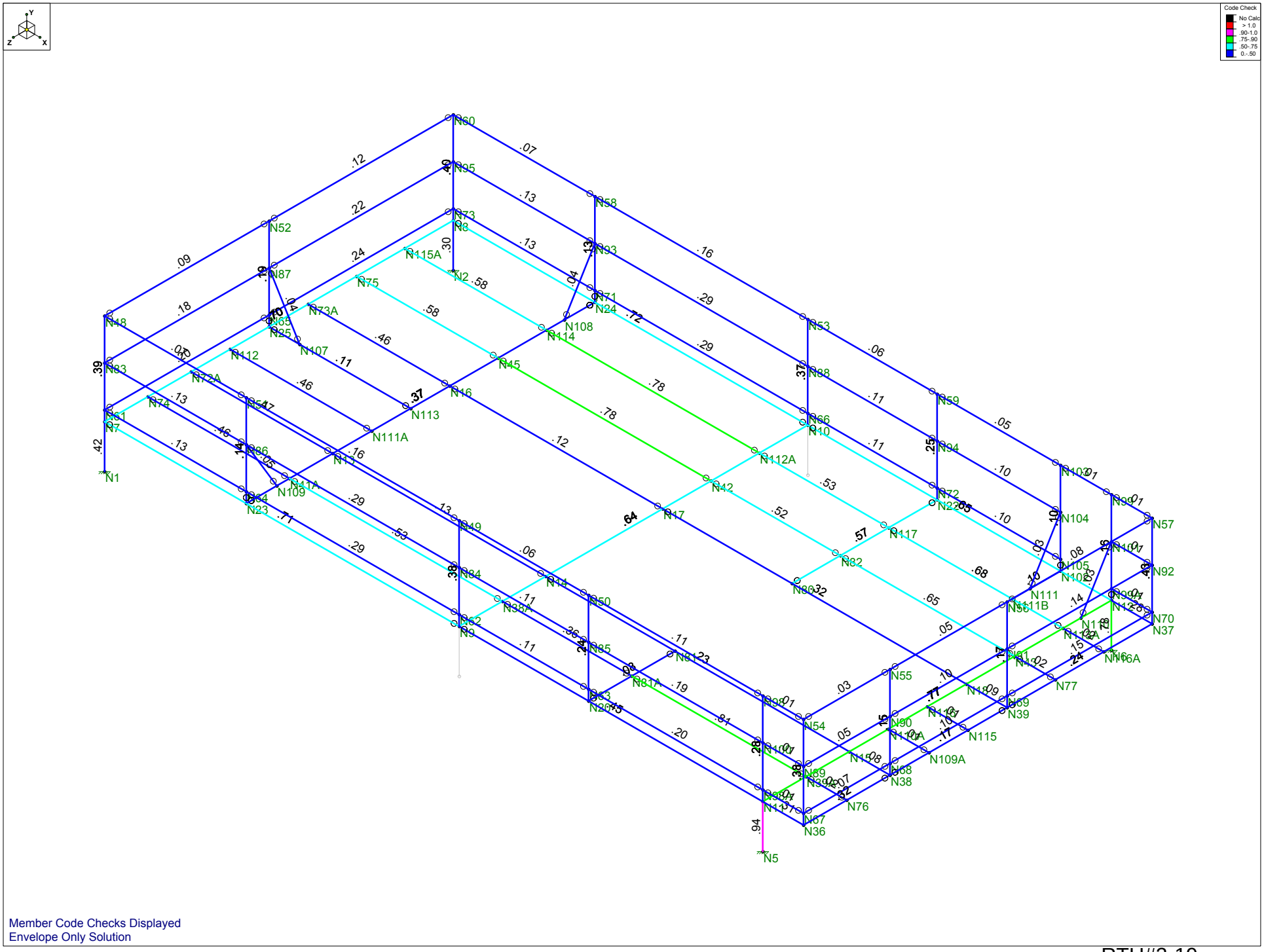
Permit #: 2015-916743-LT
RSN: 966198



Loads: BLC 10, EZ

RTU#2-18

Permit #: 2015-916743-LT
RSN: 966198



RTU#2-19

Permit #: 2015-916743-LT
RSN: 966198

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	Yes
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 13th(360-05): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): LRFD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AF&PA NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

Global, Continued

Seismic Code	ASCE 7-05
Seismic Base Elevation (ft)	0
Add Base Weight?	Yes
Ct Z	.028
Ct X	.028
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	3
R X	3
Ct Exp. Z	.8
Ct Exp. X	.8
SD1	.088
SDS	.223
S1	.055
TL (sec)	4
Occupancy Cat	IV
Om Z	3
Om X	3
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3

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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N7	N8			W21x50	Beam	Wide Flange	A992	Typical
2	M2	N9	N10			W21x62	Beam	Wide Flange	A992	Typical
3	M3	N11	N12			W21x57	Beam	Wide Flange	A992	Typical
4	M4	N1	N7			W8x40	Column	Wide Flange	A992	Typical
5	M5	N2	N8		90	W8x40	Column	Wide Flange	A992	Typical
6	M6	N3	N9		90	W8x40	Column	Wide Flange	A992	Typical
7	M7	N4	N10			W8x40	Column	Wide Flange	A992	Typical
8	M8	N5	N11			W8x40	Column	Wide Flange	A992	Typical
9	M9	N6	N12		90	W8x40	Column	Wide Flange	A992	Typical
10	M10	N13	N14			W18x35	Beam	Wide Flange	A992	Typical
11	M11	N14	N15			W21x44	Beam	Wide Flange	A992	Typical
12	M12	N16	N17			W18x35	Beam	Wide Flange	A992	Typical
13	M13	N17	N18			W21x44	Beam	Wide Flange	A992	Typical
14	M14	N10	N12			W21x44	Beam	Wide Flange	A992	Typical
15	M15	N9	N11			W21x44	Beam	Wide Flange	A992	Typical
16	M16	N8	N10			W21x62	Beam	Wide Flange	A992	Typical
17	M17	N7	N9			W21x62	Beam	Wide Flange	A992	Typical
18	M20	N23	N24			W21x62	Beam	Wide Flange	A992	Typical
19	M34	N11	N36			W21x44	Beam	Wide Flange	A992	Typical
20	M35	N12	N37			W21x44	Beam	Wide Flange	A992	Typical
21	M36	N15	N38			W21x44	Beam	Wide Flange	A992	Typical
22	M37	N18	N39			W21x44	Beam	Wide Flange	A992	Typical
23	M39	N36	N38			W12x26	Beam	Wide Flange	A992	Typical
24	M40	N38	N39			W10x12	Beam	Wide Flange	A992	Typical
25	M41	N39	N37			W12x26	Beam	Wide Flange	A992	Typical
26	M38	N41A	N38A			W14x22	Beam	Wide Flange	A992	Typical
27	M41A	N45	N42			W14x22	Beam	Wide Flange	A992	Typical
28	M42B	N38A	N81A			W10x12	Beam	Wide Flange	A992	Typical
29	M43A	N20	N81			W14x22	Beam	Wide Flange	A992	Typical
30	M42A	N42	N82			W10x12	Beam	Wide Flange	A992	Typical
31	M41B	N25	N113			W12x26	Beam	Wide Flange	A992	Typical
32	M42C	N7	N48		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
33	M43	N25	N52			HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
34	M44C	N8	N60		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
35	M45	N24	N58		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
36	M46	N10	N53		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
37	M47	N22	N59		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
38	M48	N37	N57		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
39	M49	N39	N56			HSS8x6x5	Column	Tube	A500 Gr.46	Typical
40	M50	N38	N55			HSS8x6x5	Column	Tube	A500 Gr.46	Typical
41	M51	N36	N54		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
42	M52	N20	N50		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
43	M53	N9	N49		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
44	M54	N23	N51		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
45	M55	N48	N51			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
46	M56	N51	N49			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
47	M57	N49	N50			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
48	M58	N50	N98			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
49	M59	N54	N55			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
50	M60	N55	N56			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
51	M61	N56	N57			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
52	M62	N57	N99			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
53	M63	N59	N53			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
54	M64	N53	N58			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
55	M65	N58	N60			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
56	M66	N60	N52			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
57	M67	N52	N48			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
58	M68	N61	N64			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
59	M69	N64	N62			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
60	M70	N62	N63			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
61	M71	N63	N98A			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
62	M72	N67	N68			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
63	M73	N68	N69			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
64	M74	N69	N70			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
65	M75	N70	N99A			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
66	M76	N72	N66			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
67	M77	N66	N71			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
68	M78	N71	N73			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
69	M79	N73	N65			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
70	M80	N65	N61			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
71	M82	N75	N45			W12x14	Beam	Wide Flange	A992	Typical
72	M83	N73A	N16			W12x14	Beam	Wide Flange	A992	Typical
73	M84	N72A	N13			W12x14	Beam	Wide Flange	A992	Typical
74	M85	N74	N41A			W12x14	Beam	Wide Flange	A992	Typical
75	M86	N39A	N76			W10x12	Beam	Wide Flange	A992	Typical
76	M87	N43	N77			W10x12	Beam	Wide Flange	A992	Typical
77	M89	N81A	N39A			W12x14	Beam	Wide Flange	A992	Typical
78	M90	N22	N80			W14x22	Beam	Wide Flange	A992	Typical
79	M91	N82	N43			W12x19	Beam	Wide Flange	A992	Typical
80	M92	N83	N86			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
81	M93	N86	N84			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
82	M94	N84	N85			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
83	M95	N85	N100			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
84	M96	N89	N90			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
85	M97	N90	N91			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
86	M98	N91	N92			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
87	M99	N92	N101			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
88	M100	N94	N88			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
89	M101	N88	N93			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
90	M102	N93	N95			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
91	M103	N95	N87			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
92	M104	N87	N83			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
93	M106	N12	N99		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
94	M107	N11	N98		90	HSS8x6x5	Column	Tube	A500 Gr.46	Typical
95	M108	N98	N54			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
96	M109	N100	N89			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
97	M110	N98A	N67			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
98	M111	N99	N103			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
99	M114	N102	N103		90	HSS6x6x5	Column	SquareTube	A500 Gr.46	Typical
100	M115	N104	N94			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
101	M116	N105	N72			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
102	M117	N103	N59			HSS6x6x4	Beam	SquareTube	A500 Gr.46	Typical
103	M117A	N107	N87			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
104	M118	N109	N86			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
105	M119	N108	N93			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
106	M120	N111	N104			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
107	M121	N110	N101			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
108	M120A	N109A	N110A			W10x12	Beam	Wide Flange	A992	Typical
109	M121A	N111A	N112			W12x14	Beam	Wide Flange	A992	Typical
110	M123	N115	N116			W10x12	Beam	Wide Flange	A992	Typical
111	M113	N114	N112A			W14x22	Beam	Wide Flange	A992	Typical
112	M114A	N112A	N117			W10x12	Beam	Wide Flange	A992	Typical
113	M115A	N115A	N114			W12x14	Beam	Wide Flange	A992	Typical
114	M116B	N113A	N116A			W10x12	Beam	Wide Flange	A992	Typical
115	M117B	N117	N113A			W12x19	Beam	Wide Flange	A992	Typical
116	M116A	N102	N111B			W12x26	Beam	Wide Flange	A992	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	5.251	0	0	0	Yes
2	N2	5.251	0	-34.25	0	Yes
3	N3	40.084	0	0	0	Yes
4	N4	40.084	0	-34.25	0	Yes
5	N5	69.9167	0	0	0	Yes
6	N6	69.9167	0	-34.25	0	Yes
7	N7	5.251	4.25	0	0	Yes
8	N8	5.251	4.25	-34.25	0	Yes
9	N9	40.084	4.25	0	0	Yes
10	N10	40.084	4.25	-34.25	0	Yes
11	N11	69.9167	4.25	0	0	Yes
12	N12	69.9167	4.25	-34.25	0	Yes
13	N13	19.167	4.25	-8.5	0	
14	N14	40.084	4.25	-8.5	0	
15	N15	69.9167	4.25	-8.5	0	
16	N16	19.167	4.25	-20	0	
17	N17	40.084	4.25	-20	0	
18	N18	69.9167	4.25	-20	0	
19	N20	52.79335	4.25	0	0	Yes
20	N22	52.79335	4.25	-34.25	0	Yes
21	N23	19.167	4.25	0	0	Yes
22	N24	19.167	4.25	-34.25	0	Yes
23	N25	5.251	4.25	-16.16	0	Yes
24	N36	73.9167	4.25	0	0	Yes
25	N37	73.9167	4.25	-34.25	0	Yes
26	N38	73.9167	4.25	-8.5	0	Yes
27	N39	73.9167	4.25	-20	0	Yes
28	N38A	40.084	4.25	-4.25	0	Yes
29	N39A	69.9167	4.25	-4.25	0	Yes
30	N41A	19.167	4.25	-4.25	0	Yes
31	N42	40.084	4.25	-24.75	0	Yes
32	N43	69.9167	4.25	-24.75	0	Yes
33	N45	19.167	4.25	-24.75	0	Yes
34	N48	5.251	13.25	0	0	Yes
35	N49	40.084	13.25	0	0	Yes

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
36	N50	52.79335	13.25	0	0	Yes
37	N51	19.167	13.25	0	0	Yes
38	N52	5.251	13.25	-16.16	0	Yes
39	N53	40.084	13.25	-34.25	0	Yes
40	N54	73.9167	13.25	0	0	Yes
41	N55	73.9167	13.25	-8.5	0	Yes
42	N56	73.9167	13.25	-20	0	Yes
43	N57	73.9167	13.25	-34.25	0	Yes
44	N58	19.167	13.25	-34.25	0	Yes
45	N59	52.79335	13.25	-34.25	0	Yes
46	N60	5.251	13.25	-34.25	0	Yes
47	N61	5.251	5.25	0	0	Yes
48	N62	40.084	5.25	0	0	Yes
49	N63	52.79335	5.25	0	0	Yes
50	N64	19.167	5.25	0	0	Yes
51	N65	5.251	5.25	-16.16	0	Yes
52	N66	40.084	5.25	-34.25	0	Yes
53	N67	73.9167	5.25	0	0	Yes
54	N68	73.9167	5.25	-8.5	0	Yes
55	N69	73.9167	5.25	-20	0	Yes
56	N70	73.9167	5.25	-34.25	0	Yes
57	N71	19.167	5.25	-34.25	0	Yes
58	N72	52.79335	5.25	-34.25	0	Yes
59	N73	5.251	5.25	-34.25	0	Yes
60	N72A	5.251	4.25	-8.5	0	Yes
61	N73A	5.251	4.25	-20	0	Yes
62	N74	5.251	4.25	-4.25	0	Yes
63	N75	5.251	4.25	-24.75	0	Yes
64	N76	73.9167	4.25	-4.25	0	Yes
65	N77	73.9167	4.25	-24.75	0	Yes
66	N80	52.79335	4.25	-20	0	
67	N81	52.79335	4.25	-8.5	0	
68	N81A	52.79335	4.25	-4.25	0	Yes
69	N82	52.79335	4.25	-24.75	0	Yes
70	N83	5.251	9.25	0	0	Yes
71	N84	40.084	9.25	0	0	Yes
72	N85	52.79335	9.25	0	0	Yes
73	N86	19.167	9.25	0	0	Yes
74	N87	5.251	9.25	-16.16	0	Yes
75	N88	40.084	9.25	-34.25	0	Yes
76	N89	73.9167	9.25	0	0	Yes
77	N90	73.9167	9.25	-8.5	0	Yes
78	N91	73.9167	9.25	-20	0	Yes
79	N92	73.9167	9.25	-34.25	0	Yes
80	N93	19.167	9.25	-34.25	0	Yes
81	N94	52.79335	9.25	-34.25	0	Yes
82	N95	5.251	9.25	-34.25	0	Yes
83	N98	69.9167	13.25	0	0	Yes
84	N99	69.9167	13.25	-34.25	0	Yes
85	N98A	69.9167	5.25	0	0	Yes
86	N99A	69.9167	5.25	-34.25	0	Yes
87	N100	69.9167	9.25	0	0	Yes

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
88	N101	69.9167	9.25	-34.25	0	Yes
89	N102	64.9167	4.25	-34.25	0	Yes
90	N103	64.9167	13.25	-34.25	0	Yes
91	N104	64.9167	9.25	-34.25	0	Yes
92	N105	64.9167	5.25	-34.25	0	Yes
93	N107	8.251	4.25	-16.16	0	Yes
94	N108	19.167	4.25	-31.25	0	Yes
95	N109	19.167	4.25	-3	0	Yes
96	N110	69.9167	4.25	-31.25	0	Yes
97	N111	64.9167	4.25	-31.25	0	Yes
98	N109A	73.9167	4.25	-12.33	0	Yes
99	N110A	69.9167	4.25	-12.33	0	Yes
100	N111A	19.167	4.25	-12.33	0	Yes
101	N112	5.251	4.25	-12.33	0	Yes
102	N113	19.167	4.25	-16.16	0	Yes
103	N115	73.9167	4.25	-16.16	0	Yes
104	N116	69.9167	4.25	-16.16	0	Yes
105	N112A	40.084	4.25	-29.5	0	Yes
106	N113A	69.9167	4.25	-29.5	0	Yes
107	N114	19.167	4.25	-29.5	0	Yes
108	N115A	5.251	4.25	-29.5	0	Yes
109	N116A	73.9167	4.25	-29.5	0	Yes
110	N117	52.79335	4.25	-29.5	0	Yes
111	N111B	64.91635	4.25	-29.5	0	Yes

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	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
2	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
3	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
4	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
5	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
6	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	

Member Distributed Loads (BLC 1 : D)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M12	Y	-.29	-.29	0	0
2	M13	Y	-.29	-.29	0	0
3	M11	Y	-.29	-.29	0	0
4	M10	Y	-.29	-.29	0	0
5	M67	Y	-.03	-.03	0	0
6	M66	Y	-.03	-.03	0	0
7	M65	Y	-.03	-.03	0	0
8	M64	Y	-.03	-.03	0	0
9	M63	Y	-.03	-.03	0	0
10	M62	Y	-.03	-.03	0	0
11	M61	Y	-.03	-.03	0	0
12	M60	Y	-.03	-.03	0	0
13	M59	Y	-.03	-.03	0	0

Member Distributed Loads (BLC 1 : D) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
14	M58	Y	-.03	-.03	0	0
15	M57	Y	-.03	-.03	0	0
16	M56	Y	-.03	-.03	0	0
17	M55	Y	-.03	-.03	0	0
18	M104	Y	-.06	-.06	0	0
19	M80	Y	-.06	-.06	0	0
20	M103	Y	-.06	-.06	0	0
21	M79	Y	-.06	-.06	0	0
22	M102	Y	-.06	-.06	0	0
23	M78	Y	-.06	-.06	0	0
24	M101	Y	-.06	-.06	0	0
25	M77	Y	-.06	-.06	0	0
26	M100	Y	-.06	-.06	0	0
27	M76	Y	-.06	-.06	0	0
28	M99	Y	-.06	-.06	0	0
29	M75	Y	-.06	-.06	0	0
30	M98	Y	-.06	-.06	0	0
31	M74	Y	-.06	-.06	0	0
32	M97	Y	-.06	-.06	0	0
33	M73	Y	-.06	-.06	0	0
34	M96	Y	-.06	-.06	0	0
35	M72	Y	-.06	-.06	0	0
36	M95	Y	-.06	-.06	0	0
37	M71	Y	-.06	-.06	0	0
38	M94	Y	-.06	-.06	0	0
39	M70	Y	-.06	-.06	0	0
40	M93	Y	-.06	-.06	0	0
41	M69	Y	-.06	-.06	0	0
42	M92	Y	-.06	-.06	0	0
43	M68	Y	-.06	-.06	0	0
44	M108	Y	-.03	-.03	0	6
45	M109	Y	-.06	-.06	0	6
46	M110	Y	-.06	-.06	0	6
47	M111	Y	-.03	-.03	0	0
48	M115	Y	-.06	-.06	0	12.123
49	M116	Y	-.06	-.06	0	12.123
50	M117	Y	-.03	-.03	0	12.123

Member Distributed Loads (BLC 4 : WLX)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M66	X	.034	.034	0	0
2	M67	X	.034	.034	0	0
3	M80	X	.068	.068	0	0
4	M79	X	.068	.068	0	0
5	M103	X	.068	.068	0	0
6	M104	X	.068	.068	0	0
7	M61	X	.017	.017	0	0
8	M60	X	.017	.017	0	0
9	M59	X	.017	.017	0	0
10	M96	X	.034	.034	0	0
11	M97	X	.034	.034	0	0

Member Distributed Loads (BLC 4 : WLX) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
12	M98	X	.034	.034	0	0
13	M74	X	.034	.034	0	0
14	M73	X	.034	.034	0	0
15	M72	X	.034	.034	0	0

Member Distributed Loads (BLC 5 : WLZ)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M65	Z	.034	.034	0	0
2	M64	Z	.034	.034	0	0
3	M63	Z	.034	.034	0	0
4	M62	Z	.034	.034	0	0
5	M78	Z	.068	.068	0	0
6	M77	Z	.068	.068	0	0
7	M76	Z	.068	.068	0	0
8	M75	Z	.068	.068	0	0
9	M99	Z	.068	.068	0	0
10	M100	Z	.068	.068	0	0
11	M101	Z	.068	.068	0	0
12	M102	Z	.068	.068	0	0
13	M92	Z	.034	.034	0	0
14	M68	Z	.034	.034	0	0
15	M93	Z	.034	.034	0	0
16	M69	Z	.034	.034	0	0
17	M94	Z	.034	.034	0	0
18	M70	Z	.034	.034	0	0
19	M95	Z	.034	.034	0	0
20	M71	Z	.034	.034	0	0
21	M55	Z	.017	.017	0	0
22	M56	Z	.017	.017	0	0
23	M57	Z	.017	.017	0	0
24	M58	Z	.017	.017	0	0
25	M108	Z	.017	.017	0	6
26	M109	Z	.034	.034	0	6
27	M110	Z	.034	.034	0	6
28	M111	Z	.034	.034	0	0
29	M115	Z	.068	.068	0	12.123
30	M116	Z	.068	.068	0	12.123
31	M117	Z	.034	.034	0	12.123

Member Distributed Loads (BLC 6 : WL-X)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M59	X	-.034	-.034	0	0
2	M60	X	-.034	-.034	0	0
3	M61	X	-.034	-.034	0	0
4	M74	X	-.068	-.068	0	0
5	M73	X	-.068	-.068	0	0
6	M72	X	-.068	-.068	0	0
7	M96	X	-.068	-.068	0	0
8	M97	X	-.068	-.068	0	0
9	M98	X	-.068	-.068	0	0
10	M104	X	-.034	-.034	0	0

Member Distributed Loads (BLC 6 : WL-X) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
11	M80	X	-.034	-.034	0	0
12	M103	X	-.034	-.034	0	0
13	M79	X	-.034	-.034	0	0
14	M67	X	-.017	-.017	0	0
15	M66	X	-.017	-.017	0	0

Member Distributed Loads (BLC 7 : WL-Z)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M55	Z	-.034	-.034	0	0
2	M56	Z	-.034	-.034	0	0
3	M57	Z	-.034	-.034	0	0
4	M58	Z	-.034	-.034	0	0
5	M71	Z	-.068	-.068	0	0
6	M70	Z	-.068	-.068	0	0
7	M69	Z	-.068	-.068	0	0
8	M68	Z	-.068	-.068	0	0
9	M92	Z	-.068	-.068	0	0
10	M93	Z	-.068	-.068	0	0
11	M94	Z	-.068	-.068	0	0
12	M95	Z	-.068	-.068	0	0
13	M65	Z	-.017	-.017	0	0
14	M64	Z	-.017	-.017	0	0
15	M63	Z	-.017	-.017	0	0
16	M62	Z	-.017	-.017	0	0
17	M102	Z	-.034	-.034	0	0
18	M78	Z	-.034	-.034	0	0
19	M101	Z	-.034	-.034	0	0
20	M77	Z	-.034	-.034	0	0
21	M100	Z	-.034	-.034	0	0
22	M76	Z	-.034	-.034	0	0
23	M99	Z	-.034	-.034	0	0
24	M75	Z	-.034	-.034	0	0
25	M108	Z	-.034	-.034	0	6
26	M109	Z	-.068	-.068	0	6
27	M110	Z	-.068	-.068	0	6
28	M111	Z	-.017	-.017	0	0
29	M115	Z	-.034	-.034	0	12.123
30	M116	Z	-.034	-.034	0	12.123
31	M117	Z	-.017	-.017	0	12.123

Member Distributed Loads (BLC 11 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M10	Y	-.026	-.026	5.107e-15	20.917
2	M11	Y	-.026	-.026	.229	29.833
3	M15	Y	-.026	-.026	.229	29.833
4	M17	Y	-.026	-.026	13.916	34.833
5	M38	Y	-.034	-.034	3.997e-15	20.917
6	M42B	Y	-.035	-.035	.229	12.709
7	M89	Y	-.034	-.034	.207	17.123
8	M12	Y	-.021	-.021	0	20.917
9	M13	Y	-.02	-.02	.398	29.833

Member Distributed Loads (BLC 11 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
10	M14	Y	-.02	-.02	.398	29.833
11	M16	Y	-.021	-.021	13.916	34.833
12	M41A	Y	-.052	-.052	7.661e-15	20.917
13	M42A	Y	-.051	-.051	.398	12.578
14	M91	Y	-.051	-.051	0	17.123
15	M113	Y	-.052	-.052	4.441e-16	20.917
16	M114A	Y	-.051	-.051	.398	12.578
17	M117B	Y	-.051	-.051	0	17.123
18	M34	Y	-.02	-.02	5.829e-16	4
19	M35	Y	-.024	-.024	1.131e-13	4
20	M36	Y	-.04	-.04	0	4
21	M37	Y	-.044	-.044	3.755e-14	4
22	M86	Y	-.044	-.044	4.663e-15	4
23	M87	Y	-.048	-.048	2.368e-14	4
24	M120A	Y	-.04	-.04	1.402e-14	4
25	M123	Y	-.036	-.036	7.563e-14	4
26	M116B	Y	-.048	-.048	8.527e-14	4
27	M16	Y	-.02	-.02	3.719e-15	13.916
28	M17	Y	-.02	-.02	1.055e-15	13.916
29	M41B	Y	-.04	-.04	3.053e-15	13.916
30	M82	Y	-.05	-.05	1.332e-15	13.916
31	M83	Y	-.04	-.04	2.22e-15	13.916
32	M84	Y	-.04	-.04	1.499e-15	13.916
33	M85	Y	-.04	-.04	1.943e-15	13.916
34	M121A	Y	-.04	-.04	1.499e-15	13.916
35	M115A	Y	-.05	-.05	2.442e-15	13.916

Member Distributed Loads (BLC 12 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M10	Y	-.103	-.103	0	20.917
2	M11	Y	-.102	-.102	.229	29.833
3	M15	Y	-.102	-.102	.229	29.833
4	M17	Y	-.103	-.103	13.916	34.833
5	M38	Y	-.137	-.137	5.551e-15	20.917
6	M42B	Y	-.138	-.138	.229	12.709
7	M89	Y	-.136	-.136	.207	17.123
8	M12	Y	-.083	-.083	2.331e-15	20.917
9	M13	Y	-.081	-.081	.398	29.833
10	M14	Y	-.081	-.081	.398	29.833
11	M16	Y	-.083	-.083	13.916	34.833
12	M41A	Y	-.207	-.207	5.44e-15	20.917
13	M42A	Y	-.204	-.204	.398	12.578
14	M91	Y	-.205	-.205	0	17.123
15	M113	Y	-.207	-.207	4.552e-15	20.917
16	M114A	Y	-.204	-.204	.398	12.578
17	M117B	Y	-.205	-.205	0	17.123
18	M34	Y	-.08	-.08	5.829e-16	4
19	M35	Y	-.096	-.096	1.131e-13	4
20	M36	Y	-.159	-.159	0	4
21	M37	Y	-.175	-.175	3.755e-14	4
22	M86	Y	-.175	-.175	4.663e-15	4

Member Distributed Loads (BLC 12 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
23	M87	Y	-.191	-.191	2.368e-14	4
24	M120A	Y	-.159	-.159	1.402e-14	4
25	M123	Y	-.143	-.143	7.563e-14	4
26	M116B	Y	-.191	-.191	8.527e-14	4
27	M16	Y	-.081	-.081	7.827e-15	13.916
28	M17	Y	-.081	-.081	1.277e-15	13.916
29	M41B	Y	-.161	-.161	1.055e-15	13.916
30	M82	Y	-.201	-.201	3.83e-15	13.916
31	M83	Y	-.161	-.161	1.388e-15	13.916
32	M84	Y	-.161	-.161	2.054e-15	13.916
33	M85	Y	-.161	-.161	1.499e-15	13.916
34	M121A	Y	-.161	-.161	4.996e-16	13.916
35	M115A	Y	-.201	-.201	7.272e-15	13.916

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut..	Area(Me..	Surface(...
1	D	DL		-1				50	5	
2	LL40	LL							4	
3	LL23	LL							4	
4	WLX	WL+X						15		
5	WLZ	WL+Z						31		
6	WL-X	WL-X						15		
7	WL-Z	WL-Z						31		
8	SL	SL							1	
9	EX	ELX				6				
10	EZ	ELZ				6				
11	BLC 1 Transient A...	None						35		
12	BLC 2 Transient A...	None						35		

Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		DL	1														
2	LL40		Y		2	1														
3	LL23		Y		3	1														
4	S		Y		SL	1														
5	D+LL40		Y		DL	1	2	1												
6	D+LL23		Y		DL	1	3	1												
7	D+S		Y		DL	1	SL	1												
8	WX		Y		WL...	1														
9	WZ		Y		WL...	1														
10	WX-		Y		WL...	1														
11	WZ-		Y		WL...	1														
12	ELX		Y		ELX	1														
13	ELZ		Y		ELZ	1														
14	IBC 16-1	Yes	Y		DL	1.4														
15	IBC 16-2 (a)	Yes	Y		DL	1.2	2	1.6												
16	IBC 16-2 (b)		Y		DL	1.2	3	1.6												
17	IBC 16-3 (b) (a)	Yes	Y		DL	1.2	WL...	.8												
18	IBC 16-3 (b) (b)	Yes	Y		DL	1.2	WL...	.8												

Load Combinations (Continued)

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
19	IBC 16-3 (b) (c)	Yes	Y		DL	1.2	WL...	.8												
20	IBC 16-3 (b) (d)	Yes	Y		DL	1.2	WL...	.8												
21	IBC 16-4 (a) (a)	Yes	Y		DL	1.2	WL...	1.6	2	.5										
22	IBC 16-4 (a) (b)	Yes	Y		DL	1.2	WL...	1.6	2	.5										
23	IBC 16-4 (a) (c)	Yes	Y		DL	1.2	WL...	1.6	2	.5										
24	IBC 16-4 (a) (d)	Yes	Y		DL	1.2	WL...	1.6	2	.5										
25	IBC 16-4 (b) (a)		Y		DL	1.2	WL...	1.6	3	.5										
26	IBC 16-4 (b) (b)		Y		DL	1.2	WL...	1.6	3	.5										
27	IBC 16-4 (b) (c)		Y		DL	1.2	WL...	1.6	3	.5										
28	IBC 16-4 (b) (d)		Y		DL	1.2	WL...	1.6	3	.5										
29	IBC 16-6 (a)	Yes	Y		DL	.9	WL...	1.6												
30	IBC 16-6 (b)	Yes	Y		DL	.9	WL...	1.6												
31	IBC 16-6 (c)	Yes	Y		DL	.9	WL...	1.6												
32	IBC 16-6 (d)	Yes	Y		DL	.9	WL...	1.6												
33	IBC 16-5 (a)	Yes	Y		DL	1.2	ELX	1	2	.5										
34	IBC 16-5 (b)	Yes	Y		DL	1.2	ELZ	1	2	.5										
35	IBC 16-5 (c)	Yes	Y		DL	1.2	ELX	-1	2	.5										
36	IBC 16-5 (d)	Yes	Y		DL	1.2	ELZ	-1	2	.5										
37	IBC 16-5 (a)(b)		Y		DL	1.2	ELZ	-1	3	.5										
38	IBC 16-5 (b)(b)		Y		DL	1.2	ELZ	-1	3	.5										
39	IBC 16-5 (c)(b)		Y		DL	1.2	ELZ	-1	3	.5										
40	IBC 16-5 (d)(b)		Y		DL	1.2	ELZ	-1	3	.5										
41	IBC 16-7 (a)	Yes	Y		DL	.9	ELX	1												
42	IBC 16-7 (b)	Yes	Y		DL	.9	ELZ	1												
43	IBC 16-7 (c)	Yes	Y		DL	.9	ELX	-1												
44	IBC 16-7 (d)	Yes	Y		DL	.9	ELZ	-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	N1	max	3.431	23	35.619	15	-2.3	32	-2.363	32	.747	21	9.025	29
2		min	-1.7	29	13.388	32	-9.858	15	-15.277	15	-.809	23	-15.504	23
3	N2	max	1.483	35	36.369	15	9.983	15	10.009	24	.359	31	2.374	29
4		min	-.445	41	13.063	30	1.524	30	-3.48	30	-.412	21	-5.649	23
5	N4	max	3.803	23	52.241	15	25.75	24	45.724	24	.361	31	8.152	29
6		min	-1.497	29	17.709	30	3.006	30	-1.555	30	-.42	21	-15.865	23
7	N3	max	1.843	23	53.132	15	2.265	32	30.797	32	.735	21	3.895	29
8		min	-1	29	20.577	32	-31.628	22	-44.317	22	-.791	23	-6.729	23
9	N6	max	1.173	31	39.622	15	21.385	15	15.211	24	.091	31	8.6	21
10		min	-5.071	21	15.806	30	7.715	42	-.156	30	-.161	21	-5.277	31
11	N5	max	4.23	31	38.498	15	-8.098	31	-11.368	32	.377	21	13.489	29
12		min	-6.341	21	16.793	31	-20.813	15	-31.425	15	-.357	31	-16.231	23
13	Totals:	max	13.974	31	255.48	15	27.472	32						
14		min	-13.974	21	106.737	31	-26.927	22						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M1	1	max	-.785	32	12.097	15	.728	23	0	23	.747	21	53.238	15
2			min	-6.085	15	3.266	29	-.648	21	0	29	-.809	23	10.077	32
3		2	max	-.785	32	7.091	15	.496	29	0	23	2.499	23	-8.51	30

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
4			min	-6.085	15	2.194	29	-.714	23	0	29	-1.758	29	-38.305	15
5		3	max	-1.585	44	-1.334	29	.331	29	0	23	.689	31	-23.039	29
6			min	-5.846	15	-3.518	15	-.138	24	0	29	-1.177	21	-78.488	15
7		4	max	-1.585	44	-2.464	29	.423	21	0	23	.902	31	-4.75	32
8			min	-5.846	15	-9.048	15	-.35	31	0	29	-1.214	21	-30.82	15
9		5	max	-1.585	44	-3.252	29	.061	22	0	23	.412	21	62.07	15
10			min	-5.846	15	-12.344	15	-.003	29	0	29	-.359	31	12.657	30
11	M2	1	max	29.322	22	28.145	15	.75	23	0	35	.735	21	103.371	22
12			min	2.373	32	9.774	32	-.66	21	0	41	-.791	23	-4.446	32
13		2	max	.003	15	6.77	15	0	15	0	35	0	31	-39.063	30
14			min	0	32	.419	32	0	31	0	41	0	15	-123.534	15
15		3	max	.003	15	6.13	15	0	15	0	35	0	15	-75.783	29
16			min	0	32	-.061	32	0	31	0	41	0	32	-178.765	15
17		4	max	24.325	15	-5.588	30	.697	21	0	35	1.28	31	-33.466	32
18			min	7.548	30	-18.281	15	-.642	31	0	41	-1.667	21	-125.966	15
19		5	max	24.325	15	-7.114	30	.18	23	0	35	.42	21	75.739	24
20			min	7.548	30	-25.745	15	-.128	29	0	41	-.361	31	-9.523	30
21	M3	1	max	20.523	15	22.326	15	2.487	23	.09	15	6.877	29	68.315	15
22			min	5.155	31	9.311	32	-2.062	29	.04	43	-8.331	23	14.791	32
23		2	max	.009	15	5.805	15	0	23	.012	15	0	21	-44.604	30
24			min	.003	32	1.138	32	0	21	-.003	29	0	23	-106.265	15
25		3	max	.009	15	4.013	15	0	21	.012	15	0	23	-64.254	31
26			min	.003	32	.52	32	0	23	-.003	29	0	21	-149.875	15
27		4	max	21.291	15	-7.102	30	.169	21	-.015	29	.773	31	-24.724	32
28			min	8.162	31	-17.804	15	-.172	31	-.06	23	-.976	21	-81.622	15
29		5	max	23.451	15	-5.586	32	1.061	21	.048	23	4.742	21	81.337	15
30			min	9.002	31	-18.757	15	-1.039	31	-.031	29	-4.688	31	32.228	42
31	M4	1	max	35.619	15	1.709	29	-2.297	32	.747	21	15.277	15	9.025	29
32			min	13.388	32	-3.458	23	-9.874	15	-.809	23	2.363	32	-15.504	23
33		2	max	35.568	15	1.709	29	-2.297	32	.747	21	4.786	15	7.21	29
34			min	13.35	32	-3.458	23	-9.874	15	-.809	23	-.078	32	-11.83	23
35		3	max	35.517	15	1.709	29	-2.297	32	.747	21	-1.451	30	5.394	29
36			min	13.312	32	-3.458	23	-9.874	15	-.809	23	-5.705	15	-8.156	23
37		4	max	35.466	15	1.709	29	-2.297	32	.747	21	-4.456	29	3.578	29
38			min	13.274	32	-3.458	23	-9.874	15	-.809	23	-16.195	15	-4.483	23
39		5	max	35.416	15	1.709	29	-2.297	32	.747	21	-7.124	44	1.939	21
40			min	13.236	32	-3.458	23	-9.874	15	-.809	23	-26.686	15	-.998	31
41	M5	1	max	36.369	15	9.971	15	1.499	35	.359	31	2.374	29	10.009	24
42			min	13.063	30	1.518	30	-.448	41	-.412	21	-5.649	23	-3.48	30
43		2	max	36.318	15	9.971	15	1.499	35	.359	31	2.243	29	2.497	32
44			min	13.025	30	1.518	30	-.448	41	-.412	21	-4.326	23	-6.271	22
45		3	max	36.267	15	9.971	15	1.499	35	.359	31	2.112	29	-3.164	32
46			min	12.987	30	1.518	30	-.448	41	-.412	21	-3.004	23	-14.685	15
47		4	max	36.216	15	9.971	15	1.499	35	.359	31	1.995	21	-6.925	29
48			min	12.949	30	1.518	30	-.448	41	-.412	21	-1.689	31	-25.28	15
49		5	max	36.166	15	9.971	15	1.499	35	.359	31	2.209	21	-9.308	42
50			min	12.911	30	1.518	30	-.448	41	-.412	21	-.716	31	-35.874	15
51	M6	1	max	53.132	15	2.318	32	1.886	23	.735	21	3.895	29	30.797	32
52			min	20.577	32	-31.671	22	-1.015	29	-.791	23	-6.729	23	-44.317	22
53		2	max	53.081	15	2.318	32	1.886	23	.735	21	2.817	29	32.125	24
54			min	20.539	32	-31.671	22	-1.015	29	-.791	23	-4.725	23	-14.347	30
55		3	max	53.03	15	2.318	32	1.886	23	.735	21	1.739	29	40.187	15

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
56			min	20.501	32	-31.671	22	-1.015	29	-.791	23	-2.722	23	11.856	30
57		4	max	52.98	15	2.318	32	1.886	23	.735	21	.66	29	66.781	15
58			min	20.463	32	-31.671	22	-1.015	29	-.791	23	-.718	23	23.409	32
59		5	max	52.929	15	2.318	32	1.886	23	.735	21	1.46	35	93.375	15
60			min	20.425	32	-31.671	22	-1.015	29	-.791	23	-.751	41	20.946	32
61	M7	1	max	52.241	15	1.509	29	25.85	24	.361	31	1.555	30	8.152	29
62			min	17.709	30	-3.842	23	2.98	30	-.42	21	-45.724	24	-15.865	23
63		2	max	52.19	15	1.509	29	25.85	24	.361	31	4.72	30	6.55	29
64			min	17.671	30	-3.842	23	2.98	30	-.42	21	-18.258	24	-11.783	23
65		3	max	52.139	15	1.509	29	25.85	24	.361	31	14.922	15	4.947	29
66			min	17.633	30	-3.842	23	2.98	30	-.42	21	5.035	32	-7.702	23
67		4	max	52.088	15	1.509	29	25.85	24	.361	31	40.888	15	3.344	29
68			min	17.595	30	-3.842	23	2.98	30	-.42	21	11.052	30	-3.62	23
69		5	max	52.038	15	1.509	29	25.85	24	.361	31	66.855	15	2.616	35
70			min	17.557	30	-3.842	23	2.98	30	-.42	21	14.217	30	-.644	41
71	M8	1	max	38.498	15	6.357	21	-8.1	31	.377	21	31.425	15	13.489	29
72			min	16.793	31	-4.247	31	-20.84	15	-.357	31	11.368	32	-16.231	23
73		2	max	38.447	15	6.357	21	-8.1	31	.377	21	9.282	15	7.379	29
74			min	16.755	31	-4.247	31	-20.84	15	-.357	31	2.247	32	-12.317	23
75		3	max	38.396	15	6.357	21	-8.1	31	.377	21	-5.37	30	1.269	29
76			min	16.717	31	-4.247	31	-20.84	15	-.357	31	-12.861	15	-8.402	23
77		4	max	38.346	15	6.357	21	-8.1	31	.377	21	-14.212	31	-1.886	31
78			min	16.678	31	-4.247	31	-20.84	15	-.357	31	-35.004	15	-9.253	15
79		5	max	38.295	15	6.357	21	-8.1	31	.377	21	-22.818	31	2.626	31
80			min	16.64	31	-4.247	31	-20.84	15	-.357	31	-57.147	15	-14.219	21
81	M9	1	max	39.622	15	21.347	15	1.189	31	.091	31	8.6	21	15.211	24
82			min	15.806	30	7.705	42	-5.083	21	-.161	21	-5.277	31	-.156	30
83		2	max	39.571	15	21.347	15	1.189	31	.091	31	3.491	29	-.418	32
84			min	15.768	30	7.705	42	-5.083	21	-.161	21	-4.327	23	-11.829	22
85		3	max	39.52	15	21.347	15	1.189	31	.091	31	-.69	29	-12.964	32
86			min	15.73	30	7.705	42	-5.083	21	-.161	21	-5.302	15	-34.128	15
87		4	max	39.469	15	21.347	15	1.189	31	.091	31	-1.488	31	-23.177	42
88			min	15.692	30	7.705	42	-5.083	21	-.161	21	-9.55	15	-56.809	15
89		5	max	39.419	15	21.347	15	1.189	31	.091	31	-.225	31	-31.363	42
90			min	15.654	30	7.705	42	-5.083	21	-.161	21	-13.797	15	-79.49	15
91	M10	1	max	0	19	6.128	15	0	14	.002	14	0	14	0	14
92			min	0	15	3.302	29	0	14	0	15	0	14	0	14
93		2	max	0	19	3.064	15	0	14	.002	14	0	14	-12.951	29
94			min	0	15	1.651	29	0	14	0	15	0	14	-24.035	15
95		3	max	0	19	0	14	0	14	.002	14	0	14	-17.268	29
96			min	0	15	0	14	0	14	0	15	0	14	-32.047	15
97		4	max	0	19	-1.651	29	0	14	.002	14	0	14	-12.951	29
98			min	0	15	-3.064	15	0	14	0	15	0	14	-24.035	15
99		5	max	0	19	-3.302	29	0	14	.002	14	0	14	0	14
100			min	0	15	-6.128	15	0	14	0	15	0	14	0	14
101	M11	1	max	.002	15	9.691	15	0	32	0	29	0	14	0	14
102			min	0	32	4.617	29	0	15	-.001	15	0	14	0	14
103		2	max	.002	15	5.298	15	0	32	0	29	0	32	-25.47	29
104			min	0	32	2.208	29	0	15	-.001	15	0	15	-56.054	15
105		3	max	0	32	-.074	31	0	15	0	29	0	32	-32.04	29
106			min	-.001	15	-1.283	15	0	32	-.001	15	0	15	-74.289	15
107		4	max	0	32	-2.488	31	0	15	0	29	0	22	-18.482	29

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
108			min	-.001	15	-5.72	15	0	32	-.001	15	0	32	-48.178	15
109		5	max	0	32	-4.903	31	0	15	0	29	0	15	15.948	21
110			min	-.001	15	-10.156	15	0	32	-.001	15	0	32	-2.808	31
111	M12	1	max	0	15	5.728	15	0	14	0	22	0	14	0	14
112			min	0	18	3.255	29	0	14	-.001	32	0	14	0	14
113		2	max	0	15	2.864	15	0	14	0	22	0	14	-12.765	29
114			min	0	18	1.627	29	0	14	-.001	32	0	14	-22.466	15
115		3	max	0	15	0	14	0	14	0	22	0	14	-17.02	29
116			min	0	18	0	14	0	14	-.001	32	0	14	-29.955	15
117		4	max	0	15	-1.627	29	0	14	0	22	0	14	-12.765	29
118			min	0	18	-2.864	15	0	14	-.001	32	0	14	-22.466	15
119		5	max	0	15	-3.255	29	0	14	0	22	0	14	0	14
120			min	0	18	-5.728	15	0	14	-.001	32	0	14	0	14
121	M13	1	max	0	31	11.066	15	0	32	0	32	0	14	0	14
122			min	0	15	4.732	29	0	22	0	22	0	14	0	14
123		2	max	0	31	6.982	15	0	32	0	32	0	32	-26.47	29
124			min	0	15	2.359	29	0	22	0	22	0	22	-67.52	15
125		3	max	0	15	-.397	31	0	14	0	32	0	15	-32.924	29
126			min	0	31	-3.324	15	0	14	0	22	0	31	-90.539	15
127		4	max	0	15	-2.777	31	0	14	0	32	0	15	-16.238	29
128			min	0	31	-7.469	15	0	14	0	22	0	32	-50.29	15
129		5	max	0	15	-5.157	31	0	14	0	32	0	22	23.795	21
130			min	0	31	-11.615	15	0	14	0	22	0	32	-1.224	31
131	M14	1	max	8.359	23	7.68	15	.059	22	.032	32	0	14	0	14
132			min	-2.493	29	2.004	29	-.033	31	-.066	22	0	14	0	14
133		2	max	8.359	23	6.192	15	.059	22	.032	32	.439	22	-13.385	29
134			min	-2.493	29	1.578	29	-.033	31	-.066	22	-.249	31	-51.948	15
135		3	max	2.033	21	-1.161	31	.145	31	.056	30	.286	22	-21.172	30
136			min	.093	31	-4.748	15	-.217	21	-.032	24	-.104	31	-65.558	15
137		4	max	2.033	21	-1.595	31	.145	31	.056	30	.975	31	-1.806	30
138			min	.093	31	-6.298	15	-.217	21	-.032	24	-1.4	21	-24.368	15
139		5	max	2.888	15	-1.891	30	1.461	30	.058	22	3.792	30	41.64	15
140			min	.566	30	-10.46	15	-.816	24	-.005	32	-2.349	24	8.31	31
141	M15	1	max	5.624	23	5.935	15	.03	31	.079	32	0	14	0	14
142			min	-3.015	29	1.684	29	-.03	21	-.044	22	0	14	0	14
143		2	max	5.624	23	4.138	15	.03	31	.079	32	.226	31	-10.851	29
144			min	-3.015	29	1.221	29	-.03	21	-.044	22	-.221	21	-37.72	15
145		3	max	.526	29	-1.306	31	.096	21	.035	22	.159	31	-16.679	29
146			min	-2.483	23	-3.736	15	-.103	23	-.062	32	-.164	21	-43.062	15
147		4	max	.526	29	-1.775	31	.096	21	.035	22	.552	21	4.162	29
148			min	-2.483	23	-5.577	15	-.103	23	-.062	32	-.612	23	-11.084	23
149		5	max	.526	29	-2.243	31	.096	21	.035	22	1.267	21	40.128	15
150			min	-2.483	23	-7.418	15	-.103	23	-.062	32	-1.381	23	6.334	31
151	M16	1	max	.849	23	19.666	15	.107	24	-.009	32	0	14	0	14
152			min	.203	29	6.37	30	-.037	30	-.022	15	0	14	0	14
153		2	max	.849	23	17.682	15	.107	24	-.009	32	.934	24	-52.663	30
154			min	.203	29	5.725	30	-.037	30	-.022	15	-.323	30	-162.618	15
155		3	max	1.923	23	-3.373	30	.022	30	-.009	32	1.302	24	-70.083	30
156			min	-.718	29	-10.408	15	-.075	24	-.022	15	-.377	30	-216.52	15
157		4	max	1.923	23	-4.024	30	.022	30	-.009	32	.651	24	-37.874	30
158			min	-.718	29	-12.432	15	-.075	24	-.022	15	-.189	30	-117.071	15
159		5	max	1.923	23	-4.675	30	.022	30	-.009	32	0	14	0	14

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
160			min	-.718	29	-14.456	15	-.075	24	-.022	15	0	14	0	14
161	M17	1	max	1.695	23	19.406	15	.114	24	.018	24	0	14	0	14
162			min	-.763	29	6.815	32	-.032	30	.006	30	0	14	0	14
163		2	max	1.695	23	17.422	15	.114	24	.018	24	.997	24	-56.535	32
164			min	-.763	29	6.169	32	-.032	30	.006	30	-.283	30	-160.354	15
165		3	max	1.756	23	-3.637	32	.024	30	.018	24	1.228	24	-75.366	32
166			min	-.831	29	-9.969	15	-.071	24	.006	30	-.416	30	-214.667	15
167		4	max	1.756	23	-4.327	32	.024	30	.018	24	.614	24	-40.688	32
168			min	-.831	29	-12.326	15	-.071	24	.006	30	-.208	30	-117.596	15
169		5	max	1.756	23	-5.017	32	.024	30	.018	24	0	14	0	14
170			min	-.831	29	-14.682	15	-.071	24	.006	30	0	14	0	14
171	M20	1	max	1.251	15	18.417	15	.638	23	.16	21	0	14	0	14
172			min	.294	31	3.217	30	-.571	21	-.079	31	0	14	0	14
173		2	max	.001	23	6.399	15	1.238	23	.007	31	4.85	21	-46.035	30
174			min	0	21	.724	32	-1.71	21	-.007	21	-3.303	23	-144.306	15
175		3	max	.001	21	2.326	22	3.18	21	.007	31	.791	31	-54.691	31
176			min	-.002	23	-.182	32	-1.788	31	-.007	21	-1.596	21	-184.212	15
177		4	max	4.708	22	-3.464	30	.639	21	.007	31	1.195	31	-40.012	32
178			min	-2.215	32	-13.693	15	-.581	31	-.007	21	-1.562	21	-147.393	15
179		5	max	1.444	15	-2.569	32	.221	23	.02	31	0	14	0	14
180			min	.375	31	-19.28	15	-.164	29	-.09	21	0	14	0	14
181	M34	1	max	1.474	31	5.851	15	2.535	29	-.869	43	6.602	23	22.991	15
182			min	-1.604	21	2.464	32	-3.158	23	-1.971	15	-5.262	29	9.093	31
183		2	max	1.474	31	5.647	15	2.535	29	-.869	43	3.444	23	17.242	15
184			min	-1.604	21	2.406	32	-3.158	23	-1.971	15	-2.727	29	6.325	31
185		3	max	1.474	31	5.442	15	2.535	29	-.869	43	.286	23	11.697	15
186			min	-1.604	21	2.348	32	-3.158	23	-1.971	15	-.192	29	3.614	31
187		4	max	1.474	31	5.238	15	2.535	29	-.869	43	2.343	29	6.399	21
188			min	-1.604	21	2.29	32	-3.158	23	-1.971	15	-2.872	23	.961	31
189		5	max	1.474	31	5.034	15	2.535	29	-.869	43	4.878	29	2.351	21
190			min	-1.604	21	2.233	32	-3.158	23	-1.971	15	-6.031	23	-1.634	31
191	M35	1	max	2.659	31	5.858	15	2.239	23	1.9	15	4.427	21	27.821	15
192			min	-5.236	21	2.825	30	-2.002	21	.793	44	-5.063	23	8.045	31
193		2	max	2.659	31	5.624	15	2.239	23	1.9	15	2.427	29	22.08	15
194			min	-5.236	21	2.764	30	-2.002	21	.793	44	-2.823	23	5.107	31
195		3	max	2.659	31	5.389	15	2.239	23	1.9	15	.63	30	16.798	21
196			min	-5.236	21	2.702	30	-2.002	21	.793	44	-.584	23	2.231	31
197		4	max	2.659	31	5.154	15	2.239	23	1.9	15	1.656	31	12.535	21
198			min	-5.236	21	2.641	30	-2.002	21	.793	44	-1.578	21	-.585	31
199		5	max	2.659	31	4.92	15	2.239	23	1.9	15	3.895	23	8.402	21
200			min	-5.236	21	2.58	30	-2.002	21	.793	44	-3.58	21	-3.339	31
201	M36	1	max	3.383	23	2.598	24	.42	23	-.017	32	1.294	29	15.875	21
202			min	-1.888	29	1.104	30	-.323	29	-.071	15	-1.682	23	-2.852	31
203		2	max	3.383	23	2.418	24	.42	23	-.017	32	.97	29	13.77	21
204			min	-1.888	29	1.028	30	-.323	29	-.071	15	-1.261	23	-4.388	31
205		3	max	3.383	23	2.237	24	.42	23	-.017	32	.647	29	11.845	21
206			min	-1.888	29	.952	30	-.323	29	-.071	15	-.841	23	-5.849	31
207		4	max	3.383	23	2.057	24	.42	23	-.017	32	.323	29	10.101	21
208			min	-1.888	29	.877	30	-.323	29	-.071	15	-.42	23	-7.235	31
209		5	max	3.383	23	1.876	24	.42	23	-.017	32	0	14	8.538	21
210			min	-1.888	29	.801	30	-.323	29	-.071	15	0	14	-8.545	31
211	M37	1	max	3.712	31	5.187	15	.508	23	.042	24	.885	29	23.763	21

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
212			min	-2.001	21	2.434	32	-.221	29	.004	30	-2.031	23	-1.27	31
213		2	max	3.712	31	4.801	15	.508	23	.042	24	.664	29	19.761	21
214			min	-2.001	21	2.354	32	-.221	29	.004	30	-1.524	23	-3.961	31
215		3	max	3.712	31	4.415	15	.508	23	.042	24	.443	29	15.951	21
216			min	-2.001	21	2.275	32	-.221	29	.004	30	-1.016	23	-6.573	31
217		4	max	3.712	31	4.029	15	.508	23	.042	24	.221	29	12.335	21
218			min	-2.001	21	2.196	32	-.221	29	.004	30	-.508	23	-9.106	31
219		5	max	3.712	31	3.701	14	.508	23	.042	24	0	14	8.912	21
220			min	-2.001	21	2.117	32	-.221	29	.004	30	0	14	-11.559	31
221	M39	1	max	-3.122	31	3.239	15	2.058	23	.011	15	4.878	29	23.374	15
222			min	-13.707	15	.881	32	-1.682	29	.005	43	-6.031	23	6.211	32
223		2	max	-3.122	31	3.173	15	2.058	23	.011	15	1.304	29	16.561	15
224			min	-13.707	15	.832	32	-1.682	29	.005	43	-1.658	23	4.391	32
225		3	max	-3.124	31	3.107	15	2.058	23	.011	15	2.714	23	9.889	15
226			min	-13.707	15	.782	32	-1.682	29	.005	43	-2.27	29	2.677	32
227		4	max	-3.124	31	2.326	15	.534	29	.011	15	1.357	23	4.873	15
228			min	-13.706	15	.63	32	-.639	23	.005	43	-1.135	29	1.285	32
229		5	max	-3.124	31	2.26	15	.534	29	.011	15	0	14	0	14
230			min	-13.706	15	.58	32	-.639	23	.005	43	0	14	0	14
231	M40	1	max	-2.262	31	.688	15	0	29	0	15	0	14	0	14
232			min	-10.08	15	.152	29	0	23	0	29	0	14	0	14
233		2	max	-2.262	31	.646	15	0	29	0	15	0	29	-.393	29
234			min	-10.08	15	.121	29	0	23	0	29	0	23	-1.918	15
235		3	max	-2.262	31	-.002	29	0	24	0	15	0	21	-.52	29
236			min	-10.08	15	-.02	15	0	31	0	29	-.001	23	-2.519	15
237		4	max	-2.262	31	-.119	29	0	31	0	15	0	21	-.386	29
238			min	-10.08	15	-.625	15	0	21	0	29	0	31	-1.858	15
239		5	max	-2.262	31	-.15	29	0	31	0	15	0	14	0	14
240			min	-10.08	15	-.667	15	0	21	0	29	0	14	0	14
241	M41	1	max	-3.245	31	-.149	30	.2	31	-.002	43	0	14	0	14
242			min	-12.156	15	-.71	24	-.251	21	-.005	15	0	14	0	14
243		2	max	-3.245	31	-.232	30	.2	31	-.002	43	.714	31	2.727	24
244			min	-12.156	15	-.821	24	-.251	21	-.005	15	-.893	21	.679	30
245		3	max	-3.245	31	-.425	30	.197	21	-.002	43	.602	31	6.656	24
246			min	-12.156	15	-1.43	15	-.148	31	-.005	15	-.722	21	1.915	30
247		4	max	-3.246	31	-.617	30	.807	21	-.002	43	.704	21	12.003	15
248			min	-12.156	15	-2.314	15	-.872	23	-.005	15	-.79	23	3.707	30
249		5	max	-3.246	31	-.701	30	.807	21	-.002	43	3.58	21	20.445	15
250			min	-12.156	15	-2.425	15	-.872	23	-.005	15	-3.895	23	6.055	30
251	M38	1	max	1.268	29	3.009	15	0	14	0	19	0	14	0	14
252			min	-1.619	23	.531	29	0	14	0	15	0	14	0	14
253		2	max	1.268	29	1.505	15	0	14	0	19	0	14	-2.084	29
254			min	-1.619	23	.266	29	0	14	0	15	0	14	-11.802	15
255		3	max	1.268	29	0	14	0	14	0	19	0	14	-2.779	29
256			min	-1.619	23	0	14	0	14	0	15	0	14	-15.736	15
257		4	max	1.268	29	-.266	29	0	14	0	19	0	14	-2.084	29
258			min	-1.619	23	-1.505	15	0	14	0	15	0	14	-11.802	15
259		5	max	1.268	29	-.531	29	0	14	0	19	0	14	0	14
260			min	-1.619	23	-3.009	15	0	14	0	15	0	14	0	14
261	M41A	1	max	.073	23	4.399	15	0	14	0	15	0	14	0	14
262			min	-.177	21	.696	29	0	14	0	32	0	14	0	14
263		2	max	.073	23	2.2	15	0	14	0	15	0	14	-2.73	29

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
264			min	-.177	21	.348	29	0	14	0	32	0	14	-17.254	15
265		3	max	.073	23	0	14	0	14	0	15	0	14	-3.64	29
266			min	-.177	21	0	14	0	14	0	32	0	14	-23.005	15
267		4	max	.073	23	-.348	31	0	14	0	15	0	14	-2.73	29
268			min	-.177	21	-2.2	15	0	14	0	32	0	14	-17.254	15
269		5	max	.073	23	-.696	31	0	14	0	15	0	14	0	14
270			min	-.177	21	-4.399	15	0	14	0	32	0	14	0	14
271	M42B	1	max	3.244	29	1.702	15	0	14	0	15	0	14	0	14
272			min	-3.971	23	.26	31	0	14	0	32	0	14	0	14
273		2	max	3.244	29	.881	15	0	14	0	15	0	14	-.635	31
274			min	-3.971	23	.133	31	0	14	0	32	0	14	-4.192	15
275		3	max	3.244	29	0	15	0	14	0	15	0	14	-.847	31
276			min	-3.971	23	0	31	0	14	0	32	0	14	-5.592	15
277		4	max	3.244	29	-.133	29	0	14	0	15	0	14	-.635	31
278			min	-3.971	23	-.88	15	0	14	0	32	0	14	-4.195	15
279		5	max	3.244	29	-.267	29	0	14	0	15	0	14	0	14
280			min	-3.971	23	-1.761	15	0	14	0	32	0	14	0	14
281	M43A	1	max	4.043	24	2.145	15	.145	23	0	32	0	14	0	14
282			min	-2.006	22	.395	31	-.126	21	-.001	15	0	14	0	14
283		2	max	4.043	24	2.088	15	.145	23	0	32	.308	23	-.794	31
284			min	-2.006	22	.353	31	-.126	21	-.001	15	-.268	21	-4.498	15
285		3	max	4.043	24	2.032	15	.145	23	0	32	.616	23	-1.499	31
286			min	-2.006	22	.31	31	-.126	21	-.001	15	-.537	21	-8.875	15
287		4	max	4.043	24	-.352	31	.126	21	0	32	.308	23	-.794	31
288			min	-2.006	22	-2.088	15	-.145	23	-.001	15	-.268	21	-4.497	15
289		5	max	4.043	24	-.395	31	.126	21	0	32	0	14	0	14
290			min	-2.006	22	-2.144	15	-.145	23	-.001	15	0	14	0	14
291	M42A	1	max	.262	21	2.398	15	0	14	0	15	0	14	0	14
292			min	-.238	31	.342	30	0	14	0	18	0	14	0	14
293		2	max	.262	21	1.277	15	0	14	0	15	0	14	-.855	30
294			min	-.238	31	.18	30	0	14	0	18	0	14	-6.052	15
295		3	max	.262	21	.002	15	0	14	0	15	0	14	-1.142	30
296			min	-.238	31	0	30	0	14	0	18	0	14	-8.084	15
297		4	max	.262	21	-.18	29	0	14	0	15	0	14	-.857	30
298			min	-.238	31	-1.273	15	0	14	0	18	0	14	-6.066	15
299		5	max	.262	21	-.354	29	0	14	0	15	0	14	0	14
300			min	-.238	31	-2.497	15	0	14	0	18	0	14	0	14
301	M41B	1	max	2.725	15	3.913	29	.004	24	-.004	29	0	14	0	14
302			min	.702	31	-3.518	23	0	22	-.012	15	0	14	0	14
303		2	max	3.983	21	2.118	15	.002	22	.005	15	-.005	32	10.38	23
304			min	-2.094	31	-.754	29	0	32	.001	29	-.02	22	-11.117	29
305		3	max	3.983	21	1.273	23	.002	22	.005	15	-.003	32	5.532	31
306			min	-2.094	31	-.961	29	0	32	.001	29	-.014	22	-8.719	21
307		4	max	3.983	21	.795	31	.002	22	.005	15	-.002	32	2.405	31
308			min	-2.094	31	-1.253	21	0	32	.001	29	-.007	22	-5.329	21
309		5	max	3.983	21	.587	31	.002	22	.005	15	0	14	0	14
310			min	-2.094	31	-1.81	21	0	32	.001	29	0	14	0	14
311	M42C	1	max	4.593	14	-3.176	32	1.009	33	0	14	1.938	21	-2.69	32
312			min	2.953	29	-16.005	15	-.286	29	0	14	-.998	31	-26.569	15
313		2	max	2.884	14	-.661	32	.699	15	0	14	.548	29	.573	32
314			min	1.851	29	-4.146	15	.144	43	0	14	-.999	23	-7.949	22
315		3	max	2.803	14	-.661	32	.699	15	0	14	1.458	21	2.564	24

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
316			min	1.799	29	-4.146	15	.144	43	0	14	-.328	31	-.83	30
317		4	max	1.086	14	.086	32	.687	15	0	14	.602	21	1.784	24
318			min	.697	29	-.311	22	.218	41	0	14	-.332	31	-.104	30
319		5	max	1.005	14	.086	32	.687	15	0	14	1.826	15	1.812	15
320			min	.645	29	-.311	22	.218	41	0	14	.495	31	.546	30
321	M43	1	max	10.46	23	2.849	21	1.672	22	-.008	29	0	14	0	14
322			min	-1.096	29	.475	31	-1.431	32	-.028	15	0	14	0	14
323		2	max	8.772	23	2.716	15	.177	32	-.008	29	1.372	22	.075	29
324			min	-2.345	29	.163	29	-.239	22	-.028	15	-1.21	32	-.687	15
325		3	max	8.713	23	2.716	15	.177	32	-.008	29	.833	22	-.291	29
326			min	-2.39	29	.163	29	-.239	22	-.028	15	-.813	32	-6.799	15
327		4	max	1.216	14	.943	21	.179	32	0	14	.408	22	.127	29
328			min	.781	31	-.465	31	-.181	22	0	14	-.403	32	-3.515	15
329		5	max	1.147	14	.943	21	.179	32	0	14	0	14	-.999	31
330			min	.737	31	-.465	31	-.181	22	0	14	0	14	-3.54	15
331	M44C	1	max	4.872	14	15.767	15	.675	33	0	14	2.209	21	26.218	15
332			min	3.13	29	3.15	30	-.384	43	0	14	-.716	31	2.737	30
333		2	max	3.055	14	4.211	15	.435	15	0	14	.625	29	7.824	24
334			min	1.961	29	.716	30	.035	43	0	14	-1.186	23	-.514	30
335		3	max	2.974	14	4.211	15	.435	15	0	14	1.086	21	.743	32
336			min	1.908	29	.716	30	.035	43	0	14	-.668	31	-2.689	22
337		4	max	1.151	14	.329	24	.806	15	0	14	.416	29	.064	32
338			min	.739	29	-.102	30	.226	29	0	14	-.549	23	-1.853	22
339		5	max	1.07	14	.329	24	.806	15	0	14	1.713	15	-.602	31
340			min	.686	29	-.102	30	.226	29	0	14	.504	31	-1.936	15
341	M45	1	max	9.584	24	-.276	32	.752	29	.022	31	0	14	0	14
342			min	-2.959	30	-1.412	15	-.842	23	-.139	21	0	14	0	14
343		2	max	7.899	24	.951	30	.039	41	.022	31	.683	29	.846	24
344			min	-4.224	30	-1.62	24	-.062	35	-.139	21	-.838	23	-.702	30
345		3	max	7.84	24	.951	30	.039	41	.022	31	.56	29	4.491	24
346			min	-4.268	30	-1.62	24	-.062	35	-.139	21	-.831	23	-2.841	30
347		4	max	1.239	14	.472	32	.21	23	0	14	.266	29	2.429	24
348			min	.795	30	-.958	22	-.118	29	0	14	-.472	23	-1.791	30
349		5	max	1.17	14	.472	32	.21	23	0	14	0	14	1.832	15
350			min	.751	30	-.958	22	-.118	29	0	14	0	14	.353	30
351	M46	1	max	5.117	14	2.279	32	.322	41	0	14	2.615	35	11.91	32
352			min	3.279	29	-4.606	22	-2.492	35	0	14	-.643	41	-24.122	22
353		2	max	3.201	14	1.37	32	.249	31	0	14	1.419	29	6.565	32
354			min	2.054	29	-2.772	22	-.37	21	0	14	-1.656	23	-12.987	22
355		3	max	3.12	14	1.37	32	.249	31	0	14	.619	29	3.482	32
356			min	2.002	29	-2.772	22	-.37	21	0	14	-1.126	23	-6.75	22
357		4	max	1.205	14	.457	32	.252	23	0	14	.248	29	1.43	32
358			min	.774	29	-.926	22	-.11	29	0	14	-.567	23	-2.572	22
359		5	max	1.124	14	.457	32	.252	23	0	14	0	14	.402	32
360			min	.722	29	-.926	22	-.11	29	0	14	0	14	-.49	22
361	M47	1	max	3.812	14	1.7	32	7.901	23	0	14	6.475	29	.062	24
362			min	2.449	31	-3.448	22	-4.171	29	0	14	-11.62	23	-.12	22
363		2	max	2.392	14	1.021	32	.865	23	0	14	1.619	29	.414	24
364			min	1.537	31	-2.073	22	-.548	29	0	14	-2.638	23	-.429	30
365		3	max	2.323	14	1.021	32	.865	23	0	14	.387	29	4.293	22
366			min	1.493	31	-2.073	22	-.548	29	0	14	-.692	23	-1.948	32
367		4	max	.902	14	.343	24	.066	31	0	14	.082	35	1.96	22

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
368			min	.579	30	-.697	22	-.036	35	0	14	-.148	31	-.759	32
369		5	max	.833	14	.343	24	.066	31	0	14	0	14	3.527	22
370			min	.535	30	-.697	22	-.036	35	0	14	0	14	-1.528	32
371	M48	1	max	2.895	14	12.171	15	1.789	31	0	14	8.406	21	22.345	15
372			min	1.865	32	4.14	30	-4.405	21	0	14	-3.335	31	6.893	30
373		2	max	1.837	14	5.076	15	.165	31	0	14	3.487	21	8.517	15
374			min	1.183	32	1.895	30	-.857	21	0	14	-.696	31	2.175	30
375		3	max	1.756	14	5.076	15	.165	31	0	14	1.558	21	-.24	32
376			min	1.13	32	1.895	30	-.857	21	0	14	-.325	31	-2.905	15
377		4	max	.69	14	.9	24	-.196	30	0	14	.716	21	-.036	32
378			min	.443	31	.309	31	-.712	15	0	14	-.014	31	-1.997	22
379		5	max	.609	14	.9	24	-.196	30	0	14	-.261	29	-1.376	31
380			min	.391	31	.309	31	-.712	15	0	14	-1.24	23	-3.671	15
381	M49	1	max	4.032	14	1.758	29	-.152	30	0	14	-.004	30	8.909	21
382			min	2.582	31	-3.545	23	-2.233	24	0	14	-.042	24	-11.563	31
383		2	max	2.526	14	1.055	29	.66	15	0	14	.208	30	5.303	21
384			min	1.618	31	-2.129	23	.202	31	0	14	-1.683	24	-6.168	31
385		3	max	2.445	14	1.055	29	.66	15	0	14	.987	22	2.932	21
386			min	1.566	31	-2.129	23	.202	31	0	14	-.738	32	-1.405	31
387		4	max	.946	14	.351	29	.148	32	0	14	.689	22	1.282	21
388			min	.607	31	-.709	23	-.306	22	0	14	-.334	32	-.348	31
389		5	max	.864	14	.351	29	.148	32	0	14	0	14	1.553	23
390			min	.555	31	-.709	23	-.306	22	0	14	0	14	.182	29
391	M50	1	max	3.199	14	1.373	21	3.683	15	0	14	.071	15	8.53	21
392			min	2.05	29	-2.778	23	.651	32	0	14	.017	32	-8.551	31
393		2	max	2.01	14	.82	29	-.354	31	0	14	2.53	22	4.999	21
394			min	1.29	30	-1.66	23	-.998	15	0	14	.131	32	-4.686	31
395		3	max	1.928	14	.82	29	-.354	31	0	14	.869	22	3.158	21
396			min	1.237	30	-1.66	23	-.998	15	0	14	-.836	32	-.98	31
397		4	max	.752	14	.273	29	.279	24	0	14	.315	30	1.355	21
398			min	.483	30	-.551	23	-.14	30	0	14	-.629	24	-.271	31
399		5	max	.671	14	.273	29	.279	24	0	14	0	14	1.243	23
400			min	.43	30	-.551	23	-.14	30	0	14	0	14	.437	43
401	M51	1	max	2.072	14	-4.864	32	.271	29	0	14	2.359	21	-7.085	32
402			min	1.338	30	-13.996	15	-.727	23	0	14	-1.628	31	-25.345	15
403		2	max	1.332	14	-1.789	31	-.029	31	0	14	2.478	21	-2.09	32
404			min	.857	32	-4.734	15	-.866	21	0	14	-1.114	31	-9.21	15
405		3	max	1.25	14	-1.789	31	-.029	31	0	14	.618	29	3.051	24
406			min	.805	32	-4.734	15	-.866	21	0	14	-1.274	23	-.596	30
407		4	max	.498	14	-.116	30	-.184	43	0	14	.269	29	1.724	24
408			min	.319	32	-1.107	24	-.472	23	0	14	-.494	23	-.046	30
409		5	max	.417	14	-.116	30	-.184	43	0	14	-.388	29	4.214	24
410			min	.266	32	-1.107	24	-.472	23	0	14	-1.556	23	.215	30
411	M52	1	max	4.528	14	4.159	24	7.964	23	0	14	5.779	29	.142	32
412			min	2.908	31	-2.054	22	-3.417	29	0	14	-10.919	23	-.078	22
413		2	max	2.832	14	2.499	24	.769	23	0	14	1.704	29	.377	32
414			min	1.82	31	-1.234	22	-.526	29	0	14	-1.993	23	-.479	22
415		3	max	2.763	14	2.499	24	.769	23	0	14	.612	21	2.368	30
416			min	1.776	31	-1.234	22	-.526	29	0	14	-.354	31	-5.317	24
417		4	max	1.068	14	.836	24	.002	31	0	14	.255	15	1.043	30
418			min	.687	41	-.412	22	-.113	15	0	14	-.005	31	-2.483	24
419		5	max	1	14	.836	24	.002	31	0	14	0	14	1.969	30

Permit #: 2015-916743-LT
RSN: 966198

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
420			min	.642	41	-.412	22	-.113	15	0	14	0	14	-4.363	24
421	M53	1	max	5.114	14	4.605	24	1.8	29	0	14	1.46	35	25.459	24
422			min	3.28	29	-2.281	30	-2.688	23	0	14	-.752	41	-13.057	30
423		2	max	3.2	14	2.772	24	.227	23	0	14	1.205	21	13.713	24
424			min	2.054	29	-1.372	30	-.157	29	0	14	-1.136	31	-7.268	22
425		3	max	3.119	14	2.772	24	.227	23	0	14	.921	21	7.488	32
426			min	2.002	29	-1.372	30	-.157	29	0	14	-.692	31	-4.195	22
427		4	max	1.206	14	.927	24	.148	31	0	14	.482	21	2.908	32
428			min	.775	29	-.458	30	-.214	21	0	14	-.334	31	-1.771	22
429		5	max	1.124	14	.927	24	.148	31	0	14	0	14	.832	32
430			min	.722	29	-.458	30	-.214	21	0	14	0	14	-.746	22
431	M54	1	max	9.648	22	1.427	15	.624	29	.279	21	0	14	0	14
432			min	-3.124	32	.305	30	-.688	23	-.142	31	0	14	0	14
433		2	max	7.96	22	1.656	22	.104	15	.279	21	.675	21	.762	32
434			min	-4.389	32	-1.05	32	0	43	-.142	31	-.63	31	-.896	22
435		3	max	7.901	22	1.656	22	.104	15	.279	21	.797	21	3.124	32
436			min	-4.433	32	-1.05	32	0	43	-.142	31	-.555	31	-4.621	22
437		4	max	1.238	14	.958	24	.113	31	0	14	.369	21	1.944	32
438			min	.795	31	-.472	30	-.164	21	0	14	-.255	31	-2.507	22
439		5	max	1.169	14	.958	24	.113	31	0	14	0	14	-.2	32
440			min	.751	31	-.472	30	-.164	21	0	14	0	14	-1.879	15
441	M55	1	max	.876	21	.466	14	.379	32	1.812	15	0	14	0	14
442			min	.146	31	.3	29	-.189	22	.546	30	0	14	0	14
443		2	max	.876	21	.233	14	.189	32	1.812	15	.988	32	-.782	29
444			min	.146	31	.15	29	-.095	22	.546	30	-.494	22	-1.216	14
445		3	max	.876	21	0	14	0	14	1.812	15	1.317	32	-1.042	29
446			min	.146	31	0	14	0	14	.546	30	-.658	22	-1.621	14
447		4	max	.876	21	-.15	32	.095	30	1.812	15	.988	32	-.782	29
448			min	.146	31	-.233	14	-.189	24	.546	30	-.494	22	-1.216	14
449		5	max	.876	21	-.3	32	.189	30	1.812	15	0	14	0	14
450			min	.146	31	-.466	14	-.379	24	.546	30	0	14	0	14
451	M56	1	max	.713	21	.7	14	.569	24	.92	32	0	14	0	14
452			min	.202	41	.45	29	-.284	22	-.389	22	0	14	0	14
453		2	max	.713	21	.35	14	.284	24	.92	32	2.231	24	-1.766	29
454			min	.202	41	.225	29	-.142	22	-.389	22	-1.116	22	-2.747	14
455		3	max	.713	21	0	14	0	14	.92	32	2.975	24	-2.354	29
456			min	.202	41	0	14	0	14	-.389	22	-1.488	22	-3.662	14
457		4	max	.713	21	-.225	29	.142	30	.92	32	2.231	24	-1.766	29
458			min	.202	41	-.35	14	-.284	24	-.389	22	-1.116	22	-2.747	14
459		5	max	.713	21	-.45	29	.284	30	.92	32	0	14	0	14
460			min	.202	41	-.7	14	-.569	24	-.389	22	0	14	0	14
461	M57	1	max	.555	23	.426	14	.346	24	1.752	32	0	14	0	14
462			min	.178	41	.274	29	-.173	22	-1.135	22	0	14	0	14
463		2	max	.555	23	.213	14	.173	24	1.752	32	.824	24	-.652	29
464			min	.178	41	.137	29	-.086	22	-1.135	22	-.412	22	-1.014	14
465		3	max	.555	23	0	14	0	14	1.752	32	1.098	24	-.869	29
466			min	.178	41	0	14	0	14	-1.135	22	-.549	22	-1.352	14
467		4	max	.555	23	-.137	30	.086	30	1.752	32	.824	24	-.652	29
468			min	.178	41	-.213	14	-.173	24	-1.135	22	-.412	22	-1.014	14
469		5	max	.555	23	-.274	30	.173	30	1.752	32	0	14	0	14
470			min	.178	41	-.426	14	-.346	24	-1.135	22	0	14	0	14
471	M58	1	max	.523	23	.573	14	.466	32	.932	30	0	14	0	14

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
472			min	.167	32	.369	29	-.233	22	-2.688	24	0	14	0	14
473		2	max	.523	23	.287	14	.233	32	.932	30	1.495	32	-1.183	29
474			min	.167	32	.184	29	-.116	22	-2.688	24	-.748	22	-1.841	14
475		3	max	.523	23	0	14	0	14	.932	30	1.994	32	-1.578	29
476			min	.167	32	0	14	0	14	-2.688	24	-.997	22	-2.454	14
477		4	max	.523	23	-.184	29	.116	22	.932	30	1.495	24	-1.183	29
478			min	.167	32	-.287	14	-.233	24	-2.688	24	-.748	22	-1.841	14
479		5	max	.523	23	-.369	29	.233	22	.932	30	0	14	0	14
480			min	.167	32	-.573	14	-.466	24	-2.688	24	0	14	0	14
481	M59	1	max	1.212	24	.285	14	.231	23	1.556	23	0	14	0	14
482			min	.061	30	.183	29	-.116	29	.388	29	0	14	0	14
483		2	max	1.212	24	.142	14	.116	23	1.556	23	.368	23	-.292	29
484			min	.061	30	.091	29	-.058	29	.388	29	-.184	29	-.454	14
485		3	max	1.212	24	0	14	0	14	1.556	23	.491	23	-.389	29
486			min	.061	30	0	14	0	14	.388	29	-.246	29	-.605	14
487		4	max	1.212	24	-.091	29	.058	21	1.556	23	.368	23	-.292	29
488			min	.061	30	-.142	14	-.116	31	.388	29	-.184	29	-.454	14
489		5	max	1.212	24	-.183	29	.116	21	1.556	23	0	14	0	14
490			min	.061	30	-.285	14	-.231	31	.388	29	0	14	0	14
491	M60	1	max	.934	24	.385	14	.313	23	.313	23	0	14	0	14
492			min	.201	30	.248	29	-.156	21	-.078	29	0	14	0	14
493		2	max	.934	24	.193	14	.156	23	.313	23	.674	23	-.534	29
494			min	.201	30	.124	29	-.078	21	-.078	29	-.337	21	-.83	14
495		3	max	.934	24	0	14	0	14	.313	23	.899	23	-.712	29
496			min	.201	30	0	14	0	14	-.078	29	-.45	21	-1.107	14
497		4	max	.934	24	-.124	29	.078	21	.313	23	.674	23	-.534	29
498			min	.201	30	-.193	14	-.156	23	-.078	29	-.337	21	-.83	14
499		5	max	.934	24	-.248	29	.156	21	.313	23	0	14	0	14
500			min	.201	30	-.385	14	-.313	23	-.078	29	0	14	0	14
501	M61	1	max	.84	24	.477	14	.388	23	-.261	29	0	14	0	14
502			min	.304	31	.307	31	-.194	29	-1.24	23	0	14	0	14
503		2	max	.84	24	.239	14	.194	23	-.261	29	1.036	23	-.819	31
504			min	.304	31	.153	31	-.097	29	-1.24	23	-.518	29	-1.275	14
505		3	max	.84	24	0	14	0	14	-.261	29	1.381	23	-1.093	31
506			min	.304	31	0	14	0	14	-1.24	23	-.69	29	-1.7	14
507		4	max	.84	24	-.153	29	.097	21	-.261	29	1.036	23	-.819	31
508			min	.304	31	-.239	14	-.194	31	-1.24	23	-.518	29	-1.275	14
509		5	max	.84	24	-.307	29	.194	21	-.261	29	0	14	0	14
510			min	.304	31	-.477	14	-.388	31	-1.24	23	0	14	0	14
511	M62	1	max	1.015	23	.134	14	.109	30	3.671	15	0	14	0	14
512			min	.154	29	.086	31	-.054	24	1.376	31	0	14	0	14
513		2	max	1.015	23	.067	14	.054	30	3.671	15	.082	30	-.065	31
514			min	.154	29	.043	31	-.027	24	1.376	31	-.041	24	-.1	14
515		3	max	1.015	23	0	14	0	14	3.671	15	.109	30	-.086	31
516			min	.154	29	0	14	0	14	1.376	31	-.054	24	-.134	14
517		4	max	1.015	23	-.043	29	.027	32	3.671	15	.082	30	-.065	31
518			min	.154	29	-.067	14	-.054	22	1.376	31	-.041	24	-.1	14
519		5	max	1.015	23	-.086	29	.054	32	3.671	15	0	14	0	14
520			min	.154	29	-.134	14	-.109	22	1.376	31	0	14	0	14
521	M63	1	max	.978	15	.426	14	.346	30	.623	32	0	14	0	14
522			min	.264	30	.274	30	-.173	24	-1.283	22	0	14	0	14
523		2	max	.978	15	.213	14	.173	30	.623	32	.824	30	-.652	30

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
524			min	.264	30	.137	30	-.086	24	-1.283	22	-.412	24	-1.014	14
525		3	max	.978	15	0	14	0	14	.623	32	1.098	30	-.869	30
526			min	.264	30	0	14	0	14	-1.283	22	-.549	24	-1.352	14
527		4	max	.978	15	-.137	29	.086	32	.623	32	.824	30	-.652	30
528			min	.264	30	-.213	14	-.173	22	-1.283	22	-.412	24	-1.014	14
529		5	max	.978	15	-.274	29	.173	32	.623	32	0	14	0	14
530			min	.264	30	-.426	14	-.346	22	-1.283	22	0	14	0	14
531	M64	1	max	.874	15	.7	14	.569	22	.221	32	0	14	0	14
532			min	.251	30	.45	29	-.284	24	-.794	22	0	14	0	14
533		2	max	.874	15	.35	14	.284	22	.221	32	2.231	22	-1.766	29
534			min	.251	30	.225	29	-.142	24	-.794	22	-1.116	24	-2.747	14
535		3	max	.874	15	0	14	0	14	.221	32	2.975	22	-2.354	29
536			min	.251	30	0	14	0	14	-.794	22	-1.488	24	-3.662	14
537		4	max	.874	15	-.225	29	.142	24	.221	32	2.231	22	-1.766	29
538			min	.251	30	-.35	14	-.284	22	-.794	22	-1.116	24	-2.747	14
539		5	max	.874	15	-.45	29	.284	24	.221	32	0	14	0	14
540			min	.251	30	-.7	14	-.569	22	-.794	22	0	14	0	14
541	M65	1	max	.95	21	.466	14	.379	22	-.602	31	0	14	0	14
542			min	.207	31	.3	30	-.189	32	-1.936	15	0	14	0	14
543		2	max	.95	21	.233	14	.189	22	-.602	31	.988	22	-.782	30
544			min	.207	31	.15	30	-.095	32	-1.936	15	-.494	32	-1.216	14
545		3	max	.95	21	0	14	0	14	-.602	31	1.317	22	-1.042	30
546			min	.207	31	0	14	0	14	-1.936	15	-.658	32	-1.621	14
547		4	max	.95	21	-.15	29	.095	24	-.602	31	.988	22	-.782	30
548			min	.207	31	-.233	14	-.189	30	-1.936	15	-.494	32	-1.216	14
549		5	max	.95	21	-.3	29	.189	24	-.602	31	0	14	0	14
550			min	.207	31	-.466	14	-.379	30	-1.936	15	0	14	0	14
551	M66	1	max	.298	22	.606	14	.492	21	1.713	15	0	14	0	14
552			min	-.025	31	.389	29	-.246	31	.504	31	0	14	0	14
553		2	max	.298	22	.303	14	.246	21	1.713	15	1.669	21	-1.321	29
554			min	-.025	31	.195	29	-.123	31	.504	31	-.834	31	-2.054	14
555		3	max	.298	22	0	14	0	14	1.713	15	2.225	21	-1.761	29
556			min	-.025	31	0	14	0	14	.504	31	-1.113	31	-2.739	14
557		4	max	.298	22	-.195	29	.123	23	1.713	15	1.669	21	-1.321	29
558			min	-.025	31	-.303	14	-.246	29	.504	31	-.834	31	-2.054	14
559		5	max	.298	22	-.389	29	.246	23	1.713	15	0	14	0	14
560			min	-.025	31	-.606	14	-.492	29	.504	31	0	14	0	14
561	M67	1	max	.313	24	.541	14	.44	21	-.495	31	0	14	0	14
562			min	-.027	31	.348	29	-.22	31	-1.826	15	0	14	0	14
563		2	max	.313	24	.271	14	.22	21	-.495	31	1.332	21	-1.054	29
564			min	-.027	31	.174	29	-.11	31	-1.826	15	-.666	31	-1.639	14
565		3	max	.313	24	0	14	0	14	-.495	31	1.776	21	-1.405	29
566			min	-.027	31	0	14	0	14	-1.826	15	-.888	31	-2.186	14
567		4	max	.313	24	-.174	30	.11	23	-.495	31	1.332	21	-1.054	29
568			min	-.027	31	-.271	14	-.22	29	-1.826	15	-.666	31	-1.639	14
569		5	max	.313	24	-.348	30	.22	23	-.495	31	0	14	0	14
570			min	-.027	31	-.541	14	-.44	29	-1.826	15	0	14	0	14
571	M68	1	max	.478	33	.758	14	.757	24	2.187	15	0	14	0	14
572			min	-.186	43	.487	29	-.379	22	.61	31	0	14	0	14
573		2	max	.478	33	.379	14	.379	24	2.187	15	1.975	24	-1.272	29
574			min	-.186	43	.244	29	-.189	22	.61	31	-.988	22	-1.978	14
575		3	max	.478	33	0	14	0	14	2.187	15	2.634	24	-1.696	29

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
576			min	-.186	43	0	14	0	14	.61	31	-1.317	22	-2.638	14
577		4	max	.478	33	-.244	31	.189	30	2.187	15	1.975	24	-1.272	29
578			min	-.186	43	-.379	14	-.379	24	.61	31	-.988	22	-1.978	14
579		5	max	.478	33	-.487	31	.379	30	2.187	15	0	14	0	14
580			min	-.186	43	-.758	14	-.757	24	.61	31	0	14	0	14
581	M69	1	max	.964	21	1.14	14	1.138	24	.439	32	0	14	0	14
582			min	-.66	31	.733	29	-.569	22	-.461	15	0	14	0	14
583		2	max	.964	21	.57	14	.569	24	.439	32	4.463	24	-2.873	29
584			min	-.66	31	.366	29	-.284	22	-.461	15	-2.231	22	-4.469	14
585		3	max	.964	21	0	14	0	14	.439	32	5.95	24	-3.831	29
586			min	-.66	31	0	14	0	14	-.461	15	-2.975	22	-5.959	14
587		4	max	.964	21	-.366	29	.284	22	.439	32	4.463	24	-2.873	29
588			min	-.66	31	-.57	14	-.569	24	-.461	15	-2.231	22	-4.469	14
589		5	max	.964	21	-.733	29	.569	22	.439	32	0	14	0	14
590			min	-.66	31	-1.14	14	-1.138	24	-.461	15	0	14	0	14
591	M70	1	max	2.891	29	.692	14	.691	24	4.022	32	0	14	0	14
592			min	-3.548	23	.445	29	-.346	22	-2.243	22	0	14	0	14
593		2	max	2.891	29	.346	14	.346	24	4.022	32	1.648	24	-1.061	29
594			min	-3.548	23	.223	29	-.173	22	-2.243	22	-.824	22	-1.65	14
595		3	max	2.891	29	0	14	0	14	4.022	32	2.197	24	-1.414	29
596			min	-3.548	23	0	14	0	14	-2.243	22	-1.098	22	-2.2	14
597		4	max	2.891	29	-.223	30	.173	22	4.022	32	1.648	24	-1.061	29
598			min	-3.548	23	-.346	14	-.346	24	-2.243	22	-.824	22	-1.65	14
599		5	max	2.891	29	-.445	30	.346	22	4.022	32	0	14	0	14
600			min	-3.548	23	-.692	14	-.691	24	-2.243	22	0	14	0	14
601	M71	1	max	3.649	23	.933	14	.932	24	1.76	30	0	14	0	14
602			min	0	29	.6	29	-.466	22	-3.474	24	0	14	0	14
603		2	max	3.649	23	.466	14	.466	24	1.76	30	2.991	24	-1.925	29
604			min	0	29	.3	29	-.233	22	-3.474	24	-1.495	22	-2.995	14
605		3	max	3.649	23	0	14	0	14	1.76	30	3.988	24	-2.567	29
606			min	0	29	0	14	0	14	-3.474	24	-1.994	22	-3.994	14
607		4	max	3.649	23	-.3	29	.233	22	1.76	30	2.991	24	-1.925	29
608			min	0	29	-.466	14	-.466	24	-3.474	24	-1.495	22	-2.995	14
609		5	max	3.649	23	-.6	29	.466	22	1.76	30	0	14	0	14
610			min	0	29	-.933	14	-.932	24	-3.474	24	0	14	0	14
611	M72	1	max	9.266	15	.463	14	.462	23	1.543	15	0	14	0	14
612			min	2.977	32	.298	29	-.231	21	.649	43	0	14	0	14
613		2	max	9.266	15	.232	14	.231	23	1.543	15	.737	23	-.474	29
614			min	2.977	32	.149	29	-.116	21	.649	43	-.368	21	-.738	14
615		3	max	9.266	15	0	14	0	14	1.543	15	.983	23	-.633	29
616			min	2.977	32	0	14	0	14	.649	43	-.491	21	-.984	14
617		4	max	9.266	15	-.149	29	.116	21	1.543	15	.737	23	-.474	29
618			min	2.977	32	-.232	14	-.231	31	.649	43	-.368	21	-.738	14
619		5	max	9.266	15	-.298	29	.231	21	1.543	15	0	14	0	14
620			min	2.977	32	-.463	14	-.462	31	.649	43	0	14	0	14
621	M73	1	max	4.588	15	.627	14	.626	23	.189	23	0	14	0	14
622			min	1.077	29	.403	29	-.313	21	-.081	29	0	14	0	14
623		2	max	4.588	15	.313	14	.313	23	.189	23	1.349	23	-.868	29
624			min	1.077	29	.201	29	-.156	21	-.081	29	-.674	21	-1.351	14
625		3	max	4.588	15	0	14	0	14	.189	23	1.799	23	-1.158	29
626			min	1.077	29	0	14	0	14	-.081	29	-.899	21	-1.801	14
627		4	max	4.588	15	-.201	29	.156	21	.189	23	1.349	23	-.868	29

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
628			min	1.077	29	-.313	14	-.313	23	-.081	29	-.674	21	-1.351	14
629		5	max	4.588	15	-.403	29	.313	21	.189	23	0	14	0	14
630			min	1.077	29	-.627	14	-.626	23	-.081	29	0	14	0	14
631	M74	1	max	7.095	15	.776	14	.775	23	-.321	43	0	14	0	14
632			min	2.401	29	.499	31	-.388	21	-.876	23	0	14	0	14
633		2	max	7.095	15	.388	14	.388	23	-.321	43	2.071	23	-1.334	31
634			min	2.401	29	.25	31	-.194	21	-.876	23	-1.036	21	-2.074	14
635		3	max	7.095	15	0	14	0	14	-.321	43	2.762	23	-1.778	31
636			min	2.401	29	0	14	0	14	-.876	23	-1.381	21	-2.766	14
637		4	max	7.095	15	-.25	29	.194	21	-.321	43	2.071	23	-1.334	31
638			min	2.401	29	-.388	14	-.388	23	-.876	23	-1.036	21	-2.074	14
639		5	max	7.095	15	-.499	29	.388	21	-.321	43	0	14	0	14
640			min	2.401	29	-.776	14	-.775	23	-.876	23	0	14	0	14
641	M75	1	max	3.17	21	.218	14	.218	30	4.689	15	0	14	0	14
642			min	-.855	31	.14	31	-.109	24	1.79	30	0	14	0	14
643		2	max	3.17	21	.109	14	.109	30	4.689	15	.163	30	-.105	31
644			min	-.855	31	.07	31	-.054	24	1.79	30	-.082	24	-.163	14
645		3	max	3.17	21	0	14	0	14	4.689	15	.218	30	-.14	31
646			min	-.855	31	0	14	0	14	1.79	30	-.109	24	-.218	14
647		4	max	3.17	21	-.07	29	.054	32	4.689	15	.163	30	-.105	31
648			min	-.855	31	-.109	14	-.109	22	1.79	30	-.082	24	-.163	14
649		5	max	3.17	21	-.14	29	.109	32	4.689	15	0	14	0	14
650			min	-.855	31	-.218	14	-.218	22	1.79	30	0	14	0	14
651	M76	1	max	1.802	29	.692	14	.691	22	1.569	32	0	14	0	14
652			min	-3.881	23	.445	29	-.346	24	-3.289	22	0	14	0	14
653		2	max	1.802	29	.346	14	.346	22	1.569	32	1.648	22	-1.061	29
654			min	-3.881	23	.223	29	-.173	24	-3.289	22	-.824	24	-1.65	14
655		3	max	1.802	29	0	14	0	14	1.569	32	2.197	22	-1.414	29
656			min	-3.881	23	0	14	0	14	-3.289	22	-1.098	24	-2.2	14
657		4	max	1.802	29	-.223	29	.173	24	1.569	32	1.648	22	-1.061	29
658			min	-3.881	23	-.346	14	-.346	22	-3.289	22	-.824	24	-1.65	14
659		5	max	1.802	29	-.445	29	.346	24	1.569	32	0	14	0	14
660			min	-3.881	23	-.692	14	-.691	22	-3.289	22	0	14	0	14
661	M77	1	max	1.323	29	1.14	14	1.138	22	.336	15	0	14	0	14
662			min	-1.232	23	.733	30	-.569	24	-.329	30	0	14	0	14
663		2	max	1.323	29	.57	14	.569	22	.336	15	4.463	22	-2.873	30
664			min	-1.232	23	.366	30	-.284	24	-.329	30	-2.231	24	-4.469	14
665		3	max	1.323	29	0	14	0	14	.336	15	5.95	22	-3.831	30
666			min	-1.232	23	0	14	0	14	-.329	30	-2.975	24	-5.959	14
667		4	max	1.323	29	-.366	29	.284	24	.336	15	4.463	22	-2.873	30
668			min	-1.232	23	-.57	14	-.569	22	-.329	30	-2.231	24	-4.469	14
669		5	max	1.323	29	-.733	29	.569	24	.336	15	0	14	0	14
670			min	-1.232	23	-1.14	14	-1.138	22	-.329	30	0	14	0	14
671	M78	1	max	.516	29	.758	14	.757	22	-.677	31	0	14	0	14
672			min	-.462	35	.487	30	-.379	24	-2.316	15	0	14	0	14
673		2	max	.516	29	.379	14	.379	22	-.677	31	1.975	22	-1.272	30
674			min	-.462	35	.244	30	-.189	24	-2.316	15	-.988	24	-1.978	14
675		3	max	.516	29	0	14	0	14	-.677	31	2.634	22	-1.696	30
676			min	-.462	35	0	14	0	14	-2.316	15	-1.317	24	-2.638	14
677		4	max	.516	29	-.244	29	.189	24	-.677	31	1.975	22	-1.272	30
678			min	-.462	35	-.379	14	-.379	22	-2.316	15	-.988	24	-1.978	14
679		5	max	.516	29	-.487	29	.379	24	-.677	31	0	14	0	14

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
680			min	-.462	35	-.758	14	-.757	22	-2.316	15	0	14	0	14
681	M79	1	max	11.562	15	.986	14	.984	21	2.589	15	0	14	0	14
682			min	3.179	29	.634	29	-.492	23	.798	41	0	14	0	14
683		2	max	11.562	15	.493	14	.492	21	2.589	15	3.338	21	-2.149	29
684			min	3.179	29	.317	29	-.246	23	.798	41	-1.669	23	-3.343	14
685		3	max	11.562	15	0	14	0	14	2.589	15	4.451	21	-2.865	29
686			min	3.179	29	0	14	0	14	.798	41	-2.225	23	-4.457	14
687		4	max	11.562	15	-.317	30	.246	23	2.589	15	3.338	21	-2.149	29
688			min	3.179	29	-.493	14	-.492	21	.798	41	-1.669	23	-3.343	14
689		5	max	11.562	15	-.634	30	.492	23	2.589	15	0	14	0	14
690			min	3.179	29	-.986	14	-.984	21	.798	41	0	14	0	14
691	M80	1	max	11.865	15	.88	14	.879	21	-.912	41	0	14	0	14
692			min	3.268	29	.566	29	-.44	23	-2.885	15	0	14	0	14
693		2	max	11.865	15	.44	14	.44	21	-.912	41	2.664	21	-1.715	29
694			min	3.268	29	.283	29	-.22	23	-2.885	15	-1.332	23	-2.668	14
695		3	max	11.865	15	0	14	0	14	-.912	41	3.552	21	-2.287	29
696			min	3.268	29	0	14	0	14	-2.885	15	-1.776	23	-3.557	14
697		4	max	11.865	15	-.283	31	.22	23	-.912	41	2.664	21	-1.715	29
698			min	3.268	29	-.44	14	-.44	21	-2.885	15	-1.332	23	-2.668	14
699		5	max	11.865	15	-.566	31	.44	23	-.912	41	0	14	0	14
700			min	3.268	29	-.88	14	-.879	21	-2.885	15	0	14	0	14
701	M82	1	max	.477	31	2.782	15	0	14	0	31	0	14	0	14
702			min	-.705	21	.404	29	0	14	-.001	15	0	14	0	14
703		2	max	.477	31	1.391	15	0	14	0	31	0	14	-1.054	29
704			min	-.705	21	.202	29	0	14	-.001	15	0	14	-7.258	15
705		3	max	.477	31	0	14	0	14	0	31	0	14	-1.406	29
706			min	-.705	21	0	14	0	14	-.001	15	0	14	-9.677	15
707		4	max	.477	31	-.202	31	0	14	0	31	0	14	-1.054	29
708			min	-.705	21	-1.391	15	0	14	-.001	15	0	14	-7.258	15
709		5	max	.477	31	-.404	31	0	14	0	31	0	14	0	14
710			min	-.705	21	-2.782	15	0	14	-.001	15	0	14	0	14
711	M83	1	max	.604	29	2.249	15	0	14	0	31	0	14	0	14
712			min	-.161	23	.341	29	0	14	0	21	0	14	0	14
713		2	max	.604	29	1.124	15	0	14	0	31	0	14	-.89	29
714			min	-.161	23	.17	29	0	14	0	21	0	14	-5.868	15
715		3	max	.604	29	0	14	0	14	0	31	0	14	-1.186	29
716			min	-.161	23	0	14	0	14	0	21	0	14	-7.824	15
717		4	max	.604	29	-.17	30	0	14	0	31	0	14	-.89	29
718			min	-.161	23	-1.124	15	0	14	0	21	0	14	-5.868	15
719		5	max	.604	29	-.341	30	0	14	0	31	0	14	0	14
720			min	-.161	23	-2.249	15	0	14	0	21	0	14	0	14
721	M84	1	max	.783	23	2.249	15	0	14	.001	15	0	14	0	14
722			min	-.446	29	.341	29	0	14	0	31	0	14	0	14
723		2	max	.783	23	1.124	15	0	14	.001	15	0	14	-.89	29
724			min	-.446	29	.17	29	0	14	0	31	0	14	-5.868	15
725		3	max	.783	23	0	14	0	14	.001	15	0	14	-1.186	29
726			min	-.446	29	0	14	0	14	0	31	0	14	-7.824	15
727		4	max	.783	23	-.17	30	0	14	.001	15	0	14	-.89	29
728			min	-.446	29	-1.124	15	0	14	0	31	0	14	-5.868	15
729		5	max	.783	23	-.341	30	0	14	.001	15	0	14	0	14
730			min	-.446	29	-2.249	15	0	14	0	31	0	14	0	14
731	M85	1	max	.675	23	2.249	15	0	14	.002	15	0	14	0	14

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
732			min	-.711	21	.341	29	0	14	0	31	0	14	0	14
733		2	max	.675	23	1.124	15	0	14	.002	15	0	14	-.89	29
734			min	-.711	21	.17	29	0	14	0	31	0	14	-5.868	15
735		3	max	.675	23	0	14	0	14	.002	15	0	14	-1.186	29
736			min	-.711	21	0	14	0	14	0	31	0	14	-7.824	15
737		4	max	.675	23	-.17	31	0	14	.002	15	0	14	-.89	29
738			min	-.711	21	-1.124	15	0	14	0	31	0	14	-5.868	15
739		5	max	.675	23	-.341	31	0	14	.002	15	0	14	0	14
740			min	-.711	21	-2.249	15	0	14	0	31	0	14	0	14
741	M86	1	max	2.225	29	.695	15	0	14	0	43	0	14	0	14
742			min	-2.705	23	.101	29	0	14	-.002	15	0	14	0	14
743		2	max	2.225	29	.347	15	0	14	0	43	0	14	-.075	29
744			min	-2.705	23	.05	29	0	14	-.002	15	0	14	-.521	15
745		3	max	2.225	29	0	14	0	14	0	43	0	14	-.101	29
746			min	-2.705	23	0	14	0	14	-.002	15	0	14	-.695	15
747		4	max	2.225	29	-.05	31	0	14	0	43	0	14	-.075	29
748			min	-2.705	23	-.347	15	0	14	-.002	15	0	14	-.521	15
749		5	max	2.225	29	-.101	31	0	14	0	43	0	14	0	14
750			min	-2.705	23	-.695	15	0	14	-.002	15	0	14	0	14
751	M87	1	max	.462	21	.755	15	0	14	0	31	0	14	0	14
752			min	-.352	31	.108	29	0	14	0	15	0	14	0	14
753		2	max	.462	21	.378	15	0	14	0	31	0	14	-.081	29
754			min	-.352	31	.054	29	0	14	0	15	0	14	-.566	15
755		3	max	.462	21	0	14	0	14	0	31	0	14	-.108	29
756			min	-.352	31	0	14	0	14	0	15	0	14	-.755	15
757		4	max	.462	21	-.054	31	0	14	0	31	0	14	-.081	29
758			min	-.352	31	-.378	15	0	14	0	15	0	14	-.566	15
759		5	max	.462	21	-.108	31	0	14	0	31	0	14	0	14
760			min	-.352	31	-.755	15	0	14	0	15	0	14	0	14
761	M89	1	max	2.992	29	2.305	15	0	14	0	43	0	14	0	14
762			min	-3.681	23	.365	29	0	14	0	15	0	14	0	14
763		2	max	2.992	29	1.179	15	0	14	0	43	0	14	-1.191	29
764			min	-3.681	23	.186	29	0	14	0	15	0	14	-7.566	15
765		3	max	2.992	29	0	15	0	14	0	43	0	14	-1.588	29
766			min	-3.681	23	0	29	0	14	0	15	0	14	-10.09	15
767		4	max	2.992	29	-.185	29	0	14	0	43	0	14	-1.191	29
768			min	-3.681	23	-1.179	15	0	14	0	15	0	14	-7.569	15
769		5	max	2.992	29	-.371	29	0	14	0	43	0	14	0	14
770			min	-3.681	23	-2.357	15	0	14	0	15	0	14	0	14
771	M90	1	max	3.648	22	6.103	15	.056	23	0	22	0	14	0	14
772			min	-1.71	32	.723	32	-.05	21	0	32	0	14	0	14
773		2	max	3.648	22	6.009	15	.056	23	0	22	.201	23	-2.449	32
774			min	-1.71	32	.652	32	-.05	21	0	32	-.179	21	-21.575	15
775		3	max	3.661	22	.174	24	.167	21	0	22	.157	21	-3.636	32
776			min	-1.701	32	-.279	30	-.153	31	0	32	-.1	31	-28.903	15
777		4	max	3.661	22	-.808	32	.097	31	0	22	.415	21	-3.006	32
778			min	-1.701	32	-6.066	15	-.117	21	0	32	-.347	31	-21.78	15
779		5	max	3.661	22	-.879	32	.097	31	0	22	0	14	0	14
780			min	-1.701	32	-6.161	15	-.117	21	0	32	0	14	0	14
781	M91	1	max	.054	24	3.532	15	0	14	0	14	0	14	0	14
782			min	-.024	29	.541	31	0	14	0	15	0	14	0	14
783		2	max	.054	24	1.766	15	0	14	0	14	0	14	-1.738	31

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
784			min	-.024	29	.271	31	0	14	0	15	0	14	-11.339	15
785		3	max	.054	24	0	14	0	14	0	14	0	14	-2.317	31
786			min	-.024	29	0	14	0	14	0	15	0	14	-15.119	15
787		4	max	.054	24	-.271	29	0	14	0	14	0	14	-1.738	31
788			min	-.024	29	-1.766	15	0	14	0	15	0	14	-11.339	15
789		5	max	.054	24	-.541	29	0	14	0	14	0	14	0	14
790			min	-.024	29	-3.532	15	0	14	0	15	0	14	0	14
791	M92	1	max	.891	29	.758	14	.757	32	2.306	15	0	14	0	14
792			min	-.56	23	.487	29	-.379	22	.689	31	0	14	0	14
793		2	max	.891	29	.379	14	.379	32	2.306	15	1.975	32	-1.272	29
794			min	-.56	23	.244	29	-.189	22	.689	31	-.988	22	-1.978	14
795		3	max	.891	29	0	14	0	14	2.306	15	2.634	32	-1.696	29
796			min	-.56	23	0	14	0	14	.689	31	-1.317	22	-2.638	14
797		4	max	.891	29	-.244	31	.189	30	2.306	15	1.975	32	-1.272	29
798			min	-.56	23	-.379	14	-.379	24	.689	31	-.988	22	-1.978	14
799		5	max	.891	29	-.487	31	.379	30	2.306	15	0	14	0	14
800			min	-.56	23	-.758	14	-.757	24	.689	31	0	14	0	14
801	M93	1	max	1.112	21	1.14	14	1.138	24	.964	32	0	14	0	14
802			min	-.643	31	.733	29	-.569	22	-.58	22	0	14	0	14
803		2	max	1.112	21	.57	14	.569	24	.964	32	4.463	24	-2.873	29
804			min	-.643	31	.366	29	-.284	22	-.58	22	-2.231	22	-4.469	14
805		3	max	1.112	21	0	14	0	14	.964	32	5.95	24	-3.831	29
806			min	-.643	31	0	14	0	14	-.58	22	-2.975	22	-5.959	14
807		4	max	1.112	21	-.366	29	.284	22	.964	32	4.463	24	-2.873	29
808			min	-.643	31	-.57	14	-.569	24	-.58	22	-2.231	22	-4.469	14
809		5	max	1.112	21	-.733	29	.569	22	.964	32	0	14	0	14
810			min	-.643	31	-1.14	14	-1.138	24	-.58	22	0	14	0	14
811	M94	1	max	1.201	21	.692	14	.691	24	2.549	32	0	14	0	14
812			min	-.596	31	.445	29	-.346	22	-1.523	22	0	14	0	14
813		2	max	1.201	21	.346	14	.346	24	2.549	32	1.648	24	-1.061	29
814			min	-.596	31	.223	29	-.173	22	-1.523	22	-.824	22	-1.65	14
815		3	max	1.201	21	0	14	0	14	2.549	32	2.197	24	-1.414	29
816			min	-.596	31	0	14	0	14	-1.523	22	-1.098	22	-2.2	14
817		4	max	1.201	21	-.223	30	.173	22	2.549	32	1.648	24	-1.061	29
818			min	-.596	31	-.346	14	-.346	24	-1.523	22	-.824	22	-1.65	14
819		5	max	1.201	21	-.445	30	.346	22	2.549	32	0	14	0	14
820			min	-.596	31	-.692	14	-.691	24	-1.523	22	0	14	0	14
821	M95	1	max	.851	21	.933	14	.932	24	1.232	30	0	14	0	14
822			min	.088	31	.6	29	-.466	22	-3.063	24	0	14	0	14
823		2	max	.851	21	.466	14	.466	24	1.232	30	2.991	24	-1.925	29
824			min	.088	31	.3	29	-.233	22	-3.063	24	-1.495	22	-2.995	14
825		3	max	.851	21	0	14	0	14	1.232	30	3.988	24	-2.567	29
826			min	.088	31	0	14	0	14	-3.063	24	-1.994	22	-3.994	14
827		4	max	.851	21	-.3	29	.233	22	1.232	30	2.991	24	-1.925	29
828			min	.088	31	-.466	14	-.466	24	-3.063	24	-1.495	22	-2.995	14
829		5	max	.851	21	-.6	29	.466	22	1.232	30	0	14	0	14
830			min	.088	31	-.933	14	-.932	24	-3.063	24	0	14	0	14
831	M96	1	max	4.052	15	.463	14	.462	23	1.721	23	0	14	0	14
832			min	1.409	32	.298	29	-.231	29	.494	29	0	14	0	14
833		2	max	4.052	15	.232	14	.231	23	1.721	23	.737	23	-.474	29
834			min	1.409	32	.149	29	-.116	29	.494	29	-.368	29	-.738	14
835		3	max	4.052	15	0	14	0	14	1.721	23	.983	23	-.633	29

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
836			min	1.409	32	0	14	0	14	.494	29	-.491	29	-.984	14
837		4	max	4.052	15	-.149	29	.116	21	1.721	23	.737	23	-.474	29
838			min	1.409	32	-.232	14	-.231	23	.494	29	-.368	29	-.738	14
839		5	max	4.052	15	-.298	29	.231	21	1.721	23	0	14	0	14
840			min	1.409	32	-.463	14	-.462	23	.494	29	0	14	0	14
841	M97	1	max	5.109	15	.627	14	.626	23	.312	23	0	14	0	14
842			min	1.898	31	.403	29	-.313	21	-.093	29	0	14	0	14
843		2	max	5.109	15	.313	14	.313	23	.312	23	1.349	23	-.868	29
844			min	1.898	31	.201	29	-.156	21	-.093	29	-.674	21	-1.351	14
845		3	max	5.109	15	0	14	0	14	.312	23	1.799	23	-1.158	29
846			min	1.898	31	0	14	0	14	-.093	29	-.899	21	-1.801	14
847		4	max	5.109	15	-.201	29	.156	21	.312	23	1.349	23	-.868	29
848			min	1.898	31	-.313	14	-.313	23	-.093	29	-.674	21	-1.351	14
849		5	max	5.109	15	-.403	29	.313	21	.312	23	0	14	0	14
850			min	1.898	31	-.627	14	-.626	23	-.093	29	0	14	0	14
851	M98	1	max	4.259	15	.776	14	.775	23	-.279	29	0	14	0	14
852			min	1.635	31	.499	31	-.388	29	-1.25	23	0	14	0	14
853		2	max	4.259	15	.388	14	.388	23	-.279	29	2.071	23	-1.334	31
854			min	1.635	31	.25	31	-.194	29	-1.25	23	-1.036	29	-2.074	14
855		3	max	4.259	15	0	14	0	14	-.279	29	2.762	23	-1.778	31
856			min	1.635	31	0	14	0	14	-1.25	23	-1.381	29	-2.766	14
857		4	max	4.259	15	-.25	29	.194	21	-.279	29	2.071	23	-1.334	31
858			min	1.635	31	-.388	14	-.388	23	-1.25	23	-1.036	29	-2.074	14
859		5	max	4.259	15	-.499	29	.388	21	-.279	29	0	14	0	14
860			min	1.635	31	-.776	14	-.775	23	-1.25	23	0	14	0	14
861	M99	1	max	.18	23	.218	14	.218	30	5.039	15	0	14	0	14
862			min	-.082	29	.14	31	-.109	24	2.044	31	0	14	0	14
863		2	max	.18	23	.109	14	.109	30	5.039	15	.163	30	-.105	31
864			min	-.082	29	.07	31	-.054	24	2.044	31	-.082	24	-.163	14
865		3	max	.18	23	0	14	0	14	5.039	15	.218	30	-.14	31
866			min	-.082	29	0	14	0	14	2.044	31	-.109	24	-.218	14
867		4	max	.18	23	-.07	29	.054	32	5.039	15	.163	30	-.105	31
868			min	-.082	29	-.109	14	-.109	22	2.044	31	-.082	24	-.163	14
869		5	max	.18	23	-.14	29	.109	32	5.039	15	0	14	0	14
870			min	-.082	29	-.218	14	-.218	22	2.044	31	0	14	0	14
871	M100	1	max	.719	29	.692	14	.691	30	.926	32	0	14	0	14
872			min	-1.12	23	.445	29	-.346	24	-1.949	22	0	14	0	14
873		2	max	.719	29	.346	14	.346	30	.926	32	1.648	30	-1.061	29
874			min	-1.12	23	.223	29	-.173	24	-1.949	22	-.824	24	-1.65	14
875		3	max	.719	29	0	14	0	14	.926	32	2.197	30	-1.414	29
876			min	-1.12	23	0	14	0	14	-1.949	22	-1.098	24	-2.2	14
877		4	max	.719	29	-.223	29	.173	24	.926	32	1.648	30	-1.061	29
878			min	-1.12	23	-.346	14	-.346	22	-1.949	22	-.824	24	-1.65	14
879		5	max	.719	29	-.445	29	.346	24	.926	32	0	14	0	14
880			min	-1.12	23	-.692	14	-.691	22	-1.949	22	0	14	0	14
881	M101	1	max	.963	29	1.14	14	1.138	22	.401	24	0	14	0	14
882			min	-1.101	23	.733	30	-.569	24	-.815	30	0	14	0	14
883		2	max	.963	29	.57	14	.569	22	.401	24	4.463	22	-2.873	30
884			min	-1.101	23	.366	30	-.284	24	-.815	30	-2.231	24	-4.469	14
885		3	max	.963	29	0	14	0	14	.401	24	5.95	22	-3.831	30
886			min	-1.101	23	0	14	0	14	-.815	30	-2.975	24	-5.959	14
887		4	max	.963	29	-.366	29	.284	24	.401	24	4.463	22	-2.873	30

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
888			min	-1.101	23	-.57	14	-.569	22	-.815	30	-2.231	24	-4.469	14
889		5	max	.963	29	-.733	29	.569	24	.401	24	0	14	0	14
890			min	-1.101	23	-1.14	14	-1.138	22	-.815	30	0	14	0	14
891	M102	1	max	.897	29	.758	14	.757	22	-.748	31	0	14	0	14
892			min	-.89	23	.487	30	-.379	32	-2.433	15	0	14	0	14
893		2	max	.897	29	.379	14	.379	22	-.748	31	1.975	22	-1.272	30
894			min	-.89	23	.244	30	-.189	32	-2.433	15	-.988	32	-1.978	14
895		3	max	.897	29	0	14	0	14	-.748	31	2.634	22	-1.696	30
896			min	-.89	23	0	14	0	14	-2.433	15	-1.317	32	-2.638	14
897		4	max	.897	29	-.244	29	.189	24	-.748	31	1.975	22	-1.272	30
898			min	-.89	23	-.379	14	-.379	30	-2.433	15	-.988	32	-1.978	14
899		5	max	.897	29	-.487	29	.379	24	-.748	31	0	14	0	14
900			min	-.89	23	-.758	14	-.757	30	-2.433	15	0	14	0	14
901	M103	1	max	4.138	15	.986	14	.984	21	2.222	15	0	14	0	14
902			min	1.118	29	.634	29	-.492	23	.7	41	0	14	0	14
903		2	max	4.138	15	.493	14	.492	21	2.222	15	3.338	21	-2.149	29
904			min	1.118	29	.317	29	-.246	23	.7	41	-1.669	23	-3.343	14
905		3	max	4.138	15	0	14	0	14	2.222	15	4.451	21	-2.865	29
906			min	1.118	29	0	14	0	14	.7	41	-2.225	23	-4.457	14
907		4	max	4.138	15	-.317	30	.246	23	2.222	15	3.338	21	-2.149	29
908			min	1.118	29	-.493	14	-.492	21	.7	41	-1.669	23	-3.343	14
909		5	max	4.138	15	-.634	30	.492	23	2.222	15	0	14	0	14
910			min	1.118	29	-.986	14	-.984	21	.7	41	0	14	0	14
911	M104	1	max	4.075	15	.88	14	.879	21	-.771	31	0	14	0	14
912			min	1.102	29	.566	29	-.44	31	-2.439	15	0	14	0	14
913		2	max	4.075	15	.44	14	.44	21	-.771	31	2.664	21	-1.715	29
914			min	1.102	29	.283	29	-.22	31	-2.439	15	-1.332	31	-2.668	14
915		3	max	4.075	15	0	14	0	14	-.771	31	3.552	21	-2.287	29
916			min	1.102	29	0	14	0	14	-2.439	15	-1.776	31	-3.557	14
917		4	max	4.075	15	-.283	31	.22	23	-.771	31	2.664	21	-1.715	29
918			min	1.102	29	-.44	14	-.44	29	-2.439	15	-1.332	31	-2.668	14
919		5	max	4.075	15	-.566	31	.44	23	-.771	31	0	14	0	14
920			min	1.102	29	-.88	14	-.879	29	-2.439	15	0	14	0	14
921	M106	1	max	4.786	24	-.678	30	2.784	21	.179	23	0	14	0	14
922			min	.671	30	-2.173	15	-.689	31	-.026	29	0	14	0	14
923		2	max	4.538	24	-.459	30	.167	31	.179	23	2.297	21	.688	24
924			min	.487	30	-2.166	15	-.39	21	-.026	29	-.481	31	-.538	30
925		3	max	4.479	24	-.459	30	.167	31	.179	23	1.421	21	5.409	24
926			min	.442	30	-2.166	15	-.39	21	-.026	29	-.106	31	.495	30
927		4	max	.37	14	.12	32	-.015	31	0	14	.693	21	2.105	24
928			min	.238	29	-.245	30	-.308	21	0	14	.034	31	-1.002	30
929		5	max	.301	14	.12	32	-.015	31	0	14	0	14	1.842	24
930			min	.193	29	-.245	30	-.308	21	0	14	0	14	-.452	30
931	M107	1	max	3.332	14	2.886	24	-1.469	41	0	14	6.246	21	11.136	32
932			min	2.142	43	-1.429	30	-4.097	15	0	14	-.086	31	-14.887	22
933		2	max	2.102	14	1.736	24	.222	31	0	14	2.425	21	5.158	32
934			min	1.351	29	-.859	30	-.735	21	0	14	-1.281	31	-8.174	22
935		3	max	2.02	14	1.736	24	.222	31	0	14	.771	21	1.264	32
936			min	1.299	29	-.859	30	-.735	21	0	14	-.78	31	-6.252	22
937		4	max	.788	14	.581	24	.179	23	0	14	.25	29	.366	32
938			min	.507	29	-.286	30	-.111	29	0	14	-.403	23	-2.387	22
939		5	max	.707	14	.581	24	.179	23	0	14	0	14	-.903	31

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
940			min	.454	29	-.286	30	-.111	29	0	14	0	14	-2.16	15
941	M108	1	max	.7	23	.134	14	.109	24	-.215	30	0	14	0	14
942			min	.176	29	.086	29	-.054	30	-4.214	24	0	14	0	14
943		2	max	.7	23	.067	14	.054	24	-.215	30	.082	24	-.065	29
944			min	.176	29	.043	29	-.027	30	-4.214	24	-.041	30	-.1	14
945		3	max	.7	23	0	14	0	14	-.215	30	.109	24	-.086	29
946			min	.176	29	0	14	0	14	-4.214	24	-.054	30	-.134	14
947		4	max	.7	23	-.043	31	.027	22	-.215	30	.082	24	-.065	29
948			min	.176	29	-.067	14	-.054	32	-4.214	24	-.041	30	-.1	14
949		5	max	.7	23	-.086	31	.054	22	-.215	30	0	14	0	14
950			min	.176	29	-.134	14	-.109	32	-4.214	24	0	14	0	14
951	M109	1	max	.243	15	.218	14	.218	24	-.762	30	0	14	0	14
952			min	.038	43	.14	29	-.109	30	-4.973	24	0	14	0	14
953		2	max	.243	15	.109	14	.109	24	-.762	30	.163	24	-.105	29
954			min	.038	43	.07	29	-.054	30	-4.973	24	-.082	30	-.163	14
955		3	max	.243	15	0	14	0	14	-.762	30	.218	24	-.14	29
956			min	.038	43	0	14	0	14	-4.973	24	-.109	30	-.218	14
957		4	max	.243	15	-.07	31	.054	22	-.762	30	.163	24	-.105	29
958			min	.038	43	-.109	14	-.109	32	-4.973	24	-.082	30	-.163	14
959		5	max	.243	15	-.14	31	.109	22	-.762	30	0	14	0	14
960			min	.038	43	-.218	14	-.218	32	-4.973	24	0	14	0	14
961	M110	1	max	.948	31	.218	14	.218	24	-1.431	30	0	14	0	14
962			min	-1.173	21	.14	29	-.109	30	-3.78	15	0	14	0	14
963		2	max	.948	31	.109	14	.109	24	-1.431	30	.163	24	-.105	29
964			min	-1.173	21	.07	29	-.054	30	-3.78	15	-.082	30	-.163	14
965		3	max	.948	31	0	14	0	14	-1.431	30	.218	24	-.14	29
966			min	-1.173	21	0	14	0	14	-3.78	15	-.109	30	-.218	14
967		4	max	.948	31	-.07	31	.054	22	-1.431	30	.163	24	-.105	29
968			min	-1.173	21	-.109	14	-.109	32	-3.78	15	-.082	30	-.163	14
969		5	max	.948	31	-.14	31	.109	22	-1.431	30	0	14	0	14
970			min	-1.173	21	-.218	14	-.218	32	-3.78	15	0	14	0	14
971	M111	1	max	1.116	23	.167	14	.136	22	3.45	22	0	14	0	14
972			min	.244	30	.108	29	-.068	32	0	32	0	14	0	14
973		2	max	1.116	23	.084	14	.068	22	3.45	22	.128	22	-.101	29
974			min	.244	30	.054	29	-.034	32	0	32	-.064	32	-.157	14
975		3	max	1.116	23	0	14	0	14	3.45	22	.17	22	-.135	29
976			min	.244	30	0	14	0	14	0	32	-.085	32	-.209	14
977		4	max	1.116	23	-.054	31	.034	24	3.45	22	.128	22	-.101	29
978			min	.244	30	-.084	14	-.068	30	0	32	-.064	32	-.157	14
979		5	max	1.116	23	-.108	31	.068	24	3.45	22	0	14	0	14
980			min	.244	30	-.167	14	-.136	30	0	32	0	14	0	14
981	M114	1	max	4.866	24	.904	30	1.528	29	.278	22	0	14	0	14
982			min	-3.094	30	-.899	24	-2.672	23	-.048	32	0	14	0	14
983		2	max	4.242	24	1.567	30	.485	23	.278	22	1.159	29	.89	15
984			min	-3.563	30	-1.223	24	-.295	29	-.048	32	-2.065	23	.231	31
985		3	max	4.183	24	1.567	30	.485	23	.278	22	.496	29	3.34	24
986			min	-3.607	30	-1.223	24	-.295	29	-.048	32	-.973	23	-3.264	30
987		4	max	.643	14	.232	32	.162	23	0	14	.209	29	2.328	15
988			min	.413	29	-.474	22	-.093	29	0	14	-.364	23	-.53	30
989		5	max	.574	14	.232	32	.162	23	0	14	0	14	2.358	15
990			min	.369	29	-.474	22	-.093	29	0	14	0	14	.526	30
991	M115	1	max	.201	29	.66	14	.66	22	2.696	30	0	14	0	14

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
992			min	-.322	23	.425	29	-.33	24	-1.45	24	0	14	0	14
993		2	max	.201	29	.33	14	.33	22	2.696	30	1.499	22	-.965	29
994			min	-.322	23	.212	29	-.165	24	-1.45	24	-.75	24	-1.501	14
995		3	max	.201	29	0	14	0	14	2.696	30	1.999	22	-1.287	29
996			min	-.322	23	0	14	0	14	-1.45	24	-.999	24	-2.002	14
997		4	max	.201	29	-.212	29	.165	24	2.696	30	1.499	22	-.965	29
998			min	-.322	23	-.33	14	-.33	22	-1.45	24	-.75	24	-1.501	14
999		5	max	.201	29	-.425	29	.33	24	2.696	30	0	14	0	14
1000			min	-.322	23	-.66	14	-.659	22	-1.45	24	0	14	0	14
1001	M116	1	max	3.156	23	.66	14	.66	22	3.123	30	0	14	0	14
1002			min	-1.822	29	.425	29	-.33	24	-1.841	24	0	14	0	14
1003		2	max	3.156	23	.33	14	.33	22	3.123	30	1.499	22	-.965	29
1004			min	-1.822	29	.212	29	-.165	24	-1.841	24	-.75	24	-1.501	14
1005		3	max	3.156	23	0	14	0	14	3.123	30	1.999	22	-1.287	29
1006			min	-1.822	29	0	14	0	14	-1.841	24	-.999	24	-2.002	14
1007		4	max	3.156	23	-.212	29	.165	24	3.123	30	1.499	22	-.965	29
1008			min	-1.822	29	-.33	14	-.33	22	-1.841	24	-.75	24	-1.501	14
1009		5	max	3.156	23	-.425	29	.33	24	3.123	30	0	14	0	14
1010			min	-1.822	29	-.66	14	-.659	22	-1.841	24	0	14	0	14
1011	M117	1	max	.975	15	.406	14	.33	30	2.244	22	0	14	0	14
1012			min	.258	30	.261	29	-.165	24	-.905	32	0	14	0	14
1013		2	max	.975	15	.203	14	.165	30	2.244	22	.75	30	-.593	29
1014			min	.258	30	.13	29	-.082	24	-.905	32	-.375	24	-.923	14
1015		3	max	.975	15	0	14	0	14	2.244	22	.999	30	-.791	29
1016			min	.258	30	0	14	0	14	-.905	32	-.5	24	-1.23	14
1017		4	max	.975	15	-.13	29	.082	32	2.244	22	.75	30	-.593	29
1018			min	.258	30	-.203	14	-.165	22	-.905	32	-.375	24	-.923	14
1019		5	max	.975	15	-.261	29	.165	32	2.244	22	0	14	0	14
1020			min	.258	30	-.406	14	-.33	22	-.905	32	0	14	0	14
1021	M117A	1	max	5.183	29	.021	14	0	14	.033	15	0	14	0	14
1022			min	-6.902	23	.014	30	0	14	.009	29	0	14	0	14
1023		2	max	5.172	29	.011	14	0	14	.033	15	0	14	-.015	30
1024			min	-6.918	23	.007	30	0	14	.009	29	0	14	-.023	14
1025		3	max	5.16	29	0	14	0	14	.033	15	0	14	-.02	30
1026			min	-6.933	23	0	14	0	14	.009	29	0	14	-.031	14
1027		4	max	5.149	29	-.007	29	0	14	.033	15	0	14	-.015	30
1028			min	-6.948	23	-.011	14	0	14	.009	29	0	14	-.023	14
1029		5	max	5.138	29	-.014	29	0	14	.033	15	0	14	0	14
1030			min	-6.963	23	-.021	14	0	14	.009	29	0	14	0	14
1031	M118	1	max	7.606	32	.021	14	0	14	.166	31	0	14	0	14
1032			min	-5.917	22	.014	44	0	14	-.326	21	0	14	0	14
1033		2	max	7.594	32	.011	14	0	14	.166	31	0	14	-.015	44
1034			min	-5.932	22	.007	44	0	14	-.326	21	0	14	-.023	14
1035		3	max	7.583	32	0	14	0	14	.166	31	0	14	-.02	44
1036			min	-5.947	22	0	14	0	14	-.326	21	0	14	-.031	14
1037		4	max	7.572	32	-.007	31	0	14	.166	31	0	14	-.015	44
1038			min	-5.963	22	-.011	14	0	14	-.326	21	0	14	-.023	14
1039		5	max	7.56	32	-.014	31	0	14	.166	31	0	14	0	14
1040			min	-5.978	22	-.021	14	0	14	-.326	21	0	14	0	14
1041	M119	1	max	7.413	30	.021	14	0	14	.162	21	0	14	0	14
1042			min	-5.848	24	.014	42	0	14	-.026	31	0	14	0	14
1043		2	max	7.401	30	.011	14	0	14	.162	21	0	14	-.015	42

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1044			min	-5.863	24	.007	42	0	14	-.026	31	0	14	-.023	14
1045		3	max	7.39	30	0	14	0	14	.162	21	0	14	-.02	42
1046			min	-5.878	24	0	14	0	14	-.026	31	0	14	-.031	14
1047		4	max	7.379	30	-.007	30	0	14	.162	21	0	14	-.015	42
1048			min	-5.893	24	-.011	14	0	14	-.026	31	0	14	-.023	14
1049		5	max	7.367	30	-.014	30	0	14	.162	21	0	14	0	14
1050			min	-5.908	24	-.021	14	0	14	-.026	31	0	14	0	14
1051	M120	1	max	5.268	30	.021	14	0	14	.056	32	0	14	0	14
1052			min	-3.425	24	.014	29	0	14	-.324	22	0	14	0	14
1053		2	max	5.256	30	.011	14	0	14	.056	32	0	14	-.015	29
1054			min	-3.44	24	.007	29	0	14	-.324	22	0	14	-.023	14
1055		3	max	5.245	30	0	14	0	14	.056	32	0	14	-.02	29
1056			min	-3.455	24	0	14	0	14	-.324	22	0	14	-.031	14
1057		4	max	5.234	30	-.007	30	0	14	.056	32	0	14	-.015	29
1058			min	-3.47	24	-.011	14	0	14	-.324	22	0	14	-.023	14
1059		5	max	5.222	30	-.014	30	0	14	.056	32	0	14	0	14
1060			min	-3.485	24	-.021	14	0	14	-.324	22	0	14	0	14
1061	M121	1	max	.03	30	.021	14	0	14	.031	29	0	14	0	14
1062			min	-4.484	24	.014	43	0	14	-.208	23	0	14	0	14
1063		2	max	.019	30	.011	14	0	14	.031	29	0	14	-.015	43
1064			min	-4.499	24	.007	43	0	14	-.208	23	0	14	-.023	14
1065		3	max	.007	30	0	14	0	14	.031	29	0	14	-.02	43
1066			min	-4.514	24	0	14	0	14	-.208	23	0	14	-.031	14
1067		4	max	-.004	30	-.007	41	0	14	.031	29	0	14	-.015	43
1068			min	-4.529	24	-.011	14	0	14	-.208	23	0	14	-.023	14
1069		5	max	-.015	30	-.014	41	0	14	.031	29	0	14	0	14
1070			min	-4.544	24	-.021	14	0	14	-.208	23	0	14	0	14
1071	M120A	1	max	0	23	.634	15	0	14	0	29	0	14	0	14
1072			min	0	21	.093	31	0	14	-.001	15	0	14	0	14
1073		2	max	0	23	.317	15	0	14	0	29	0	14	-.07	31
1074			min	0	21	.047	31	0	14	-.001	15	0	14	-.476	15
1075		3	max	0	23	0	14	0	14	0	29	0	14	-.093	31
1076			min	0	21	0	14	0	14	-.001	15	0	14	-.634	15
1077		4	max	0	23	-.047	29	0	14	0	29	0	14	-.07	31
1078			min	0	21	-.317	15	0	14	-.001	15	0	14	-.476	15
1079		5	max	0	23	-.093	29	0	14	0	29	0	14	0	14
1080			min	0	21	-.634	15	0	14	-.001	15	0	14	0	14
1081	M121A	1	max	.911	29	2.249	15	0	14	0	15	0	14	0	14
1082			min	-.943	23	.341	31	0	14	0	31	0	14	0	14
1083		2	max	.911	29	1.124	15	0	14	0	15	0	14	-.89	31
1084			min	-.943	23	.17	31	0	14	0	31	0	14	-5.868	15
1085		3	max	.911	29	0	14	0	14	0	15	0	14	-1.186	31
1086			min	-.943	23	0	14	0	14	0	31	0	14	-7.824	15
1087		4	max	.911	29	-.17	29	0	14	0	15	0	14	-.89	31
1088			min	-.943	23	-1.124	15	0	14	0	31	0	14	-5.868	15
1089		5	max	.911	29	-.341	29	0	14	0	15	0	14	0	14
1090			min	-.943	23	-2.249	15	0	14	0	31	0	14	0	14
1091	M123	1	max	0	23	.574	15	0	14	0	14	0	14	0	14
1092			min	0	21	.086	31	0	14	0	31	0	14	0	14
1093		2	max	0	23	.287	15	0	14	0	14	0	14	-.065	31
1094			min	0	21	.043	31	0	14	0	31	0	14	-.43	15
1095		3	max	0	23	0	14	0	14	0	14	0	14	-.086	31

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1096			min	0	21	0	14	0	14	0	31	0	14	-.574	15
1097		4	max	0	23	-.043	29	0	14	0	14	0	14	-.065	31
1098			min	0	21	-.287	15	0	14	0	31	0	14	-.43	15
1099		5	max	0	23	-.086	29	0	14	0	14	0	14	0	14
1100			min	0	21	-.574	15	0	14	0	31	0	14	0	14
1101	M113	1	max	1.216	21	4.399	15	0	14	0	15	0	14	0	14
1102			min	-1.157	31	.696	29	0	14	0	31	0	14	0	14
1103		2	max	1.216	21	2.2	15	0	14	0	15	0	14	-2.73	29
1104			min	-1.157	31	.348	29	0	14	0	31	0	14	-17.254	15
1105		3	max	1.216	21	0	14	0	14	0	15	0	14	-3.64	29
1106			min	-1.157	31	0	14	0	14	0	31	0	14	-23.005	15
1107		4	max	1.216	21	-.348	29	0	14	0	15	0	14	-2.73	29
1108			min	-1.157	31	-2.2	15	0	14	0	31	0	14	-17.254	15
1109		5	max	1.216	21	-.696	29	0	14	0	15	0	14	0	14
1110			min	-1.157	31	-4.399	15	0	14	0	31	0	14	0	14
1111	M114A	1	max	2.029	21	2.398	15	0	14	0	32	0	14	0	14
1112			min	-1.966	31	.342	29	0	14	0	15	0	14	0	14
1113		2	max	2.029	21	1.277	15	0	14	0	32	0	14	-.855	29
1114			min	-1.966	31	.18	29	0	14	0	15	0	14	-6.052	15
1115		3	max	2.029	21	.002	15	0	14	0	32	0	14	-1.142	29
1116			min	-1.966	31	0	29	0	14	0	15	0	14	-8.084	15
1117		4	max	2.029	21	-.18	29	0	14	0	32	0	14	-.857	29
1118			min	-1.966	31	-1.273	15	0	14	0	15	0	14	-6.066	15
1119		5	max	2.029	21	-.354	29	0	14	0	32	0	14	0	14
1120			min	-1.966	31	-2.497	15	0	14	0	15	0	14	0	14
1121	M115A	1	max	.421	21	2.782	15	0	14	0	31	0	14	0	14
1122			min	-.366	31	.404	29	0	14	-.002	15	0	14	0	14
1123		2	max	.421	21	1.391	15	0	14	0	31	0	14	-1.054	29
1124			min	-.366	31	.202	29	0	14	-.002	15	0	14	-7.258	15
1125		3	max	.421	21	0	14	0	14	0	31	0	14	-1.406	29
1126			min	-.366	31	0	14	0	14	-.002	15	0	14	-9.677	15
1127		4	max	.421	21	-.202	29	0	14	0	31	0	14	-1.054	29
1128			min	-.366	31	-1.391	15	0	14	-.002	15	0	14	-7.258	15
1129		5	max	.421	21	-.404	29	0	14	0	31	0	14	0	14
1130			min	-.366	31	-2.782	15	0	14	-.002	15	0	14	0	14
1131	M116B	1	max	.612	29	.755	15	0	14	.002	15	0	14	0	14
1132			min	-.734	23	.108	29	0	14	0	43	0	14	0	14
1133		2	max	.612	29	.378	15	0	14	.002	15	0	14	-.081	29
1134			min	-.734	23	.054	29	0	14	0	43	0	14	-.566	15
1135		3	max	.612	29	0	14	0	14	.002	15	0	14	-.108	29
1136			min	-.734	23	0	14	0	14	0	43	0	14	-.755	15
1137		4	max	.612	29	-.054	31	0	14	.002	15	0	14	-.081	29
1138			min	-.734	23	-.378	15	0	14	0	43	0	14	-.566	15
1139		5	max	.612	29	-.108	31	0	14	.002	15	0	14	0	14
1140			min	-.734	23	-.755	15	0	14	0	43	0	14	0	14
1141	M117B	1	max	2.246	21	3.359	15	.028	31	.002	32	0	14	0	14
1142			min	-2.174	31	.07	32	-.04	21	-.003	22	0	14	0	14
1143		2	max	2.246	21	1.593	15	.028	31	.002	32	.12	31	.278	32
1144			min	-2.174	31	-.2	32	-.04	21	-.003	22	-.172	21	-10.598	15
1145		3	max	2.246	21	.836	30	.028	31	.002	32	.239	31	1.715	32
1146			min	-2.174	31	-.524	24	-.04	21	-.003	22	-.344	21	-13.637	15
1147		4	max	1.507	21	.882	32	.129	30	.011	22	.474	21	3.197	32

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1148			min	-1.591	23	-2.779	22	-.111	21	-.002	32	-.552	30	-13.607	22
1149		5	max	1.507	21	.611	32	.129	30	.011	22	0	14	0	14
1150			min	-1.591	23	-3.579	22	-.111	21	-.002	32	0	14	0	14
1151	M116A	1	max	1.684	24	1.722	30	.74	21	.027	32	1.889	31	.06	15
1152			min	-2.531	30	-.995	24	-.585	31	-.195	15	-2.569	21	-.014	30
1153		2	max	1.684	24	1.694	30	.74	21	.027	32	1.195	31	1.247	24
1154			min	-2.531	30	-1.032	24	-.585	31	-.195	15	-1.691	21	-2.042	30
1155		3	max	1.684	24	1.666	30	.74	21	.027	32	.501	31	2.495	24
1156			min	-2.531	30	-1.07	24	-.585	31	-.195	15	-.812	21	-4.037	30
1157		4	max	.137	30	1.82	24	.739	21	.056	32	.163	21	2.14	24
1158			min	-.079	24	-2.886	30	-.584	31	-.346	22	-.116	31	-3.454	30
1159		5	max	.137	30	1.783	24	.739	21	.056	32	1.04	21	.004	32
1160			min	-.079	24	-2.914	30	-.584	31	-.346	22	-.81	31	-.014	22

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M1	W21x50	.700	34.25	15	.052	34.25	y	15	192.374	661.5	45.75	89.466	1.404	H1-1b
2	M2	W21x62	.644	0	22	.112	0	y	15	519.114	823.5	81.375	167.998	1.299	H1-1b
3	M3	W21x57	.769	34.25	15	.093	3.924	y	15	584.282	751.5	55.5	110.079	1.286	H1-1b
4	M4	W8x40	.425	4.25	15	.070	2.125	z	23	503.173	526.5	69.375	149.25	1.781	H1-1b
5	M5	W8x40	.301	4.25	15	.115	2.125	y	15	503.173	526.5	69.375	149.25	1.896	H1-1b
6	M6	W8x40	.690	4.25	15	.357	2.125	y	22	503.173	526.5	69.375	149.25	1.837	H1-1b
7	M7	W8x40	1.037	4.25	15	.111	2.125	z	24	503.173	526.5	69.375	149.25	1.981	H1-1b
8	M8	W8x40	.942	4.25	15	.088	2.125	z	15	503.173	526.5	69.375	149.25	1.442	H1-1b
9	M9	W8x40	.777	4.25	15	.242	2.125	y	15	503.173	526.5	69.375	149.25	1.84	H1-1b
10	M10	W18x35	.129	10.4...	15	.039	0	y	15	54.862	463.5	30.225	249.375	1	H1-1b
11	M11	W21x44	.228	29.8...	21	.047	29.8...	y	15	36.489	585	38.215	69.989	1.191	H1-1b
12	M12	W18x35	.120	10.4...	15	.036	0	y	15	54.862	463.5	30.225	249.375	1	H1-1b
13	M13	W21x44	.323	29.8...	21	.054	29.8...	y	15	36.489	585	38.215	73.726	1.254	H1-1b
14	M14	W21x44	.653	12.43	15	.061	29.8...	y	15	106.04	585	38.215	129.714	1	H1-1b
15	M15	W21x44	.446	29.8...	15	.037	29.8...	y	24	106.04	585	38.215	90.484	1.54	H1-1b
16	M16	W21x62	.720	14.1...	15	.081	0	y	15	312.139	823.5	81.375	352.349	1	H1-1b
17	M17	W21x62	.711	13.7...	15	.079	0	y	15	312.139	823.5	81.375	352.349	1	H1-1b
18	M20	W21x62	.366	20.3...	15	.087	34.25	y	15	653.077	823.5	81.375	540	1	H1-1b
19	M34	W21x44	.307	0	23	.051	2	z	23	457.504	585	38.215	357.75	1.795	H1-1b
20	M35	W21x44	.275	0	21	.043	2	z	23	457.504	585	38.215	357.75	1.381	H1-1b
21	M36	W21x44	.079	0	21	.028	0	y	15	457.504	585	38.215	357.75	1.251	H1-1b
22	M37	W21x44	.087	0	24	.031	0	y	15	457.504	585	38.215	357.75	1.57	H1-1b
23	M39	W12x26	.319	0	23	.044	0	y	15	239.391	344.25	30.637	139.5	1.777	H1-1b
24	M40	W10x12	.171	4.432	15	.013	0	y	15	25.861	159.3	6.458	18.174	1.141	H1-1b
25	M41	W12x26	.236	14.25	23	.031	14.25	y	15	133.658	344.25	30.637	139.5	2.077	H1-1b
26	M38	W14x22	.535	10.4...	15	.032	0	y	15	25.1	292.05	16.462	29.445	1.136	H1-1b
27	M41A	W14x22	.781	10.4...	15	.047	0	y	15	25.1	292.05	16.462	29.445	1.136	H1-1b
28	M42B	W10x12	.361	6.355	15	.032	12.7...	y	15	21.173	159.3	6.458	15.528	1.136	H1-1b
29	M43A	W14x22	.076	4.25	15	.024	0	y	15	142.655	292.05	16.462	117.967	1.31	H1-1b
30	M42A	W10x12	.522	6.355	15	.045	12.7...	y	15	21.173	159.3	6.458	15.531	1.137	H1-1b
31	M41B	W12x26	.107	3.044	29	.052	2.899	y	23	139.734	344.25	30.637	123.408	1.327	H1-1b
32	M42C	HSS8x6x5	.392	0	15	.155	0	y	15	274.28	314.226	58.305	71.07	3	H1-1b
33	M43	HSS6x6x5	.188	4.969	15	.039	0	y	21	229.791	266.202	46.92	46.92	1.682	H1-1b
34	M44C	HSS8x6x5	.398	0	15	.153	0	y	15	274.28	314.226	58.305	71.07	3	H1-1b

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Envelope AISC 13th(360-05): LRFD Steel Code Checks (Continued)

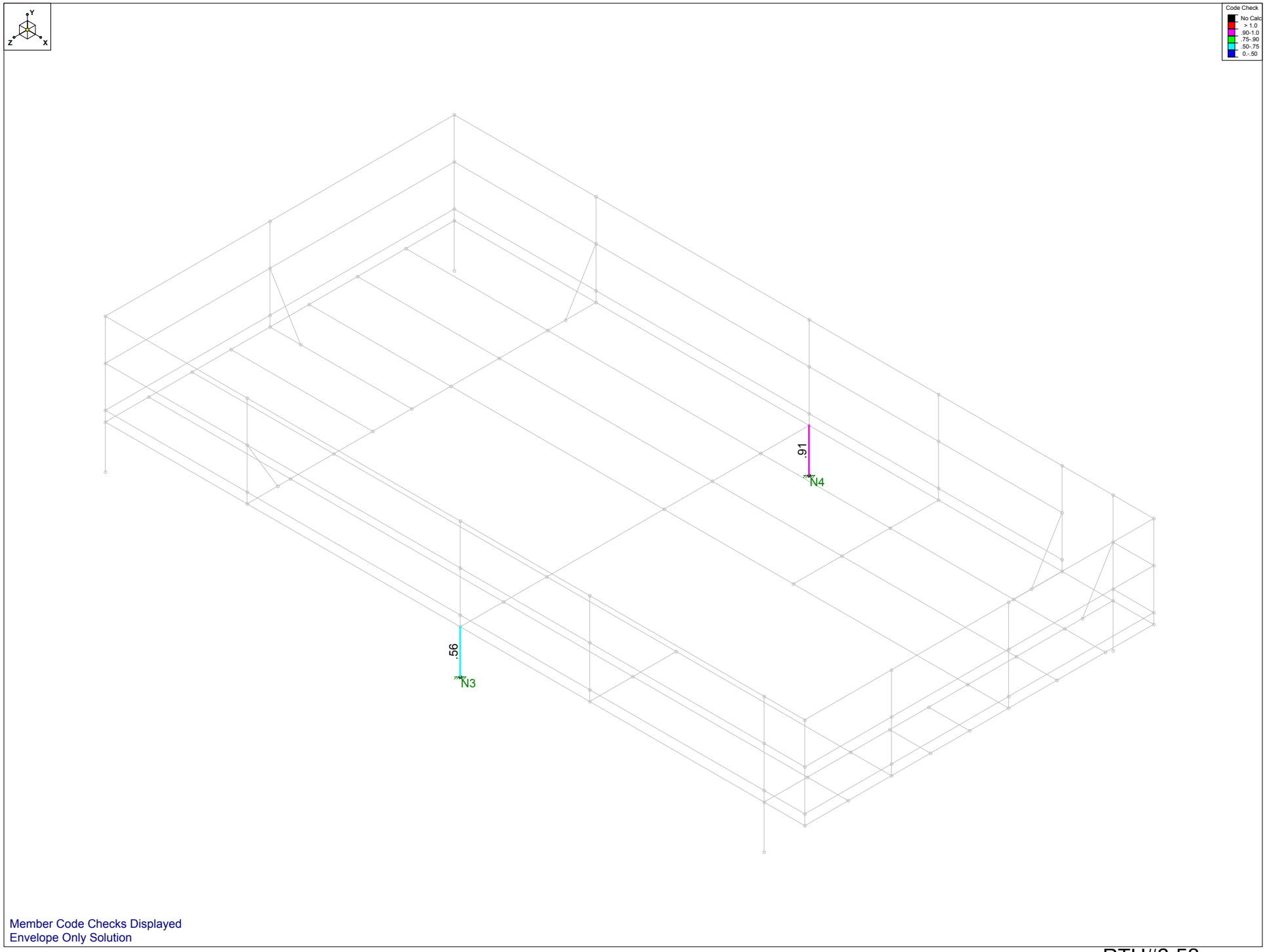
	Member	Shape	Code ..	Loc[ft]	LC	Shear..	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
35	M45	HSS6x6x5	.132	4.969	24	.024	1.031	y	24	229.791	266.202	46.92	46.92	1.604	H1-1b
36	M46	HSS8x6x5	.367	0	22	.045	0	y	22	274.28	314.226	58.305	71.07	2.25	H1-1b
37	M47	HSS6x6x5	.255	0	23	.107	0	z	23	229.791	266.202	46.92	46.92	1.15	H1-1b
38	M48	HSS8x6x5	.426	0	15	.118	0	y	15	274.28	314.226	58.305	71.07	2.835	H1-1b
39	M49	HSS8x6x5	.168	0	31	.034	0	y	23	274.28	314.226	58.305	71.07	2.673	H1-1b
40	M50	HSS8x6x5	.152	.938	21	.050	0	z	15	274.28	314.226	58.305	71.07	2.011	H1-1b
41	M51	HSS8x6x5	.381	0	15	.136	0	y	15	274.28	314.226	58.305	71.07	3	H1-1b
42	M52	HSS6x6x5	.241	0	23	.107	0	z	23	229.791	266.202	46.92	46.92	1.13	H1-1b
43	M53	HSS8x6x5	.376	0	24	.045	0	y	24	274.28	314.226	58.305	71.07	2.221	H1-1b
44	M54	HSS6x6x5	.136	4.969	22	.025	1.031	y	22	229.791	266.202	46.92	46.92	1.599	H1-1b
45	M55	HSS6x6x4	.071	6.958	24	.063	13.9...	y	15	153.84	216.936	38.64	38.64	1.136	H1-1b
46	M56	HSS6x6x4	.160	10.4...	24	.038	0	z	32	99.795	216.936	38.64	38.64	1.136	H1-1b
47	M57	HSS6x6x4	.060	6.355	24	.060	0	z	32	162.867	216.936	38.64	38.64	1.136	H1-1b
48	M58	HSS6x6x4	.107	8.562	24	.092	17.1...	y	24	128.925	216.936	38.64	38.64	1.136	H1-1b
49	M59	HSS6x6x4	.027	4.25	23	.052	0	y	23	190.829	216.936	38.64	38.64	1.136	H1-1b
50	M60	HSS6x6x4	.049	5.75	23	.015	0	y	23	171.553	216.936	38.64	38.64	1.136	H1-1b
51	M61	HSS6x6x4	.075	7.125	23	.045	0	y	23	151.293	216.936	38.64	38.64	1.136	H1-1b
52	M62	HSS6x6x4	.007	2	22	.116	4	y	15	210.863	216.936	38.64	38.64	1.136	H1-1b
53	M63	HSS6x6x4	.060	6.355	22	.046	12.7...	y	22	162.867	216.936	38.64	38.64	1.136	H1-1b
54	M64	HSS6x6x4	.161	10.4...	22	.035	0	y	22	99.795	216.936	38.64	38.64	1.136	H1-1b
55	M65	HSS6x6x4	.072	6.958	22	.067	0	y	15	153.84	216.936	38.64	38.64	1.136	H1-1b
56	M66	HSS6x6x4	.119	9.045	21	.062	0	y	15	121.367	216.936	38.64	38.64	1.136	H1-1b
57	M67	HSS6x6x4	.095	8.08	21	.064	16.16	y	15	136.474	216.936	38.64	38.64	1.136	H1-1b
58	M68	HSS6x6x4	.127	6.958	24	.079	13.9...	y	15	153.84	216.936	38.64	38.64	1.136	H1-1b
59	M69	HSS6x6x4	.286	10.4...	24	.032	0	z	32	99.795	216.936	38.64	38.64	1.136	H1-1b
60	M70	HSS6x6x4	.107	6.355	24	.137	0	z	32	162.867	216.936	38.64	38.64	1.136	H1-1b
61	M71	HSS6x6x4	.201	8.562	24	.123	17.1...	z	24	128.925	216.936	38.64	38.64	1.136	H1-1b
62	M72	HSS6x6x4	.065	4.25	23	.055	0	y	15	190.829	216.936	38.64	38.64	1.136	H1-1b
63	M73	HSS6x6x4	.098	5.75	23	.016	0	z	23	171.553	216.936	38.64	38.64	1.136	H1-1b
64	M74	HSS6x6x4	.151	7.125	23	.040	0	z	23	151.293	216.936	38.64	38.64	1.136	H1-1b
65	M75	HSS6x6x4	.013	2	22	.149	4	y	15	210.863	216.936	38.64	38.64	1.136	H1-1b
66	M76	HSS6x6x4	.108	6.355	22	.114	0	z	22	162.867	216.936	38.64	38.64	1.136	H1-1b
67	M77	HSS6x6x4	.286	10.4...	22	.029	0	z	30	99.795	216.936	38.64	38.64	1.136	H1-1b
68	M78	HSS6x6x4	.127	6.958	22	.083	0	y	15	153.84	216.936	38.64	38.64	1.136	H1-1b
69	M79	HSS6x6x4	.241	9.045	21	.094	0	y	15	121.367	216.936	38.64	38.64	1.136	H1-1b
70	M80	HSS6x6x4	.195	8.08	21	.102	16.16	y	15	136.474	216.936	38.64	38.64	1.136	H1-1b
71	M82	W12x14	.575	6.958	15	.045	13.9...	y	15	19.119	187.2	7.125	16.836	1.136	H1-1b
72	M83	W12x14	.465	6.958	15	.035	13.9...	y	15	19.119	187.2	7.125	16.836	1.136	H1-1b
73	M84	W12x14	.466	6.958	15	.037	13.9...	y	15	19.119	187.2	7.125	16.836	1.136	H1-1b
74	M85	W12x14	.465	6.958	15	.038	13.9...	y	15	19.119	187.2	7.125	16.836	1.136	H1-1b
75	M86	W10x12	.016	2	21	.015	4	y	15	115	159.3	6.458	46.904	1.136	H1-1b
76	M87	W10x12	.017	2	15	.014	4	y	15	115	159.3	6.458	46.904	1.136	H1-1b
77	M89	W12x14	.812	8.562	15	.038	17.1...	y	15	12.627	187.2	7.125	12.436	1.136	H1-1b
78	M90	W14x22	.566	9.5	15	.065	14.25	y	15	54.081	292.05	16.462	51.93	1.138	H1-1b
79	M91	W12x19	.654	8.562	15	.041	17.1...	y	15	20.118	250.65	11.175	23.13	1.136	H1-1b
80	M92	HSS6x6x4	.127	6.958	24	.082	13.9...	y	15	153.84	216.936	38.64	38.64	1.136	H1-1b
81	M93	HSS6x6x4	.287	10.4...	24	.049	0	z	32	99.795	216.936	38.64	38.64	1.136	H1-1b
82	M94	HSS6x6x4	.106	6.355	24	.091	0	z	32	162.867	216.936	38.64	38.64	1.136	H1-1b
83	M95	HSS6x6x4	.194	8.562	24	.111	17.1...	z	24	128.925	216.936	38.64	38.64	1.136	H1-1b
84	M96	HSS6x6x4	.054	4.25	23	.061	0	z	23	190.829	216.936	38.64	38.64	1.136	H1-1b
85	M97	HSS6x6x4	.096	5.75	23	.020	0	z	23	171.553	216.936	38.64	38.64	1.136	H1-1b
86	M98	HSS6x6x4	.142	7.125	23	.052	0	z	23	151.293	216.936	38.64	38.64	1.136	H1-1b

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Envelope AISC 13th(360-05): LRFD Steel Code Checks (Continued)

	Member	Shape	Code ...	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
87	M99	HSS6x6x4	.010	2	22	.160	4	y	15	210.863	216.936	38.64	38.64	1.136	H1-1b
88	M100	HSS6x6x4	.106	6.355	22	.072	12.7...	z	22	162.867	216.936	38.64	38.64	1.136	H1-1b
89	M101	HSS6x6x4	.287	10.4...	22	.044	0	z	30	99.795	216.936	38.64	38.64	1.136	H1-1b
90	M102	HSS6x6x4	.127	6.958	22	.086	0	y	15	153.84	216.936	38.64	38.64	1.136	H1-1b
91	M103	HSS6x6x4	.223	9.045	21	.083	0	y	15	121.367	216.936	38.64	38.64	1.136	H1-1b
92	M104	HSS6x6x4	.179	8.08	21	.088	16.16	y	15	136.474	216.936	38.64	38.64	1.136	H1-1b
93	M106	HSS6x6x5	.163	4.969	15	.038	0	z	21	229.791	266.202	46.92	46.92	1.93	H1-1b
94	M107	HSS8x6x5	.277	0	22	.055	0	z	15	274.28	314.226	58.305	71.07	1.982	H1-1b
95	M108	HSS6x6x4	.007	2	24	.133	0	y	24	210.863	216.936	38.64	38.64	1.136	H1-1b
96	M109	HSS6x6x4	.011	2	24	.159	0	z	24	210.863	216.936	38.64	38.64	1.136	H1-1b
97	M110	HSS6x6x4	.011	2	24	.121	0	y	15	210.863	216.936	38.64	38.64	1.136	H1-1b
98	M111	HSS6x6x4	.010	2.5	22	.110	0	y	22	207.521	216.936	38.64	38.64	1.136	H1-1b
99	M114	HSS6x6x5	.096	4.969	24	.040	0	z	23	229.791	266.202	46.92	46.92	1.567	H1-1b
100	M115	HSS6x6x4	.096	6.062	22	.095	0	z	30	167.128	216.936	38.64	38.64	1.136	H1-1b
101	M116	HSS6x6x4	.098	6.062	22	.108	0	z	30	167.128	216.936	38.64	38.64	1.136	H1-1b
102	M117	HSS6x6x4	.055	6.062	22	.076	0	y	22	167.128	216.936	38.64	38.64	1.136	H1-1b
103	M117A	PIPE_4.0	.039	3.037	23	.004	5.831		15	85.754	95.904	10.935	10.935	1.136	H1-1b
104	M118	PIPE_4.0	.046	2.794	32	.034	0		21	85.754	95.904	10.935	10.935	1.136	H1-1b
105	M119	PIPE_4.0	.045	2.794	30	.017	5.831		21	85.754	95.904	10.935	10.935	1.136	H1-1b
106	M120	PIPE_4.0	.032	2.794	30	.034	0		22	85.754	95.904	10.935	10.935	1.136	H1-1b
107	M121	PIPE_4.0	.026	3.037	24	.022	5.831		23	85.754	95.904	10.935	10.935	1.136	H1-1b
108	M120A	W10x12	.014	2	15	.013	4	y	15	115	159.3	6.458	46.904	1.136	H1-1b
109	M121A	W12x14	.465	6.958	15	.036	0	y	15	19.119	187.2	7.125	16.836	1.136	H1-1b
110	M123	W10x12	.012	2	15	.011	4	y	15	115	159.3	6.458	46.904	1.136	H1-1b
111	M113	W14x22	.784	10.4...	15	.047	0	y	15	25.1	292.05	16.462	29.445	1.136	H1-1b
112	M114A	W10x12	.526	6.355	15	.045	12.7...	y	15	21.173	159.3	6.458	15.531	1.137	H1-1b
113	M115A	W12x14	.576	6.958	15	.046	13.9...	y	15	19.119	187.2	7.125	16.836	1.136	H1-1b
114	M116B	W10x12	.016	2	15	.017	4	y	15	115	159.3	6.458	46.904	1.136	H1-1b
115	M117B	W12x19	.682	12.1...	22	.050	17.1...	y	22	20.118	250.65	11.175	24.782	1.218	H1-1b
116	M116A	W12x26	.097	0	21	.044	3.018	y	22	291.643	344.25	30.637	139.5	1.44	H1-1b

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Member Distributed Loads (BLC 11 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
10	M14	Y	-.02	-.02	.398	29.833
11	M16	Y	-.021	-.021	13.916	34.833
12	M41A	Y	-.052	-.052	7.661e-15	20.917
13	M42A	Y	-.051	-.051	.398	12.578
14	M91	Y	-.051	-.051	0	17.123
15	M113	Y	-.052	-.052	4.441e-16	20.917
16	M114A	Y	-.051	-.051	.398	12.578
17	M117B	Y	-.051	-.051	0	17.123
18	M34	Y	-.02	-.02	5.829e-16	4
19	M35	Y	-.024	-.024	1.131e-13	4
20	M36	Y	-.04	-.04	0	4
21	M37	Y	-.044	-.044	3.755e-14	4
22	M86	Y	-.044	-.044	4.663e-15	4
23	M87	Y	-.048	-.048	2.368e-14	4
24	M120A	Y	-.04	-.04	1.402e-14	4
25	M123	Y	-.036	-.036	7.563e-14	4
26	M116B	Y	-.048	-.048	8.527e-14	4
27	M16	Y	-.02	-.02	3.719e-15	13.916
28	M17	Y	-.02	-.02	1.055e-15	13.916
29	M41B	Y	-.04	-.04	3.053e-15	13.916
30	M82	Y	-.05	-.05	1.332e-15	13.916
31	M83	Y	-.04	-.04	2.22e-15	13.916
32	M84	Y	-.04	-.04	1.499e-15	13.916
33	M85	Y	-.04	-.04	1.943e-15	13.916
34	M121A	Y	-.04	-.04	1.499e-15	13.916
35	M115A	Y	-.05	-.05	2.442e-15	13.916

Member Distributed Loads (BLC 12 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M10	Y	-.059	-.059	0	20.917
2	M11	Y	-.058	-.058	.229	29.833
3	M15	Y	-.058	-.058	.229	29.833
4	M17	Y	-.059	-.059	13.916	34.833
5	M38	Y	-.078	-.078	5.551e-15	20.917
6	M42B	Y	-.078	-.078	.229	12.709
7	M89	Y	-.077	-.077	.207	17.123
8	M12	Y	-.047	-.047	2.331e-15	20.917
9	M13	Y	-.046	-.046	.398	29.833
10	M14	Y	-.046	-.046	.398	29.833
11	M16	Y	-.047	-.047	13.916	34.833
12	M41A	Y	-.118	-.118	5.44e-15	20.917
13	M42A	Y	-.116	-.116	.398	12.578
14	M91	Y	-.116	-.116	0	17.123
15	M113	Y	-.118	-.118	4.552e-15	20.917
16	M114A	Y	-.116	-.116	.398	12.578
17	M117B	Y	-.116	-.116	0	17.123
18	M34	Y	-.045	-.045	5.829e-16	4
19	M35	Y	-.054	-.054	1.131e-13	4
20	M36	Y	-.09	-.09	0	4
21	M37	Y	-.099	-.099	3.755e-14	4
22	M86	Y	-.099	-.099	4.663e-15	4

Member Distributed Loads (BLC 12 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
23	M87	Y	-.108	-.108	2.368e-14	4
24	M120A	Y	-.09	-.09	1.402e-14	4
25	M123	Y	-.081	-.081	7.563e-14	4
26	M116B	Y	-.108	-.108	8.527e-14	4
27	M16	Y	-.046	-.046	7.827e-15	13.916
28	M17	Y	-.046	-.046	1.277e-15	13.916
29	M41B	Y	-.091	-.091	1.055e-15	13.916
30	M82	Y	-.114	-.114	3.83e-15	13.916
31	M83	Y	-.091	-.091	1.388e-15	13.916
32	M84	Y	-.091	-.091	2.054e-15	13.916
33	M85	Y	-.091	-.091	1.499e-15	13.916
34	M121A	Y	-.091	-.091	4.996e-16	13.916
35	M115A	Y	-.114	-.114	7.272e-15	13.916

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut..	Area(Me..	Surface(...
1	D	DL		-1				50	5	
2	LL40	LL							4	
3	LL23	LL							4	
4	WLX	WL+X						15		
5	WLZ	WL+Z						31		
6	WL-X	WL-X						15		
7	WL-Z	WL-Z						31		
8	SL	SL							1	
9	EX	ELX				6				
10	EZ	ELZ				6				
11	BLC 1 Transient A...	None						35		
12	BLC 3 Transient A...	None						35		

Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		DL	1														
2	LL40		Y		2	1														
3	LL23		Y		3	1														
4	S		Y		SL	1														
5	D+LL40		Y		DL	1	2	1												
6	D+LL23		Y		DL	1	3	1												
7	D+S		Y		DL	1	SL	1												
8	WX		Y		WL...	1														
9	WZ		Y		WL...	1														
10	WX-		Y		WL...	1														
11	WZ-		Y		WL...	1														
12	ELX		Y		ELX	1														
13	ELZ		Y		ELZ	1														
14	IBC 16-1	Yes	Y		DL	1.4														
15	IBC 16-2 (a)		Y		DL	1.2	2	1.6												
16	IBC 16-2 (b)	Yes	Y		DL	1.2	3	1.6												
17	IBC 16-3 (b) (a)	Yes	Y		DL	1.2	WL...	.8												
18	IBC 16-3 (b) (b)	Yes	Y		DL	1.2	WL...	.8												

Load Combinations (Continued)

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
19	IBC 16-3 (b) (c)	Yes	Y		DL	1.2	WL...	.8												
20	IBC 16-3 (b) (d)	Yes	Y		DL	1.2	WL...	.8												
21	IBC 16-4 (a) (a)		Y		DL	1.2	WL...	1.6	2	.5										
22	IBC 16-4 (a) (b)		Y		DL	1.2	WL...	1.6	2	.5										
23	IBC 16-4 (a) (c)		Y		DL	1.2	WL...	1.6	2	.5										
24	IBC 16-4 (a) (d)		Y		DL	1.2	WL...	1.6	2	.5										
25	IBC 16-4 (b) (a)	Yes	Y		DL	1.2	WL...	1.6	3	.5										
26	IBC 16-4 (b) (b)	Yes	Y		DL	1.2	WL...	1.6	3	.5										
27	IBC 16-4 (b) (c)	Yes	Y		DL	1.2	WL...	1.6	3	.5										
28	IBC 16-4 (b) (d)	Yes	Y		DL	1.2	WL...	1.6	3	.5										
29	IBC 16-6 (a)	Yes	Y		DL	.9	WL...	1.6												
30	IBC 16-6 (b)	Yes	Y		DL	.9	WL...	1.6												
31	IBC 16-6 (c)	Yes	Y		DL	.9	WL...	1.6												
32	IBC 16-6 (d)	Yes	Y		DL	.9	WL...	1.6												
33	IBC 16-5 (a)		Y		DL	1.2	ELX	1	2	.5										
34	IBC 16-5 (b)		Y		DL	1.2	ELZ	1	2	.5										
35	IBC 16-5 (c)		Y		DL	1.2	ELX	-1	2	.5										
36	IBC 16-5 (d)		Y		DL	1.2	ELZ	-1	2	.5										
37	IBC 16-5 (a)(b)	Yes	Y		DL	1.2	ELZ	-1	3	.5										
38	IBC 16-5 (b)(b)	Yes	Y		DL	1.2	ELZ	-1	3	.5										
39	IBC 16-5 (c)(b)	Yes	Y		DL	1.2	ELZ	-1	3	.5										
40	IBC 16-5 (d)(b)	Yes	Y		DL	1.2	ELZ	-1	3	.5										
41	IBC 16-7 (a)	Yes	Y		DL	.9	ELX	1												
42	IBC 16-7 (b)	Yes	Y		DL	.9	ELZ	1												
43	IBC 16-7 (c)	Yes	Y		DL	.9	ELX	-1												
44	IBC 16-7 (d)	Yes	Y		DL	.9	ELZ	-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	N4	max	3.085	31	41.322	16	24.273	25	43.511	25	.361	31	8.152	29
2		min	-1.497	29	17.709	30	3.006	30	-1.555	30	-.393	29	-13.326	31
3	N3	max	1.62	31	43.488	16	2.265	32	30.797	32	.725	29	3.895	29
4		min	-1	29	20.577	32	-24.626	30	-40.55	30	-.786	31	-5.924	31

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M6	1	max	43.488	16	2.318	32	1.644	31	.725	29	3.895	29	30.797	32
2			min	20.577	32	-24.661	30	-1.015	29	-.786	31	-5.924	31	-40.55	30
3		2	max	43.437	16	2.318	32	1.644	31	.725	29	2.817	29	31.416	25
4			min	20.539	32	-24.661	30	-1.015	29	-.786	31	-4.178	31	-14.347	30
5		3	max	43.386	16	2.318	32	1.644	31	.725	29	1.739	29	34.718	25
6			min	20.501	32	-24.661	30	-1.015	29	-.786	31	-2.432	31	11.856	30
7		4	max	43.335	16	2.318	32	1.644	31	.725	29	.66	29	54.218	16
8			min	20.463	32	-24.661	30	-1.015	29	-.786	31	-.685	31	23.409	32
9		5	max	43.285	16	2.318	32	1.644	31	.725	29	1.241	43	75.655	16
10			min	20.425	32	-24.661	30	-1.015	29	-.786	31	-.751	41	20.946	32
11	M7	1	max	41.322	16	1.509	29	24.363	25	.361	31	1.555	30	8.152	29
12			min	17.709	30	-3.105	31	2.98	30	-.393	29	-43.511	25	-13.326	31
13		2	max	41.271	16	1.509	29	24.363	25	.361	31	4.72	30	6.55	29

Envelope Member Section Forces (Continued)

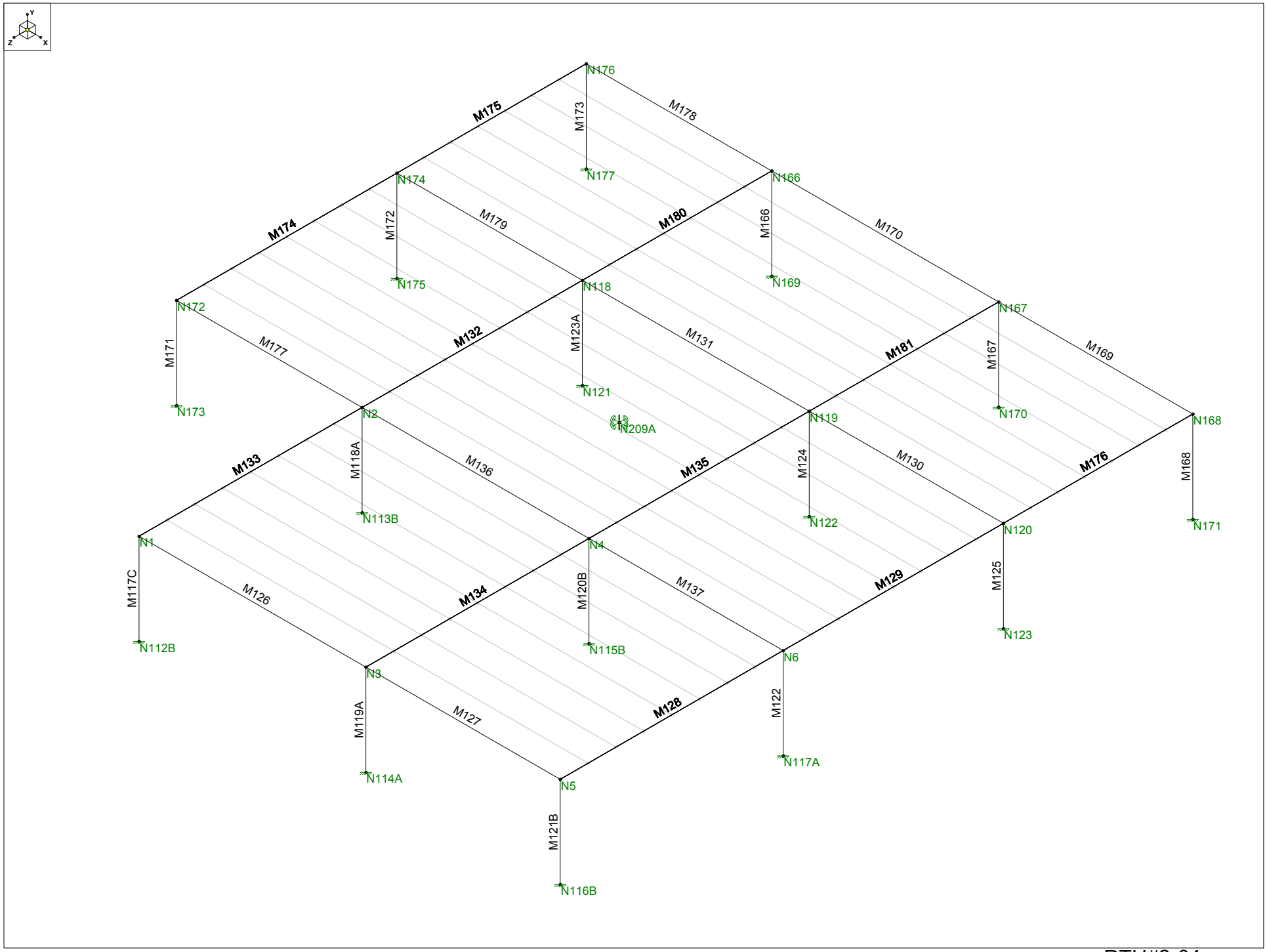
	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
14			min	17.671	30	-3.105	31	2.98	30	-.393	29	-17.625	25	-10.027	31
15		3	max	41.22	16	1.509	29	24.363	25	.361	31	11.881	16	4.947	29
16			min	17.633	30	-3.105	31	2.98	30	-.393	29	5.035	32	-6.729	31
17		4	max	41.169	16	1.509	29	24.363	25	.361	31	34.147	25	3.344	29
18			min	17.595	30	-3.105	31	2.98	30	-.393	29	11.052	30	-3.43	31
19		5	max	41.119	16	1.509	29	24.363	25	.361	31	60.033	25	2.018	43
20			min	17.557	30	-3.105	31	2.98	30	-.393	29	14.217	30	-.644	41

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code ...	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M6	W8x40	.559	4.25	16	.279	2.125	y	30	503.173	526.5	69.375	149.25	1.829	H1-1b
2	M7	W8x40	.914	4.25	25	.104	2.125	z	25	503.173	526.5	69.375	149.25	2.018	H1-1b

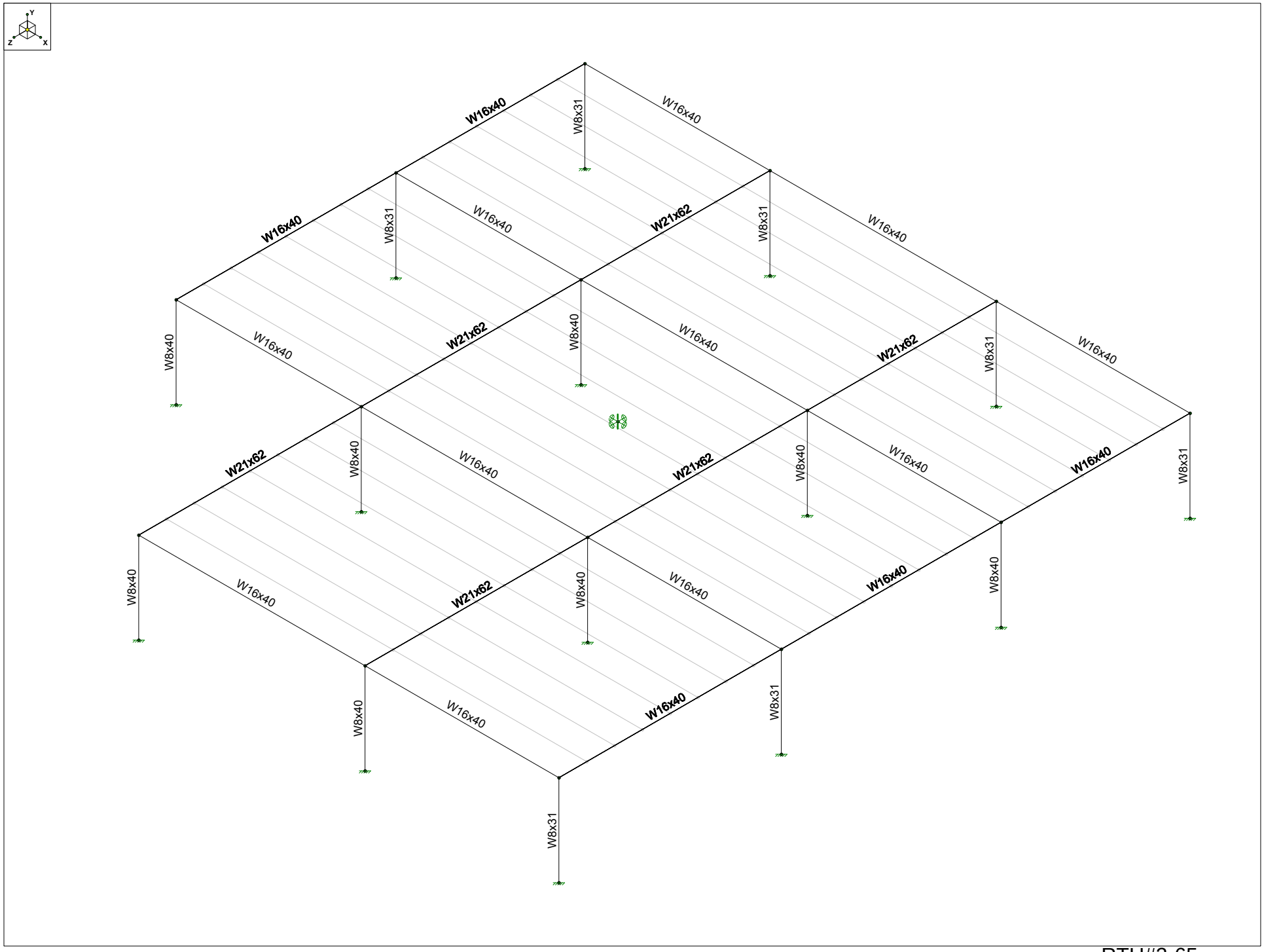
Existing Structure Capacity Check

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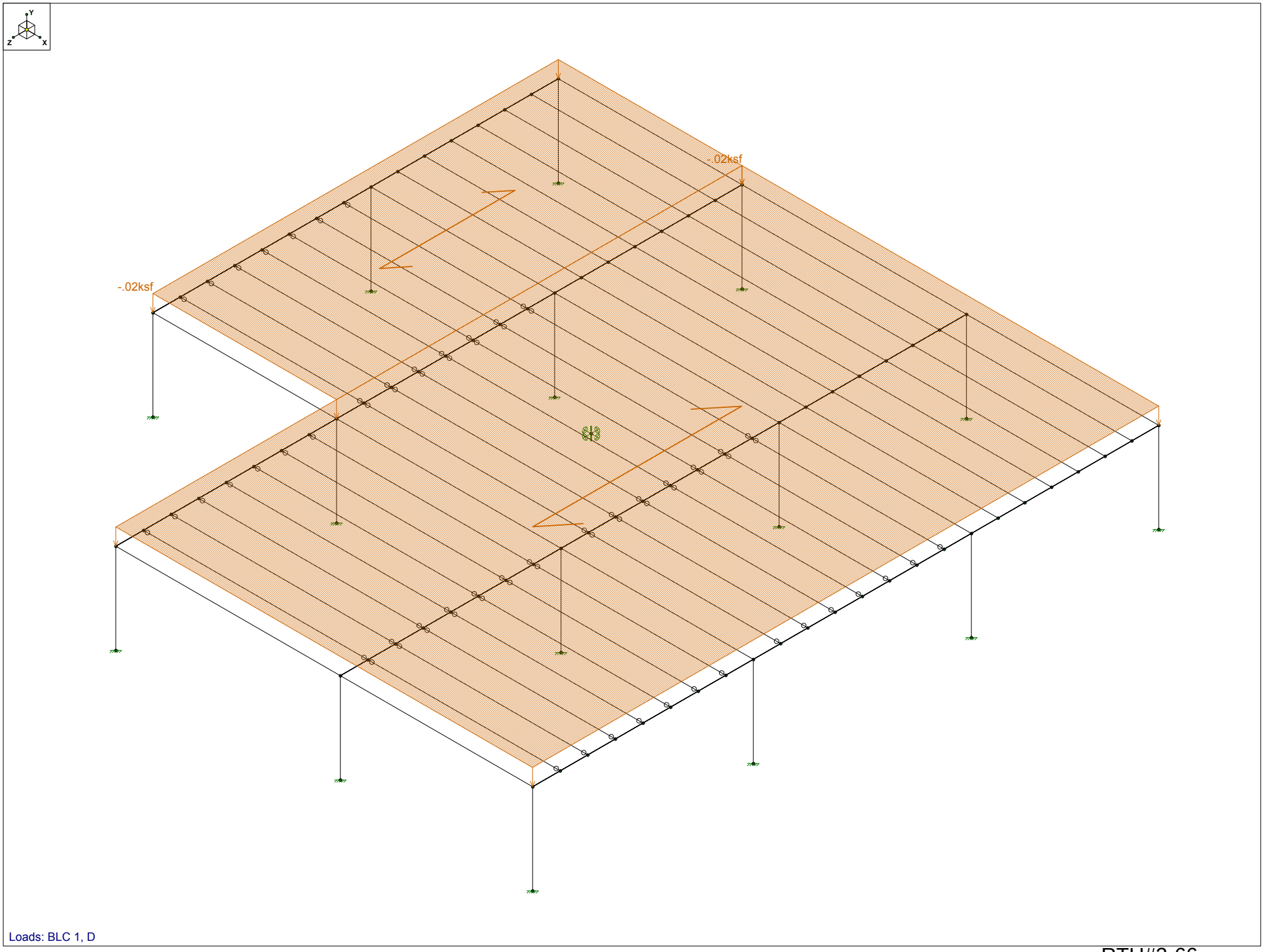
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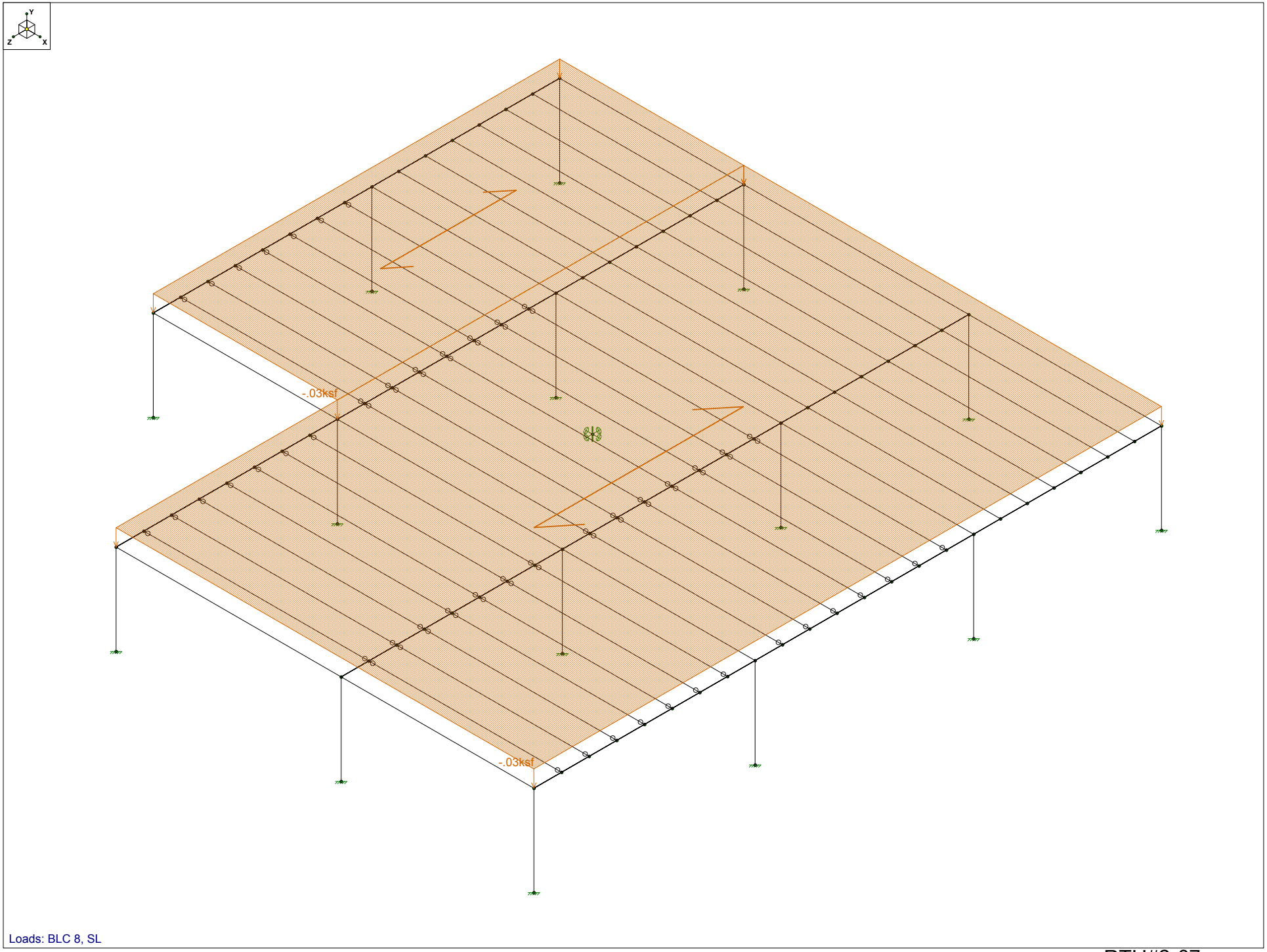


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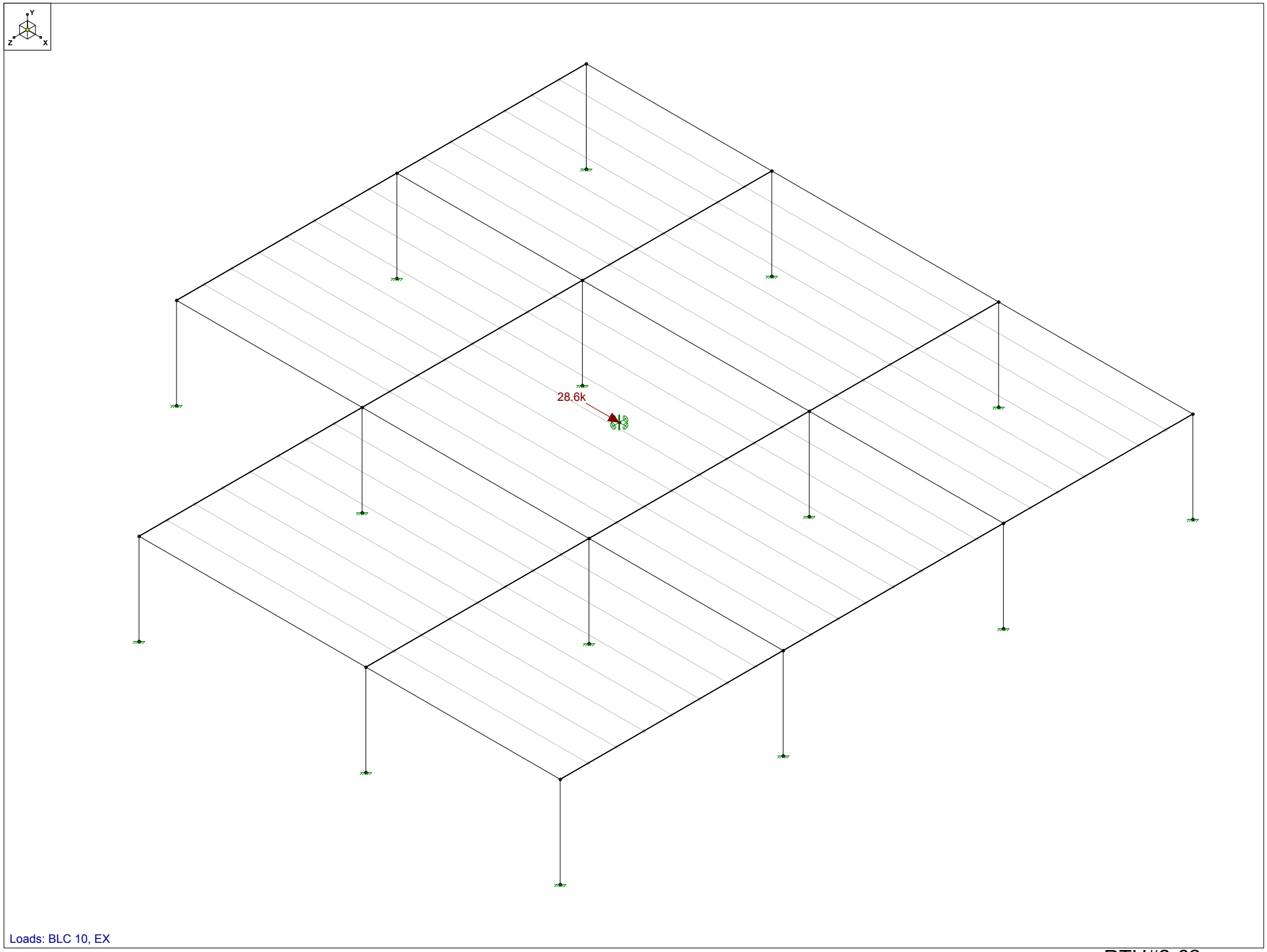
RTU#2-66



Loads: BLC 8, SL

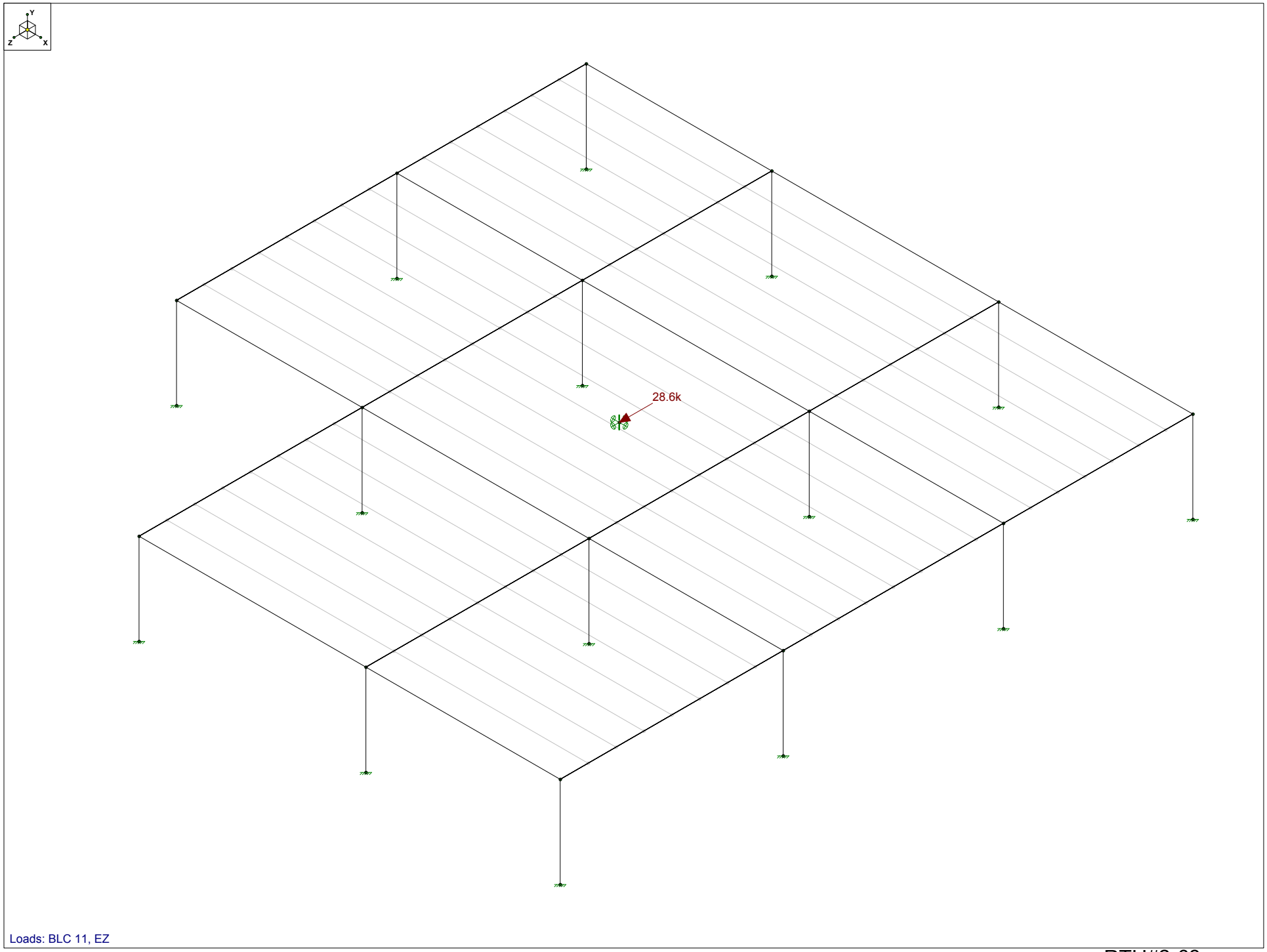
RTU#2-67

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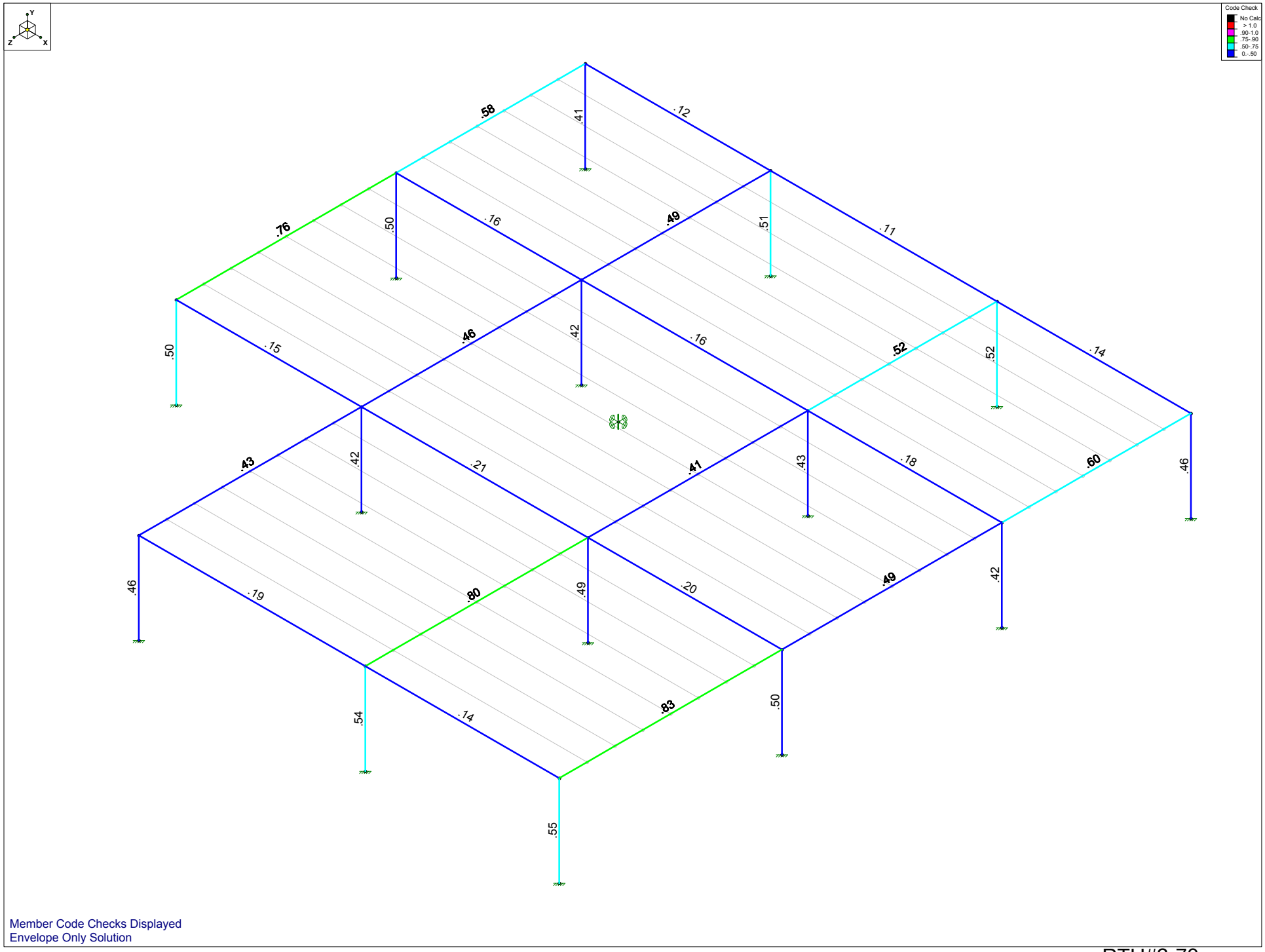
RTU#2-68

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RTU#2-69

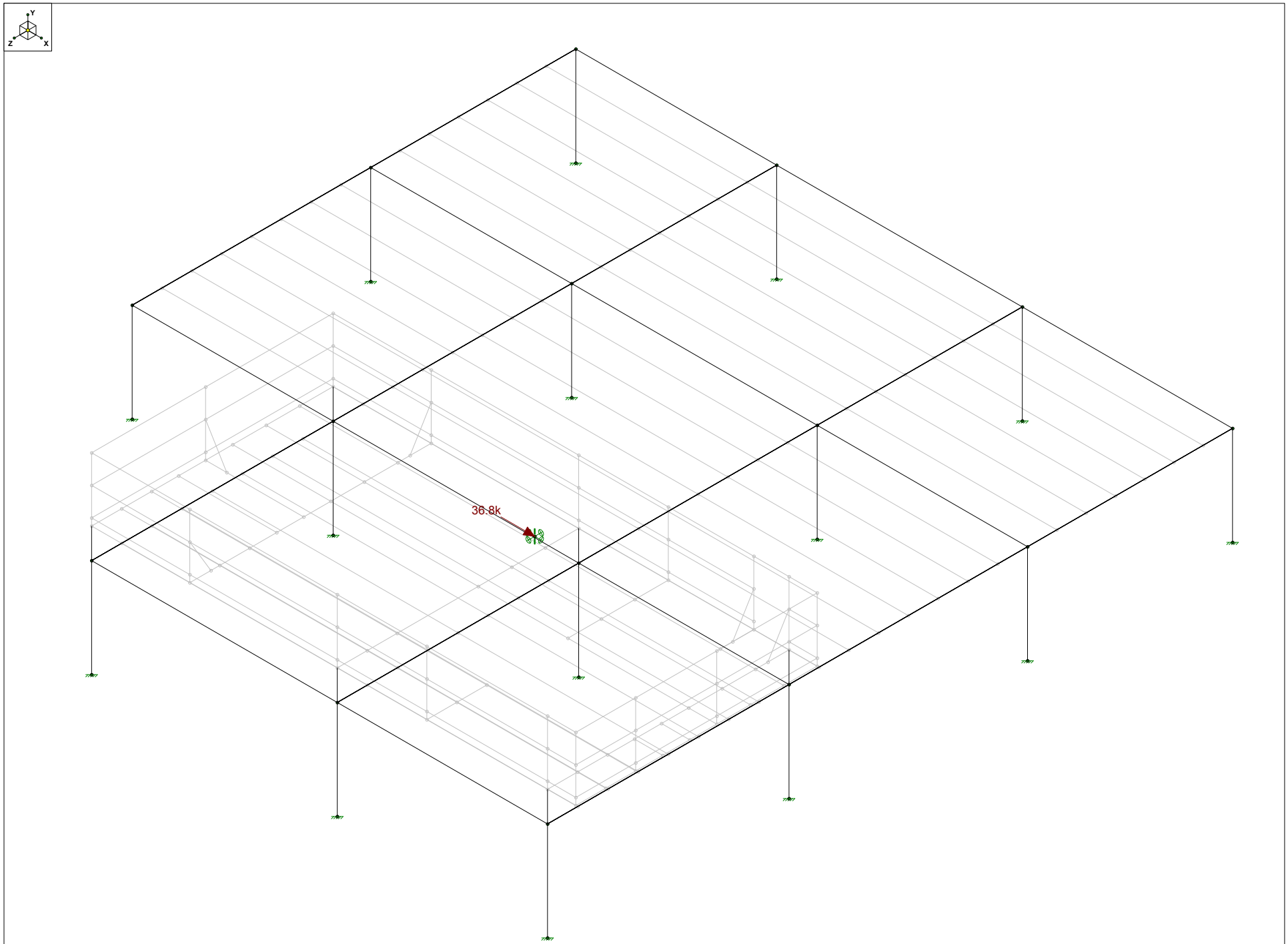
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Member Code Checks Displayed
Envelope Only Solution

RTU#2-70

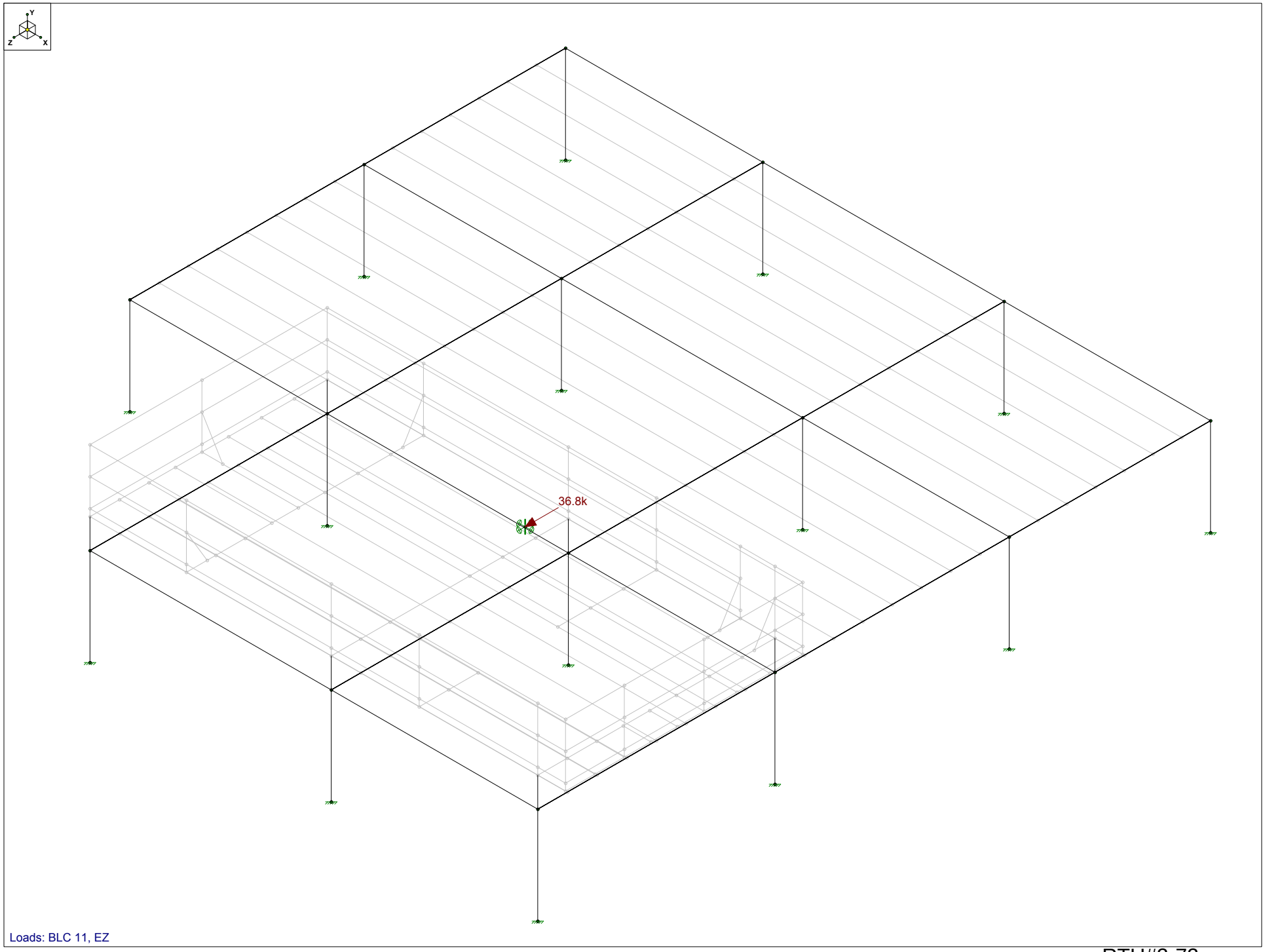
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Loads: BLC 10, EX

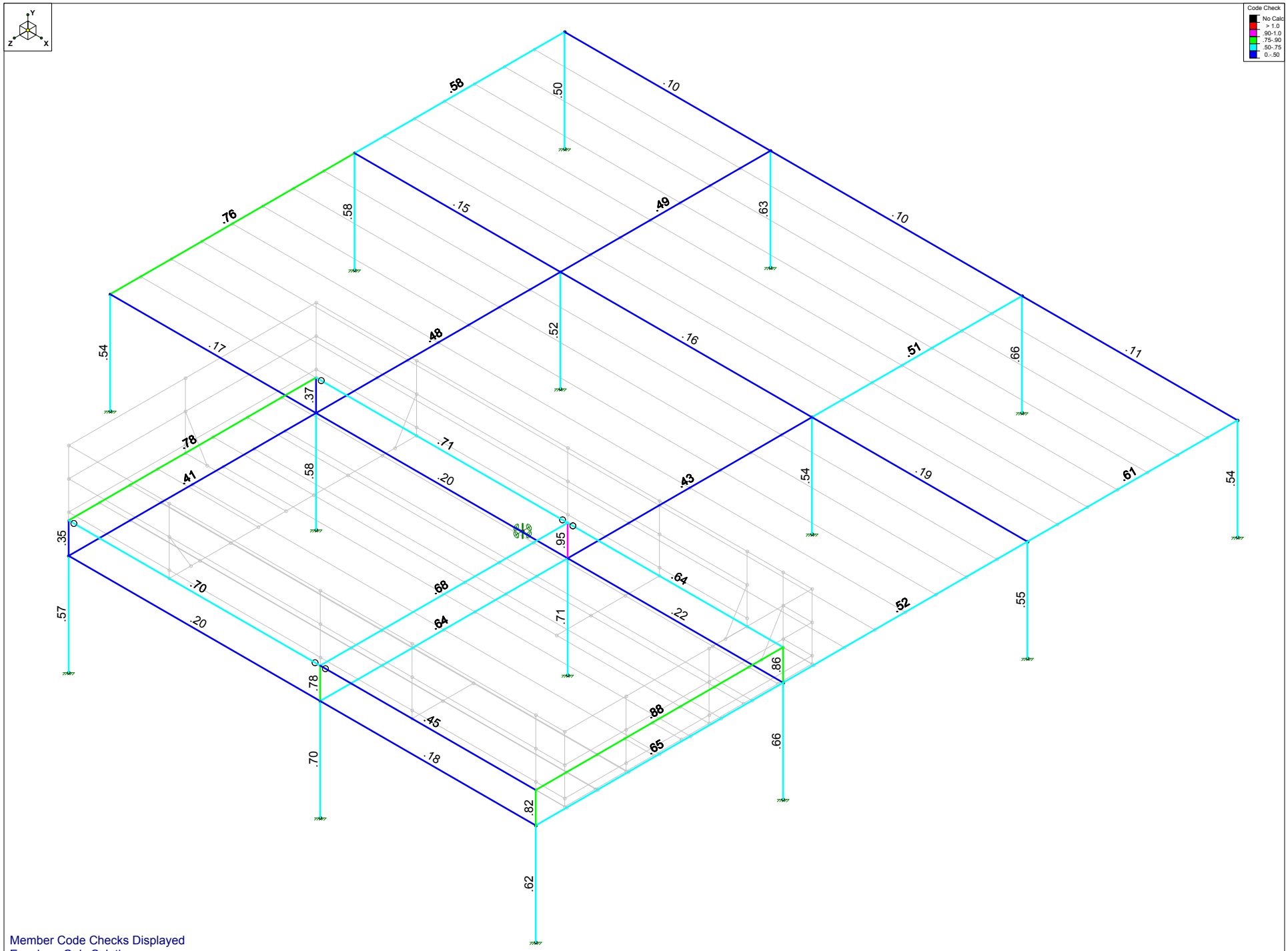
RTU#2-71

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RTU#2-72

Permit #: 2015-916743-LT
RSN: 966198



RTU#2-73

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Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	Yes
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 13th(360-05): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): LRFD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AF&PA NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

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Global, Continued

Seismic Code	ASCE 7-05
Seismic Base Elevation (ft)	-14
Add Base Weight?	Yes
Ct Z	.028
Ct X	.028
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	3
R X	3
Ct Exp. Z	.8
Ct Exp. X	.8
SD1	.088
SDS	.223
S1	.055
TL (sec)	4
Occupancy Cat	IV
Om Z	3
Om X	3
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N7	N8			W21x50	Beam	Wide Flange	A992	Typical
2	M2	N9	N10			W21x62	Beam	Wide Flange	A992	Typical
3	M3	N11	N12			W21x57	Beam	Wide Flange	A992	Typical
4	M4	N1	N7			W8x40	Column	Wide Flange	A992	Typical
5	M5	N2	N8		90	W8x40	Column	Wide Flange	A992	Typical
6	M6	N3	N9		90	W8x40	Column	Wide Flange	A992	Typical
7	M7	N4	N10			W8x40	Column	Wide Flange	A992	Typical
8	M8	N5	N11			W8x40	Column	Wide Flange	A992	Typical
9	M9	N6	N12		90	W8x40	Column	Wide Flange	A992	Typical
10	M10	N13	N14			W18x35	Beam	Wide Flange	A992	Typical
11	M11	N14	N15			W21x44	Beam	Wide Flange	A992	Typical
12	M12	N16	N17			W18x35	Beam	Wide Flange	A992	Typical
13	M13	N17	N18			W21x44	Beam	Wide Flange	A992	Typical
14	M14	N10	N12			W21x44	Beam	Wide Flange	A992	Typical
15	M15	N9	N11			W21x44	Beam	Wide Flange	A992	Typical
16	M16	N8	N10			W21x62	Beam	Wide Flange	A992	Typical
17	M17	N7	N9			W21x62	Beam	Wide Flange	A992	Typical
18	M20	N23	N24			W21x62	Beam	Wide Flange	A992	Typical
19	M34	N11	N36			W21x44	Beam	Wide Flange	A992	Typical
20	M35	N12	N37			W21x44	Beam	Wide Flange	A992	Typical
21	M36	N15	N38			W21x44	Beam	Wide Flange	A992	Typical
22	M37	N18	N39			W21x44	Beam	Wide Flange	A992	Typical
23	M39	N36	N38			W12x26	Beam	Wide Flange	A992	Typical
24	M40	N38	N39			W10x12	Beam	Wide Flange	A992	Typical
25	M41	N39	N37			W12x26	Beam	Wide Flange	A992	Typical
26	M38	N41A	N38A			W14x22	Beam	Wide Flange	A992	Typical
27	M41A	N45	N42			W14x22	Beam	Wide Flange	A992	Typical
28	M42B	N38A	N81A			W10x12	Beam	Wide Flange	A992	Typical
29	M43A	N20	N81			W14x22	Beam	Wide Flange	A992	Typical
30	M42A	N42	N82			W10x12	Beam	Wide Flange	A992	Typical
31	M41B	N25	N113			W12x14	Beam	Wide Flange	A992	Typical
32	M42C	N7	N48		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
33	M43	N25	N52			HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
34	M44C	N8	N60		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
35	M45	N24	N58		90	HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
36	M46	N10	N53		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
37	M47	N22	N59		90	HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
38	M48	N37	N57		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
39	M49	N39	N56			HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
40	M50	N38	N55			HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
41	M51	N36	N54		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
42	M52	N20	N50		90	HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
43	M53	N9	N49		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
44	M54	N23	N51		90	HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
45	M55	N48	N51			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
46	M56	N51	N49			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
47	M57	N49	N50			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
48	M58	N50	N98			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
49	M59	N54	N55			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
50	M60	N55	N56			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
51	M61	N56	N57			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
52	M62	N57	N99			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
53	M63	N59	N53			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
54	M64	N53	N58			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
55	M65	N58	N60			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
56	M66	N60	N52			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
57	M67	N52	N48			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
58	M68	N61	N64			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
59	M69	N64	N62			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
60	M70	N62	N63			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
61	M71	N63	N98A			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
62	M72	N67	N68			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
63	M73	N68	N69			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
64	M74	N69	N70			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
65	M75	N70	N99A			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
66	M76	N72	N66			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
67	M77	N66	N71			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
68	M78	N71	N73			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
69	M79	N73	N65			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
70	M80	N65	N61			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
71	M82	N75	N45			W12x14	Beam	Wide Flange	A992	Typical
72	M83	N73A	N16			W12x14	Beam	Wide Flange	A992	Typical
73	M84	N72A	N13			W12x14	Beam	Wide Flange	A992	Typical
74	M85	N74	N41A			W12x14	Beam	Wide Flange	A992	Typical
75	M86	N39A	N76			W10x12	Beam	Wide Flange	A992	Typical
76	M87	N43	N77			W10x12	Beam	Wide Flange	A992	Typical
77	M89	N81A	N39A			W12x14	Beam	Wide Flange	A992	Typical
78	M90	N22	N80			W14x22	Beam	Wide Flange	A992	Typical
79	M91	N82	N43			W12x19	Beam	Wide Flange	A992	Typical
80	M92	N83	N86			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
81	M93	N86	N84			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
82	M94	N84	N85			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
83	M95	N85	N100			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
84	M96	N89	N90			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
85	M97	N90	N91			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
86	M98	N91	N92			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
87	M99	N92	N101			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
88	M100	N94	N88			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
89	M101	N88	N93			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
90	M102	N93	N95			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
91	M103	N95	N87			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
92	M104	N87	N83			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
93	M106	N12	N99		90	HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
94	M107	N11	N98		90	HSS8x6x5	Column	Wide Flange	A500 Gr.46	Typical
95	M108	N98	N54			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
96	M109	N100	N89			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
97	M110	N98A	N67			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
98	M111	N99	N103			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
99	M114	N102	N103		90	HSS6x6x5	Column	Wide Flange	A500 Gr.46	Typical
100	M115	N104	N94			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
101	M116	N105	N72			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
102	M117	N103	N59			HSS6x6x4	Beam	Wide Flange	A500 Gr.46	Typical
103	M117A	N107	N87			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
104	M118	N109	N86			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
105	M119	N108	N93			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
106	M120	N111	N104			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
107	M121	N110	N101			PIPE_4.0	VBrace	Pipe	A36 Gr.36	Typical
108	M120A	N109A	N110A			W10x12	Beam	Wide Flange	A992	Typical
109	M121A	N111A	N112			W12x14	Beam	Wide Flange	A992	Typical
110	M123	N115	N116			W10x12	Beam	Wide Flange	A992	Typical
111	M113	N114	N112A			W14x22	Beam	Wide Flange	A992	Typical
112	M114A	N112A	N117			W10x12	Beam	Wide Flange	A992	Typical
113	M115A	N115A	N114			W12x14	Beam	Wide Flange	A992	Typical
114	M116B	N113A	N116A			W10x12	Beam	Wide Flange	A992	Typical
115	M117B	N117	N113A			W12x19	Beam	Wide Flange	A992	Typical
116	M116A	N102	N111B			W12x26	Beam	Wide Flange	A992	Typical
117	M117C	N112B	N1			W8x40	Column	Wide Flange	A36 Gr.36	Typical
118	M118A	N113B	N2			W8x40	Column	Wide Flange	A36 Gr.36	Typical
119	M119A	N114A	N3			W8x40	Column	Wide Flange	A36 Gr.36	Typical
120	M120B	N115B	N4			W8x40	Column	Wide Flange	A36 Gr.36	Typical
121	M121B	N116B	N5			W8x31	Column	Wide Flange	A36 Gr.36	Typical
122	M122	N117A	N6			W8x31	Column	Wide Flange	A36 Gr.36	Typical
123	M123A	N121	N118			W8x40	Column	Wide Flange	A36 Gr.36	Typical
124	M124	N122	N119			W8x40	Column	Wide Flange	A36 Gr.36	Typical
125	M125	N123	N120			W8x40	Column	Wide Flange	A36 Gr.36	Typical
126	M126	N1	N3			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
127	M127	N3	N5			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
128	M128	N5	N6			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
129	M129	N6	N120			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
130	M130	N120	N119			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
131	M131	N119	N118			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
132	M132	N118	N2			W21x62	Beam	Wide Flange	A36 Gr.36	Typical
133	M133	N2	N1			W21x62	Beam	Wide Flange	A36 Gr.36	Typical
134	M134	N3	N4			W21x62	Beam	Wide Flange	A36 Gr.36	Typical
135	M135	N4	N119			W21x62	Beam	Wide Flange	A36 Gr.36	Typical
136	M136	N2	N4			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
137	M137	N4	N6			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
138	M138	N124	N125			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
139	M139	N126	N127			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
140	M140	N128	N129			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
141	M141	N130	N131			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
142	M142	N132	N133			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
143	M143	N134	N135			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
144	M144	N136	N137			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
145	M145	N125	N138			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
146	M146	N127	N139			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
147	M147	N129	N140			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
148	M148	N131	N141			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
149	M149	N133	N142			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
150	M150	N135	N143			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
151	M151	N137	N144			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
152	M152	N145	N146			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
153	M153	N147	N148			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
154	M154	N149	N150			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
155	M155	N151	N152			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
156	M156	N153	N154			W8x10	Beam	Wide Flange	A36 Gr.36	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
157	M157	N155	N156			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
158	M158	N157	N158			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
159	M159	N146	N159			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
160	M160	N148	N160			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
161	M161	N150	N161			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
162	M162	N152	N162			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
163	M163	N154	N163			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
164	M164	N156	N164			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
165	M165	N158	N165			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
166	M166	N169	N166			W8x31	Column	Wide Flange	A36 Gr.36	Typical
167	M167	N170	N167			W8x31	Column	Wide Flange	A36 Gr.36	Typical
168	M168	N171	N168			W8x31	Column	Wide Flange	A36 Gr.36	Typical
169	M169	N168	N167			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
170	M170	N167	N166			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
171	M171	N173	N172			W8x40	Column	Wide Flange	A36 Gr.36	Typical
172	M172	N175	N174			W8x31	Column	Wide Flange	A36 Gr.36	Typical
173	M173	N177	N176			W8x31	Column	Wide Flange	A36 Gr.36	Typical
174	M174	N172	N174			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
175	M175	N174	N176			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
176	M176	N120	N168			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
177	M177	N172	N2			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
178	M178	N176	N166			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
179	M179	N174	N118			W16x40	Beam	Wide Flange	A36 Gr.36	Typical
180	M180	N118	N166			W21x62	Beam	Wide Flange	A36 Gr.36	Typical
181	M181	N119	N167			W21x62	Beam	Wide Flange	A36 Gr.36	Typical
182	M182	N178	N145			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
183	M183	N180	N147			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
184	M184	N182	N149			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
185	M185	N184	N151			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
186	M186	N186	N153			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
187	M187	N188	N155			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
188	M188	N190	N157			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
189	M189	N185	N186A			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
190	M190	N187	N188A			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
191	M191	N189	N190A			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
192	M192	N191	N192			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
193	M193	N193	N194			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
194	M194	N196	N197			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
195	M195	N186A	N198			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
196	M196	N188A	N200			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
197	M197	N190A	N202			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
198	M198	N192	N204			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
199	M199	N194	N206			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
200	M200	N197	N208			W8x10	Beam	Wide Flange	A36 Gr.36	Typical
201	M201	N198	N209			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
202	M202	N200	N210			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
203	M203	N202	N211			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
204	M204	N204	N212			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
205	M205	N206	N213			W6x9	Beam	Wide Flange	A36 Gr.36	Typical
206	M206	N208	N214			W6x9	Beam	Wide Flange	A36 Gr.36	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	5.251	0	0	0	
2	N2	5.251	0	-34.25	0	
3	N3	40.084	0	0	0	
4	N4	40.084	0	-34.25	0	
5	N5	69.9167	0	0	0	
6	N6	69.9167	0	-34.25	0	
7	N7	5.251	4.25	0	0	Yes
8	N8	5.251	4.25	-34.25	0	Yes
9	N9	40.084	4.25	0	0	Yes
10	N10	40.084	4.25	-34.25	0	Yes
11	N11	69.9167	4.25	0	0	Yes
12	N12	69.9167	4.25	-34.25	0	Yes
13	N13	19.167	4.25	-8.5	0	
14	N14	40.084	4.25	-8.5	0	
15	N15	69.9167	4.25	-8.5	0	
16	N16	19.167	4.25	-20	0	
17	N17	40.084	4.25	-20	0	
18	N18	69.9167	4.25	-20	0	
19	N20	52.79335	4.25	0	0	Yes
20	N22	52.79335	4.25	-34.25	0	Yes
21	N23	19.167	4.25	0	0	Yes
22	N24	19.167	4.25	-34.25	0	Yes
23	N25	5.251	4.25	-16.16	0	Yes
24	N36	73.9167	4.25	0	0	Yes
25	N37	73.9167	4.25	-34.25	0	Yes
26	N38	73.9167	4.25	-8.5	0	Yes
27	N39	73.9167	4.25	-20	0	Yes
28	N38A	40.084	4.25	-4.25	0	Yes
29	N39A	69.9167	4.25	-4.25	0	Yes
30	N41A	19.167	4.25	-4.25	0	Yes
31	N42	40.084	4.25	-24.75	0	Yes
32	N43	69.9167	4.25	-24.75	0	Yes
33	N45	19.167	4.25	-24.75	0	Yes
34	N48	5.251	13.25	0	0	Yes
35	N49	40.084	13.25	0	0	Yes
36	N50	52.79335	13.25	0	0	Yes
37	N51	19.167	13.25	0	0	Yes
38	N52	5.251	13.25	-16.16	0	Yes
39	N53	40.084	13.25	-34.25	0	Yes
40	N54	73.9167	13.25	0	0	Yes
41	N55	73.9167	13.25	-8.5	0	Yes
42	N56	73.9167	13.25	-20	0	Yes
43	N57	73.9167	13.25	-34.25	0	Yes
44	N58	19.167	13.25	-34.25	0	Yes
45	N59	52.79335	13.25	-34.25	0	Yes
46	N60	5.251	13.25	-34.25	0	Yes
47	N61	5.251	5.25	0	0	Yes
48	N62	40.084	5.25	0	0	Yes
49	N63	52.79335	5.25	0	0	Yes
50	N64	19.167	5.25	0	0	Yes
51	N65	5.251	5.25	-16.16	0	Yes

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
52	N66	40.084	5.25	-34.25	0	Yes
53	N67	73.9167	5.25	0	0	Yes
54	N68	73.9167	5.25	-8.5	0	Yes
55	N69	73.9167	5.25	-20	0	Yes
56	N70	73.9167	5.25	-34.25	0	Yes
57	N71	19.167	5.25	-34.25	0	Yes
58	N72	52.79335	5.25	-34.25	0	Yes
59	N73	5.251	5.25	-34.25	0	Yes
60	N72A	5.251	4.25	-8.5	0	Yes
61	N73A	5.251	4.25	-20	0	Yes
62	N74	5.251	4.25	-4.25	0	Yes
63	N75	5.251	4.25	-24.75	0	Yes
64	N76	73.9167	4.25	-4.25	0	Yes
65	N77	73.9167	4.25	-24.75	0	Yes
66	N80	52.79335	4.25	-20	0	
67	N81	52.79335	4.25	-8.5	0	
68	N81A	52.79335	4.25	-4.25	0	Yes
69	N82	52.79335	4.25	-24.75	0	Yes
70	N83	5.251	9.25	0	0	Yes
71	N84	40.084	9.25	0	0	Yes
72	N85	52.79335	9.25	0	0	Yes
73	N86	19.167	9.25	0	0	Yes
74	N87	5.251	9.25	-16.16	0	Yes
75	N88	40.084	9.25	-34.25	0	Yes
76	N89	73.9167	9.25	0	0	Yes
77	N90	73.9167	9.25	-8.5	0	Yes
78	N91	73.9167	9.25	-20	0	Yes
79	N92	73.9167	9.25	-34.25	0	Yes
80	N93	19.167	9.25	-34.25	0	Yes
81	N94	52.79335	9.25	-34.25	0	Yes
82	N95	5.251	9.25	-34.25	0	Yes
83	N98	69.9167	13.25	0	0	
84	N99	69.9167	13.25	-34.25	0	
85	N98A	69.9167	5.25	0	0	
86	N99A	69.9167	5.25	-34.25	0	
87	N100	69.9167	9.25	0	0	
88	N101	69.9167	9.25	-34.25	0	
89	N102	64.9167	4.25	-34.25	0	
90	N103	64.9167	13.25	-34.25	0	
91	N104	64.9167	9.25	-34.25	0	
92	N105	64.9167	5.25	-34.25	0	
93	N107	8.251	4.25	-16.16	0	
94	N108	19.167	4.25	-31.25	0	
95	N109	19.167	4.25	-3	0	
96	N110	69.9167	4.25	-31.25	0	
97	N111	64.9167	4.25	-31.25	0	
98	N109A	73.9167	4.25	-12.33	0	
99	N110A	69.9167	4.25	-12.33	0	
100	N111A	19.167	4.25	-12.33	0	
101	N112	5.251	4.25	-12.33	0	
102	N113	19.167	4.25	-16.16	0	
103	N115	73.9167	4.25	-16.16	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
104	N116	69.9167	4.25	-16.16	0	
105	N112A	40.084	4.25	-29.5	0	
106	N113A	69.9167	4.25	-29.5	0	
107	N114	19.167	4.25	-29.5	0	
108	N115A	5.251	4.25	-29.5	0	
109	N116A	73.9167	4.25	-29.5	0	
110	N117	52.79335	4.25	-29.5	0	
111	N111B	64.91635	4.25	-29.5	0	
112	N112B	5.251	-14	0	0	
113	N113B	5.251	-14	-34.25	0	
114	N114A	40.084	-14	0	0	
115	N115B	40.084	-14	-34.25	0	
116	N116B	69.9167	-14	0	0	
117	N117A	69.9167	-14	-34.25	0	
118	N118	5.251	0	-68.08	0	
119	N119	40.084	0	-68.08	0	
120	N120	69.9167	0	-68.08	0	
121	N121	5.251	-14	-68.08	0	
122	N122	40.084	-14	-68.08	0	
123	N123	69.9167	-14	-68.08	0	
124	N124	5.251	0	-4.281	0	
125	N125	40.084	0	-4.281	0	
126	N126	5.251	0	-8.562	0	
127	N127	40.084	0	-8.562	0	
128	N128	5.251	0	-12.843	0	
129	N129	40.084	0	-12.843	0	
130	N130	5.251	0	-17.124	0	
131	N131	40.084	0	-17.124	0	
132	N132	5.251	0	-21.405	0	
133	N133	40.084	0	-21.405	0	
134	N134	5.251	0	-25.686	0	
135	N135	40.084	0	-25.686	0	
136	N136	5.251	0	-29.967	0	
137	N137	40.084	0	-29.967	0	
138	N138	69.9167	0	-4.281	0	
139	N139	69.9167	0	-8.562	0	
140	N140	69.9167	0	-12.843	0	
141	N141	69.9167	0	-17.124	0	
142	N142	69.9167	0	-21.405	0	
143	N143	69.9167	0	-25.686	0	
144	N144	69.9167	0	-29.967	0	
145	N145	5.251	0	-38.479	0	
146	N146	40.084	0	-38.479	0	
147	N147	5.251	0	-42.708	0	
148	N148	40.084	0	-42.708	0	
149	N149	5.251	0	-46.937	0	
150	N150	40.084	0	-46.937	0	
151	N151	5.251	0	-51.166	0	
152	N152	40.084	0	-51.166	0	
153	N153	5.251	0	-55.395	0	
154	N154	40.084	0	-55.395	0	
155	N155	5.251	0	-59.624	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
156	N156	40.084	0	-59.624	0	
157	N157	5.251	0	-63.853	0	
158	N158	40.084	0	-63.853	0	
159	N159	69.9167	0	-38.479	0	
160	N160	69.9167	0	-42.708	0	
161	N161	69.9167	0	-46.937	0	
162	N162	69.9167	0	-51.166	0	
163	N163	69.9167	0	-55.395	0	
164	N164	69.9167	0	-59.624	0	
165	N165	69.9167	0	-63.853	0	
166	N166	5.251	0	-97.163	0	
167	N167	40.084	0	-97.163	0	
168	N168	69.9167	0	-97.163	0	
169	N169	5.251	-14	-97.163	0	
170	N170	40.084	-14	-97.163	0	
171	N171	69.9167	-14	-97.163	0	
172	N172	-23.249	0	-34.25	0	
173	N173	-23.249	-14	-34.25	0	
174	N174	-23.249	0	-68.08	0	
175	N175	-23.249	-14	-68.08	0	
176	N176	-23.249	0	-97.163	0	
177	N177	-23.249	-14	-97.163	0	
178	N178	-23.249	0	-38.479	0	
179	N180	-23.249	0	-42.708	0	
180	N182	-23.249	0	-46.937	0	
181	N184	-23.249	0	-51.166	0	
182	N186	-23.249	0	-55.395	0	
183	N188	-23.249	0	-59.624	0	
184	N190	-23.249	0	-63.853	0	
185	N185	69.9167	0	-72.23	0	
186	N186A	40.084	0	-72.23	0	
187	N187	69.9167	0	-76.38	0	
188	N188A	40.084	0	-76.38	0	
189	N189	69.9167	0	-80.53	0	
190	N190A	40.084	0	-80.53	0	
191	N191	69.9167	0	-84.68	0	
192	N192	40.084	0	-84.68	0	
193	N193	69.9167	0	-88.83	0	
194	N194	40.084	0	-88.83	0	
195	N196	69.9167	0	-92.98	0	
196	N197	40.084	0	-92.98	0	
197	N198	5.251	0	-72.23	0	
198	N200	5.251	0	-76.38	0	
199	N202	5.251	0	-80.53	0	
200	N204	5.251	0	-84.68	0	
201	N206	5.251	0	-88.83	0	
202	N208	5.251	0	-92.98	0	
203	N209	-23.249	0	-72.23	0	
204	N210	-23.249	0	-76.38	0	
205	N211	-23.249	0	-80.53	0	
206	N212	-23.249	0	-84.68	0	
207	N213	-23.249	0	-88.83	0	

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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
208	N214	-23.249	0	-92.98	0	
209	N209A	33.7	0	-34.4	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N1							
2	N2							
3	N4							
4	N3							
5	N6							
6	N5							
7	N112B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
8	N113B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
9	N114A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
10	N115B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
11	N116B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
12	N117A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
13	N118							
14	N119							
15	N120							
16	N121	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
17	N122	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
18	N123	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
19	N166							
20	N167							
21	N168							
22	N169	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
23	N170	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
24	N171	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
25	N172							
26	N173	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
27	N174							
28	N175	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
29	N176							
30	N177	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
31	N209A		Reaction		Reaction		Reaction	

Member Distributed Loads (BLC 1 : D)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M12	Y	-.29	-.29	0	0
2	M13	Y	-.29	-.29	0	0
3	M11	Y	-.29	-.29	0	0
4	M10	Y	-.29	-.29	0	0
5	M67	Y	-.03	-.03	0	0
6	M66	Y	-.03	-.03	0	0
7	M65	Y	-.03	-.03	0	0
8	M64	Y	-.03	-.03	0	0
9	M63	Y	-.03	-.03	0	0
10	M62	Y	-.03	-.03	0	0

Member Distributed Loads (BLC 1 : D) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
11	M61	Y	-.03	-.03	0	0
12	M60	Y	-.03	-.03	0	0
13	M59	Y	-.03	-.03	0	0
14	M58	Y	-.03	-.03	0	0
15	M57	Y	-.03	-.03	0	0
16	M56	Y	-.03	-.03	0	0
17	M55	Y	-.03	-.03	0	0
18	M104	Y	-.06	-.06	0	0
19	M80	Y	-.06	-.06	0	0
20	M103	Y	-.06	-.06	0	0
21	M79	Y	-.06	-.06	0	0
22	M102	Y	-.06	-.06	0	0
23	M78	Y	-.06	-.06	0	0
24	M101	Y	-.06	-.06	0	0
25	M77	Y	-.06	-.06	0	0
26	M100	Y	-.06	-.06	0	0
27	M76	Y	-.06	-.06	0	0
28	M99	Y	-.06	-.06	0	0
29	M75	Y	-.06	-.06	0	0
30	M98	Y	-.06	-.06	0	0
31	M74	Y	-.06	-.06	0	0
32	M97	Y	-.06	-.06	0	0
33	M73	Y	-.06	-.06	0	0
34	M96	Y	-.06	-.06	0	0
35	M72	Y	-.06	-.06	0	0
36	M95	Y	-.06	-.06	0	0
37	M71	Y	-.06	-.06	0	0
38	M94	Y	-.06	-.06	0	0
39	M70	Y	-.06	-.06	0	0
40	M93	Y	-.06	-.06	0	0
41	M69	Y	-.06	-.06	0	0
42	M92	Y	-.06	-.06	0	0
43	M68	Y	-.06	-.06	0	0
44	M108	Y	-.03	-.03	0	6
45	M109	Y	-.06	-.06	0	6
46	M110	Y	-.06	-.06	0	6
47	M111	Y	-.03	-.03	0	0
48	M115	Y	-.06	-.06	0	12.123
49	M116	Y	-.06	-.06	0	12.123
50	M117	Y	-.03	-.03	0	12.123

Member Distributed Loads (BLC 3 : WLX)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M66	X	.034	.034	0	0
2	M67	X	.034	.034	0	0
3	M80	X	.068	.068	0	0
4	M79	X	.068	.068	0	0
5	M103	X	.068	.068	0	0
6	M104	X	.068	.068	0	0
7	M61	X	.017	.017	0	0
8	M60	X	.017	.017	0	0

Member Distributed Loads (BLC 3 : WLX) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
9	M59	X	.017	.017	0	0
10	M96	X	.034	.034	0	0
11	M97	X	.034	.034	0	0
12	M98	X	.034	.034	0	0
13	M74	X	.034	.034	0	0
14	M73	X	.034	.034	0	0
15	M72	X	.034	.034	0	0

Member Distributed Loads (BLC 4 : WLZ)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M65	Z	.034	.034	0	0
2	M64	Z	.034	.034	0	0
3	M63	Z	.034	.034	0	0
4	M62	Z	.034	.034	0	0
5	M78	Z	.068	.068	0	0
6	M77	Z	.068	.068	0	0
7	M76	Z	.068	.068	0	0
8	M75	Z	.068	.068	0	0
9	M99	Z	.068	.068	0	0
10	M100	Z	.068	.068	0	0
11	M101	Z	.068	.068	0	0
12	M102	Z	.068	.068	0	0
13	M92	Z	.034	.034	0	0
14	M68	Z	.034	.034	0	0
15	M93	Z	.034	.034	0	0
16	M69	Z	.034	.034	0	0
17	M94	Z	.034	.034	0	0
18	M70	Z	.034	.034	0	0
19	M95	Z	.034	.034	0	0
20	M71	Z	.034	.034	0	0
21	M55	Z	.017	.017	0	0
22	M56	Z	.017	.017	0	0
23	M57	Z	.017	.017	0	0
24	M58	Z	.017	.017	0	0
25	M108	Z	.017	.017	0	6
26	M109	Z	.034	.034	0	6
27	M110	Z	.034	.034	0	6
28	M111	Z	.034	.034	0	0
29	M115	Z	.068	.068	0	12.123
30	M116	Z	.068	.068	0	12.123
31	M117	Z	.034	.034	0	12.123

Member Distributed Loads (BLC 5 : WL-X)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M59	X	-.034	-.034	0	0
2	M60	X	-.034	-.034	0	0
3	M61	X	-.034	-.034	0	0
4	M74	X	-.068	-.068	0	0
5	M73	X	-.068	-.068	0	0
6	M72	X	-.068	-.068	0	0
7	M96	X	-.068	-.068	0	0

Member Distributed Loads (BLC 5 : WL-X) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
8	M97	X	-.068	-.068	0	0
9	M98	X	-.068	-.068	0	0
10	M104	X	-.034	-.034	0	0
11	M80	X	-.034	-.034	0	0
12	M103	X	-.034	-.034	0	0
13	M79	X	-.034	-.034	0	0
14	M67	X	-.017	-.017	0	0
15	M66	X	-.017	-.017	0	0

Member Distributed Loads (BLC 6 : WL-Z)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M55	Z	-.034	-.034	0	0
2	M56	Z	-.034	-.034	0	0
3	M57	Z	-.034	-.034	0	0
4	M58	Z	-.034	-.034	0	0
5	M71	Z	-.068	-.068	0	0
6	M70	Z	-.068	-.068	0	0
7	M69	Z	-.068	-.068	0	0
8	M68	Z	-.068	-.068	0	0
9	M92	Z	-.068	-.068	0	0
10	M93	Z	-.068	-.068	0	0
11	M94	Z	-.068	-.068	0	0
12	M95	Z	-.068	-.068	0	0
13	M65	Z	-.017	-.017	0	0
14	M64	Z	-.017	-.017	0	0
15	M63	Z	-.017	-.017	0	0
16	M62	Z	-.017	-.017	0	0
17	M102	Z	-.034	-.034	0	0
18	M78	Z	-.034	-.034	0	0
19	M101	Z	-.034	-.034	0	0
20	M77	Z	-.034	-.034	0	0
21	M100	Z	-.034	-.034	0	0
22	M76	Z	-.034	-.034	0	0
23	M99	Z	-.034	-.034	0	0
24	M75	Z	-.034	-.034	0	0
25	M108	Z	-.034	-.034	0	6
26	M109	Z	-.068	-.068	0	6
27	M110	Z	-.068	-.068	0	6
28	M111	Z	-.017	-.017	0	0
29	M115	Z	-.034	-.034	0	12.123
30	M116	Z	-.034	-.034	0	12.123
31	M117	Z	-.017	-.017	0	12.123

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

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M10	Y	-.026	-.026	5.107e-15	20.917
2	M11	Y	-.026	-.026	.229	29.833
3	M15	Y	-.026	-.026	.229	29.833
4	M17	Y	-.026	-.026	13.916	34.833
5	M38	Y	-.034	-.034	3.997e-15	20.917
6	M42B	Y	-.035	-.035	.229	12.709

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

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
7	M89	Y	-.034	-.034	.207	17.123
8	M12	Y	-.021	-.021	0	20.917
9	M13	Y	-.02	-.02	.398	29.833
10	M14	Y	-.02	-.02	.398	29.833
11	M16	Y	-.021	-.021	13.916	34.833
12	M41A	Y	-.052	-.052	7.661e-15	20.917
13	M42A	Y	-.051	-.051	.398	12.578
14	M91	Y	-.051	-.051	0	17.123
15	M113	Y	-.052	-.052	4.441e-16	20.917
16	M114A	Y	-.051	-.051	.398	12.578
17	M117B	Y	-.051	-.051	0	17.123
18	M34	Y	-.02	-.02	5.829e-16	4
19	M35	Y	-.024	-.024	1.131e-13	4
20	M36	Y	-.04	-.04	0	4
21	M37	Y	-.044	-.044	3.755e-14	4
22	M86	Y	-.044	-.044	4.663e-15	4
23	M87	Y	-.048	-.048	2.368e-14	4
24	M120A	Y	-.04	-.04	1.402e-14	4
25	M123	Y	-.036	-.036	7.563e-14	4
26	M116B	Y	-.048	-.048	8.527e-14	4
27	M16	Y	-.02	-.02	3.719e-15	13.916
28	M17	Y	-.02	-.02	1.055e-15	13.916
29	M41B	Y	-.04	-.04	3.053e-15	13.916
30	M82	Y	-.05	-.05	1.332e-15	13.916
31	M83	Y	-.04	-.04	2.22e-15	13.916
32	M84	Y	-.04	-.04	1.499e-15	13.916
33	M85	Y	-.04	-.04	1.943e-15	13.916
34	M121A	Y	-.04	-.04	1.499e-15	13.916
35	M115A	Y	-.05	-.05	2.442e-15	13.916
36	M177	Y	-.041	-.041	0	28.5
37	M178	Y	-.041	-.041	2.509e-14	28.5
38	M179	Y	-.081	-.081	2.554e-15	28.5
39	M182	Y	-.081	-.081	1.099e-14	28.5
40	M183	Y	-.081	-.081	1.799e-14	28.5
41	M184	Y	-.101	-.101	1.477e-14	28.5
42	M185	Y	-.081	-.081	1.932e-14	28.5
43	M186	Y	-.081	-.081	2.032e-14	28.5
44	M187	Y	-.081	-.081	4.441e-16	28.5
45	M188	Y	-.081	-.081	2.609e-14	28.5
46	M201	Y	-.081	-.081	1.543e-14	28.5
47	M202	Y	-.101	-.101	1.599e-14	28.5
48	M203	Y	-.081	-.081	8.216e-15	28.5
49	M204	Y	-.081	-.081	1.055e-14	28.5
50	M205	Y	-.081	-.081	1.432e-14	28.5
51	M206	Y	-.081	-.081	6.661e-15	28.5
52	M126	Y	-.04	-.04	3.442e-15	34.354
53	M127	Y	-.04	-.04	0	29.833
54	M130	Y	-.081	-.081	5.662e-15	29.833
55	M131	Y	-.079	-.079	.479	34.833
56	M136	Y	-.099	-.099	1.488e-14	34.354
57	M137	Y	-.101	-.101	0	29.833
58	M138	Y	-.079	-.079	3.109e-15	34.354

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

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
59	M139	Y	-.099	-.099	4.108e-15	34.354
60	M140	Y	-.079	-.079	4.996e-15	34.354
61	M141	Y	-.079	-.079	4.663e-15	34.354
62	M142	Y	-.099	-.099	8.216e-15	34.354
63	M143	Y	-.079	-.079	5.44e-15	34.354
64	M144	Y	-.079	-.079	7.216e-15	34.354
65	M145	Y	-.081	-.081	0	29.833
66	M146	Y	-.101	-.101	0	29.833
67	M147	Y	-.081	-.081	0	29.833
68	M148	Y	-.081	-.081	0	29.833
69	M149	Y	-.101	-.101	0	29.833
70	M150	Y	-.081	-.081	0	29.833
71	M151	Y	-.081	-.081	0	29.833
72	M152	Y	-.079	-.079	2.731e-14	34.354
73	M153	Y	-.079	-.079	1.132e-14	34.354
74	M154	Y	-.079	-.079	1.821e-14	34.354
75	M155	Y	-.099	-.099	1.654e-14	34.354
76	M156	Y	-.079	-.079	1.299e-14	34.354
77	M157	Y	-.079	-.079	2.531e-14	34.354
78	M158	Y	-.099	-.099	2.72e-14	34.354
79	M159	Y	-.081	-.081	0	29.833
80	M160	Y	-.081	-.081	0	29.833
81	M161	Y	-.081	-.081	0	29.833
82	M162	Y	-.101	-.101	0	29.833
83	M163	Y	-.081	-.081	0	29.833
84	M164	Y	-.081	-.081	0	29.833
85	M165	Y	-.101	-.101	0	29.833
86	M169	Y	-.04	-.04	5.551e-16	29.833
87	M170	Y	-.04	-.04	.479	34.833
88	M189	Y	-.081	-.081	1.23e-13	29.833
89	M190	Y	-.081	-.081	3.83e-14	29.833
90	M191	Y	-.081	-.081	1.285e-13	29.833
91	M192	Y	-.101	-.101	9.948e-14	29.833
92	M193	Y	-.081	-.081	0	29.833
93	M194	Y	-.081	-.081	1.008e-13	29.833
94	M195	Y	-.079	-.079	.479	34.833
95	M196	Y	-.079	-.079	.479	34.833
96	M197	Y	-.079	-.079	.479	34.833
97	M198	Y	-.099	-.099	.479	34.833
98	M199	Y	-.079	-.079	.479	34.833
99	M200	Y	-.079	-.079	.479	34.833

Member Distributed Loads (BLC 9 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M10	Y	-.103	-.103	0	20.917
2	M11	Y	-.102	-.102	.229	29.833
3	M15	Y	-.102	-.102	.229	29.833
4	M17	Y	-.103	-.103	13.916	34.833
5	M38	Y	-.137	-.137	5.551e-15	20.917
6	M42B	Y	-.138	-.138	.229	12.709
7	M89	Y	-.136	-.136	.207	17.123

Member Distributed Loads (BLC 9 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
8	M12	Y	-.083	-.083	2.331e-15	20.917
9	M13	Y	-.081	-.081	.398	29.833
10	M14	Y	-.081	-.081	.398	29.833
11	M16	Y	-.083	-.083	13.916	34.833
12	M41A	Y	-.207	-.207	5.44e-15	20.917
13	M42A	Y	-.204	-.204	.398	12.578
14	M91	Y	-.205	-.205	0	17.123
15	M113	Y	-.207	-.207	4.552e-15	20.917
16	M114A	Y	-.204	-.204	.398	12.578
17	M117B	Y	-.205	-.205	0	17.123
18	M34	Y	-.08	-.08	5.829e-16	4
19	M35	Y	-.096	-.096	1.131e-13	4
20	M36	Y	-.159	-.159	0	4
21	M37	Y	-.175	-.175	3.755e-14	4
22	M86	Y	-.175	-.175	4.663e-15	4
23	M87	Y	-.191	-.191	2.368e-14	4
24	M120A	Y	-.159	-.159	1.402e-14	4
25	M123	Y	-.143	-.143	7.563e-14	4
26	M116B	Y	-.191	-.191	8.527e-14	4
27	M16	Y	-.081	-.081	7.827e-15	13.916
28	M17	Y	-.081	-.081	1.277e-15	13.916
29	M41B	Y	-.161	-.161	1.055e-15	13.916
30	M82	Y	-.201	-.201	3.83e-15	13.916
31	M83	Y	-.161	-.161	1.388e-15	13.916
32	M84	Y	-.161	-.161	2.054e-15	13.916
33	M85	Y	-.161	-.161	1.499e-15	13.916
34	M121A	Y	-.161	-.161	4.996e-16	13.916
35	M115A	Y	-.201	-.201	7.272e-15	13.916

Member Distributed Loads (BLC 12 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M10	Y	-.242	-.242	.221	20.417
2	M11	Y	-.246	-.246	0	29.794
3	M12	Y	-.242	-.242	.221	20.417
4	M13	Y	-.246	-.246	0	29.794
5	M14	Y	-.061	-.061	0	29.794
6	M15	Y	-.061	-.061	0	29.794
7	M16	Y	-.06	-.06	1.11e-14	34.333
8	M17	Y	-.06	-.06	4.552e-15	34.333
9	M34	Y	-.061	-.061	0	4
10	M35	Y	-.061	-.061	0	4
11	M36	Y	-.122	-.122	0	4
12	M37	Y	-.122	-.122	0	4
13	M38	Y	-.121	-.121	.221	20.417
14	M41A	Y	-.151	-.151	.221	20.417
15	M42B	Y	-.126	-.126	0	12.627
16	M42A	Y	-.157	-.157	0	12.627
17	M41B	Y	-.123	-.123	2.554e-15	13.916
18	M82	Y	-.154	-.154	2.554e-15	13.916
19	M83	Y	-.123	-.123	4.885e-15	13.916
20	M84	Y	-.123	-.123	3.664e-15	13.916

Member Distributed Loads (BLC 12 : BLC 8 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
21	M85	Y	-.123	-.123	8.105e-15	13.916
22	M86	Y	-.122	-.122	0	4
23	M87	Y	-.153	-.153	0	4
24	M89	Y	-.121	-.121	0	17.084
25	M91	Y	-.152	-.152	0	17.084
26	M120A	Y	-.122	-.122	1.443e-14	4
27	M121A	Y	-.123	-.123	0	13.916
28	M123	Y	-.122	-.122	3.364e-14	4
29	M113	Y	-.151	-.151	.221	20.417
30	M114A	Y	-.157	-.157	0	12.627
31	M115A	Y	-.154	-.154	4.996e-15	13.916
32	M116B	Y	-.153	-.153	0	4
33	M117B	Y	-.152	-.152	0	17.084
34	M126	Y	-.059	-.059	3.442e-15	34.354
35	M127	Y	-.06	-.06	0	29.833
36	M130	Y	-.121	-.121	1.482e-13	29.833
37	M131	Y	-.119	-.119	.479	34.833
38	M136	Y	-.149	-.149	1.432e-14	34.354
39	M137	Y	-.151	-.151	0	29.833
40	M138	Y	-.119	-.119	3.109e-15	34.354
41	M139	Y	-.149	-.149	6.772e-15	34.354
42	M140	Y	-.119	-.119	1.132e-14	34.354
43	M141	Y	-.119	-.119	5.662e-15	34.354
44	M142	Y	-.149	-.149	8.327e-15	34.354
45	M143	Y	-.119	-.119	1.188e-14	34.354
46	M144	Y	-.119	-.119	2.187e-14	34.354
47	M145	Y	-.121	-.121	0	29.833
48	M146	Y	-.151	-.151	0	29.833
49	M147	Y	-.121	-.121	0	29.833
50	M148	Y	-.121	-.121	0	29.833
51	M149	Y	-.151	-.151	0	29.833
52	M150	Y	-.121	-.121	0	29.833
53	M151	Y	-.121	-.121	0	29.833
54	M152	Y	-.119	-.119	9.437e-15	34.354
55	M153	Y	-.119	-.119	2.054e-14	34.354
56	M154	Y	-.119	-.119	1.532e-14	34.354
57	M155	Y	-.149	-.149	1.354e-14	34.354
58	M156	Y	-.119	-.119	1.421e-14	34.354
59	M157	Y	-.119	-.119	2.964e-14	34.354
60	M158	Y	-.149	-.149	2.542e-14	34.354
61	M159	Y	-.121	-.121	0	29.833
62	M160	Y	-.121	-.121	0	29.833
63	M161	Y	-.121	-.121	0	29.833
64	M162	Y	-.151	-.151	0	29.833
65	M163	Y	-.121	-.121	0	29.833
66	M164	Y	-.121	-.121	0	29.833
67	M165	Y	-.151	-.151	0	29.833
68	M169	Y	-.06	-.06	5.551e-16	29.833
69	M170	Y	-.059	-.059	.479	34.833
70	M189	Y	-.121	-.121	1.279e-13	29.833
71	M190	Y	-.121	-.121	2.975e-14	29.833
72	M191	Y	-.121	-.121	2.787e-14	29.833

Member Distributed Loads (BLC 12 : BLC 8 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
73	M192	Y	-.151	-.151	4.996e-15	29.833
74	M193	Y	-.121	-.121	0	29.833
75	M194	Y	-.121	-.121	1.044e-13	29.833
76	M195	Y	-.119	-.119	.479	34.833
77	M196	Y	-.119	-.119	.479	34.833
78	M197	Y	-.119	-.119	.479	34.833
79	M198	Y	-.149	-.149	.479	34.833
80	M199	Y	-.119	-.119	.479	34.833
81	M200	Y	-.119	-.119	.479	34.833
82	M177	Y	-.061	-.061	2.331e-15	28.5
83	M178	Y	-.061	-.061	1.299e-14	28.5
84	M179	Y	-.122	-.122	2.609e-14	28.5
85	M182	Y	-.122	-.122	5.884e-15	28.5
86	M183	Y	-.122	-.122	0	28.5
87	M184	Y	-.152	-.152	0	28.5
88	M185	Y	-.122	-.122	2.642e-14	28.5
89	M186	Y	-.122	-.122	2.986e-14	28.5
90	M187	Y	-.122	-.122	2.232e-14	28.5
91	M188	Y	-.122	-.122	2.254e-14	28.5
92	M201	Y	-.122	-.122	7.772e-15	28.5
93	M202	Y	-.152	-.152	1.31e-14	28.5
94	M203	Y	-.122	-.122	9.437e-15	28.5
95	M204	Y	-.122	-.122	1.432e-14	28.5
96	M205	Y	-.122	-.122	1.743e-14	28.5
97	M206	Y	-.122	-.122	1.432e-14	28.5

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	D	DL		-1				50	7	
2	L	LL							4	
3	WLX	WL+X						15		
4	WLZ	WL+Z						31		
5	WL-X	WL-X						15		
6	WL-Z	WL-Z						31		
7	BLC 1 Transient A...	None						99		
8	SL	SL							3	
9	BLC 2 Transient A...	None						35		
10	EX	ELX				1				
11	EZ	ELZ				1				
12	BLC 8 Transient A...	None						97		

Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		DL	1														
2	L		Y		LL	1														
3	S		Y		SL	1														
4	WX		Y		WL...	1														
5	WZ		Y		WL...	1														
6	WX-		Y		WL...	1														

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Designer :
Job Number :
Model Name :

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Checked By:_____

Load Combinations (Continued)

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
7	WZ-		Y		WL...	1														
8	EX		Y		ELX	1														
9	EZ		Y		ELZ	1														
10			Y																	
11	IBC 16-1	Yes	Y		DL	1.4														
12	IBC 16-2 (a)	Yes	Y		DL	1.2	LL	1.6												
13	IBC 16-2 (b)	Yes	Y		DL	1.2	SL	.5												
14	IBC 16-3 (b) (a)	Yes	Y		DL	1.2	WLX	.8												
15	IBC 16-3 (b) (b)	Yes	Y		DL	1.2	WLZ	.8												
16	IBC 16-3 (b) (c)	Yes	Y		DL	1.2	WLX	-.8												
17	IBC 16-3 (b) (d)	Yes	Y		DL	1.2	WLZ	-.8												
18	IBC 16-4 (a) (a)	Yes	Y		DL	1.2	WLX	1.6	LL	.5										
19	IBC 16-4 (a) (b)	Yes	Y		DL	1.2	WLZ	1.6	LL	.5										
20	IBC 16-4 (a) (c)	Yes	Y		DL	1.2	WLX	-1.6	LL	.5										
21	IBC 16-4 (a) (d)	Yes	Y		DL	1.2	WLZ	-1.6	LL	.5										
22	IBC 16-4 (b) (a)	Yes	Y		DL	1.2	WLX	1.6	SL	.5										
23	IBC 16-4 (b) (b)	Yes	Y		DL	1.2	WLZ	1.6	SL	.5										
24	IBC 16-4 (b) (c)	Yes	Y		DL	1.2	WLX	-1.6	SL	.5										
25	IBC 16-4 (b) (d)	Yes	Y		DL	1.2	WLZ	-1.6	SL	.5										
26	IBC 16-6 (a)	Yes	Y		DL	.9	WLX	1.6												
27	IBC 16-6 (b)	Yes	Y		DL	.9	WLZ	1.6												
28	IBC 16-6 (c)	Yes	Y		DL	.9	WLX	-1.6												
29	IBC 16-6 (d)	Yes	Y		DL	.9	WLZ	-1.6												
30	IBC 16-5 (a)	Yes	Y		DL	1.2	ELX	1	LL	.5										
31	IBC 16-5 (b)	Yes	Y		DL	1.2	ELZ	1	LL	.5										
32	IBC 16-5 (c)	Yes	Y		DL	1.2	ELX	-1	SL	.2										
33	IBC 16-5 (d)	Yes	Y		DL	1.2	ELZ	-1	SL	.2										
34	IBC 16-5 (e)	Yes	Y		DL	1.2	ELZ	-1	LL	.5										
35	IBC 16-5 (f)	Yes	Y		DL	1.2	ELZ	-1	LL	.5										
36	IBC 16-5 (g)	Yes	Y		DL	1.2	ELZ	-1	SL	.2										
37	IBC 16-5 (h)	Yes	Y		DL	1.2	ELZ	-1	SL	.2										
38	IBC 16-7 (a)	Yes	Y		DL	.9	ELX	1												
39	IBC 16-7 (b)	Yes	Y		DL	.9	ELZ	1												
40	IBC 16-7 (c)	Yes	Y		DL	.9	ELX	-1												
41	IBC 16-7 (d)	Yes	Y		DL	.9	ELZ	-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	N112B	max	4.332	32	43.913	12	2.451	41	19.187	34	.005	32	30.769	30
2		min	-3.917	38	19.516	41	-2.93	31	-21.491	31	-.004	30	-33.344	32
3	N113B	max	3.673	32	65.396	13	2.615	41	20.722	33	.005	32	24.83	38
4		min	-3.249	38	35.022	40	-2.72	39	-20.984	31	-.004	30	-27.358	32
5	N114A	max	4.431	32	70.046	12	2.437	41	19.969	34	.005	32	33.408	30
6		min	-4.414	38	34.366	41	-3.137	31	-23.754	31	-.004	30	-34.196	32
7	N115B	max	3.268	40	88.014	13	2.835	41	22.985	33	.005	32	26.115	30
8		min	-3.42	30	46.378	38	-2.713	39	-21.851	31	-.004	30	-25.459	32
9	N116B	max	3.105	40	45.536	12	1.925	41	15.813	34	.003	32	25.044	30
10		min	-3.293	30	22.043	40	-2.399	31	-18.335	31	-.002	30	-24.42	32
11	N117A	max	2.201	40	56.898	12	2.168	41	17.4	33	.003	32	19.508	30
12		min	-2.554	30	28.775	40	-2.278	39	-18.009	31	-.002	30	-17.749	40

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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
13	N121	max	2.406	32	54.33	13	2.742	34	21.153	33	.005	32	17.798	30
14		min	-2.346	38	26.873	41	-2.704	31	-20.538	31	-.004	30	-18.142	32
15	N122	max	2.378	40	54.094	13	2.883	34	22.265	33	.005	32	18.22	30
16		min	-2.432	30	26.835	38	-2.956	31	-22.341	31	-.004	30	-17.934	32
17	N123	max	1.723	40	22.212	13	3.314	33	24.078	33	.005	32	18.53	30
18		min	-2.541	30	10.738	40	-2.981	31	-22.318	31	-.004	30	-14.673	40
19	N169	max	1.177	40	19.186	13	2.689	33	18.482	33	.003	32	8.873	30
20		min	-1.204	30	9.17	39	-1.722	39	-13.386	39	-.002	30	-8.539	40
21	N170	max	1.153	40	19.893	13	2.849	33	19.623	33	.003	32	8.975	30
22		min	-1.226	30	9.249	39	-1.858	39	-14.433	39	-.002	30	-8.437	40
23	N171	max	.825	40	6.911	13	2.729	33	19.023	33	.003	32	9.432	30
24		min	-1.337	30	2.919	39	-2.045	39	-15.526	31	-.002	30	-6.904	40
25	N173	max	3.345	32	10.066	13	1.691	41	14.602	41	.005	32	22.408	38
26		min	-2.807	38	4.322	38	-3.272	31	-21.884	31	-.004	30	-25.265	32
27	N175	max	2.068	32	22.825	13	2.371	33	16.761	33	.003	32	11.748	38
28		min	-1.438	38	10.986	38	-1.806	39	-13.503	39	-.002	30	-14.717	32
29	N177	max	1.274	32	6.122	13	2.249	33	15.836	33	.003	32	7.422	38
30		min	-.908	38	2.499	39	-1.657	39	-12.573	39	-.002	30	-8.933	32
31	N209A	max	0	11	0	11	0	11	0	11	0	11	0	11
32		min	0	11	0	11	0	11	0	11	0	11	0	11
33	Totals:	max	36.798	40	559.418	13	36.796	41						
34		min	-36.798	30	302.249	38	-36.796	39						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M1	1	max	-1.281	41	11.606	12	.091	30	0	38	.013	40	46.85	12
2			min	-7.537	12	3.599	41	-.018	40	0	40	-.05	30	14.368	40
3		2	max	-1.281	41	6.602	12	.02	30	0	38	.012	40	-13.099	38
4			min	-7.537	12	2.532	41	-.004	40	0	40	-.057	30	-40.497	12
5		3	max	.034	33	-2.121	39	.031	12	0	38	-.016	38	-27.822	41
6			min	.012	39	-3.907	12	.01	38	0	40	-.051	12	-76.649	12
7		4	max	.034	33	-3.251	39	.002	12	0	38	-.002	38	-4.917	41
8			min	.012	39	-9.451	12	0	38	0	40	-.005	12	-25.6	12
9		5	max	2.339	33	-4.041	39	-.004	38	0	38	-.001	38	70.716	12
10			min	-1.574	12	-12.742	12	-.041	32	0	40	-.02	32	24.897	39
11	M2	1	max	36.066	12	28.677	12	.133	30	0	38	.013	40	105.081	12
12			min	16.814	39	12.047	41	-.038	40	-.001	31	-.04	30	42.349	41
13		2	max	.003	12	7.21	12	0	12	0	38	0	40	-52.799	39
14			min	.001	39	2.608	41	0	40	-.001	31	0	12	-116.335	12
15		3	max	.003	12	6.57	12	0	12	0	38	0	12	-74.906	39
16			min	.001	39	2.128	41	0	40	-.001	31	0	40	-175.33	12
17		4	max	.019	12	-7.398	39	0	38	0	38	.003	12	-43.545	41
18			min	.006	38	-17.662	12	-.002	12	-.001	31	0	38	-126.952	12
19		5	max	21.713	12	-8.948	39	-.003	38	0	38	0	38	60.181	12
20			min	9.508	39	-25.283	12	-.055	12	-.001	31	-.015	12	25.318	39
21	M3	1	max	17.787	12	21.653	12	.248	30	.088	12	-.112	40	60.905	12
22			min	8.034	39	9.559	41	.011	40	.036	40	-.807	12	26.671	41
23		2	max	.607	12	5.225	12	0	12	.013	12	0	38	-50.324	40
24			min	.277	38	1.822	41	0	38	0	40	0	32	-107.914	12
25		3	max	0	38	3.43	12	0	30	.013	12	0	40	-63.987	41

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
26			min	-.051	32	1.204	41	0	40	0	40	0	13	-146.541	12
27		4	max	.007	40	-7.93	39	0	38	-.023	40	.001	12	-24.734	41
28			min	-.01	30	-18.235	12	0	12	-.06	12	0	38	-73.912	12
29		5	max	28.494	12	-7.466	39	.029	12	.026	12	.007	30	93.745	12
30			min	13.231	39	-19.516	12	.004	40	0	13	-.013	40	39.784	39
31	M4	1	max	35.096	12	.36	40	-2.548	39	.013	40	13.642	12	3.219	40
32			min	14.08	41	-3.867	30	-8.161	12	-.05	30	4.271	39	-16.981	30
33		2	max	35.046	12	.36	40	-2.548	39	.013	40	6.801	33	2.836	40
34			min	14.042	41	-3.867	30	-8.161	12	-.05	30	1.564	39	-12.872	30
35		3	max	34.995	12	.36	40	-2.548	39	.013	40	1.353	33	2.454	40
36			min	14.004	41	-3.867	30	-8.161	12	-.05	30	-3.701	12	-8.764	30
37		4	max	34.944	12	.36	40	-2.548	39	.013	40	-2.688	41	2.072	40
38			min	13.966	41	-3.867	30	-8.161	12	-.05	30	-12.372	12	-4.655	30
39		5	max	34.893	12	.36	40	-2.548	39	.013	40	-6.174	40	1.931	32
40			min	13.928	41	-3.867	30	-8.161	12	-.05	30	-21.044	12	-.869	38
41	M5	1	max	36.726	12	14.107	12	1.691	12	.02	32	-2.372	38	14.359	12
42			min	14.257	39	5.671	39	.528	38	.001	38	-5.442	12	6.89	38
43		2	max	36.675	12	14.107	12	1.691	12	.02	32	-1.811	38	2.028	32
44			min	14.219	39	5.671	39	.528	38	.001	38	-3.646	12	-.63	12
45		3	max	36.624	12	14.107	12	1.691	12	.02	32	-.661	40	-4.57	39
46			min	14.181	39	5.671	39	.528	38	.001	38	-1.89	13	-15.619	12
47		4	max	36.573	12	14.107	12	1.691	12	.02	32	.515	40	-10.595	39
48			min	14.142	39	5.671	39	.528	38	.001	38	-.706	30	-30.607	12
49		5	max	36.523	12	14.107	12	1.691	12	.02	32	2.13	32	-16.62	39
50			min	14.104	39	5.671	39	.528	38	.001	38	-.128	38	-45.596	12
51	M6	1	max	53.643	12	-16.812	39	1.146	12	.013	40	-.515	38	-25.355	39
52			min	22.978	38	-36.041	12	-.205	38	-.04	30	-3.545	12	-56.869	13
53		2	max	53.592	12	-16.812	39	1.146	12	.013	40	-.699	41	-7.492	39
54			min	22.94	38	-36.041	12	-.205	38	-.04	30	-2.328	12	-22.883	13
55		3	max	53.541	12	-16.812	39	1.146	12	.013	40	.227	40	28.853	12
56			min	22.902	38	-36.041	12	-.205	38	-.04	30	-1.269	30	4.718	41
57		4	max	53.491	12	-16.812	39	1.146	12	.013	40	1.195	32	67.146	12
58			min	22.864	38	-36.041	12	-.205	38	-.04	30	-1.168	38	23.397	41
59		5	max	53.44	12	-16.812	39	1.146	12	.013	40	2.333	32	105.439	12
60			min	22.826	38	-36.041	12	-.205	38	-.04	30	-1.386	38	42.075	41
61	M7	1	max	51.778	12	-.277	38	21.738	12	.015	12	-15.188	39	-.957	40
62			min	19.958	38	-1.641	12	9.512	39	0	38	-31.18	12	-5.104	12
63		2	max	51.727	12	-.277	38	21.738	12	.015	12	-5.082	39	-.134	40
64			min	19.92	38	-1.641	12	9.512	39	0	38	-10.605	13	-3.36	12
65		3	max	51.676	12	-.277	38	21.738	12	.015	12	15.014	12	.689	40
66			min	19.881	38	-1.641	12	9.512	39	0	38	5.025	39	-2.104	30
67		4	max	51.625	12	-.277	38	21.738	12	.015	12	38.111	12	1.555	32
68			min	19.843	38	-1.641	12	9.512	39	0	38	15.131	39	-1.34	38
69		5	max	51.575	12	-.277	38	21.738	12	.015	12	61.208	12	2.654	32
70			min	19.805	38	-1.641	12	9.512	39	0	38	25.238	39	-1.046	38
71	M8	1	max	37.815	12	2.339	12	-8.199	39	.025	32	29.684	13	5.457	32
72			min	17.336	40	.679	40	-18.188	12	0	38	12.23	39	-2.559	30
73		2	max	37.765	12	2.339	12	-8.199	39	.025	32	13.055	33	4.172	32
74			min	17.298	40	.679	40	-18.188	12	0	38	3.518	39	-5.04	30
75		3	max	37.714	12	2.339	12	-8.199	39	.025	32	-1.174	41	3.368	40
76			min	17.26	40	.679	40	-18.188	12	0	38	-10.923	12	-7.522	30
77		4	max	37.663	12	2.339	12	-8.199	39	.025	32	-11.478	41	2.646	40

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
78			min	17.222	40	.679	40	-18.188	12	0	38	-30.248	12	-10.003	30
79		5	max	37.612	12	2.339	12	-8.199	39	.025	32	-21.781	41	1.924	40
80			min	17.184	40	.679	40	-18.188	12	0	38	-49.573	12	-12.485	30
81	M9	1	max	40.223	12	26.667	12	-1.631	40	.001	39	5.783	32	25.824	13
82			min	17.006	40	12.394	39	-4.61	12	-.003	33	1.905	38	13.037	40
83		2	max	40.173	12	26.667	12	-1.631	40	.001	39	3.006	32	.878	13
84			min	16.968	40	12.394	39	-4.61	12	-.003	33	-.335	38	-7.002	12
85		3	max	40.122	12	26.667	12	-1.631	40	.001	39	.638	40	-12.664	39
86			min	16.93	40	12.394	39	-4.61	12	-.003	33	-4.54	12	-35.336	12
87		4	max	40.071	12	26.667	12	-1.631	40	.001	39	-1.095	40	-25.833	39
88			min	16.892	40	12.394	39	-4.61	12	-.003	33	-9.438	12	-63.67	12
89		5	max	40.02	12	26.667	12	-1.631	40	.001	39	-2.828	40	-39.002	39
90			min	16.853	40	12.394	39	-4.61	12	-.003	33	-14.336	12	-92.004	12
91	M14	1	max	5.188	12	7.668	12	0	12	0	40	0	11	0	11
92			min	.115	38	2.444	38	0	39	-.005	12	0	11	0	11
93		2	max	5.188	12	6.18	12	0	12	0	40	.004	12	-16.661	38
94			min	.115	38	2.017	38	0	39	-.005	12	.002	39	-51.856	12
95		3	max	.89	32	-1.596	40	0	39	0	40	.005	12	-22.302	38
96			min	.227	38	-4.757	12	0	12	-.006	12	.002	39	-65.25	12
97		4	max	.89	32	-2.029	40	0	39	0	40	0	39	-6.614	38
98			min	.227	38	-6.307	12	0	12	-.006	12	-.001	12	-23.99	12
99		5	max	3.679	12	-4.091	40	-.035	39	.056	12	-.096	39	42.03	12
100			min	1.415	40	-10.459	12	-.076	12	.011	40	-.205	12	15.732	40
101	M15	1	max	3.638	32	6.012	12	-.001	38	-.001	39	0	11	0	11
102			min	.231	38	2.071	38	-.004	12	-.003	12	0	11	0	11
103		2	max	3.638	32	4.215	12	-.001	38	-.001	39	-.009	38	-13.736	38
104			min	.231	38	1.608	38	-.004	12	-.003	12	-.029	12	-38.296	12
105		3	max	.622	38	-1.627	40	.009	12	.003	12	-.011	38	-17.191	38
106			min	-2.014	12	-3.66	12	.002	38	.002	41	-.03	12	-43.297	12
107		4	max	.622	38	-2.095	40	.009	12	.003	12	.037	32	.751	38
108			min	-2.014	12	-5.501	12	.002	38	.002	41	.003	38	-9.137	12
109		5	max	.622	38	-2.563	40	.009	12	.003	12	.099	32	38.756	12
110			min	-2.014	12	-7.342	12	.002	38	.002	41	.017	38	11.626	40
111	M16	1	max	2.036	32	19.643	12	-.001	38	-.01	39	0	11	0	11
112			min	.236	38	6.928	40	-.005	12	-.024	12	0	11	0	11
113		2	max	2.036	32	17.659	12	-.001	38	-.01	39	-.012	38	-57.517	40
114			min	.236	38	6.282	40	-.005	12	-.024	12	-.046	12	-162.417	12
115		3	max	1.508	32	-3.744	40	0	38	-.01	39	.049	12	-76.543	40
116			min	.425	38	-10.393	12	-.003	12	-.024	12	.016	38	-216.254	12
117		4	max	1.508	32	-4.395	40	0	38	-.01	39	.024	12	-41.104	40
118			min	.425	38	-12.417	12	-.003	12	-.024	12	.008	38	-116.938	12
119		5	max	1.508	32	-5.045	40	0	38	-.01	39	0	11	0	11
120			min	.425	38	-14.44	12	-.003	12	-.024	12	0	11	0	11
121	M17	1	max	2.587	30	19.375	12	.005	12	.015	12	0	11	0	11
122			min	.137	40	7.363	40	.001	38	.007	39	0	11	0	11
123		2	max	2.587	30	17.391	12	.005	12	.015	12	.043	12	-61.307	40
124			min	.137	40	6.717	40	.001	38	.007	39	.01	38	-160.086	12
125		3	max	1.81	30	-4.002	40	.003	12	.015	12	-.019	38	-81.721	40
126			min	.097	40	-9.949	12	.001	38	.007	39	-.05	12	-214.32	12
127		4	max	1.81	30	-4.692	40	.003	12	.015	12	-.009	38	-43.865	40
128			min	.097	40	-12.306	12	.001	38	.007	39	-.025	12	-117.422	12
129		5	max	1.81	30	-5.382	40	.003	12	.015	12	0	11	0	11

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
130			min	.097	40	-14.662	12	.001	38	.007	39	0	11	0	11
131	M117C	1	max	43.913	12	4.013	30	2.58	34	.005	32	21.491	31	30.769	30
132			min	19.516	41	-4.453	32	-3.133	31	-.004	30	-19.187	34	-33.344	32
133		2	max	43.745	12	4.013	30	2.58	34	.005	32	10.524	31	16.723	30
134			min	19.39	41	-4.453	32	-3.133	31	-.004	30	-10.165	33	-17.759	32
135		3	max	43.578	12	4.013	30	2.58	34	.005	32	-.287	39	2.677	30
136			min	19.265	41	-4.453	32	-3.133	31	-.004	30	-1.338	33	-2.241	40
137		4	max	43.411	12	4.013	30	2.58	34	.005	32	8.041	41	13.411	32
138			min	19.139	41	-4.453	32	-3.133	31	-.004	30	-11.41	31	-11.369	30
139		5	max	43.244	12	4.013	30	2.58	34	.005	32	17.037	41	28.996	32
140			min	19.014	41	-4.453	32	-3.133	31	-.004	30	-22.377	31	-25.415	30
141	M118A	1	max	65.396	13	3.351	38	2.894	33	.005	32	20.984	31	24.83	38
142			min	35.022	40	-3.832	32	-3.024	31	-.004	30	-20.722	33	-27.358	32
143		2	max	65.229	13	3.351	38	2.894	33	.005	32	10.398	31	13.151	30
144			min	34.897	40	-3.832	32	-3.024	31	-.004	30	-10.594	33	-13.945	32
145		3	max	65.061	13	3.351	38	2.894	33	.005	32	-.095	39	1.475	30
146			min	34.771	40	-3.832	32	-3.024	31	-.004	30	-.467	33	-.728	40
147		4	max	64.894	13	3.351	38	2.894	33	.005	32	9.661	33	12.881	32
148			min	34.646	40	-3.832	32	-3.024	31	-.004	30	-10.773	31	-10.358	38
149		5	max	64.727	13	3.351	38	2.894	33	.005	32	19.788	33	26.294	32
150			min	34.521	40	-3.832	32	-3.024	31	-.004	30	-21.359	31	-22.087	38
151	M119A	1	max	70.046	12	4.594	30	2.661	41	.005	32	23.754	31	33.408	30
152			min	34.366	41	-4.64	32	-3.5	31	-.004	30	-19.969	34	-34.196	32
153		2	max	69.879	12	4.594	30	2.661	41	.005	32	11.502	31	17.33	30
154			min	34.24	41	-4.64	32	-3.5	31	-.004	30	-10.69	34	-17.955	32
155		3	max	69.712	12	4.594	30	2.661	41	.005	32	-.549	39	1.303	38
156			min	34.115	41	-4.64	32	-3.5	31	-.004	30	-1.818	13	-1.714	32
157		4	max	69.545	12	4.594	30	2.661	41	.005	32	8.119	41	14.528	32
158			min	33.989	41	-4.64	32	-3.5	31	-.004	30	-13	31	-14.825	30
159		5	max	69.378	12	4.594	30	2.661	41	.005	32	17.433	41	30.769	32
160			min	33.864	41	-4.64	32	-3.5	31	-.004	30	-25.251	31	-30.903	30
161	M120B	1	max	88.014	13	3.619	30	3.283	33	.005	32	21.851	31	26.115	30
162			min	46.378	38	-3.415	32	-3.092	31	-.004	30	-22.985	33	-25.459	32
163		2	max	87.847	13	3.619	30	3.283	33	.005	32	11.03	31	13.447	30
164			min	46.253	38	-3.415	32	-3.092	31	-.004	30	-11.493	33	-13.508	32
165		3	max	87.68	13	3.619	30	3.283	33	.005	32	.23	39	.915	38
166			min	46.127	38	-3.415	32	-3.092	31	-.004	30	-.088	34	-1.557	32
167		4	max	87.513	13	3.619	30	3.283	33	.005	32	11.491	33	10.51	40
168			min	46.002	38	-3.415	32	-3.092	31	-.004	30	-10.612	31	-11.888	30
169		5	max	87.346	13	3.619	30	3.283	33	.005	32	22.982	33	22.426	40
170			min	45.876	38	-3.415	32	-3.092	31	-.004	30	-21.433	31	-24.556	30
171	M121B	1	max	45.536	12	3.429	30	2.096	34	.003	32	18.335	31	25.044	30
172			min	22.043	40	-3.197	32	-2.651	31	-.002	30	-15.813	34	-24.42	32
173		2	max	45.406	12	3.429	30	2.096	34	.003	32	9.057	31	13.041	30
174			min	21.945	40	-3.197	32	-2.651	31	-.002	30	-8.476	34	-13.23	32
175		3	max	45.276	12	3.429	30	2.096	34	.003	32	-.134	39	1.173	38
176			min	21.847	40	-3.197	32	-2.651	31	-.002	30	-1.435	33	-2.041	32
177		4	max	45.145	12	3.429	30	2.096	34	.003	32	6.253	41	9.312	40
178			min	21.749	40	-3.197	32	-2.651	31	-.002	30	-9.498	31	-10.965	30
179		5	max	45.015	12	3.429	30	2.096	34	.003	32	13.537	41	20.47	40
180			min	21.651	40	-3.197	32	-2.651	31	-.002	30	-18.776	31	-22.968	30
181	M122	1	max	56.898	12	2.687	30	2.426	33	.003	32	18.009	31	19.508	30

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
182			min	28.775	40	-2.284	40	-2.581	31	-.002	30	-17.4	33	-17.749	40
183		2	max	56.768	12	2.687	30	2.426	33	.003	32	8.976	31	10.103	30
184			min	28.678	40	-2.284	40	-2.581	31	-.002	30	-8.911	33	-9.815	32
185		3	max	56.637	12	2.687	30	2.426	33	.003	32	.033	39	.799	38
186			min	28.58	40	-2.284	40	-2.581	31	-.002	30	-.439	34	-2.059	32
187		4	max	56.507	12	2.687	30	2.426	33	.003	32	8.068	33	6.236	40
188			min	28.482	40	-2.284	40	-2.581	31	-.002	30	-9.089	31	-8.707	30
189		5	max	56.376	12	2.687	30	2.426	33	.003	32	16.557	33	14.231	40
190			min	28.384	40	-2.284	40	-2.581	31	-.002	30	-18.122	31	-18.111	30
191	M123A	1	max	54.33	13	2.412	30	2.986	33	.005	32	20.538	31	17.798	30
192			min	26.873	41	-2.493	32	-2.929	31	-.004	30	-21.153	33	-18.142	32
193		2	max	54.163	13	2.412	30	2.986	33	.005	32	10.288	31	9.356	30
194			min	26.748	41	-2.493	32	-2.929	31	-.004	30	-10.701	33	-9.418	32
195		3	max	53.996	13	2.412	30	2.986	33	.005	32	.05	39	.914	30
196			min	26.622	41	-2.493	32	-2.929	31	-.004	30	-.25	33	-.727	40
197		4	max	53.829	13	2.412	30	2.986	33	.005	32	10.202	33	8.03	32
198			min	26.497	41	-2.493	32	-2.929	31	-.004	30	-10.212	31	-7.528	30
199		5	max	53.661	13	2.412	30	2.986	33	.005	32	20.654	33	16.754	32
200			min	26.371	41	-2.493	32	-2.929	31	-.004	30	-20.462	31	-15.97	30
201	M124	1	max	54.094	13	2.505	30	3.129	33	.005	32	22.341	31	18.22	30
202			min	26.835	38	-2.447	32	-3.197	31	-.004	30	-22.265	33	-17.934	32
203		2	max	53.927	13	2.505	30	3.129	33	.005	32	11.152	31	9.453	30
204			min	26.709	38	-2.447	32	-3.197	31	-.004	30	-11.314	33	-9.37	32
205		3	max	53.76	13	2.505	30	3.129	33	.005	32	-.012	39	.694	38
206			min	26.584	38	-2.447	32	-3.197	31	-.004	30	-.364	33	-.806	32
207		4	max	53.592	13	2.505	30	3.129	33	.005	32	10.635	34	7.759	32
208			min	26.458	38	-2.447	32	-3.197	31	-.004	30	-11.227	31	-8.081	30
209		5	max	53.425	13	2.505	30	3.129	33	.005	32	21.57	34	16.323	32
210			min	26.333	38	-2.447	32	-3.197	31	-.004	30	-22.416	31	-16.848	30
211	M125	1	max	22.212	13	2.573	30	3.436	33	.005	32	22.318	31	18.53	30
212			min	10.738	40	-1.744	40	-3.09	31	-.004	30	-24.078	33	-14.673	40
213		2	max	22.044	13	2.573	30	3.436	33	.005	32	11.503	31	9.524	30
214			min	10.613	40	-1.744	40	-3.09	31	-.004	30	-12.053	33	-8.57	40
215		3	max	21.877	13	2.573	30	3.436	33	.005	32	.688	31	.786	38
216			min	10.488	40	-1.744	40	-3.09	31	-.004	30	-.149	41	-2.957	32
217		4	max	21.71	13	2.573	30	3.436	33	.005	32	11.996	33	3.636	40
218			min	10.362	40	-1.744	40	-3.09	31	-.004	30	-10.127	31	-8.488	30
219		5	max	21.543	13	2.573	30	3.436	33	.005	32	24.021	33	9.739	40
220			min	10.237	40	-1.744	40	-3.09	31	-.004	30	-20.942	31	-17.493	30
221	M126	1	max	0	41	2.842	32	0	38	.003	13	0	32	28.383	32
222			min	0	31	.311	38	0	32	0	40	0	38	-11.045	38
223		2	max	0	41	1.905	32	0	38	.003	13	0	32	8.252	40
224			min	0	31	-.315	38	0	32	0	40	0	38	-11.282	30
225		3	max	0	41	.967	32	0	38	.003	13	0	32	-2.737	40
226			min	0	31	-.94	38	0	32	0	40	0	38	-7.261	13
227		4	max	0	41	.324	40	0	38	.003	13	0	38	5.343	38
228			min	0	31	-1.757	30	0	32	0	40	0	32	-9.125	32
229		5	max	0	41	-.285	40	0	38	.003	13	0	38	23.728	30
230			min	0	31	-2.569	30	0	32	0	40	0	32	-8.379	40
231	M127	1	max	0	11	3.047	32	0	11	.001	41	0	38	27.682	32
232			min	0	31	.136	38	0	11	-.003	31	0	32	-8.285	38
233		2	max	0	11	2.237	32	0	11	.001	41	0	38	7.978	32

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
234			min	0	31	-.404	38	0	11	-.003	31	0	32	-7.288	38
235		3	max	0	11	1.427	32	0	11	.001	41	0	30	-2.263	38
236			min	0	31	-.944	38	0	11	-.003	31	0	40	-5.684	32
237		4	max	0	11	.777	40	0	11	.001	41	0	32	6.789	38
238			min	0	31	-1.594	30	0	11	-.003	31	0	38	-13.304	32
239		5	max	0	11	.237	40	0	11	.001	41	0	32	20.409	30
240			min	0	31	-2.314	30	0	11	-.003	31	0	38	-15.659	40
241	M128	1	max	0	31	8.796	13	0	32	0	33	0	38	38.265	31
242			min	0	34	3.812	41	0	38	0	12	0	32	5.896	41
243		2	max	0	11	2.783	13	0	11	0	33	0	38	-6.61	39
244			min	0	11	.823	41	0	11	0	12	0	32	-29.101	33
245		3	max	0	11	-.649	39	0	11	0	33	0	38	-17.842	39
246			min	0	11	-2.717	33	0	11	0	12	0	32	-39.636	13
247		4	max	0	11	-3.638	39	0	11	0	33	0	38	3.208	34
248			min	0	11	-8.658	13	0	11	0	12	0	32	-4.672	31
249		5	max	0	34	-5.151	39	0	38	0	33	0	38	84.664	13
250			min	0	31	-11.578	13	0	32	0	12	0	32	32.989	39
251	M129	1	max	.008	32	9.915	13	0	32	.001	34	0	38	59.664	13
252			min	-.008	38	4.48	41	0	38	0	39	0	32	21.806	41
253		2	max	0	11	7	13	0	11	.001	34	0	30	-2.82	39
254			min	0	11	2.971	41	0	11	0	39	0	40	-13.305	33
255		3	max	0	11	1.577	13	0	11	.001	34	0	32	-18.257	41
256			min	0	11	-1.689	33	0	11	0	39	0	38	-37.535	13
257		4	max	0	11	-2.994	39	0	40	.001	34	0	38	-1.568	41
258			min	0	11	-6.938	13	0	30	0	39	0	32	-12.713	31
259		5	max	.008	38	-4.774	39	0	30	.001	34	0	30	61.083	13
260			min	-.008	32	-10.439	13	0	40	0	39	0	40	22.269	39
261	M130	1	max	0	11	2.594	30	0	11	0	41	0	38	16.923	30
262			min	0	11	.59	40	0	11	-.005	13	0	32	-10.126	40
263		2	max	0	11	1.513	30	0	11	0	41	0	38	2.971	38
264			min	0	11	-.22	40	0	11	-.005	13	0	32	-13.969	32
265		3	max	0	11	.513	38	0	11	0	41	0	38	-3.877	38
266			min	0	11	-1.183	32	0	11	-.005	13	0	32	-10.159	13
267		4	max	0	11	-.298	38	0	11	0	41	0	31	3.863	40
268			min	0	11	-2.443	32	0	11	-.005	13	0	34	-4.85	30
269		5	max	0	11	-1.108	38	0	11	0	41	0	32	26.595	32
270			min	0	11	-3.704	32	0	11	-.005	13	0	38	.563	38
271	M131	1	max	0	11	3.475	13	0	11	0	13	0	34	20.914	30
272			min	0	11	1.474	40	0	11	0	40	0	31	4.451	40
273		2	max	0	11	1.783	13	0	11	0	13	0	34	1.699	38
274			min	0	11	.572	40	0	11	0	40	0	31	-5.435	32
275		3	max	0	11	.388	30	0	11	0	13	0	31	-5.507	40
276			min	0	11	-.364	40	0	11	0	40	0	34	-10.564	13
277		4	max	0	11	-.554	38	0	11	0	13	0	31	1.741	40
278			min	0	11	-1.819	32	0	11	0	40	0	34	-5.514	30
279		5	max	0	11	-1.491	38	0	11	0	13	0	31	23.068	32
280			min	0	11	-3.516	13	0	11	0	40	0	34	3.953	38
281	M132	1	max	.004	30	22.273	13	0	30	.003	33	0	40	149.183	13
282			min	-.004	40	10.595	39	0	40	0	40	0	30	65.785	39
283		2	max	0	38	10.305	13	0	38	.003	33	0	32	-1.505	41
284			min	0	32	4.667	39	0	32	0	40	0	38	-11.556	31
285		3	max	0	32	-.314	41	0	11	.003	33	0	32	-36.074	38

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
286			min	0	38	-1.664	13	0	11	0	40	0	38	-73.029	13
287		4	max	0	32	-6.191	41	0	38	.003	33	0	32	-11.575	39
288			min	0	38	-13.524	13	0	32	0	40	0	38	-31.343	13
289		5	max	.003	40	-9.236	41	0	32	.003	33	0	32	108.253	13
290			min	-.003	30	-19.487	13	0	38	0	40	0	38	45.786	41
291	M133	1	max	.001	32	15.084	13	0	38	.006	38	0	32	120.792	13
292			min	-.001	38	6.804	39	0	32	-.007	32	0	38	48.547	39
293		2	max	0	32	11.54	13	0	38	.006	38	0	32	10.368	33
294			min	0	38	4.923	39	0	32	-.007	32	0	38	-1.66	39
295		3	max	0	32	4.42	13	0	32	.006	38	0	32	-22.44	39
296			min	0	38	1.33	39	0	38	-.007	32	0	38	-49.111	13
297		4	max	.004	32	-1.959	41	0	32	.006	38	0	38	-13.785	39
298			min	-.004	38	-5.605	13	0	38	-.007	32	0	32	-47.518	33
299		5	max	.009	38	-3.839	41	0	32	.006	38	0	32	30.312	31
300			min	-.009	32	-9.148	13	0	38	-.007	32	0	38	-8.339	41
301	M134	1	max	.003	38	18.425	13	0	32	.002	30	0	38	63.637	13
302			min	-.004	32	8.29	41	0	38	0	40	0	32	15.206	41
303		2	max	0	32	5.868	13	0	32	.002	30	0	38	-23.687	39
304			min	0	38	2.094	41	0	38	0	40	0	32	-68.531	13
305		3	max	0	32	-1.767	39	0	32	.002	30	0	38	-43.635	39
306			min	0	38	-5.448	13	0	38	0	40	0	32	-93.175	13
307		4	max	0	38	-7.963	39	0	32	.002	30	0	38	-1.829	41
308			min	0	32	-18.005	13	0	38	0	40	0	32	-15.606	13
309		5	max	.002	32	-11.014	39	0	38	.002	30	0	38	164.161	13
310			min	-.002	38	-23.983	13	0	32	0	40	0	32	68.268	39
311	M135	1	max	.008	32	20.321	13	0	32	0	38	0	38	132.002	13
312			min	-.008	38	9.552	41	0	38	-.003	32	0	32	55.509	41
313		2	max	0	32	14.351	13	0	32	0	38	0	32	-3.011	39
314			min	0	38	6.507	41	0	38	-.003	32	0	38	-16.856	33
315		3	max	0	32	2.353	31	0	32	0	38	0	32	-32.441	39
316			min	0	38	-3.536	13	0	39	-.003	32	0	38	-65.608	13
317		4	max	0	32	-6.805	39	0	32	0	38	0	38	-.869	41
318			min	0	38	-14.844	13	0	38	-.003	32	0	32	-11.376	31
319		5	max	.008	38	-10.423	39	0	30	0	38	0	30	145.555	13
320			min	-.008	32	-22.055	13	0	40	-.003	32	0	40	63.319	39
321	M136	1	max	0	30	4.179	13	0	11	-.001	41	0	38	27.645	32
322			min	0	40	1.643	38	0	11	-.003	13	0	32	2.613	38
323		2	max	0	30	2.243	32	0	11	-.001	41	0	38	2.069	40
324			min	0	40	.551	38	0	11	-.003	13	0	32	-7.679	30
325		3	max	0	30	.531	40	0	11	-.001	41	0	38	-6.989	38
326			min	0	40	-.54	38	0	11	-.003	13	0	32	-13.844	13
327		4	max	0	30	-.561	40	0	11	-.001	41	0	32	2.471	38
328			min	0	40	-2.131	13	0	11	-.003	13	0	38	-8.549	32
329		5	max	0	30	-1.61	40	0	11	-.001	41	0	32	25.049	30
330			min	0	40	-4.141	13	0	11	-.003	13	0	38	2.459	40
331	M137	1	max	0	11	4.347	32	0	11	.003	33	0	32	33.317	32
332			min	0	31	1.232	38	0	11	.001	39	0	30	-.194	38
333		2	max	0	11	2.86	32	0	11	.003	33	0	32	6.442	32
334			min	0	31	.286	38	0	11	.001	39	0	30	-5.854	38
335		3	max	0	11	1.374	32	0	11	.003	33	0	40	-4.461	38
336			min	0	31	-.66	38	0	11	.001	39	0	30	-10.393	13
337		4	max	0	11	.26	40	0	11	.003	33	0	34	3.986	38

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
338			min	0	31	-1.839	30	0	11	.001	39	0	31	-14.052	32
339		5	max	0	11	-.686	40	0	11	.003	33	0	38	21.414	30
340			min	0	31	-3.125	13	0	11	.001	39	0	32	-10.127	40
341	M166	1	max	19.186	13	1.221	30	2.793	33	.003	32	13.386	39	8.873	30
342			min	9.17	39	-1.188	40	-1.776	39	-.002	30	-18.482	33	-8.539	40
343		2	max	19.055	13	1.221	30	2.793	33	.003	32	7.19	31	4.599	30
344			min	9.072	39	-1.188	40	-1.776	39	-.002	30	-8.707	33	-4.379	40
345		3	max	18.925	13	1.221	30	2.793	33	.003	32	1.574	13	.325	30
346			min	8.975	39	-1.188	40	-1.776	39	-.002	30	.6	41	-.22	40
347		4	max	18.794	13	1.221	30	2.793	33	.003	32	10.844	33	3.954	32
348			min	8.877	39	-1.188	40	-1.776	39	-.002	30	-5.264	39	-3.949	30
349		5	max	18.664	13	1.221	30	2.793	33	.003	32	20.62	33	8.108	32
350			min	8.779	39	-1.188	40	-1.776	39	-.002	30	-11.48	39	-8.223	30
351	M167	1	max	19.893	13	1.243	30	2.965	33	.003	32	14.433	39	8.975	30
352			min	9.249	39	-1.166	40	-1.917	39	-.002	30	-19.623	33	-8.437	40
353		2	max	19.763	13	1.243	30	2.965	33	.003	32	7.778	31	4.623	30
354			min	9.151	39	-1.166	40	-1.917	39	-.002	30	-9.244	33	-4.356	40
355		3	max	19.632	13	1.243	30	2.965	33	.003	32	1.675	13	.27	30
356			min	9.053	39	-1.166	40	-1.917	39	-.002	30	.634	41	-.275	32
357		4	max	19.502	13	1.243	30	2.965	33	.003	32	11.513	33	3.807	40
358			min	8.955	39	-1.166	40	-1.917	39	-.002	30	-5.694	39	-4.082	30
359		5	max	19.371	13	1.243	30	2.965	33	.003	32	21.891	33	7.888	40
360			min	8.857	39	-1.166	40	-1.917	39	-.002	30	-12.404	39	-8.434	30
361	M168	1	max	6.911	13	1.344	30	2.774	33	.003	32	15.526	31	9.432	30
362			min	2.919	39	-.829	40	-2.064	39	-.002	30	-19.023	33	-6.904	40
363		2	max	6.781	13	1.344	30	2.774	33	.003	32	8.36	31	4.728	30
364			min	2.821	39	-.829	40	-2.064	39	-.002	30	-9.314	33	-4.002	40
365		3	max	6.65	13	1.344	30	2.774	33	.003	32	1.194	31	.176	38
366			min	2.723	39	-.829	40	-2.064	39	-.002	30	.086	41	-1.34	32
367		4	max	6.52	13	1.344	30	2.774	33	.003	32	10.104	33	1.803	40
368			min	2.625	39	-.829	40	-2.064	39	-.002	30	-6.219	39	-4.679	30
369		5	max	6.389	13	1.344	30	2.774	33	.003	32	19.813	33	4.705	40
370			min	2.528	39	-.829	40	-2.064	39	-.002	30	-13.444	39	-9.382	30
371	M169	1	max	0	11	1.588	30	0	11	.006	33	0	34	8.824	30
372			min	0	11	.5	40	0	11	0	39	0	31	-5.102	40
373		2	max	0	11	.868	30	0	11	.006	33	0	34	.672	38
374			min	0	11	-.04	40	0	11	0	39	0	31	-8.395	32
375		3	max	0	11	.208	38	0	11	.006	33	0	34	-2.893	38
376			min	0	11	-.675	32	0	11	0	39	0	31	-6.522	13
377		4	max	0	11	-.332	38	0	11	.006	33	0	31	1.83	40
378			min	0	11	-1.485	32	0	11	0	39	0	34	-2.542	30
379		5	max	0	11	-.872	38	0	11	.006	33	0	31	15.773	32
380			min	0	11	-2.295	32	0	11	0	39	0	34	2.058	38
381	M170	1	max	0	11	2.173	13	0	11	0	38	0	38	12.954	13
382			min	0	11	1.074	40	0	11	0	32	0	32	4.375	40
383		2	max	0	11	1.117	13	0	11	0	38	0	34	.636	38
384			min	0	11	.466	40	0	11	0	32	0	31	-2.842	32
385		3	max	0	11	.191	30	0	11	0	38	0	32	-3.705	38
386			min	0	11	-.16	40	0	11	0	32	0	38	-6.487	13
387		4	max	0	11	-.44	38	0	11	0	38	0	32	.379	40
388			min	0	11	-1.091	32	0	11	0	32	0	38	-2.976	30
389		5	max	0	11	-1.065	38	0	11	0	38	0	32	13.422	32

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
390			min	0	11	-2.162	13	0	11	0	32	0	38	3.954	38
391	M171	1	max	10.066	13	2.819	38	1.716	41	.005	32	21.884	31	22.408	38
392			min	4.322	38	-3.372	32	-3.315	31	-.004	30	-14.602	41	-25.265	32
393		2	max	9.899	13	2.819	38	1.716	41	.005	32	10.281	31	12.559	30
394			min	4.196	38	-3.372	32	-3.315	31	-.004	30	-8.6	34	-13.463	32
395		3	max	9.731	13	2.819	38	1.716	41	.005	32	-.781	39	2.862	30
396			min	4.071	38	-3.372	32	-3.315	31	-.004	30	-3.625	33	-1.83	40
397		4	max	9.564	13	2.819	38	1.716	41	.005	32	3.418	41	10.14	32
398			min	3.946	38	-3.372	32	-3.315	31	-.004	30	-12.925	31	-7.186	38
399		5	max	9.397	13	2.819	38	1.716	41	.005	32	9.425	41	21.942	32
400			min	3.82	38	-3.372	32	-3.315	31	-.004	30	-24.528	31	-17.051	38
401	M172	1	max	22.825	13	1.46	38	2.483	33	.003	32	13.503	39	11.748	38
402			min	10.986	38	-2.106	32	-1.87	39	-.002	30	-16.761	33	-14.717	32
403		2	max	22.695	13	1.46	38	2.483	33	.003	32	7.009	31	6.638	38
404			min	10.888	38	-2.106	32	-1.87	39	-.002	30	-8.071	33	-7.345	32
405		3	max	22.564	13	1.46	38	2.483	33	.003	32	.797	13	1.739	30
406			min	10.79	38	-2.106	32	-1.87	39	-.002	30	.38	41	-.307	40
407		4	max	22.434	13	1.46	38	2.483	33	.003	32	9.31	33	7.4	32
408			min	10.692	38	-2.106	32	-1.87	39	-.002	30	-6.135	39	-3.582	38
409		5	max	22.303	13	1.46	38	2.483	33	.003	32	18	33	14.773	32
410			min	10.594	38	-2.106	32	-1.87	39	-.002	30	-12.681	39	-8.692	38
411	M173	1	max	6.122	13	.911	38	2.284	33	.003	32	12.573	39	7.422	38
412			min	2.499	39	-1.28	32	-1.67	39	-.002	30	-15.836	33	-8.933	32
413		2	max	5.992	13	.911	38	2.284	33	.003	32	6.771	31	4.234	38
414			min	2.402	39	-1.28	32	-1.67	39	-.002	30	-7.841	33	-4.452	32
415		3	max	5.861	13	.911	38	2.284	33	.003	32	1.025	31	1.191	30
416			min	2.304	39	-1.28	32	-1.67	39	-.002	30	-.069	41	-.189	40
417		4	max	5.731	13	.911	38	2.284	33	.003	32	8.148	33	4.511	32
418			min	2.206	39	-1.28	32	-1.67	39	-.002	30	-4.967	39	-2.142	38
419		5	max	5.6	13	.911	38	2.284	33	.003	32	16.142	33	8.992	32
420			min	2.108	39	-1.28	32	-1.67	39	-.002	30	-10.813	39	-5.33	38
421	M174	1	max	0	30	7.961	13	0	32	.001	38	0	38	24.536	31
422			min	0	40	3.311	41	0	38	-.003	32	0	32	-9.41	41
423		2	max	0	11	5.126	13	0	40	.001	38	0	32	-11.576	39
424			min	0	11	1.835	41	0	30	-.003	32	0	38	-44.271	33
425		3	max	0	11	-.837	39	0	11	.001	38	0	32	-21.736	39
426			min	0	11	-3.206	33	0	11	-.003	32	0	38	-51.176	13
427		4	max	0	11	-3.483	39	0	30	.001	38	0	40	-4.25	41
428			min	0	11	-8.393	13	0	40	-.003	32	0	30	-12.722	13
429		5	max	0	40	-4.959	39	0	30	.001	38	0	30	70.245	13
430			min	0	30	-11.229	13	0	40	-.003	32	0	40	27.278	39
431	M175	1	max	.042	30	8.683	13	0	40	-.346	38	0	30	66.434	13
432			min	-.042	40	3.739	41	0	30	-.761	13	0	40	26.889	41
433		2	max	0	11	6.485	13	0	11	-.116	39	0	40	10.342	13
434			min	0	11	2.589	41	0	11	-.253	13	0	30	3.426	41
435		3	max	0	11	2.03	31	0	11	.059	13	0	40	-5.749	41
436			min	0	11	.353	41	0	11	.027	41	0	30	-17.305	13
437		4	max	0	11	-.314	39	0	40	.052	13	0	40	-1.971	41
438			min	0	11	-2.244	33	0	30	.023	39	0	30	-21.236	31
439		5	max	.042	40	-1.465	39	0	40	.743	13	0	40	16.134	33
440			min	-.042	30	-4.15	13	0	30	.342	38	0	30	-10.814	39
441	M176	1	max	.016	30	8.53	13	0	40	.859	13	0	30	59.017	13

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
442			min	-.016	40	3.328	41	0	30	.388	40	0	40	16.462	41
443		2	max	.004	40	6.239	13	0	30	.078	13	0	30	9.261	31
444			min	-.004	30	2.134	41	0	40	.036	40	0	40	-3.875	41
445		3	max	0	40	2.414	31	0	30	.162	13	0	40	-10.781	41
446			min	0	30	.038	41	0	40	.074	39	0	30	-23.806	13
447		4	max	0	40	-.265	39	0	30	-.035	40	0	40	-3.286	41
448			min	0	30	-3.05	33	0	40	-.076	13	0	30	-24.314	31
449		5	max	.012	40	-1.458	39	0	40	-.397	40	0	40	19.807	33
450			min	-.012	30	-4.92	33	0	30	-.857	13	0	30	-13.444	39
451	M177	1	max	0	11	2.438	32	0	11	-.005	39	0	31	21.94	32
452			min	0	11	-.346	38	0	11	-.021	33	0	34	-17.05	38
453		2	max	0	11	1.661	32	0	11	-.005	39	0	31	8.281	40
454			min	0	11	-.864	38	0	11	-.021	33	0	34	-13.574	30
455		3	max	0	11	.979	40	0	11	-.005	39	0	40	-.538	40
456			min	0	11	-1.451	30	0	11	-.021	33	0	30	-5.697	30
457		4	max	0	11	.461	40	0	11	-.005	39	0	34	7.098	30
458			min	0	11	-2.141	30	0	11	-.021	33	0	31	-5.668	40
459		5	max	0	11	-.057	40	0	11	-.005	39	0	34	24.812	30
460			min	0	11	-2.831	30	0	11	-.021	33	0	31	-7.108	40
461	M178	1	max	0	11	1.663	32	0	11	0	39	0	31	8.398	32
462			min	0	11	.412	38	0	11	-.008	33	0	34	-5.673	38
463		2	max	0	11	.886	32	0	11	0	39	0	31	.816	40
464			min	0	11	-.106	38	0	11	-.008	33	0	34	-7.772	30
465		3	max	0	11	.211	40	0	11	0	39	0	34	-2.531	40
466			min	0	11	-.694	30	0	11	-.008	33	0	31	-5.91	13
467		4	max	0	11	-.307	40	0	11	0	39	0	34	2.125	38
468			min	0	11	-1.385	30	0	11	-.008	33	0	31	-2.225	32
469		5	max	0	11	-.825	40	0	11	0	39	0	34	14.45	30
470			min	0	11	-2.179	13	0	11	-.008	33	0	31	1.843	40
471	M179	1	max	0	11	2.698	32	0	11	.008	13	0	31	14.162	32
472			min	0	11	.543	38	0	11	.003	39	0	34	-9.039	38
473		2	max	0	11	1.487	32	0	11	.008	13	0	31	1.585	40
474			min	0	11	-.235	38	0	11	.003	39	0	34	-11.61	30
475		3	max	0	11	.43	40	0	11	.008	13	0	38	-4.252	40
476			min	0	11	-1.116	30	0	11	.003	39	0	32	-9.436	13
477		4	max	0	11	-.348	40	0	11	.008	13	0	34	4.293	38
478			min	0	11	-2.153	30	0	11	.003	39	0	31	-4.677	32
479		5	max	0	11	-1.126	40	0	11	.008	13	0	34	23.322	30
480			min	0	11	-3.493	13	0	11	.003	39	0	31	.704	40
481	M180	1	max	.051	38	24.379	13	0	40	.067	30	0	30	149.148	13
482			min	-.051	32	11.155	41	0	30	-.005	40	0	40	61.84	41
483		2	max	0	11	17.981	13	0	40	.295	13	0	40	1.537	39
484			min	0	11	7.93	41	0	30	.135	40	0	30	-11.542	33
485		3	max	0	11	4.98	13	0	11	-.137	39	0	40	-39.571	41
486			min	0	11	1.542	41	0	11	-.298	13	0	30	-83.241	13
487		4	max	0	11	-2.968	39	0	30	-.004	41	0	40	-30.045	41
488			min	0	11	-7.935	13	0	40	-.01	13	0	30	-77.324	13
489		5	max	.051	32	-6.19	39	0	40	.004	40	0	40	20.627	33
490			min	-.051	38	-14.322	13	0	30	-.03	13	0	30	-11.48	39
491	M181	1	max	.033	30	24.342	13	0	40	-.033	38	0	30	146.269	13
492			min	-.033	40	11.096	41	0	30	-.138	13	0	40	59.874	41
493		2	max	0	38	17.868	13	0	30	-.052	38	0	30	.634	39

RISA TECHNOLOGIES

Company :
Designer :
Job Number :
Model Name :

Feb 27, 2015

Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
494			min	0	32	7.831	41	0	40	-.114	13	0	40	-13.683	33
495		3	max	0	40	5.46	13	0	11	.073	13	0	40	-42.13	41
496			min	0	30	1.706	41	0	11	.032	39	0	30	-88.938	13
497		4	max	0	40	-3.175	39	0	30	.037	13	0	40	-31.48	41
498			min	0	30	-8.5	13	0	40	.017	38	0	30	-81.57	13
499		5	max	.033	40	-6.443	39	0	40	.118	13	0	40	21.898	33
500			min	-.033	30	-14.982	13	0	30	.038	38	0	30	-12.403	39

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code ...	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M1	W21x50	.784	34.25	12	.054	34.25	y	12	192.374	661.5	45.75	90.393	1.418	H1-1b
2	M2	W21x62	.678	0	12	.114	0	y	12	519.114	823.5	81.375	163.484	1.264	H1-1b
3	M3	W21x57	.882	34.25	12	.092	29.6...	y	12	584.282	751.5	55.5	109.748	1.282	H1-1b
4	M4	W8x40	.349	4.25	12	.045	2.125	y	30	503.173	526.5	69.375	149.25	1.813	H1-1b
5	M5	W8x40	.369	4.25	12	.159	2.125	y	12	503.173	526.5	69.375	149.25	2.11	H1-1b
6	M6	W8x40	.781	4.25	12	.405	2.125	y	12	503.173	526.5	69.375	149.25	2.165	H1-1b
7	M7	W8x40	.947	4.25	12	.090	2.125	z	12	503.173	526.5	69.375	149.25	2.149	H1-1b
8	M8	W8x40	.821	4.25	12	.076	2.125	z	12	503.173	526.5	69.375	149.25	1.659	H1-1b
9	M9	W8x40	.863	4.25	12	.299	2.125	y	12	503.173	526.5	69.375	149.25	1.971	H1-1b
10	M14	W21x44	.641	12.43	12	.061	29.8...	y	12	106.04	585	38.215	129.714	1	H1-1b
11	M15	W21x44	.451	12.43	12	.034	29.8...	y	12	106.04	585	38.215	129.714	1	H1-1b
12	M16	W21x62	.711	13.7...	12	.081	0	y	12	312.139	823.5	81.375	352.349	1	H1-1b
13	M17	W21x62	.700	13.7...	12	.079	0	y	12	312.139	823.5	81.375	352.349	1	H1-1b
14	M117C	W8x40	.568	14	31	.070	7	y	32	266.051	379.08	49.95	107.46	2.258	H1-1b
15	M118A	W8x40	.581	0	33	.061	7	y	32	266.051	379.08	49.95	102.07	1.015	H1-1a
16	M119A	W8x40	.699	14	31	.073	7	y	32	266.051	379.08	49.95	107.46	2.241	H1-1a
17	M120B	W8x40	.705	14	33	.057	7	y	30	266.051	379.08	49.95	107.46	2.231	H1-1a
18	M121B	W8x31	.618	0	31	.070	7	y	30	205.218	295.812	38.07	82.08	2.196	H1-1b
19	M122	W8x31	.657	0	33	.055	7	y	30	205.218	295.812	38.07	82.08	2.204	H1-1a
20	M123A	W8x40	.524	0	33	.040	7	y	32	266.051	379.08	49.95	107.46	2.266	H1-1b
21	M124	W8x40	.543	0	33	.040	7	y	30	266.051	379.08	49.95	107.46	2.239	H1-1b
22	M125	W8x40	.548	14	33	.041	7	y	30	266.051	379.08	49.95	107.46	1.939	H1-1b
23	M126	W16x40	.202	0	32	.027	0	y	32	37.367	382.32	34.29	140.736	2.523	H1-1b
24	M127	W16x40	.184	0	32	.029	0	y	32	50.944	382.32	34.29	150.907	2.221	H1-1b
25	M128	W16x40	.648	34.25	13	.110	34.25	y	13	38.65	382.32	34.29	130.76	2.295	H1-1b
26	M129	W16x40	.520	33.83	13	.099	33.83	y	13	39.616	382.32	34.29	117.601	2.033	H1-1b
27	M130	W16x40	.188	29.8...	32	.035	29.8...	y	32	50.944	382.32	34.29	142.223	2.093	H1-1b
28	M131	W16x40	.159	34.8...	32	.033	34.8...	y	13	37.367	382.32	34.29	144.794	2.596	H1-1b
29	M132	W21x62	.483	0	13	.123	0	y	13	78.821	592.92	58.59	309.305	2.353	H1-1b
30	M133	W21x62	.408	0	13	.083	0	y	13	76.9	592.92	58.59	295.971	2.289	H1-1b
31	M134	W21x62	.641	34.25	13	.132	34.25	y	13	76.9	592.92	58.59	256.211	1.982	H1-1b
32	M135	W21x62	.427	33.83	13	.122	33.83	y	13	78.821	592.92	58.59	340.858	2.593	H1-1b
33	M136	W16x40	.205	0	32	.040	0	y	13	37.367	382.32	34.29	135.399	2.427	H1-1b
34	M137	W16x40	.215	0	32	.041	0	y	32	50.944	382.32	34.29	155.329	2.286	H1-1b
35	M166	W8x31	.626	14	33	.025	7	y	30	205.218	295.812	38.07	82.08	2.267	H1-1b
36	M167	W8x31	.658	14	33	.026	7	y	30	205.218	295.812	38.07	82.08	2.258	H1-1b
37	M168	W8x31	.541	0	33	.028	7	y	30	205.218	295.812	38.07	82.08	1.694	H1-1b
38	M169	W16x40	.113	29.8...	32	.022	29.8...	y	32	50.944	382.32	34.29	140.759	2.072	H1-1b
39	M170	W16x40	.099	0	13	.021	0	y	13	37.367	382.32	34.29	131.484	2.357	H1-1b
40	M171	W8x40	.543	14	31	.053	7	y	32	266.051	379.08	49.95	107.46	2.232	H1-1b

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Envelope AISC 13th(360-05): LRFD Steel Code Checks (Continued)

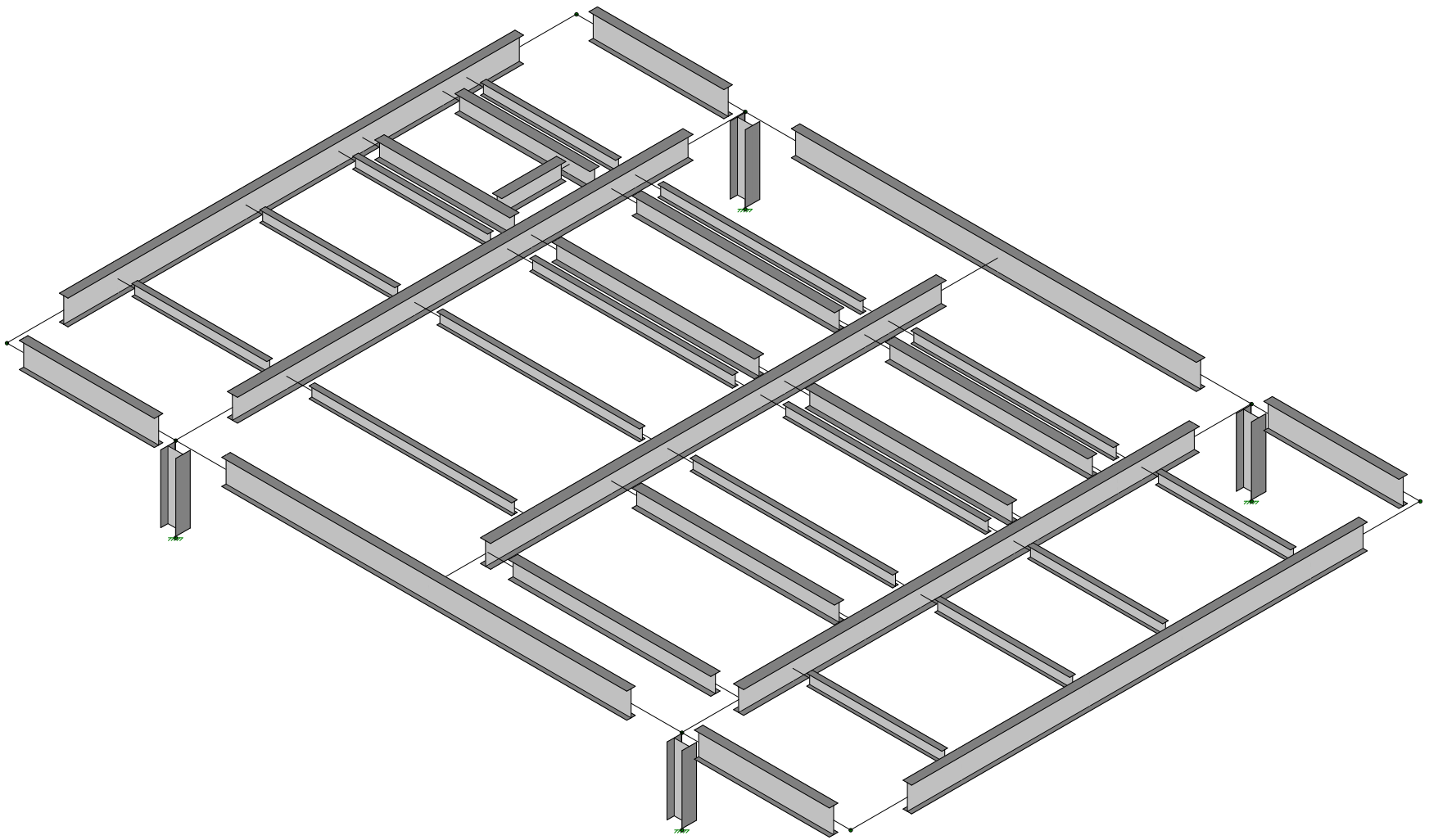
	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z [...	Cb	Eqn
41	M172	W8x31	.576	14	33	.044	7	y	32	205.218	295.812	38.07	82.08	2.201	H1-1b
42	M173	W8x31	.502	14	33	.027	7	y	32	205.218	295.812	38.07	82.08	2.244	H1-1b
43	M174	W16x40	.756	33.83	13	.107	33.83	y	13	39.616	382.32	34.29	92.925	1.606	H1-1b
44	M175	W16x40	.581	0	13	.202	3.938	y	13	53.604	382.32	34.29	179.742	2.559	H1-1b
45	M176	W16x40	.610	0	13	.217	3.938	y	13	53.604	382.32	34.29	159.157	2.266	H1-1b
46	M177	W16x40	.166	28.5	30	.027	28.5	y	30	55.819	382.32	34.29	152.388	2.112	H1-1b
47	M178	W16x40	.097	28.5	30	.021	28.5	y	13	55.819	382.32	34.29	149.882	2.077	H1-1b
48	M179	W16x40	.152	28.5	30	.033	28.5	y	13	55.819	382.32	34.29	155.305	2.153	H1-1b
49	M180	W21x62	.485	0	13	.137	3.938	y	13	106.651	592.92	58.59	313.616	1.939	H1-1b
50	M181	W21x62	.513	0	13	.142	3.938	y	13	106.651	592.92	58.59	296.622	1.834	H1-1b

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RTU #3 Calculations

RTU #3 is located on an existing mechanical platform that previously supported four chillers. The capacity of the existing platform for the new gravity loads was checked with the new units and no strengthening is required.

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RTU#3-2

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Structural Design Group

RTU #3

10,000lb / (32.5' × 4.75') = 65 psf

Chiller

7500lb / (8.5' × 7') = 127 psf

Live Load - 40psf

Middle Girder Reduced $K_{LL}A_T = 2(15 \times 33.75) = 1012.5 ft^2 > 400$

$L = 40\left(.25 + \frac{15}{\sqrt{1012.5}}\right) = 29 psf$

Edge Girder Reduced $K_{LL}A_T = 2(12.5 \times 33.75) = 843.75 ft^2 > 400$

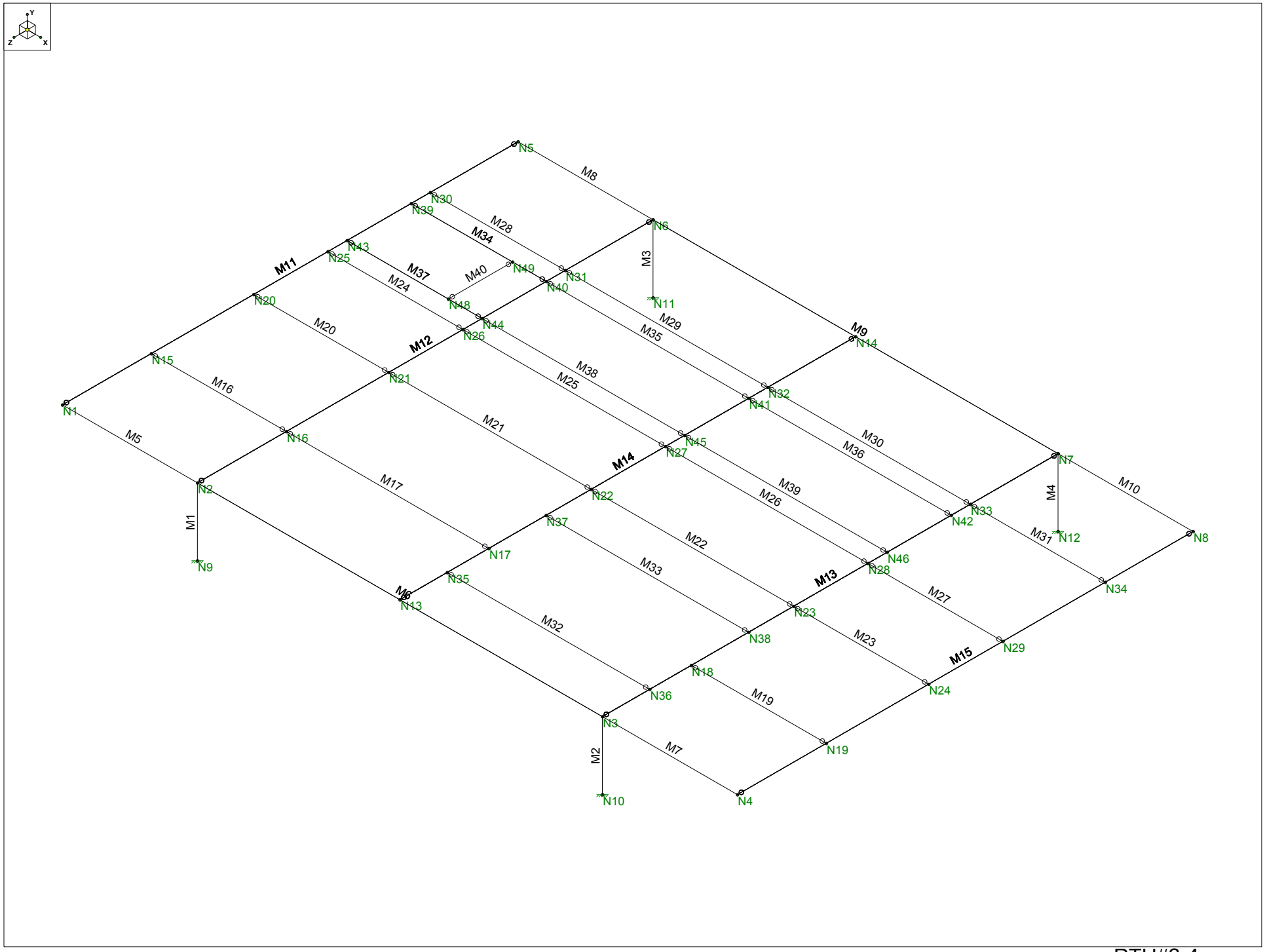
$L = 31 psf$

Grating Planks specified to be attached at each support

Project _____ Project No. _____

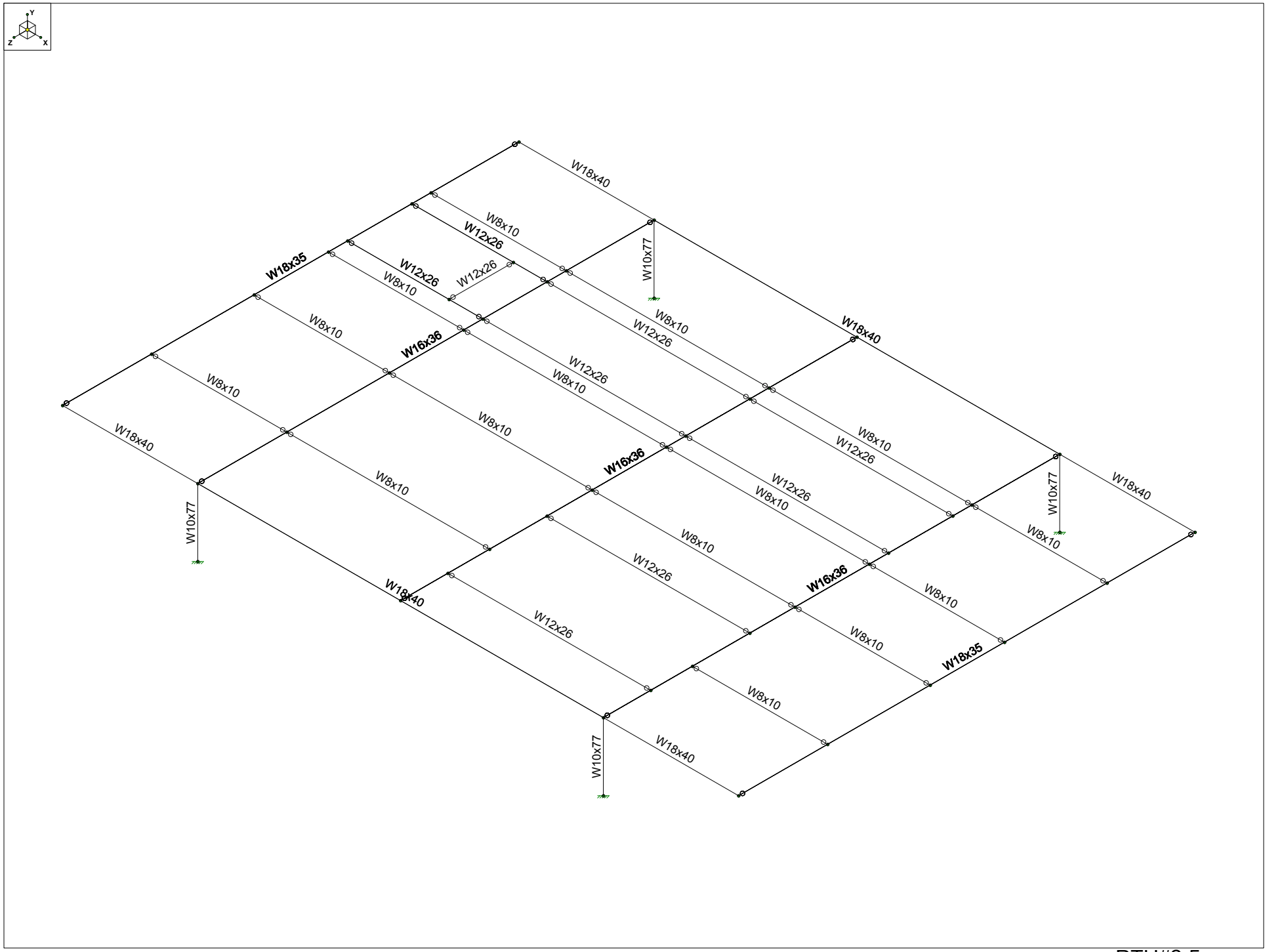
By _____ Date _____ Sheet RTU#3-3 of _____

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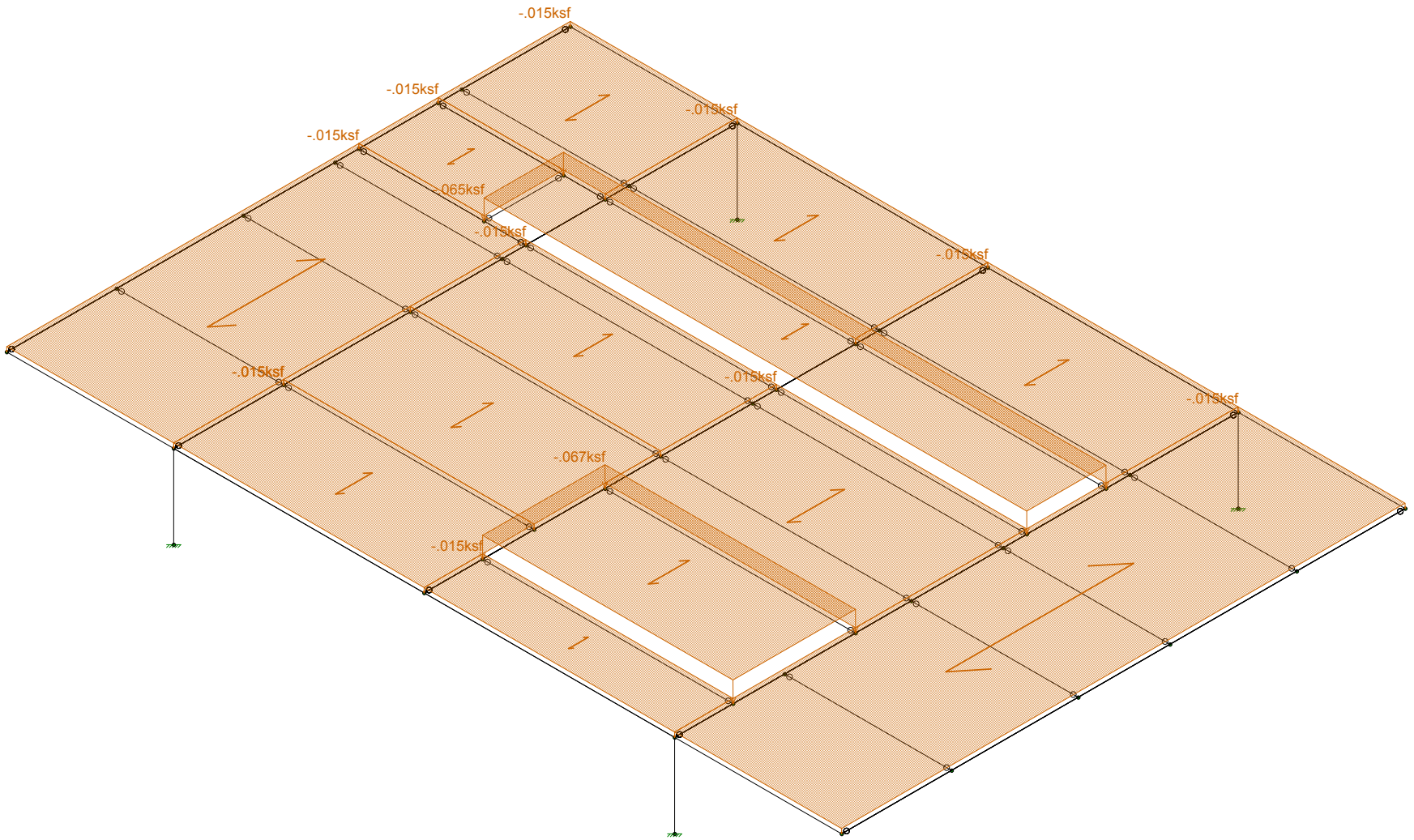


RTU#3-4

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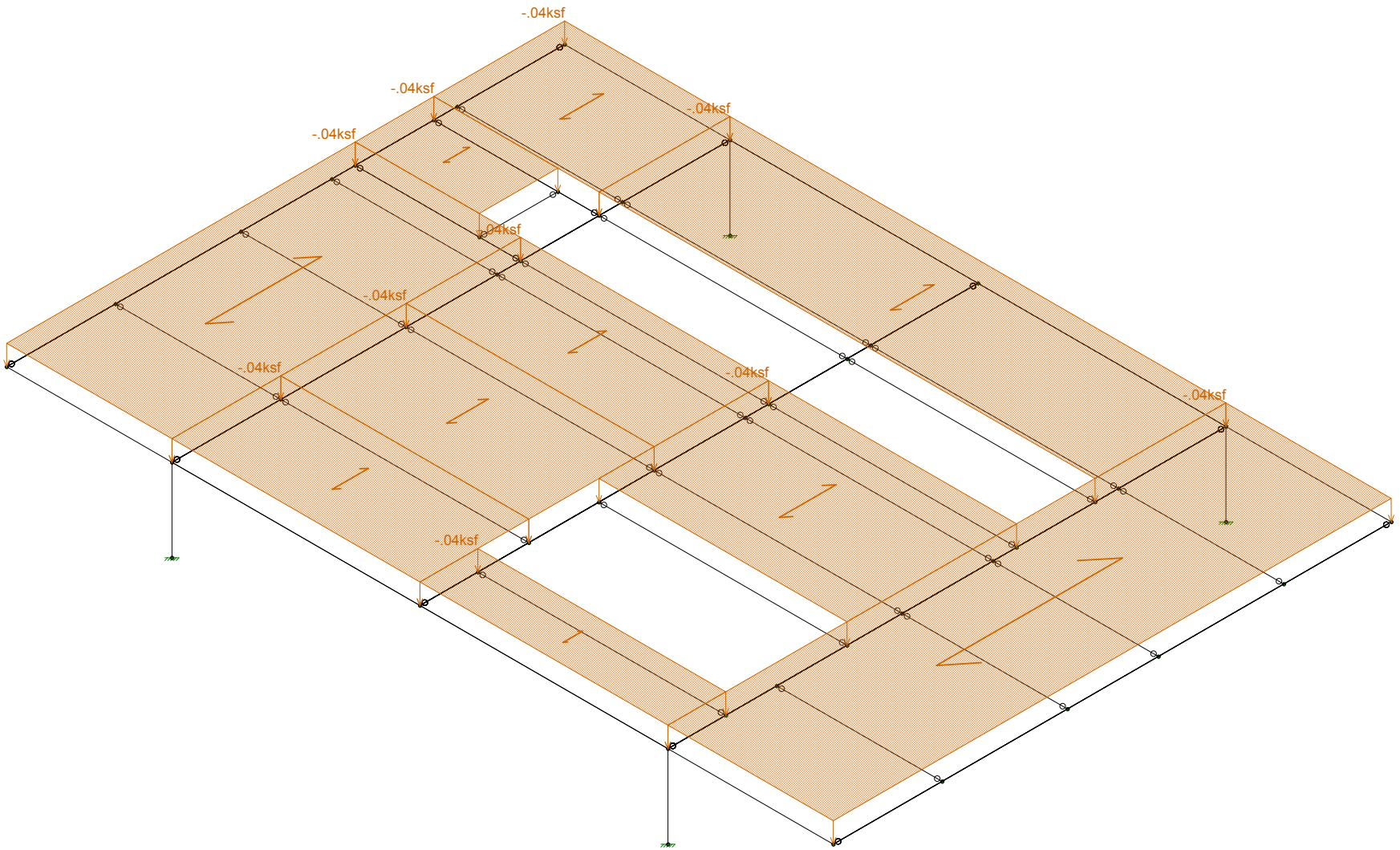
RTU#3-5



Loads: BLC 1, DL

RTU#3-6

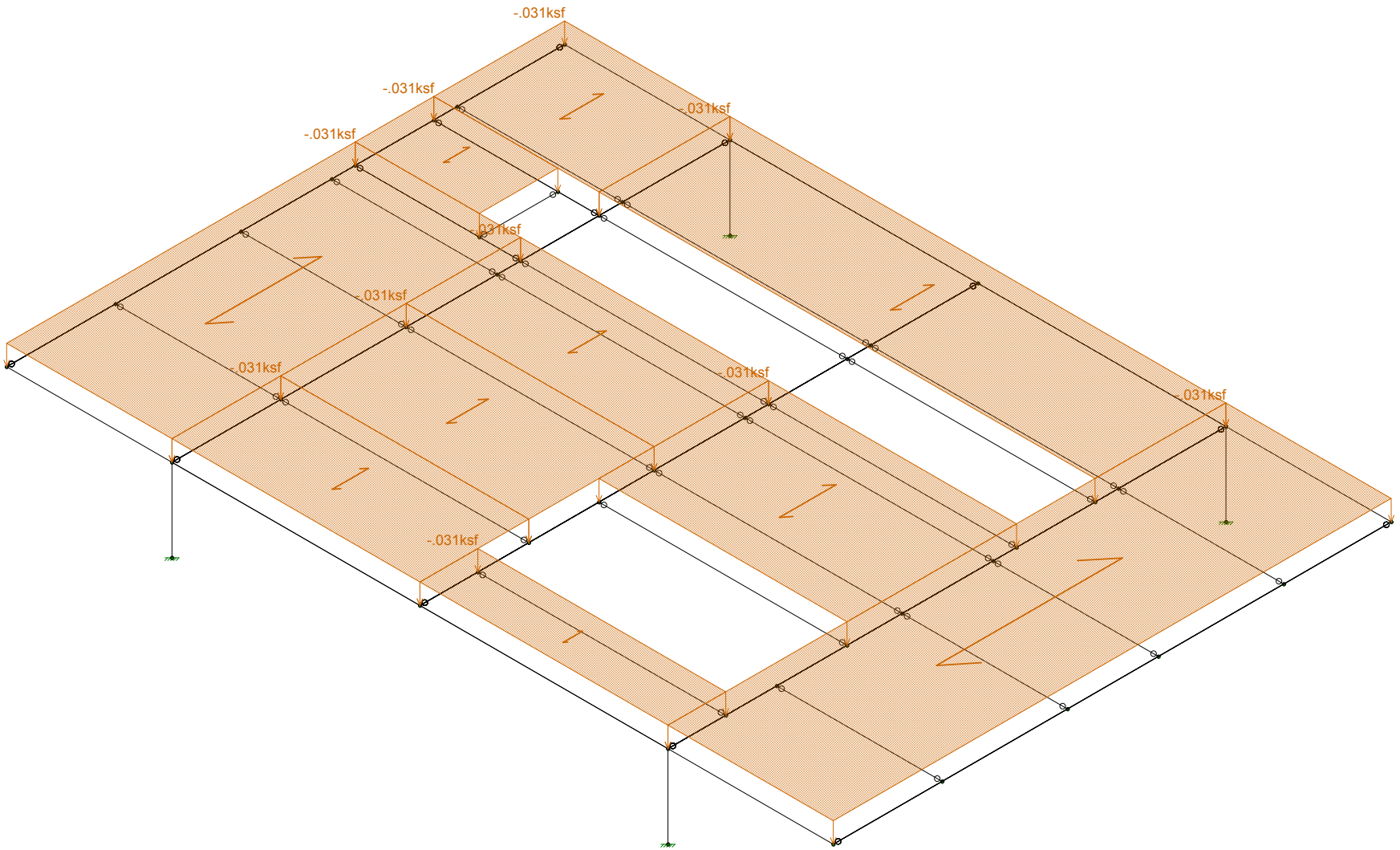
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Loads: BLC 2, 40 psf Live

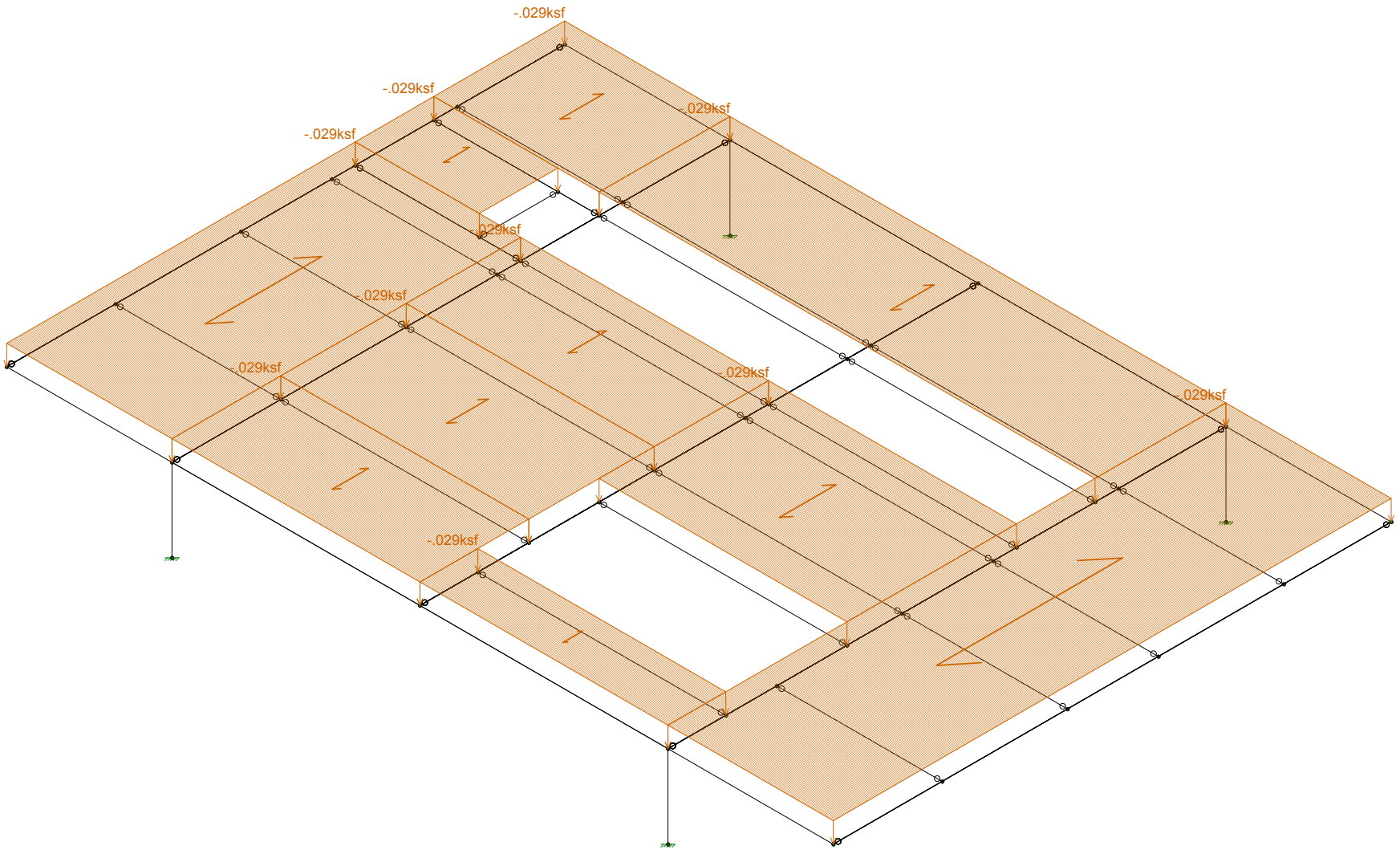
RTU#3-7

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Loads: BLC 3, 31 psf Live

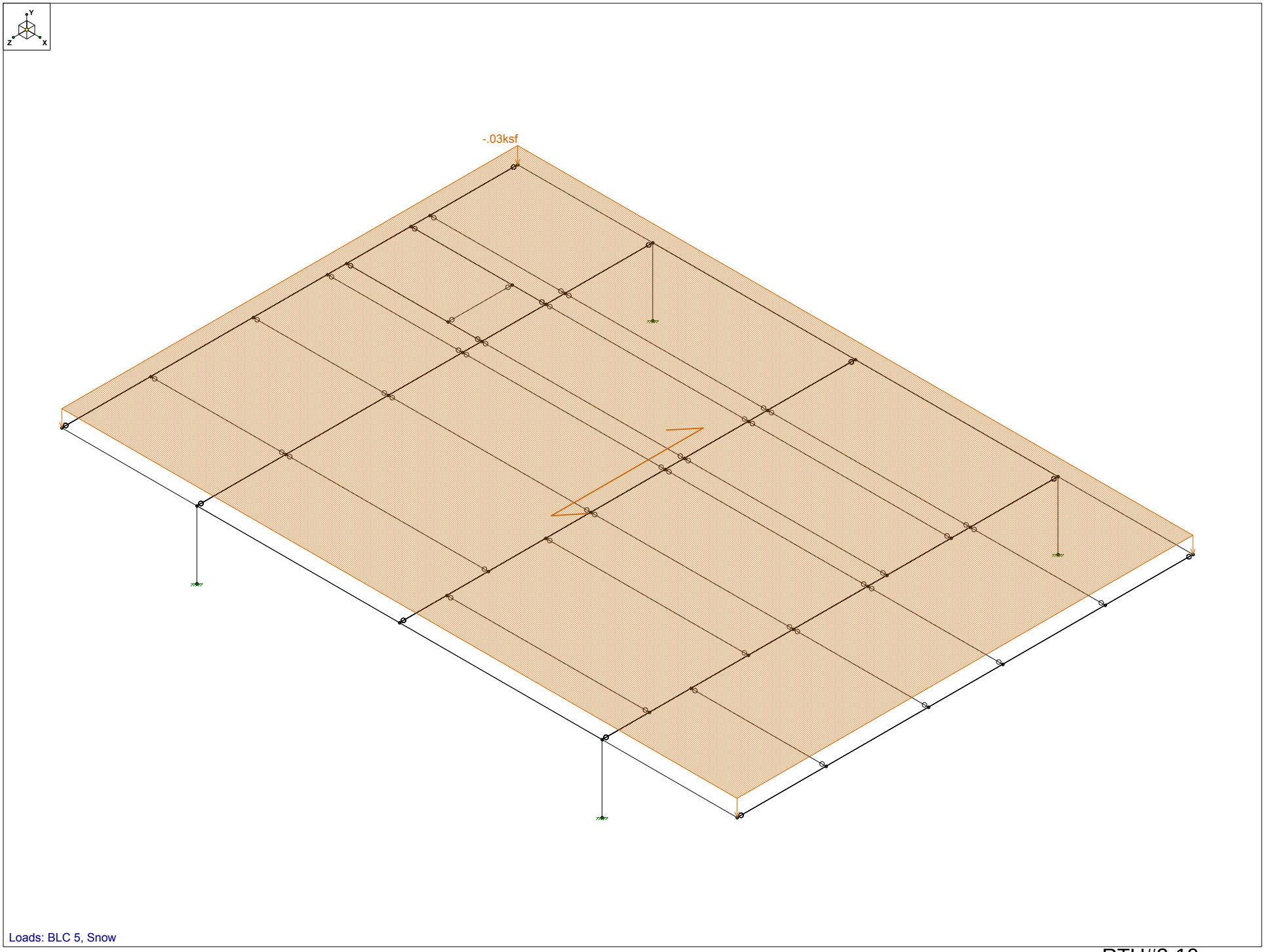
RTU#3-8



Loads: BLC 4, 29 psf Live

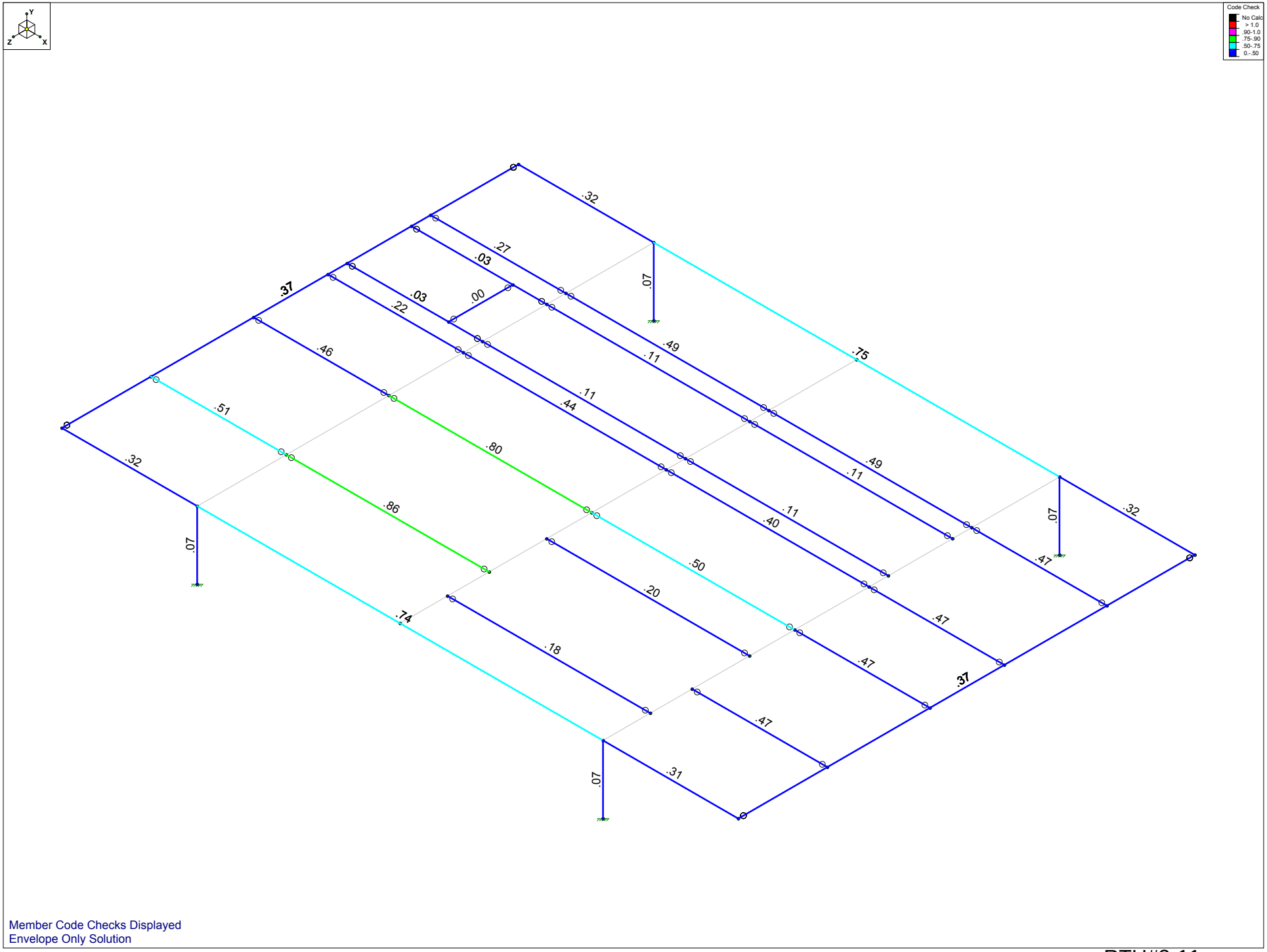
RTU#3-9

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RTU#3-10

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Member Code Checks Displayed
Envelope Only Solution

RTU#3-11

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Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	Yes
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 13th(360-05): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): LRFD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AF&PA NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

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Global, Continued

Seismic Code	ASCE 7-05
Seismic Base Elevation (ft)	0
Add Base Weight?	Yes
Ct Z	.028
Ct X	.028
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	3
R X	3
Ct Exp. Z	.8
Ct Exp. X	.8
SD1	.088
SDS	.233
S1	.055
TL (sec)	4
Occupancy Cat	IV
Om Z	3
Om X	3
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3

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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N9	N2			W10x77	Column	Wide Flange	A992	Typical
2	M2	N10	N3			W10x77	Column	Wide Flange	A992	Typical
3	M3	N11	N6			W10x77	Column	Wide Flange	A992	Typical
4	M4	N12	N7			W10x77	Column	Wide Flange	A992	Typical
5	M5	N1	N2			W18x40	Beam	Wide Flange	A992	Typical
6	M6	N2	N3			W18x40	Beam	Wide Flange	A992	Typical
7	M7	N3	N4			W18x40	Beam	Wide Flange	A992	Typical
8	M8	N5	N6			W18x40	Beam	Wide Flange	A992	Typical
9	M9	N6	N7			W18x40	Beam	Wide Flange	A992	Typical
10	M10	N7	N8			W18x40	Beam	Wide Flange	A992	Typical
11	M11	N1	N5			W18x35	Beam	Wide Flange	A992	Typical
12	M12	N2	N6			W16x36	Beam	Wide Flange	A992	Typical
13	M13	N3	N7			W16x36	Beam	Wide Flange	A992	Typical
14	M14	N13	N14			W16x36	Beam	Wide Flange	A992	Typical
15	M15	N4	N8			W18x35	Beam	Wide Flange	A992	Typical
16	M16	N15	N16			W8x10	Beam	Wide Flange	A992	Typical
17	M17	N16	N17			W8x10	Beam	Wide Flange	A992	Typical
18	M19	N18	N19			W8x10	Beam	Wide Flange	A992	Typical
19	M20	N20	N21			W8x10	Beam	Wide Flange	A992	Typical
20	M21	N21	N22			W8x10	Beam	Wide Flange	A992	Typical
21	M22	N22	N23			W8x10	Beam	Wide Flange	A992	Typical
22	M23	N23	N24			W8x10	Beam	Wide Flange	A992	Typical
23	M24	N25	N26			W8x10	Beam	Wide Flange	A992	Typical
24	M25	N26	N27			W8x10	Beam	Wide Flange	A992	Typical
25	M26	N27	N28			W8x10	Beam	Wide Flange	A992	Typical
26	M27	N28	N29			W8x10	Beam	Wide Flange	A992	Typical
27	M28	N30	N31			W8x10	Beam	Wide Flange	A992	Typical
28	M29	N31	N32			W8x10	Beam	Wide Flange	A992	Typical
29	M30	N32	N33			W8x10	Beam	Wide Flange	A992	Typical
30	M31	N33	N34			W8x10	Beam	Wide Flange	A992	Typical
31	M32	N35	N36			W12x26	Beam	Wide Flange	A992	Typical
32	M33	N37	N38			W12x26	Beam	Wide Flange	A992	Typical
33	M34	N39	N40			W12x26	Beam	Wide Flange	A992	Typical
34	M35	N40	N41			W12x26	Beam	Wide Flange	A992	Typical
35	M36	N41	N42			W12x26	Beam	Wide Flange	A992	Typical
36	M37	N43	N44			W12x26	Beam	Wide Flange	A992	Typical
37	M38	N44	N45			W12x26	Beam	Wide Flange	A992	Typical
38	M39	N45	N46			W12x26	Beam	Wide Flange	A992	Typical
39	M40	N48	N49			W12x26	Beam	Wide Flange	A992	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	0	0	
2	N2	10	0	0	0	
3	N3	40	0	0	0	
4	N4	50	0	0	0	
5	N5	0	0	-33.75	0	
6	N6	10	0	-33.75	0	
7	N7	40	0	-33.75	0	
8	N8	50	0	-33.75	0	

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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
9	N9	10	-5	0	0	
10	N10	40	-5	0	0	
11	N11	10	-5	-33.75	0	
12	N12	40	-5	-33.75	0	
13	N13	25	0	0	0	
14	N14	25	0	-33.75	0	
15	N15	0	0	-6.5833	0	
16	N16	10	0	-6.5833	0	
17	N17	25	0	-6.5833	0	
18	N18	40	0	-6.5833	0	
19	N19	50	0	-6.5833	0	
20	N20	0	0	-14.167	0	
21	N21	10	0	-14.167	0	
22	N22	25	0	-14.167	0	
23	N23	40	0	-14.167	0	
24	N24	50	0	-14.167	0	
25	N25	0	0	-19.6667	0	
26	N26	10	0	-19.6667	0	
27	N27	25	0	-19.6667	0	
28	N28	40	0	-19.6667	0	
29	N29	50	0	-19.6667	0	
30	N30	0	0	-27.25	0	
31	N31	10	0	-27.25	0	
32	N32	25	0	-27.25	0	
33	N33	40	0	-27.25	0	
34	N34	50	0	-27.25	0	
35	N35	25	0	-3.5	0	
36	N36	40	0	-3.5	0	
37	N37	25	0	-10.83	0	
38	N38	40	0	-10.83	0	
39	N39	0	0	-25.837	0	
40	N40	10	0	-25.837	0	
41	N41	25	0	-25.837	0	
42	N42	40	0	-25.837	0	
43	N43	0	0	-21.087	0	
44	N44	10	0	-21.087	0	
45	N45	25	0	-21.087	0	
46	N46	40	0	-21.087	0	
47	N48	7.5	0	-21.087	0	
48	N49	7.5	0	-25.837	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
2	N12	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
3	N11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
4	N10	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	

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Member Distributed Loads (BLC 6 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M6	Y	-.049	-.049	8.327e-16	15
2	M17	Y	-.049	-.049	3.497e-15	15
3	M6	Y	-.026	-.026	15	30
4	M32	Y	-.026	-.026	7.022e-15	15
5	M7	Y	-.045	-.045	4.996e-16	10
6	M10	Y	-.045	-.045	9.603e-15	10
7	M19	Y	-.104	-.104	2.442e-15	10
8	M23	Y	-.104	-.104	1.876e-14	10
9	M27	Y	-.104	-.104	2.809e-14	10
10	M31	Y	-.104	-.104	3.292e-14	10
11	M8	Y	-.047	-.047	2.165e-15	10
12	M28	Y	-.059	-.059	0	10
13	M34	Y	-.012	-.012	2.276e-15	10
14	M34	Y	-.036	-.036	3.553e-15	7.5
15	M37	Y	-.036	-.036	9.159e-16	7.5
16	M5	Y	-.043	-.043	4.996e-16	10
17	M16	Y	-.115	-.115	4.441e-16	10
18	M20	Y	-.101	-.101	0	10
19	M24	Y	-.043	-.043	8.882e-16	10
20	M37	Y	-.014	-.014	8.327e-16	10
21	M21	Y	-.042	-.042	1.016e-14	15
22	M25	Y	-.052	-.052	4.496e-15	15
23	M38	Y	-.01	-.01	6.106e-16	15
24	M9	Y	-.047	-.047	4.496e-15	15
25	M29	Y	-.059	-.059	1.06e-14	15
26	M35	Y	-.169	-.169	0	15
27	M9	Y	-.047	-.047	15	30
28	M30	Y	-.059	-.059	1.932e-14	15
29	M36	Y	-.012	-.012	5.052e-15	15
30	M22	Y	-.062	-.062	2.22e-15	15
31	M26	Y	-.046	-.046	1.299e-14	15
32	M33	Y	-.031	-.031	3.331e-16	15
33	M39	Y	-.015	-.015	5.218e-15	15
34	M34	Y	-.154	-.154	7.5	9.89
35	M36	Y	-.154	-.154	.184	15
36	M37	Y	-.154	-.154	7.5	9.89
37	M38	Y	-.157	-.157	0	15
38	M39	Y	-.154	-.154	.184	15
39	M32	Y	-.246	-.246	4.718e-15	15
40	M33	Y	-.246	-.246	4.441e-15	15
41	M17	Y	-.057	-.057	5.329e-15	15
42	M21	Y	-.057	-.057	5.329e-15	15

Member Distributed Loads (BLC 7 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M7	Y	-.119	-.119	4.996e-16	10
2	M10	Y	-.119	-.119	9.603e-15	10
3	M19	Y	-.278	-.278	2.442e-15	10
4	M23	Y	-.278	-.278	1.876e-14	10
5	M27	Y	-.278	-.278	2.809e-14	10

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Member Distributed Loads (BLC 7 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
6	M31	Y	-.278	-.278	3.292e-14	10
7	M8	Y	-.127	-.127	2.165e-15	10
8	M28	Y	-.158	-.158	0	10
9	M34	Y	-.032	-.032	2.276e-15	10
10	M34	Y	-.095	-.095	3.553e-15	7.5
11	M37	Y	-.095	-.095	9.159e-16	7.5
12	M9	Y	-.127	-.127	1.216e-14	30
13	M29	Y	-.158	-.158	4.885e-15	15
14	M30	Y	-.158	-.158	1.821e-14	15
15	M35	Y	-.032	-.032	7.161e-15	15
16	M36	Y	-.032	-.032	1.382e-14	15
17	M22	Y	-.164	-.164	2.22e-15	15
18	M26	Y	-.123	-.123	1.299e-14	15
19	M33	Y	-.082	-.082	3.331e-16	15
20	M39	Y	-.041	-.041	5.218e-15	15
21	M5	Y	-.115	-.115	4.996e-16	10
22	M16	Y	-.307	-.307	4.441e-16	10
23	M20	Y	-.268	-.268	0	10
24	M24	Y	-.115	-.115	8.882e-16	10
25	M37	Y	-.038	-.038	8.327e-16	10
26	M6	Y	-.132	-.132	8.327e-16	15
27	M17	Y	-.132	-.132	3.497e-15	15
28	M21	Y	-.111	-.111	1.016e-14	15
29	M25	Y	-.138	-.138	4.496e-15	15
30	M38	Y	-.028	-.028	6.106e-16	15
31	M6	Y	-.07	-.07	15	30
32	M32	Y	-.07	-.07	7.022e-15	15
33	M17	Y	-.152	-.152	3.997e-15	15
34	M21	Y	-.152	-.152	7.105e-15	15

Member Distributed Loads (BLC 8 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M5	Y	-.089	-.089	2.22e-16	10
2	M6	Y	-.089	-.089	4.33e-15	1
3	M6	Y	-.089	-.089	1	2
4	M6	Y	-.089	-.089	2	3
5	M6	Y	-.089	-.089	3	4
6	M6	Y	-.089	-.089	4	5
7	M6	Y	-.089	-.089	5	6
8	M6	Y	-.089	-.089	6	7
9	M6	Y	-.089	-.089	7	8
10	M6	Y	-.089	-.089	8	9
11	M6	Y	-.089	-.089	9	10
12	M6	Y	-.089	-.089	10	11
13	M6	Y	-.089	-.089	11	12
14	M6	Y	-.089	-.089	12	13
15	M6	Y	-.089	-.089	13	14
16	M6	Y	-.089	-.074	14	15
17	M6	Y	-.074	-.06	15	16
18	M6	Y	-.06	-.06	16	17
19	M6	Y	-.06	-.06	17	18

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Member Distributed Loads (BLC 8 : BLC 5 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
20	M6	Y	-.06	-.06	18	19
21	M6	Y	-.06	-.06	19	20
22	M6	Y	-.06	-.06	20	21
23	M6	Y	-.06	-.06	21	22
24	M6	Y	-.06	-.06	22	23
25	M6	Y	-.06	-.06	23	24
26	M6	Y	-.06	-.06	24	25
27	M6	Y	-.06	-.06	25	26
28	M6	Y	-.06	-.06	26	27
29	M6	Y	-.06	-.06	27	28
30	M6	Y	-.06	-.06	28	29
31	M6	Y	-.06	-.06	29	30
32	M7	Y	-.089	-.089	0	10
33	M8	Y	-.089	-.089	1.887e-15	10
34	M9	Y	-.089	-.089	1.221e-14	30
35	M10	Y	-.089	-.089	8.826e-15	10
36	M16	Y	-.208	-.208	1.776e-15	10
37	M17	Y	-.208	-.208	1.221e-15	15
38	M19	Y	-.208	-.208	6.217e-15	10
39	M20	Y	-.208	-.208	1.443e-15	10
40	M21	Y	-.208	-.208	3.553e-15	15
41	M22	Y	-.119	-.119	1.099e-14	15
42	M23	Y	-.208	-.208	0	10
43	M24	Y	-.119	-.119	1.665e-16	10
44	M25	Y	-.119	-.119	6.661e-15	15
45	M26	Y	-.119	-.119	2.831e-15	15
46	M27	Y	-.208	-.208	2.409e-14	10
47	M28	Y	-.119	-.119	7.216e-16	10
48	M29	Y	-.119	-.119	2.276e-15	15
49	M30	Y	-.119	-.119	1.266e-14	15
50	M31	Y	-.208	-.208	3.292e-14	10
51	M32	Y	-.149	-.149	0	15
52	M33	Y	-.179	-.179	4.496e-15	15
53	M34	Y	-.089	-.089	7.772e-16	10
54	M35	Y	-.089	-.089	3.83e-15	15
55	M36	Y	-.089	-.089	2.098e-14	15
56	M37	Y	-.089	-.089	2.22e-16	10
57	M38	Y	-.089	-.089	2.054e-15	15
58	M39	Y	-.089	-.089	4.718e-15	15

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut..	Area(Me..	Surface(...
1	DL	DL		-1					13	
2	40 psf Live	LL							10	
3	31 psf Live	LL							10	
4	29 psf Live	LL							10	
5	Snow	SL							1	
6	BLC 1 Transient A...	None						42		
7	BLC 2 Transient A...	None						34		
8	BLC 5 Transient A...	None						58		

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Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		DL	1														
2	40LL		Y		2	1														
3	31LL		Y		3	1														
4	25LL		Y		4	1														
5	S		Y		SL	1														
6	D+40LL		Y		DL	1	2	1												
7	D+31LL		Y		DL	1	3	1												
8	D+25LL		Y		DL	1	4	1												
9	D+S		Y		DL	1	SL	1												
10	IBC 16-1	Yes	Y		DL	1.4														
11	IBC 16-2 (a)(a)	Yes	Y		DL	1.2	2	1.6												
12	IBC 16-2 (a)(b)		Y		DL	1.2	3	1.6												
13	IBC 16-2 (a)(c)		Y		DL	1.2	4	1.6												
14	IBC 16-2 (b)(a)	Yes	Y		DL	1.2	2	1.6	SL	.5										
15	IBC 16-2 (b)(b)		Y		DL	1.2	3	1.6	SL	.5										
16	IBC 16-2 (b)(c)		Y		DL	1.2	4	1.6	SL	.5										
17	IBC 16-2 (c)(a)	Yes	Y		DL	1.2	SL	1.6	2	.5										
18	IBC 16-2 (c)(b)		Y		DL	1.2	SL	1.6	3	.5										
19	IBC 16-2 (c)(c)		Y		DL	1.2	SL	1.6	4	.5										
20	IBC 16-8		Y		DL	1														
21	IBC 16-9 (a)		Y		DL	1	2	1												
22	IBC 16-9 (b)		Y		DL	1	3	1												
23	IBC 16-9 (c)		Y		DL	1	4	1												
24	IBC 16-10 (b)		Y		DL	1	SL	1												
25	IBC 16-11 (a)		Y		DL	1	2	.75	SL	.75										
26	IBC 16-11 (b)		Y		DL	1	3	.75	SL	.75										
27	IBC 16-11 (c)		Y		DL	1	4	.75	SL	.75										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N9	max	4.542	17	45.667	14	0	10	0	14	0	14	-1.403	11
2		min	2.213	11	17.807	10	0	14	0	10	0	10	-3.512	17
3	N12	max	-2.262	11	45.456	14	0	14	0	14	0	14	3.114	17
4		min	-4.369	17	19.184	10	0	10	0	10	0	10	1.452	11
5	N11	max	4.369	17	45.983	14	0	14	0	14	0	14	-2.386	11
6		min	2.262	11	19.58	10	0	10	0	10	0	10	-4.297	17
7	N10	max	-2.213	11	45.502	14	0	14	0	14	0	14	4.195	17
8		min	-4.542	17	20.677	10	0	10	0	10	0	10	2.353	11
9	Totals:	max	0	11	182.608	14	0	14						
10		min	0	10	77.248	10	0	10						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M1	1	max	45.667	14	-2.212	11	0	10	0	10	0	10	-1.403	11
2			min	17.807	10	-4.539	17	0	10	0	10	0	10	-3.512	17
3		2	max	45.551	14	-2.212	11	0	10	0	10	0	10	2.162	17
4			min	17.672	10	-4.539	17	0	10	0	10	0	10	1.362	11
5		3	max	45.435	14	-2.212	11	0	10	0	10	0	10	7.836	17

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
6			min	17.537	10	-4.539	17	0	10	0	10	0	10	4.127	11
7		4	max	45.319	14	-2.212	11	0	10	0	10	0	10	13.511	17
8			min	17.401	10	-4.539	17	0	10	0	10	0	10	6.892	11
9		5	max	45.203	14	-2.212	11	0	10	0	10	0	10	19.185	17
10			min	17.266	10	-4.539	17	0	10	0	10	0	10	9.657	11
11	M2	1	max	45.502	14	4.54	17	0	10	0	10	0	10	4.195	17
12			min	20.677	10	2.213	11	0	10	0	10	0	10	2.353	11
13		2	max	45.386	14	4.54	17	0	10	0	10	0	10	-.414	11
14			min	20.541	10	2.213	11	0	10	0	10	0	10	-1.715	10
15		3	max	45.27	14	4.54	17	0	10	0	10	0	10	-3.18	11
16			min	20.406	10	2.213	11	0	10	0	10	0	10	-7.156	17
17		4	max	45.155	14	4.54	17	0	10	0	10	0	10	-5.947	11
18			min	20.271	10	2.213	11	0	10	0	10	0	10	-12.831	17
19		5	max	45.039	14	4.54	17	0	10	0	10	0	10	-8.713	11
20			min	20.136	10	2.213	11	0	10	0	10	0	10	-18.506	17
21	M3	1	max	45.983	14	-2.262	11	0	10	0	10	0	10	-2.386	11
22			min	19.58	10	-4.368	17	0	10	0	10	0	10	-4.297	17
23		2	max	45.867	14	-2.262	11	0	10	0	10	0	10	1.163	17
24			min	19.445	10	-4.368	17	0	10	0	10	0	10	.442	11
25		3	max	45.751	14	-2.262	11	0	10	0	10	0	10	6.623	17
26			min	19.31	10	-4.368	17	0	10	0	10	0	10	3.269	11
27		4	max	45.635	14	-2.262	11	0	10	0	10	0	10	12.083	17
28			min	19.175	10	-4.368	17	0	10	0	10	0	10	6.097	11
29		5	max	45.519	14	-2.262	11	0	10	0	10	0	10	17.543	17
30			min	19.04	10	-4.368	17	0	10	0	10	0	10	8.924	11
31	M4	1	max	45.456	14	4.366	17	0	10	0	10	0	10	3.114	17
32			min	19.184	10	2.261	11	0	10	0	10	0	10	1.452	11
33		2	max	45.34	14	4.366	17	0	10	0	10	0	10	-1.374	11
34			min	19.049	10	2.261	11	0	10	0	10	0	10	-2.344	17
35		3	max	45.225	14	4.366	17	0	10	0	10	0	10	-4.2	11
36			min	18.914	10	2.261	11	0	10	0	10	0	10	-7.801	17
37		4	max	45.109	14	4.366	17	0	10	0	10	0	10	-7.025	11
38			min	18.778	10	2.261	11	0	10	0	10	0	10	-13.259	17
39		5	max	44.993	14	4.366	17	0	10	0	10	0	10	-9.851	11
40			min	18.643	10	2.261	11	0	10	0	10	0	10	-18.717	17
41	M5	1	max	-.001	11	-2.597	10	0	10	0	10	0	10	0	10
42			min	-.003	17	-7.725	14	0	10	0	10	0	10	0	11
43		2	max	-.001	11	-2.889	10	0	10	0	10	0	10	20.339	14
44			min	-.003	17	-8.546	14	0	10	0	10	0	10	6.858	10
45		3	max	-.001	11	-3.18	10	0	10	0	10	0	10	42.731	14
46			min	-.003	17	-9.368	14	0	10	0	10	0	10	14.445	10
47		4	max	-.001	11	-3.472	10	0	10	0	10	0	10	67.178	14
48			min	-.003	17	-10.189	14	0	10	0	10	0	10	22.76	10
49		5	max	-.001	11	-3.763	10	0	10	0	10	0	10	93.679	14
50			min	-.003	17	-11.011	14	0	10	0	10	0	10	31.804	10
51	M6	1	max	4.534	17	16.234	14	0	10	0	10	0	10	105.433	14
52			min	2.21	11	7.386	10	0	10	0	10	0	10	47.837	10
53		2	max	4.534	17	13.546	17	0	10	0	10	0	10	-4.034	10
54			min	2.21	11	6.446	10	0	10	0	10	0	10	-6.808	17
55		3	max	4.534	17	-5.661	10	0	10	0	10	0	10	-48.855	10
56			min	2.21	11	-11.823	17	0	10	0	10	0	10	-99.511	17
57		4	max	4.525	17	-6.358	10	0	10	0	10	0	10	-2.808	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
58			min	2.205	11	-13.41	17	0	10	0	10	0	10	-4.847	17
59		5	max	4.525	17	-7.055	10	0	10	0	10	0	10	103.025	14
60			min	2.205	11	-15.014	14	0	10	0	10	0	10	46.514	10
61	M7	1	max	-.001	11	10.924	14	0	10	0	10	0	10	92.389	14
62			min	-.003	17	3.612	10	0	10	0	10	0	10	30.18	10
63		2	max	-.001	11	10.082	14	0	10	0	10	0	10	66.132	14
64			min	-.003	17	3.315	10	0	10	0	10	0	10	21.522	10
65		3	max	-.001	11	9.239	14	0	10	0	10	0	10	41.981	14
66			min	-.003	17	3.018	10	0	10	0	10	0	10	13.606	10
67		4	max	-.001	11	8.396	14	0	10	0	10	0	10	19.937	14
68			min	-.003	17	2.721	10	0	10	0	10	0	10	6.432	10
69		5	max	-.001	11	7.554	14	0	10	0	10	0	10	0	10
70			min	-.003	17	2.424	10	0	10	0	10	0	10	0	14
71	M8	1	max	-.002	11	-2.762	10	0	10	0	10	0	10	0	11
72			min	-.003	17	-7.725	14	0	10	0	10	0	10	0	10
73		2	max	-.002	11	-3.068	10	0	10	0	10	0	10	20.414	14
74			min	-.003	17	-8.606	14	0	10	0	10	0	10	7.287	10
75		3	max	-.002	11	-3.375	10	0	10	0	10	0	10	43.031	14
76			min	-.003	17	-9.487	14	0	10	0	10	0	10	15.341	10
77		4	max	-.002	11	-3.682	10	0	10	0	10	0	10	67.85	14
78			min	-.003	17	-10.368	14	0	10	0	10	0	10	24.162	10
79		5	max	-.002	11	-3.988	10	0	10	0	10	0	10	94.872	14
80			min	-.003	17	-11.249	14	0	10	0	10	0	10	33.749	10
81	M9	1	max	4.361	17	16.1	14	0	10	0	10	0	10	105.805	14
82			min	2.258	11	7.284	10	0	10	0	10	0	10	47.871	10
83		2	max	4.361	17	13.457	14	0	10	0	10	0	10	-3.308	10
84			min	2.258	11	6.364	10	0	10	0	10	0	10	-5.766	17
85		3	max	4.361	17	11.091	17	0	10	0	10	0	10	-47.585	10
86			min	2.258	11	5.444	10	0	10	0	10	0	10	-97.708	17
87		4	max	4.361	17	-6.232	10	0	10	0	10	0	10	-4.299	10
88			min	2.258	11	-13.376	14	0	10	0	10	0	10	-6.539	17
89		5	max	4.361	17	-7.152	10	0	10	0	10	0	10	104.588	14
90			min	2.258	11	-16.019	14	0	10	0	10	0	10	45.888	10
91	M10	1	max	-.001	11	10.958	14	0	10	0	10	0	10	92.729	14
92			min	-.002	17	3.62	10	0	10	0	10	0	10	30.259	10
93		2	max	-.001	11	10.115	14	0	10	0	10	0	10	66.387	14
94			min	-.002	17	3.323	10	0	10	0	10	0	10	21.581	10
95		3	max	-.001	11	9.273	14	0	10	0	10	0	10	42.151	14
96			min	-.002	17	3.026	10	0	10	0	10	0	10	13.645	10
97		4	max	-.001	11	8.43	14	0	10	0	10	0	10	20.022	14
98			min	-.002	17	2.729	10	0	10	0	10	0	10	6.452	10
99		5	max	-.001	11	7.588	14	0	10	0	10	0	10	0	14
100			min	-.002	17	2.432	10	0	10	0	10	0	10	0	10
101	M11	1	max	0	10	7.725	14	.003	17	0	10	0	10	0	10
102			min	0	10	2.597	10	.001	11	0	11	0	10	0	10
103		2	max	0	10	3.644	14	-.001	11	0	10	.012	17	-18.547	10
104			min	0	10	1.308	10	-.003	17	0	11	.006	11	-56.776	14
105		3	max	0	10	.119	10	0	17	0	10	-.001	11	-25.736	10
106			min	0	10	-.043	14	0	11	0	11	-.003	17	-77.006	14
107		4	max	0	10	-1.274	10	.002	17	0	10	.006	17	-20.319	10
108			min	0	10	-3.699	14	0	11	0	11	.003	11	-58.996	14
109		5	max	0	10	-2.762	10	-.002	11	0	10	0	10	0	10

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
110			min	0	10	-7.725	14	-.003	17	0	11	0	10	0	10
111	M15	1	max	0	10	7.554	14	-.001	11	0	14	0	10	0	10
112			min	0	10	2.424	10	-.003	17	0	10	0	10	0	10
113		2	max	0	10	3.768	14	.003	17	0	14	-.006	11	-17.227	10
114			min	0	10	1.21	10	.002	11	0	10	-.013	17	-55.881	14
115		3	max	0	10	-.004	10	0	11	0	14	.004	17	-23.525	10
116			min	0	10	-.017	14	0	17	0	10	.002	11	-76.892	14
117		4	max	0	10	-1.218	10	-.001	11	0	14	-.005	11	-17.227	10
118			min	0	10	-3.802	14	-.002	17	0	10	-.011	17	-55.882	14
119		5	max	0	10	-2.432	10	.002	17	0	14	0	10	0	10
120			min	0	10	-7.588	14	.001	11	0	10	0	10	0	10
121	M16	1	max	.006	17	3.725	14	0	10	.005	14	0	10	0	10
122			min	.003	11	.876	10	0	10	.002	10	0	10	0	10
123		2	max	.006	17	1.863	14	0	10	.005	14	0	10	-1.642	10
124			min	.003	11	.438	10	0	10	.002	10	0	10	-6.985	14
125		3	max	.006	17	0	10	0	10	.005	14	0	10	-2.189	10
126			min	.003	11	0	10	0	10	.002	10	0	10	-9.314	14
127		4	max	.006	17	-.438	10	0	10	.005	14	0	10	-1.642	10
128			min	.003	11	-1.863	14	0	10	.002	10	0	10	-6.985	14
129		5	max	.006	17	-.876	10	0	10	.005	14	0	10	0	10
130			min	.003	11	-3.725	14	0	10	.002	10	0	10	0	10
131	M17	1	max	.015	17	5.229	14	0	10	.001	17	0	10	0	10
132			min	.007	11	1.221	10	0	10	0	11	0	10	0	10
133		2	max	.015	17	2.614	14	0	10	.001	17	0	10	-3.435	10
134			min	.007	11	.611	10	0	10	0	11	0	10	-14.706	14
135		3	max	.015	17	0	10	0	10	.001	17	0	10	-4.58	10
136			min	.007	11	0	10	0	10	0	11	0	10	-19.608	14
137		4	max	.015	17	-.611	10	0	10	.001	17	0	10	-3.435	10
138			min	.007	11	-2.614	14	0	10	0	11	0	10	-14.706	14
139		5	max	.015	17	-1.221	10	0	10	.001	17	0	10	0	10
140			min	.007	11	-5.229	14	0	10	0	11	0	10	0	10
141	M19	1	max	.006	17	3.43	14	0	10	-.002	10	0	10	0	10
142			min	.003	11	.8	10	0	10	-.005	17	0	10	0	10
143		2	max	.006	17	1.715	14	0	10	-.002	10	0	10	-1.5	10
144			min	.003	11	.4	10	0	10	-.005	17	0	10	-6.432	14
145		3	max	.006	17	0	10	0	10	-.002	10	0	10	-2	10
146			min	.003	11	0	10	0	10	-.005	17	0	10	-8.576	14
147		4	max	.006	17	-.4	10	0	10	-.002	10	0	10	-1.5	10
148			min	.003	11	-1.715	14	0	10	-.005	17	0	10	-6.432	14
149		5	max	.006	17	-.8	10	0	10	-.002	10	0	10	0	10
150			min	.003	11	-3.43	14	0	10	-.005	17	0	10	0	10
151	M20	1	max	-.002	11	3.332	14	0	10	.002	17	0	10	0	10
152			min	-.004	17	.775	10	0	10	0	10	0	10	0	10
153		2	max	-.002	11	1.666	14	0	10	.002	17	0	10	-1.453	10
154			min	-.004	17	.388	10	0	10	0	10	0	10	-6.248	14
155		3	max	-.002	11	0	10	0	10	.002	17	0	10	-1.938	10
156			min	-.004	17	0	10	0	10	0	10	0	10	-8.331	14
157		4	max	-.002	11	-.388	10	0	10	.002	17	0	10	-1.453	10
158			min	-.004	17	-1.666	14	0	10	0	10	0	10	-6.248	14
159		5	max	-.002	11	-.775	10	0	10	.002	17	0	10	0	10
160			min	-.004	17	-3.332	14	0	10	0	10	0	10	0	10
161	M21	1	max	-.005	11	4.907	14	0	10	0	17	0	10	0	10

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
162			min	-.011	17	1.139	10	0	10	0	10	0	10	0	10
163		2	max	-.005	11	2.453	14	0	10	0	17	0	10	-3.203	10
164			min	-.011	17	.569	10	0	10	0	10	0	10	-13.8	14
165		3	max	-.005	11	0	10	0	10	0	17	0	10	-4.271	10
166			min	-.011	17	0	10	0	10	0	10	0	10	-18.4	14
167		4	max	-.005	11	-.569	10	0	10	0	17	0	10	-3.203	10
168			min	-.011	17	-2.453	14	0	10	0	10	0	10	-13.8	14
169		5	max	-.005	11	-1.139	10	0	10	0	17	0	10	0	10
170			min	-.011	17	-4.907	14	0	10	0	10	0	10	0	10
171	M22	1	max	-.002	11	3.061	14	0	10	0	10	0	10	0	10
172			min	-.005	17	.752	10	0	10	0	17	0	10	0	10
173		2	max	-.002	11	1.53	14	0	10	0	10	0	10	-2.115	10
174			min	-.005	17	.376	10	0	10	0	17	0	10	-8.608	14
175		3	max	-.002	11	0	10	0	10	0	10	0	10	-2.82	10
176			min	-.005	17	0	10	0	10	0	17	0	10	-11.477	14
177		4	max	-.002	11	-.376	10	0	10	0	10	0	10	-2.115	10
178			min	-.005	17	-1.53	14	0	10	0	17	0	10	-8.608	14
179		5	max	-.002	11	-.752	10	0	10	0	10	0	10	0	10
180			min	-.005	17	-3.061	14	0	10	0	17	0	10	0	10
181	M23	1	max	-.002	11	3.43	14	0	10	0	10	0	10	0	10
182			min	-.004	17	.8	10	0	10	-.001	17	0	10	0	10
183		2	max	-.002	11	1.715	14	0	10	0	10	0	10	-1.5	10
184			min	-.004	17	.4	10	0	10	-.001	17	0	10	-6.432	14
185		3	max	-.002	11	0	10	0	10	0	10	0	10	-2	10
186			min	-.004	17	0	10	0	10	-.001	17	0	10	-8.576	14
187		4	max	-.002	11	-.4	10	0	10	0	10	0	10	-1.5	10
188			min	-.004	17	-1.715	14	0	10	-.001	17	0	10	-6.432	14
189		5	max	-.002	11	-.8	10	0	10	0	10	0	10	0	10
190			min	-.004	17	-3.43	14	0	10	-.001	17	0	10	0	10
191	M24	1	max	.002	17	1.56	17	0	10	0	10	0	10	0	10
192			min	0	11	.372	10	0	10	-.001	14	0	10	0	10
193		2	max	.002	17	.78	17	0	10	0	10	0	10	-.698	10
194			min	0	11	.186	10	0	10	-.001	14	0	10	-2.924	17
195		3	max	.002	17	0	10	0	10	0	10	0	10	-.931	10
196			min	0	11	0	10	0	10	-.001	14	0	10	-3.899	17
197		4	max	.002	17	-.186	10	0	10	0	10	0	10	-.698	10
198			min	0	11	-.78	17	0	10	-.001	14	0	10	-2.924	17
199		5	max	.002	17	-.372	10	0	10	0	10	0	10	0	10
200			min	0	11	-1.56	17	0	10	-.001	14	0	10	0	10
201	M25	1	max	.005	17	2.665	14	0	10	0	11	0	10	0	10
202			min	.002	11	.651	10	0	10	0	17	0	10	0	10
203		2	max	.005	17	1.333	14	0	10	0	11	0	10	-1.83	10
204			min	.002	11	.325	10	0	10	0	17	0	10	-7.496	14
205		3	max	.005	17	0	10	0	10	0	11	0	10	-2.44	10
206			min	.002	11	0	10	0	10	0	17	0	10	-9.995	14
207		4	max	.005	17	-.325	10	0	10	0	11	0	10	-1.83	10
208			min	.002	11	-1.333	14	0	10	0	17	0	10	-7.496	14
209		5	max	.005	17	-.651	10	0	10	0	11	0	10	0	10
210			min	.002	11	-2.665	14	0	10	0	17	0	10	0	10
211	M26	1	max	.001	17	2.43	14	0	10	0	17	0	10	0	10
212			min	0	11	.59	10	0	10	0	10	0	10	0	10
213		2	max	.001	17	1.215	14	0	10	0	17	0	10	-1.661	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 Moment[k...	LC	z-z Moment[k-ft]	LC
214			min	0	11	.295	10	0	10	0	10	0	10	-6.834	14
215		3	max	.001	17	0	10	0	10	0	17	0	10	-2.214	10
216			min	0	11	0	10	0	10	0	10	0	10	-9.112	14
217		4	max	.001	17	-.295	10	0	10	0	17	0	10	-1.661	10
218			min	0	11	-1.215	14	0	10	0	10	0	10	-6.834	14
219		5	max	.001	17	-.59	10	0	10	0	17	0	10	0	10
220			min	0	11	-2.43	14	0	10	0	10	0	10	0	10
221	M27	1	max	-.001	11	3.43	14	0	10	.002	17	0	10	0	10
222			min	-.002	17	.8	10	0	10	0	10	0	10	0	10
223		2	max	-.001	11	1.715	14	0	10	.002	17	0	10	-1.5	10
224			min	-.002	17	.4	10	0	10	0	10	0	10	-6.432	14
225		3	max	-.001	11	0	10	0	10	.002	17	0	10	-2	10
226			min	-.002	17	0	10	0	10	0	10	0	10	-8.576	14
227		4	max	-.001	11	-.4	10	0	10	.002	17	0	10	-1.5	10
228			min	-.002	17	-1.715	14	0	10	0	10	0	10	-6.432	14
229		5	max	-.001	11	-.8	10	0	10	.002	17	0	10	0	10
230			min	-.002	17	-3.43	14	0	10	0	10	0	10	0	10
231	M28	1	max	.011	17	1.98	14	0	10	-.002	10	0	10	0	10
232			min	.006	11	.486	10	0	10	-.005	14	0	10	0	10
233		2	max	.011	17	.99	14	0	10	-.002	10	0	10	-.911	10
234			min	.006	11	.243	10	0	10	-.005	14	0	10	-3.713	14
235		3	max	.011	17	0	10	0	10	-.002	10	0	10	-1.215	10
236			min	.006	11	0	10	0	10	-.005	14	0	10	-4.951	14
237		4	max	.011	17	-.243	10	0	10	-.002	10	0	10	-.911	10
238			min	.006	11	-.99	14	0	10	-.005	14	0	10	-3.713	14
239		5	max	.011	17	-.486	10	0	10	-.002	10	0	10	0	10
240			min	.006	11	-1.98	14	0	10	-.005	14	0	10	0	10
241	M29	1	max	.033	17	2.971	14	0	10	0	11	0	10	0	10
242			min	.017	11	.729	10	0	10	-.001	17	0	10	0	10
243		2	max	.033	17	1.485	14	0	10	0	11	0	10	-2.05	10
244			min	.017	11	.364	10	0	10	-.001	17	0	10	-8.355	14
245		3	max	.033	17	0	10	0	10	0	11	0	10	-2.733	10
246			min	.017	11	0	10	0	10	-.001	17	0	10	-11.14	14
247		4	max	.033	17	-.364	10	0	10	0	11	0	10	-2.05	10
248			min	.017	11	-1.485	14	0	10	-.001	17	0	10	-8.355	14
249		5	max	.033	17	-.729	10	0	10	0	11	0	10	0	10
250			min	.017	11	-2.971	14	0	10	-.001	17	0	10	0	10
251	M30	1	max	.031	17	2.971	14	0	10	.001	17	0	10	0	10
252			min	.016	11	.729	10	0	10	0	10	0	10	0	10
253		2	max	.031	17	1.485	14	0	10	.001	17	0	10	-2.05	10
254			min	.016	11	.364	10	0	10	0	10	0	10	-8.355	14
255		3	max	.031	17	0	10	0	10	.001	17	0	10	-2.733	10
256			min	.016	11	0	10	0	10	0	10	0	10	-11.14	14
257		4	max	.031	17	-.364	10	0	10	.001	17	0	10	-2.05	10
258			min	.016	11	-1.485	14	0	10	0	10	0	10	-8.355	14
259		5	max	.031	17	-.729	10	0	10	.001	17	0	10	0	10
260			min	.016	11	-2.971	14	0	10	0	10	0	10	0	10
261	M31	1	max	.005	17	3.43	14	0	10	.005	17	0	10	0	10
262			min	.002	11	.8	10	0	10	.003	10	0	10	0	10
263		2	max	.005	17	1.715	14	0	10	.005	17	0	10	-1.5	10
264			min	.002	11	.4	10	0	10	.003	10	0	10	-6.432	14
265		3	max	.005	17	0	10	0	10	.005	17	0	10	-2	10

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	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
266			min	.002	11	0	10	0	10	.003	10	0	10	-8.576	14
267		4	max	.005	17	-.4	10	0	10	.005	17	0	10	-1.5	10
268			min	.002	11	-1.715	14	0	10	.003	10	0	10	-6.432	14
269		5	max	.005	17	-.8	10	0	10	.005	17	0	10	0	10
270			min	.002	11	-3.43	14	0	10	.003	10	0	10	0	10
271	M32	1	max	.025	17	4.73	17	0	10	-.005	10	0	10	0	10
272			min	.012	11	3.127	10	0	10	-.009	17	0	10	0	10
273		2	max	.025	17	2.365	17	0	10	-.005	10	0	10	-8.795	10
274			min	.012	11	1.564	10	0	10	-.009	17	0	10	-13.303	17
275		3	max	.025	17	0	10	0	10	-.005	10	0	10	-11.727	10
276			min	.012	11	0	10	0	10	-.009	17	0	10	-17.737	17
277		4	max	.025	17	-1.564	10	0	10	-.005	10	0	10	-8.795	10
278			min	.012	11	-2.365	17	0	10	-.009	17	0	10	-13.303	17
279		5	max	.025	17	-3.127	10	0	10	-.005	10	0	10	0	10
280			min	.012	11	-4.73	17	0	10	-.009	17	0	10	0	10
281	M33	1	max	-.002	11	5.173	17	0	10	-.003	10	0	10	0	10
282			min	-.004	17	3.175	10	0	10	-.005	17	0	10	0	10
283		2	max	-.002	11	2.587	17	0	10	-.003	10	0	10	-8.929	10
284			min	-.004	17	1.587	10	0	10	-.005	17	0	10	-14.549	17
285		3	max	-.002	11	0	10	0	10	-.003	10	0	10	-11.905	10
286			min	-.004	17	0	10	0	10	-.005	17	0	10	-19.399	17
287		4	max	-.002	11	-1.587	10	0	10	-.003	10	0	10	-8.929	10
288			min	-.004	17	-2.587	17	0	10	-.005	17	0	10	-14.549	17
289		5	max	-.002	11	-3.175	10	0	10	-.003	10	0	10	0	10
290			min	-.004	17	-5.173	17	0	10	-.005	17	0	10	0	10
291	M34	1	max	-.003	11	1.691	14	0	10	-.013	10	0	10	0	10
292			min	-.007	17	.587	10	0	10	-.03	14	0	10	0	10
293		2	max	-.003	11	.852	14	0	10	-.013	10	0	10	-1.146	10
294			min	-.007	17	.33	10	0	10	-.03	14	0	10	-3.179	14
295		3	max	-.003	11	.073	10	0	10	-.013	10	0	10	-1.649	10
296			min	-.007	17	.013	14	0	10	-.03	14	0	10	-4.26	14
297		4	max	-.003	11	-.271	10	0	10	-.013	10	0	10	-1.518	10
298			min	-.007	17	-.9	14	0	10	-.03	14	0	10	-3.268	14
299		5	max	-.003	11	-.92	10	0	10	-.013	10	0	10	0	10
300			min	-.007	17	-1.718	17	0	10	-.03	14	0	10	0	10
301	M35	1	max	-.011	11	2.948	17	0	10	-.005	11	0	10	0	10
302			min	-.021	17	2.051	10	0	10	-.008	17	0	10	0	10
303		2	max	-.011	11	1.474	17	0	10	-.005	11	0	10	-5.768	10
304			min	-.021	17	1.025	10	0	10	-.008	17	0	10	-8.293	17
305		3	max	-.011	11	0	10	0	10	-.005	11	0	10	-7.69	10
306			min	-.021	17	0	10	0	10	-.008	17	0	10	-11.057	17
307		4	max	-.011	11	-1.025	10	0	10	-.005	11	0	10	-5.768	10
308			min	-.021	17	-1.474	17	0	10	-.008	17	0	10	-8.293	17
309		5	max	-.011	11	-2.051	10	0	10	-.005	11	0	10	0	10
310			min	-.021	17	-2.948	17	0	10	-.008	17	0	10	0	10
311	M36	1	max	-.01	11	2.887	17	0	10	.007	17	0	10	0	10
312			min	-.019	17	1.979	10	0	10	.004	10	0	10	0	10
313		2	max	-.01	11	1.461	17	0	10	.007	17	0	10	-5.675	10
314			min	-.019	17	1.01	10	0	10	.004	10	0	10	-8.214	17
315		3	max	-.01	11	0	10	0	10	.007	17	0	10	-7.569	10
316			min	-.019	17	0	17	0	10	.004	10	0	10	-10.953	17
317		4	max	-.01	11	-1.009	10	0	10	.007	17	0	10	-5.677	10

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Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
318			min	-.019	17	-1.46	17	0	10	.004	10	0	10	-8.215	17
319		5	max	-.01	11	-2.019	10	0	10	.007	17	0	10	0	10
320			min	-.019	17	-2.921	17	0	10	.004	10	0	10	0	10
321	M37	1	max	-.001	11	1.764	14	0	10	-.006	10	0	10	0	10
322			min	-.003	17	.607	10	0	10	-.015	14	0	10	0	10
323		2	max	-.001	11	.891	14	0	10	-.006	10	0	10	-1.184	10
324			min	-.003	17	.341	10	0	10	-.015	14	0	10	-3.319	14
325		3	max	-.001	11	.074	10	0	10	-.006	10	0	10	-1.703	10
326			min	-.003	17	.017	11	0	10	-.015	14	0	10	-4.455	14
327		4	max	-.001	11	-.278	10	0	10	-.006	10	0	10	-1.556	10
328			min	-.003	17	-.93	14	0	10	-.015	14	0	10	-3.408	14
329		5	max	-.001	11	-.936	10	0	10	-.006	10	0	10	0	10
330			min	-.003	17	-1.758	14	0	10	-.015	14	0	10	0	10
331	M38	1	max	-.003	11	2.92	17	0	10	-.003	11	0	10	0	10
332			min	-.006	17	2.035	10	0	10	-.004	17	0	10	0	10
333		2	max	-.003	11	1.46	17	0	10	-.003	11	0	10	-5.724	10
334			min	-.006	17	1.018	10	0	10	-.004	17	0	10	-8.213	17
335		3	max	-.003	11	0	10	0	10	-.003	11	0	10	-7.631	10
336			min	-.006	17	0	10	0	10	-.004	17	0	10	-10.951	17
337		4	max	-.003	11	-1.018	10	0	10	-.003	11	0	10	-5.724	10
338			min	-.006	17	-1.46	17	0	10	-.004	17	0	10	-8.213	17
339		5	max	-.003	11	-2.035	10	0	10	-.003	11	0	10	0	10
340			min	-.006	17	-2.92	17	0	10	-.004	17	0	10	0	10
341	M39	1	max	-.002	11	2.954	17	0	10	.003	17	0	10	0	10
342			min	-.004	17	2.016	10	0	10	.002	10	0	10	0	10
343		2	max	-.002	11	1.494	17	0	10	.003	17	0	10	-5.779	10
344			min	-.004	17	1.028	10	0	10	.002	10	0	10	-8.402	17
345		3	max	-.002	11	0	10	0	10	.003	17	0	10	-7.707	10
346			min	-.004	17	0	14	0	10	.002	10	0	10	-11.204	17
347		4	max	-.002	11	-1.028	10	0	10	.003	17	0	10	-5.781	10
348			min	-.004	17	-1.494	17	0	10	.002	10	0	10	-8.403	17
349		5	max	-.002	11	-2.056	10	0	10	.003	17	0	10	0	10
350			min	-.004	17	-2.988	17	0	10	.002	10	0	10	0	10
351	M40	1	max	0	10	.087	10	0	10	.023	14	0	10	0	10
352			min	0	10	.074	14	0	10	.009	10	0	10	0	10
353		2	max	0	10	.043	10	0	10	.023	14	0	10	-.066	14
354			min	0	10	.037	14	0	10	.009	10	0	10	-.077	10
355		3	max	0	10	0	10	0	10	.023	14	0	10	-.088	14
356			min	0	10	0	10	0	10	.009	10	0	10	-.103	10
357		4	max	0	10	-.037	11	0	10	.023	14	0	10	-.066	14
358			min	0	10	-.043	10	0	10	.009	10	0	10	-.077	10
359		5	max	0	10	-.074	11	0	10	.023	14	0	10	0	10
360			min	0	10	-.087	10	0	10	.009	10	0	10	0	10

Envelope AISC 13th(360-05): LRFD Steel Code Checks

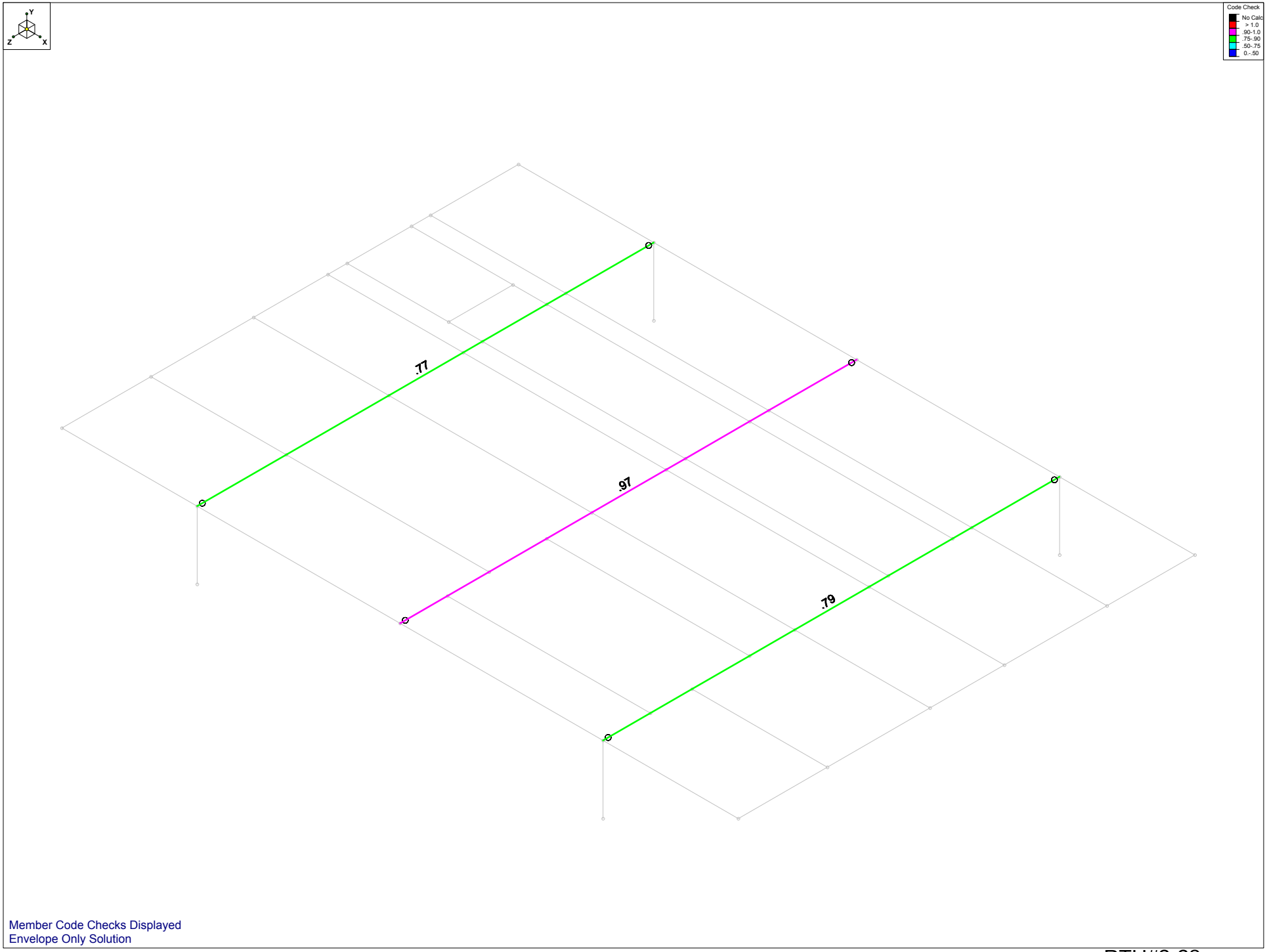
	Member	Shape	Code ...	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M1	W10x77	.074	5	17	.027	0	y	17	982.625	1021.5	172.125	366	1.898	H1-1b
2	M2	W10x77	.073	5	17	.027	0	y	17	982.625	1021.5	172.125	366	1.963	H1-1b
3	M3	W10x77	.070	5	17	.026	0	y	17	982.625	1021.5	172.125	366	1.992	H1-1b
4	M4	W10x77	.073	5	17	.026	0	y	17	982.625	1021.5	172.125	366	1.875	H1-1b

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Envelope AISC 13th(360-05): LRFD Steel Code Checks (Continued)

	Member	Shape	Code ..	Loc[ft]	LC	Shear..	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
5	M5	W18x40	.319	10	14	.065	10	y	14	274.515	531	37.5	294	1.754	H1-1b
6	M6	W18x40	.744	0	14	.096	0	y	14	133.177	531	37.5	143.701	1	H1-1b
7	M7	W18x40	.314	0	14	.065	0	y	14	274.515	531	37.5	294	1.757	H1-1b
8	M8	W18x40	.323	10	14	.067	10	y	14	274.515	531	37.5	294	1.759	H1-1b
9	M9	W18x40	.747	0	14	.095	0	y	14	133.177	531	37.5	143.701	1	H1-1b
10	M10	W18x40	.315	0	14	.065	0	y	14	274.515	531	37.5	294	1.757	H1-1b
11	M11	W18x35	.368	15.82	14	.049	33.75	y	14	292.294	463.5	30.225	209.535	1	H1-1b
12	M15	W18x35	.367	16.5...	14	.048	33.75	y	14	292.294	463.5	30.225	209.535	1	H1-1b
13	M16	W8x10	.514	5	14	.102	0	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
14	M17	W8x10	.856	7.5	14	.132	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
15	M19	W8x10	.473	5	14	.094	10	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
16	M20	W8x10	.459	5	14	.086	0	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
17	M21	W8x10	.803	7.5	14	.122	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
18	M22	W8x10	.501	7.5	14	.077	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
19	M23	W8x10	.473	5	14	.088	10	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
20	M24	W8x10	.215	5	17	.041	10	y	17	32.789	133.2	6.119	18.136	1.136	H1-1b
21	M25	W8x10	.436	7.5	14	.067	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
22	M26	W8x10	.398	7.5	14	.061	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
23	M27	W8x10	.473	5	14	.088	10	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
24	M28	W8x10	.273	5	14	.058	0	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
25	M29	W8x10	.486	7.5	14	.076	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
26	M30	W8x10	.486	7.5	14	.076	15	y	14	57.574	133.2	6.119	22.916	1	H1-1b
27	M31	W8x10	.473	5	14	.095	10	y	14	32.789	133.2	6.119	18.136	1.136	H1-1b
28	M32	W12x26	.180	7.5	17	.061	15	y	17	120.626	344.25	30.637	98.378	1.136	H1-1b
29	M33	W12x26	.197	7.5	17	.064	15	y	17	120.626	344.25	30.637	98.378	1.136	H1-1b
30	M34	W12x26	.033	5	14	.036	10	y	17	213.265	344.25	30.637	129.273	1.132	H1-1b
31	M35	W12x26	.112	7.5	17	.039	0	y	17	120.626	344.25	30.637	98.378	1.136	H1-1b
32	M36	W12x26	.111	7.5	17	.038	15	y	17	120.626	344.25	30.637	98.38	1.136	H1-1b
33	M37	W12x26	.034	5	14	.029	0	y	14	213.265	344.25	30.637	129.385	1.133	H1-1b
34	M38	W12x26	.111	7.5	17	.037	0	y	17	120.626	344.25	30.637	98.378	1.136	H1-1b
35	M39	W12x26	.114	7.5	17	.037	15	y	17	120.626	344.25	30.637	98.38	1.136	H1-1b
36	M40	W12x26	.001	2.375	10	.013	0	z	14	291.643	344.25	30.637	139.5	1.136	H1-1b

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Member Code Checks Displayed
Envelope Only Solution

RTU#3-28

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Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		DL	1														
2	40LL		Y		2	1														
3	31LL		Y		3	1														
4	25LL		Y		4	1														
5	S		Y		SL	1														
6	D+40LL		Y		DL	1	2	1												
7	D+31LL		Y		DL	1	3	1												
8	D+25LL		Y		DL	1	4	1												
9	D+S		Y		DL	1	SL	1												
10	IBC 16-1	Yes	Y		DL	1.4														
11	IBC 16-2 (a)(a)		Y		DL	1.2	2	1.6												
12	IBC 16-2 (a)(b)		Y		DL	1.2	3	1.6												
13	IBC 16-2 (a)(c)	Yes	Y		DL	1.2	4	1.6												
14	IBC 16-2 (b)(a)		Y		DL	1.2	2	1.6	SL	.5										
15	IBC 16-2 (b)(b)		Y		DL	1.2	3	1.6	SL	.5										
16	IBC 16-2 (b)(c)	Yes	Y		DL	1.2	4	1.6	SL	.5										
17	IBC 16-2 (c)(a)		Y		DL	1.2	SL	1.6	2	.5										
18	IBC 16-2 (c)(b)		Y		DL	1.2	SL	1.6	3	.5										
19	IBC 16-2 (c)(c)	Yes	Y		DL	1.2	SL	1.6	4	.5										
20	IBC 16-8		Y		DL	1														
21	IBC 16-9 (a)		Y		DL	1	2	1												
22	IBC 16-9 (b)		Y		DL	1	3	1												
23	IBC 16-9 (c)		Y		DL	1	4	1												
24	IBC 16-10 (b)		Y		DL	1	SL	1												
25	IBC 16-11 (a)		Y		DL	1	2	.75	SL	.75										
26	IBC 16-11 (b)		Y		DL	1	3	.75	SL	.75										
27	IBC 16-11 (c)		Y		DL	1	4	.75	SL	.75										

Envelope Joint Reactions

Joint	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
No Data to Print ...												

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M12	1	max	0	10	15.857	19	.004	19	0	19	0	10	0	10
2			min	0	10	6.123	10	.002	13	0	13	0	10	0	10
3		2	max	0	10	8.199	19	-.003	13	0	19	.02	19	-45.974	10
4			min	0	10	3.6	10	-.005	19	0	13	.011	13	-118.729	19
5		3	max	0	10	1.26	10	.002	19	0	19	-.002	13	-69.365	10
6			min	0	10	.326	16	0	13	0	13	-.004	19	-167.387	19
7		4	max	0	10	-3.161	10	.002	19	0	19	.008	19	-59.867	10
8			min	0	10	-7.958	19	.001	13	0	13	.004	13	-131.784	19
9		5	max	0	10	-7.773	10	-.003	13	0	19	0	10	0	10
10			min	0	10	-17.04	19	-.005	19	0	13	0	10	0	10
11	M13	1	max	0	10	18.731	19	-.008	13	0	16	0	10	0	10
12			min	0	10	9.475	10	-.014	19	0	10	0	10	0	10
13		2	max	0	10	10.851	19	.005	19	0	16	-.005	13	-61.225	10
14			min	0	10	5.121	10	.002	13	0	10	-.009	19	-128.213	19

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
15		3	max	0	10	.02	19	0	13	0	16	.001	19	-79.248	10
16			min	0	10	-.031	10	0	19	0	10	0	13	-172.912	19
17		4	max	0	10	-3.904	10	0	13	0	16	-.003	13	-60.648	10
18			min	0	10	-8.418	19	-.002	19	0	10	-.005	19	-130.146	19
19		5	max	0	10	-7.877	10	.006	19	0	16	0	10	0	10
20			min	0	10	-17.013	19	.003	13	0	10	0	10	0	10
21	M14	1	max	0	10	22.152	19	.01	19	0	10	0	10	0	10
22			min	0	10	11.155	10	.006	13	0	16	0	10	0	10
23		2	max	0	10	12.81	19	0	19	0	10	-.006	13	-74.61	10
24			min	0	10	6.38	10	0	13	0	16	-.01	19	-154.349	19
25		3	max	0	10	.888	10	0	13	0	10	.002	19	-102.328	10
26			min	0	10	.264	13	-.002	19	0	16	0	13	-211.954	19
27		4	max	0	10	-4.83	10	0	19	0	10	.001	19	-83.906	10
28			min	0	10	-10.157	19	0	13	0	16	0	13	-165.183	19
29		5	max	0	10	-10.744	10	0	19	0	10	0	10	0	10
30			min	0	10	-21.262	19	0	13	0	16	0	10	0	10

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code ...	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M12	W16x36	.772	19.6...	19	.121	33.75	y	19	342.853	477	40.5	219.387	1	H1-1b
2	M13	W16x36	.788	17.2...	19	.133	0	y	19	342.853	477	40.5	219.387	1	H1-1b
3	M14	W16x36	.973	19.6...	19	.157	0	y	19	342.853	477	40.5	219.387	1	H1-1b

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Moved Column Calculations

An existing interior column needs to be moved for the architectural layout. The existing beam line was modeled and a required moment of inertia for the new column location was determined to find an equivalent built up shape with a new WT member welded to the bottom flange of the existing beam.

Structural Design Group

S_L 25 psf

L_L 20 psf

Assume steel is A36

S: 25 × 2'-10½' × 28 = 2.01ᵏ ✓

S: 30 × 2'-10½' × 28 = 2.42ᵏ ✓

D: 25 × 4'-5¾' × 28 = 3.17ᵏ ✓

S: 30 × 4'-5¾' × 28 = 3.73ᵏ ✓

D: 25 × 6' × 28 = 4.2ᵏ ✓

S: 30 × 6' × 28 = 5.04ᵏ ✓

D: 25 × 5.9' × 28 = 4.13ᵏ ✓

S: 30 × 5.9' × 28 = 4.96ᵏ ✓

D: 25 × 5.8' × 28 = 4.06ᵏ ✓

S: 30 × 5.8' × 28 = 4.87ᵏ ✓

D: 25 × 6.25' × 28 = 4.38ᵏ ✓

S: 30 × 6.25' × 28 = 5.25ᵏ ✓

D: 25 × 6.17' × 28 = 4.32ᵏ ✓

S: 30 × 6.17' × 28 = 5.2ᵏ ✓

D: 25 × 6.84' × 28 = 4.79ᵏ ✓

S: 30 × 6.84' × 28 = 5.75ᵏ ✓

D: 25 × 7' × 28 = 4.9ᵏ ✓

S: 30 × 7' × 28 = 5.88ᵏ ✓

Column Axial

D+S: 58ᵏ

Assume 2000 psf bearing (used in 1997)

6.5 × 5.5 × 1'-0" footing

Need $w24 \times 76$ Equivalent for 1.75" max deflection of 11' column

I_x 2100 in⁴

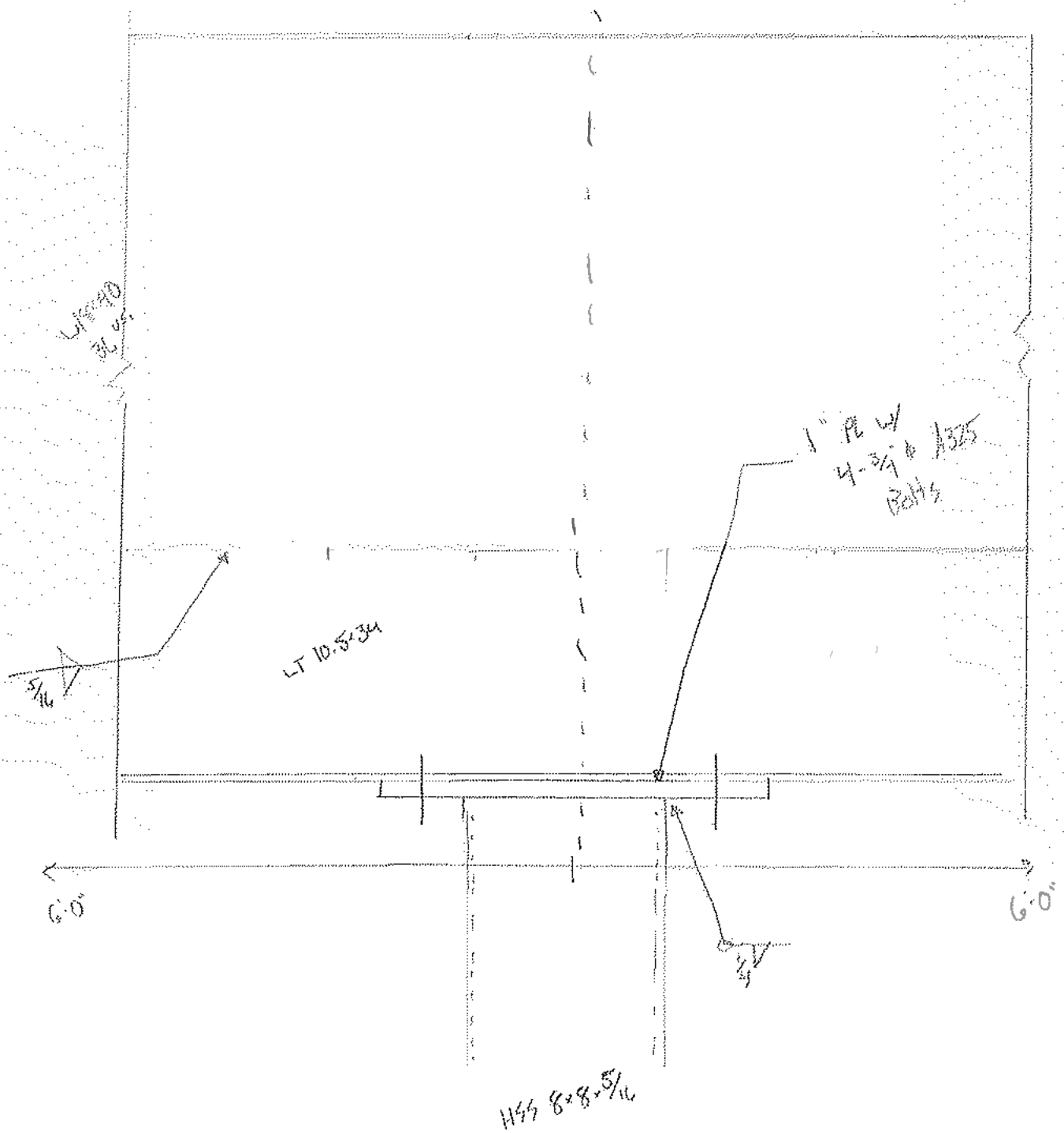
Kicker to brace bottom flange with side of new column

Project Assess Adj. Column in 1997 ADU's Project No.

By Date Sheet of

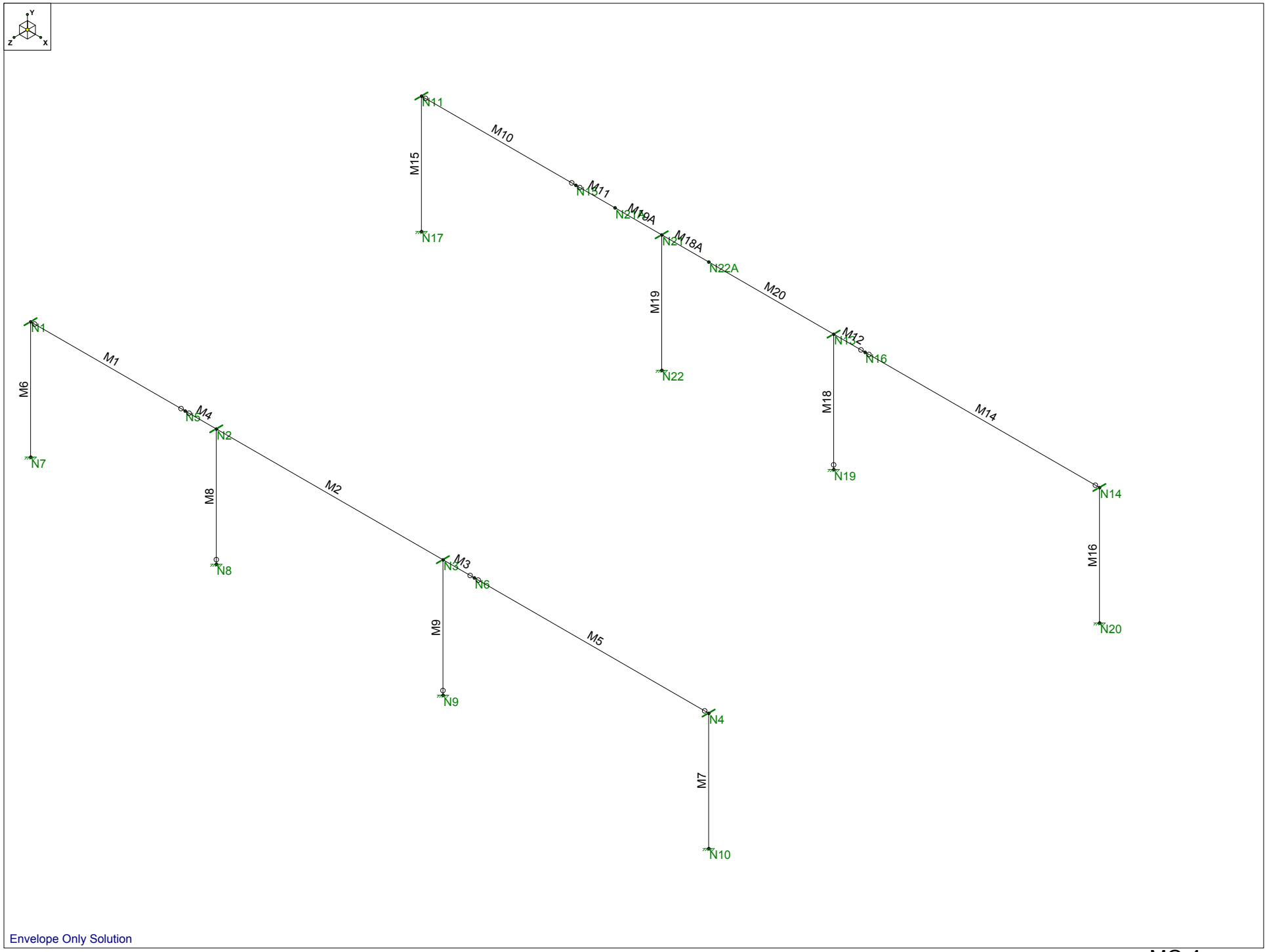
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Structural Design Group

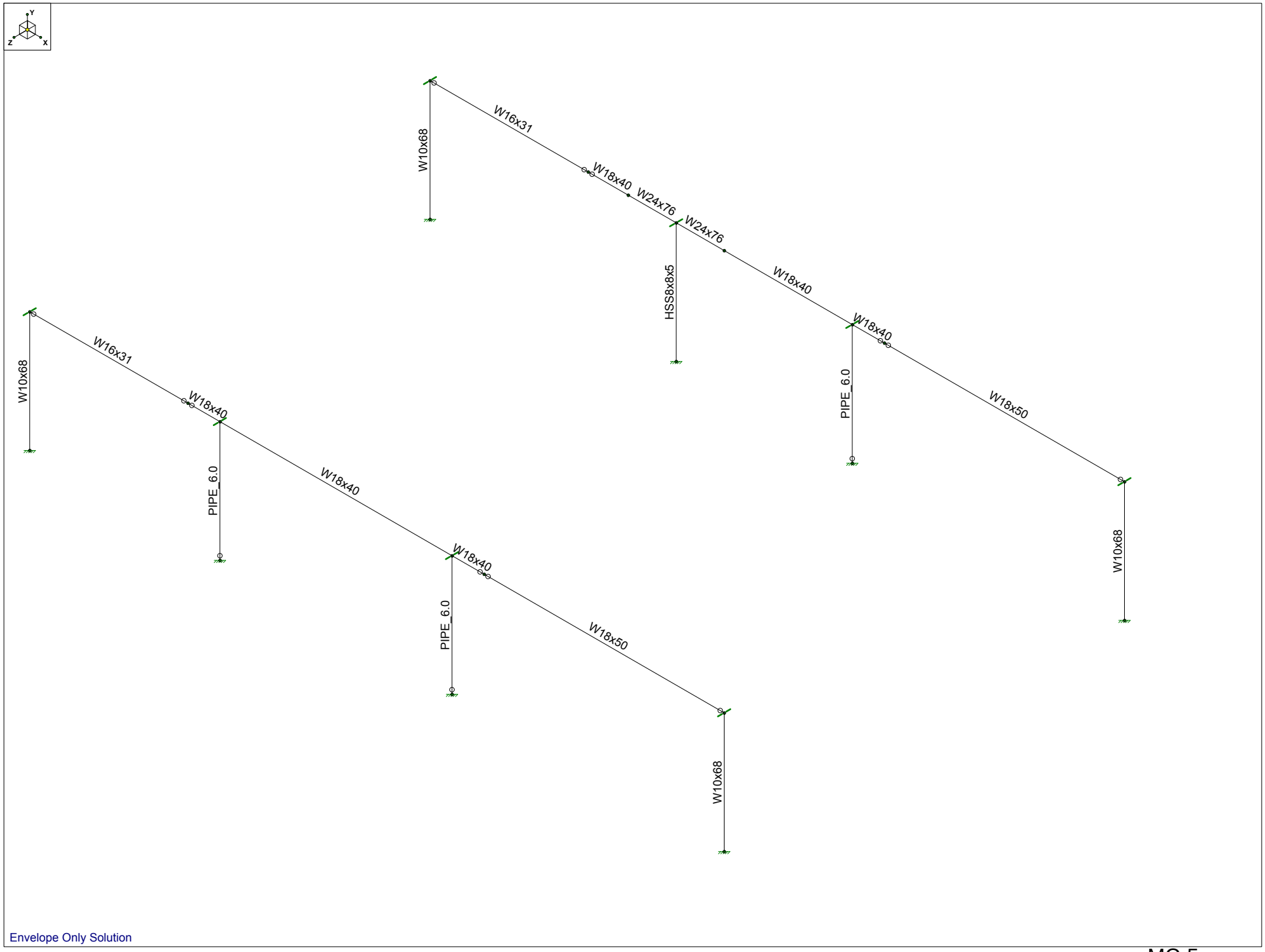


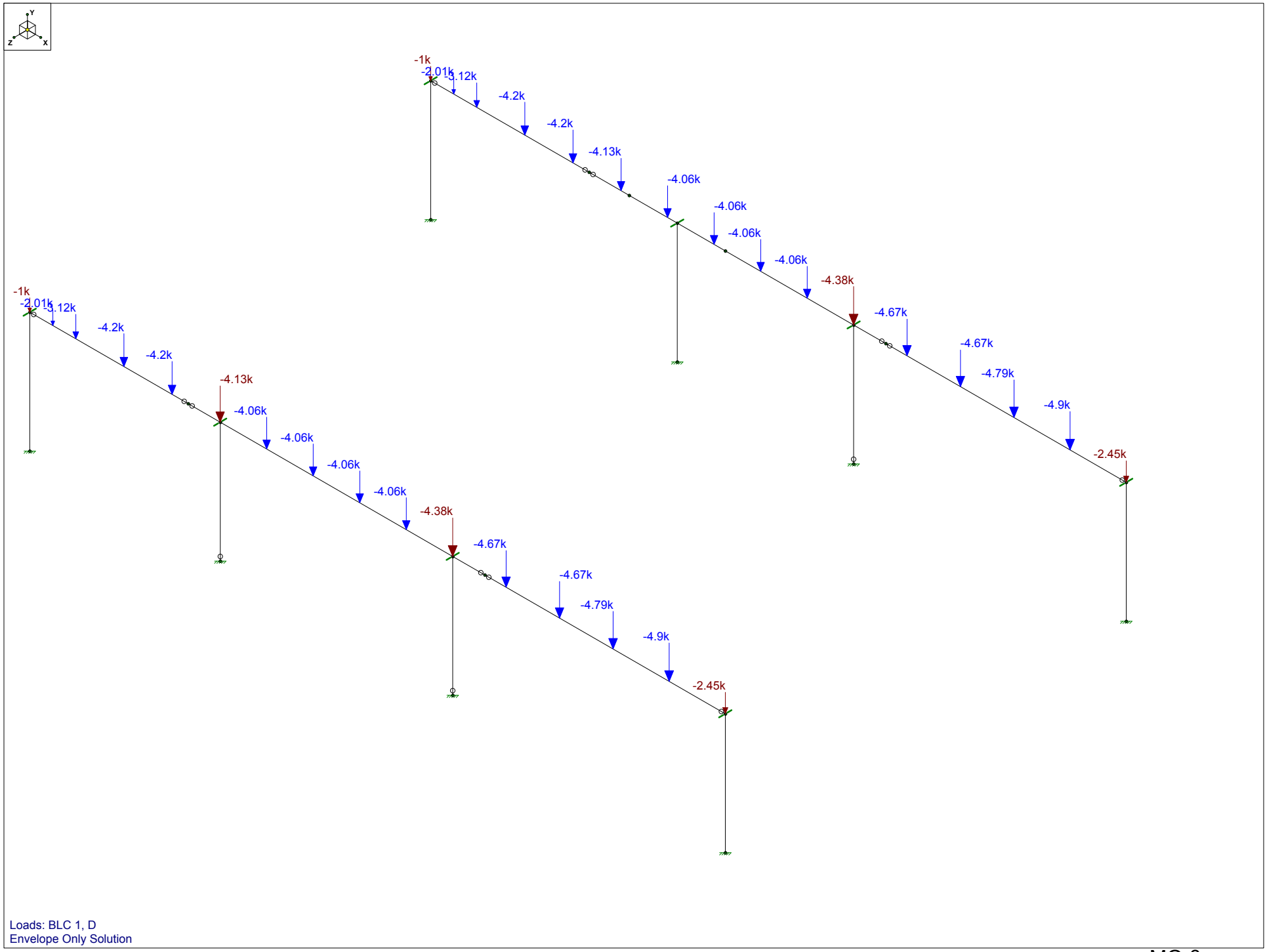
Project _____ Project No. _____

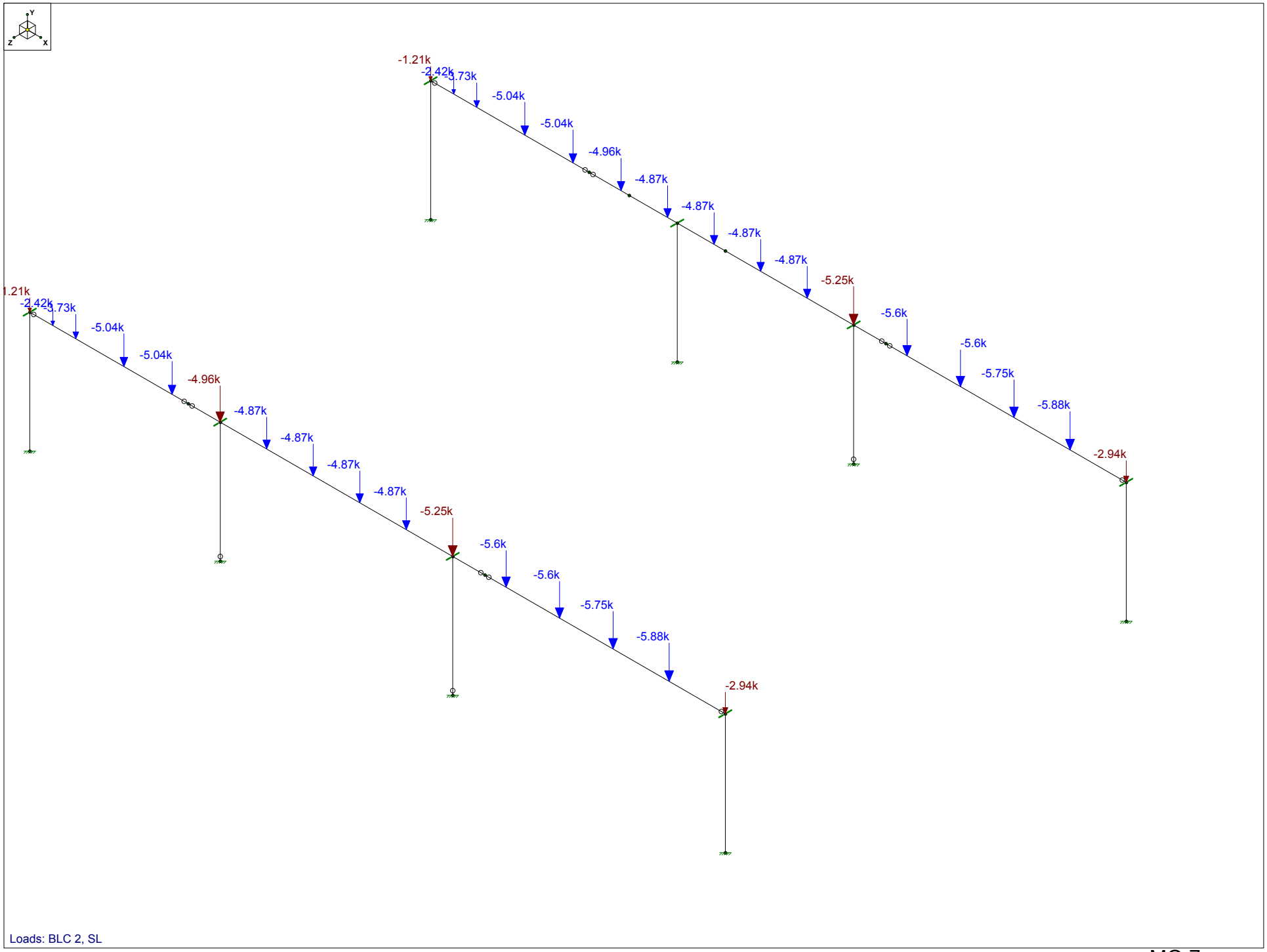
By _____ Date _____ Sheet _____ of _____


Y
Z
X
N11
M10
M15
N15
M11
N21
M19A
N17
M18
N18A
N22A
M20
M19
N22
N1
M1
M12
N12
N16
M6
M4
N5
M14
M18
N2
N7
N19
M8
M2
N14
M16
N8
M3
N3
N6
N20
M9
M5
N9
N4
M7
N10
Envelope Only Solution

MC-4

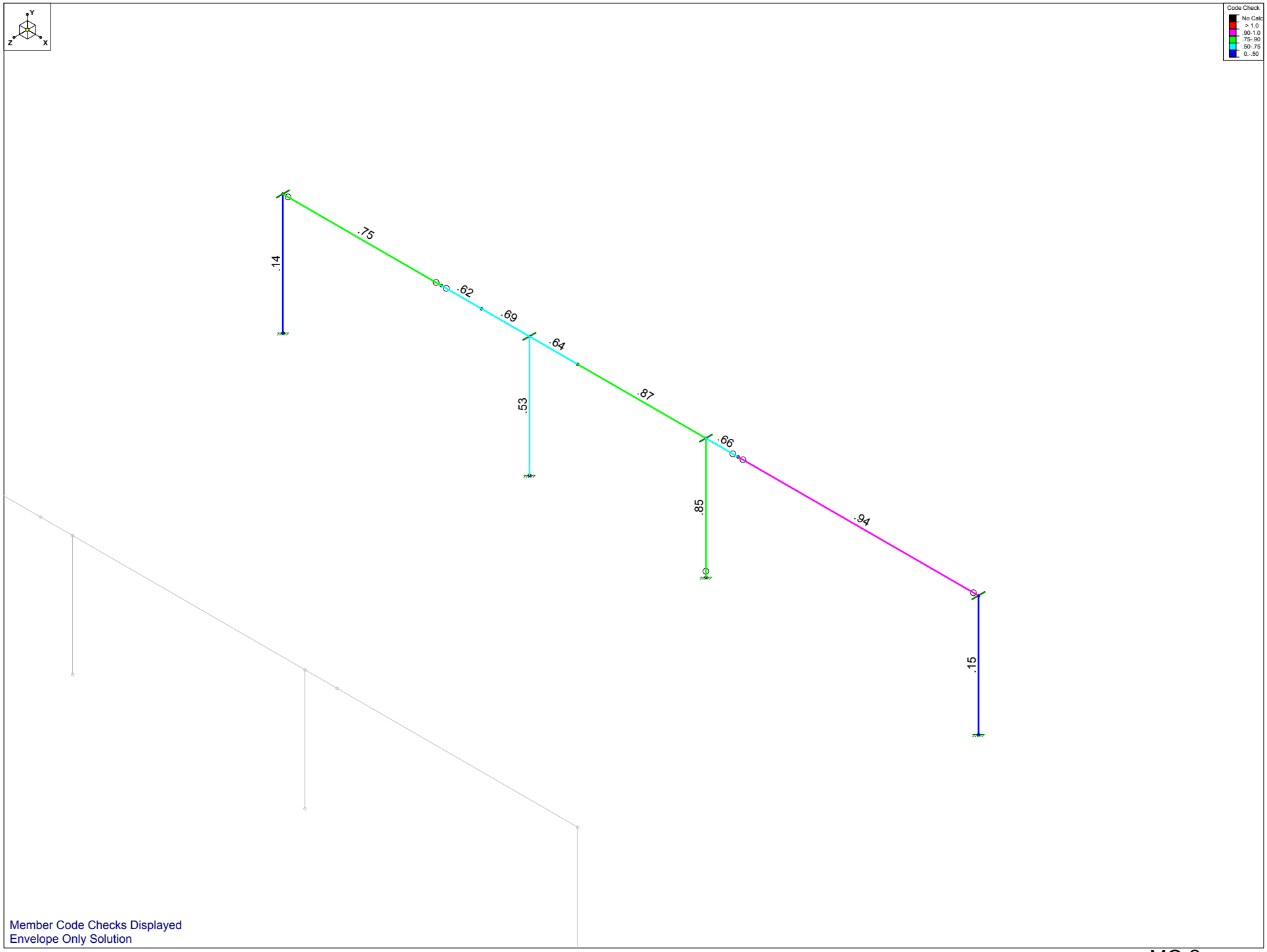

Y
Z
X
W10x68
W16x31
W18x40
W24x76
W24x76
W18x40
HSS8x8x5
W18x40
PIPE_6.0
W18x50
W10x68
W10x68
W16x31
W18x40
PIPE_6.0
W18x40
W18x40
PIPE_6.0
W18x50
W10x68
Envelope Only Solution


-1k
-2.01k
-3.12k
-4.2k
-4.2k
-4.13k
-4.06k
-4.06k
-4.06k
-4.06k
-4.38k
-4.67k
-4.67k
-4.79k
-4.9k
-2.45k
-1k
-2.01k
-3.12k
-4.2k
-4.2k
-4.13k
-4.06k
-4.06k
-4.06k
-4.06k
-4.38k
-4.67k
-4.67k
-4.79k
-4.9k
-2.45k
Loads: BLC 1, D
Envelope Only Solution


-1.21k
-2.42k
-3.73k
-5.04k
-5.04k
-4.96k
-4.87k
-4.87k
-4.87k
-4.87k
-5.25k
-5.6k
-5.6k
-5.75k
-5.88k
-2.94k
1.21k
-2.42k
-3.73k
-5.04k
-5.04k
-4.96k
-4.87k
-4.87k
-4.87k
-4.87k
-5.25k
-5.6k
-5.6k
-5.75k
-5.88k
-2.94k
Loads: BLC 2, SL

MC-7

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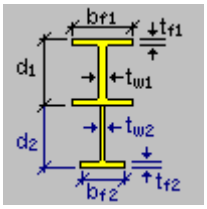
MC-8

Current Date: 2/26/2015 6:30 PM
Units system: English
File name: S:\Sdg\Projects\2014\2014-205\Engineering\Gravity\W and WT.etz\

Section information

Section name: W18x40 and WT10.5x34 **(US)**

Dimensions



bf1	=	6.020	[in]	W Flange width
bf2	=	8.270	[in]	WT Flange width
d1	=	17.900	[in]	W Depth
d2	=	10.600	[in]	WT Depth
tf1	=	0.525	[in]	W Flange thickness
tf2	=	0.685	[in]	WT Flange thickness
tw1	=	0.315	[in]	W Web thickness
tw2	=	0.430	[in]	WT Web thickness

Properties

Ag	:	21.870	[in2]	Gross area of the section.
I 33	:	2282.412	[in4]	Moment of inertia about local axis 3.
I 22	:	51.490	[in4]	Moment of inertia about local axis 2.
I 23	:	0.000	[in4]	Product of inertia.
Ang 3' to 3	:	0.000	--	Angle to the principal axis. (°)
I 33'	:	2282.412	[in4]	Moment of inertia about principal axis 3.
I 22'	:	51.490	[in4]	Moment of inertia about principal axis 2.
Dist. to cg 3	:	0.000	[in]	Distance from the geometric center to the gravity center of the section in the axis 3 direction.
Dist. to cg 2	:	-2.515	[in]	Distance from the geometric center to the gravity center of the section in the axis 2 direction.
J	:	1.920	[in4]	Saint-Venant torsion constant.
Xsc'	:	0.000	[in]	Distance from the c.g. to the shear center with reference to the principal axis 3.
Ysc'	:	-4.247	[in]	Distance from the c.g. to the shear center with reference to the principal axis 2.
Cw	:	5866.639	[in6]	Section warping constant.
ro	:	11.169	[in]	Polar radius of gyration.
J 33'	:	6.357	[in]	Property to consider torsional – flexural buckling about principal axis 3.
J 22'	:	0.000	[in]	Property to consider torsional – flexural buckling about principal axis 2.
S 33 top	:	136.143	[in3]	Top elastic section modulus about local axis 3.
S 33 bot	:	194.492	[in3]	Bottom elastic section modulus about local axis 3.
S 22 top	:	12.452	[in3]	Top elastic section modulus about local axis 2.
S 22 bot	:	12.452	[in3]	Bottom elastic section modulus about local axis 2.
S 33' top	:	136.143	[in3]	Top elastic section modulus about principal axis 3.
S 33' bot	:	194.492	[in3]	Bottom elastic section modulus about principal axis 3.
S 22' top	:	12.452	[in3]	Top elastic section modulus about principal axis 2.
S 22' bot	:	12.452	[in3]	Bottom elastic section modulus about principal axis 2.
Z 33	:	186.042	[in3]	Plastic section modulus about local axis 3.
Z 22	:	21.225	[in3]	Plastic section modulus about local axis 2.
Z 33'	:	186.042	[in3]	Plastic section modulus about principal axis 3.
Z 22'	:	21.225	[in3]	Plastic section modulus about principal axis 2.
Max 3	:	4.135	[in]	Coordinate of the farthest positive extremity of the section in relation to local axis 3.
Min 3	:	-4.135	[in]	Coordinate of the farthest negative extremity of the section in relation to local axis 3.
Max 2	:	16.765	[in]	Coordinate of the farthest positive extremity of the section in relation to local axis 2.
Min 2	:	-11.735	[in]	Coordinate of the farthest negative extremity of the section in relation to local axis 2.
Aw3	:	11.986	[in2]	Flange area for shear.
Aw2	:	9.884	[in2]	Web area for shear.

Qmod2'	:	0.000	[in3]	Shear modulus for principal axis 2.
Qmod3'	:	-9.26E+61	[in3]	Shear modulus for principal axis 3.

Global

Display Sections for Member Calcs	10
Max Internal Sections for Member Calcs	100
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	No
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	3
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 13th(360-05): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): ASD
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	ACI 530-05: ASD
Aluminum Code	AA ADM1-05: ASD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

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Global, Continued

Seismic Code	UBC 1997
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct Z	.035
Ct X	.035
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	8.5
R X	8.5
Ca	.36
Cv	.54
Nv	1
Occupancy Category	4
Seismic Zone	3
Om Z	1
Om X	1
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1.5
Check Concrete Bearing	Yes
Footing Concrete Weight (k/ft^3)	.145
Footing Concrete f'c (ksi)	3
Footing Concrete Ec (ksi)	4000
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	3.5
Footing Bottom Bar	#4
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft..	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N5			W16x31	Beam	Wide Flange	A36 Gr.36	Typical
2	M2	N2	N3			W18x40	Beam	Wide Flange	A36 Gr.36	Typical
3	M3	N3	N6			W18x40	Beam	Wide Flange	A36 Gr.36	Typical
4	M4	N5	N2			W18x40	Beam	Wide Flange	A36 Gr.36	Typical
5	M5	N6	N4			W18x50	Beam	Wide Flange	A36 Gr.36	Typical
6	M6	N7	N1		90	W10x68	Column	Wide Flange	A36 Gr.36	Typical

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
7	M7	N10	N4		90	W10x68	Column	Wide Flange	A36 Gr.36	Typical
8	M8	N8	N2			PIPE_6.0	Column	Pipe	A36 Gr.36	Typical
9	M9	N9	N3			PIPE_6.0	Column	Pipe	A36 Gr.36	Typical
10	M10	N11	N15			W16x31	Beam	Wide Flange	A36 Gr.36	Typical
11	M11	N15	N21A			W18x40	Beam	Wide Flange	A36 Gr.36	Typical
12	M12	N13	N16			W18x40	Beam	Wide Flange	A36 Gr.36	Typical
13	M14	N16	N14			W18x50	Beam	Wide Flange	A36 Gr.36	Typical
14	M15	N17	N11		90	W10x68	Column	Wide Flange	A36 Gr.36	Typical
15	M16	N20	N14		90	W10x68	Column	Wide Flange	A36 Gr.36	Typical
16	M18	N19	N13			PIPE_6.0	Column	Pipe	A36 Gr.36	Typical
17	M19	N22	N21			HSS8x8x5	Column	SquareTube	A500 Gr.46	Typical
18	M18A	N21	N22A			W24x76	Beam	Wide Flange	A36 Gr.36	Typical
19	M19A	N21A	N21			W24x76	Beam	Wide Flange	A36 Gr.36	Typical
20	M20	N22A	N13			W18x40	Beam	Wide Flange	A36 Gr.36	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	0	0	
2	N2	23.75	0	0	0	
3	N3	52.75	0	0	0	
4	N4	86.75	0	0	0	
5	N5	19.75	0	0	0	
6	N6	56.75	0	0	0	
7	N7	0	-15	0	0	
8	N8	23.75	-15	0	0	
9	N9	52.75	-15	0	0	
10	N10	86.75	-15	0	0	
11	N11	0	0	-50	0	
12	N13	52.75	0	-50	0	
13	N14	86.75	0	-50	0	
14	N15	19.75	0	-50	0	
15	N16	56.75	0	-50	0	
16	N17	0	-15	-50	0	
17	N19	52.75	-15	-50	0	
18	N20	86.75	-15	-50	0	
19	N21	30.75	0	-50	0	
20	N22	30.75	-15	-50	0	
21	N21A	24.75	0	-50	0	
22	N22A	36.75	0	-50	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N1			Reaction				
2	N2			Reaction				
3	N3			Reaction				
4	N4			Reaction				
5	N7	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
6	N8	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
7	N9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	

RISA TECHNOLOGIES

Company : SDG
Designer :
Job Number :
Model Name : cont beam check

Feb 26, 2015
Checked By:____

Joint Boundary Conditions (Continued)

	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
8	N10	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
9	N11			Reaction				
10	N13			Reaction				
11	N14			Reaction				
12	N17	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
13	N19	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
14	N20	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
15	N21			Reaction				
16	N22	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	

Member Distributed Loads

Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
No Data to Print ...					

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	D	None		-1		9	25			
2	SL	None				7	25			

Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D		Y		1	1														
2	SL		Y		2	1														
3	D+SL		Y		1	1	2	1												
4	1.4D	Yes	Y		1	1.4														
5	1.2D+1.6SL1	Yes	Y		1	1.2	2	1.6												
6	1.2D+1.6SL2	Yes	Y		1	1.2	3	1.6												
7	1.2D+1.6SL3	Yes	Y		1	1.2	4	1.6												
8	1.2D+1.6SL4	Yes	Y		1	1.2	5	1.6												
9	1.2D+1.6SL5	Yes	Y		1	1.2	6	1.6												

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	N11	max	0	4	0	4	0	4	0	4	0	4	0	4
2		min	0	4	0	4	0	4	0	4	0	4	0	4
3	N13	max	0	4	0	4	0	4	0	4	0	4	0	4
4		min	0	4	0	4	0	4	0	4	0	4	0	4
5	N14	max	0	4	0	4	0	4	0	4	0	4	0	4
6		min	0	4	0	4	0	4	0	4	0	4	0	4
7	N17	max	.758	5	23.605	5	0	4	0	4	0	4	-4.433	6
8		min	.286	6	10.053	6	0	4	0	4	0	4	-12.363	5
9	N19	max	.641	5	57.523	5	0	4	0	4	0	4	0	4
10		min	.291	6	23.283	6	0	4	0	4	0	4	0	4
11	N20	max	.724	5	35.283	5	0	4	0	4	0	4	-4.426	6
12		min	.28	6	14.875	6	0	4	0	4	0	4	-12.345	5
13	N21	max	0	4	0	4	0	4	0	4	0	4	0	4

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
14		min	0	4	0	4	0	4	0	4	0	4	0	4
15	N22	max	-.857	6	81.273	5	0	4	0	4	0	4	4.092	5
16		min	-2.123	5	32.834	6	0	4	0	4	0	4	2.19	6

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
1	M10	1	max	.758	5	19.257	5	0	4	0	4	0	4	0	4
2			min	.286	6	7.635	6	0	4	0	4	0	4	0	4
3		2	max	.758	5	19.175	5	0	4	0	4	0	4	-16.665	6
4			min	.286	6	7.553	6	0	4	0	4	0	4	-42.168	5
5		3	max	.758	5	12.809	5	0	4	0	4	0	4	-29.498	6
6			min	.286	6	5.059	6	0	4	0	4	0	4	-74.644	5
7		4	max	.758	5	3.015	5	0	4	0	4	0	4	-37.391	6
8			min	.286	6	1.233	6	0	4	0	4	0	4	-94.569	5
9		5	max	.758	5	2.934	5	0	4	0	4	0	4	-40.008	6
10			min	.286	6	1.152	6	0	4	0	4	0	4	-101.097	5
11		6	max	.758	5	2.852	5	0	4	0	4	0	4	-42.445	6
12			min	.286	6	1.07	6	0	4	0	4	0	4	-107.444	5
13		7	max	.758	5	-4.052	6	0	4	0	4	0	4	-37.563	6
14			min	.286	6	-10.334	5	0	4	0	4	0	4	-95.049	5
15		8	max	.758	5	-4.134	6	0	4	0	4	0	4	-28.582	6
16			min	.286	6	-10.416	5	0	4	0	4	0	4	-72.281	5
17		9	max	.758	5	-4.216	6	0	4	0	4	0	4	-19.421	6
18			min	.286	6	-10.498	5	0	4	0	4	0	4	-49.334	5
19		10	max	.758	5	-9.337	6	0	4	0	4	0	4	0	4
20			min	.286	6	-23.684	5	0	4	0	4	0	4	0	4
21	M11	1	max	.758	5	-9.34	6	0	4	0	4	0	4	0	4
22			min	.286	6	-23.704	5	0	4	0	4	0	4	0	4
23		2	max	.758	5	-9.367	6	0	4	0	4	0	4	13.176	5
24			min	.286	6	-23.731	5	0	4	0	4	0	4	5.197	6
25		3	max	.758	5	-9.394	6	0	4	0	4	0	4	26.367	5
26			min	.286	6	-23.757	5	0	4	0	4	0	4	10.408	6
27		4	max	.758	5	-9.421	6	0	4	0	4	0	4	39.573	5
28			min	.286	6	-23.784	5	0	4	0	4	0	4	15.634	6
29		5	max	.758	5	-9.447	6	0	4	0	4	0	4	52.794	5
30			min	.286	6	-23.811	5	0	4	0	4	0	4	20.875	6
31		6	max	.758	5	-9.474	6	0	4	0	4	0	4	66.03	5
32			min	.286	6	-23.838	5	0	4	0	4	0	4	26.131	6
33		7	max	.758	5	-9.501	6	0	4	0	4	0	4	79.28	5
34			min	.286	6	-23.864	5	0	4	0	4	0	4	31.402	6
35		8	max	.758	5	-9.528	6	0	4	0	4	0	4	92.546	5
36			min	.286	6	-23.891	5	0	4	0	4	0	4	36.688	6
37		9	max	.758	5	-14.511	6	0	4	0	4	0	4	111.556	5
38			min	.286	6	-36.81	5	0	4	0	4	0	4	44.192	6
39		10	max	.758	5	-14.537	6	0	4	0	4	0	4	132.013	5
40			min	.286	6	-36.837	5	0	4	0	4	0	4	52.26	6
41	M12	1	max	-.28	6	34.927	5	0	4	0	4	0	4	139.323	5
42			min	-.724	5	14.112	6	0	4	0	4	0	4	56.063	6
43		2	max	-.28	6	34.906	5	0	4	0	4	0	4	123.804	5
44			min	-.724	5	14.091	6	0	4	0	4	0	4	49.796	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
45		3	max	-.28	6	34.884	5	0	4	0	4	0	4	108.295	5
46			min	-.724	5	14.069	6	0	4	0	4	0	4	43.538	6
47		4	max	-.28	6	34.863	5	0	4	0	4	0	4	92.796	5
48			min	-.724	5	14.048	6	0	4	0	4	0	4	37.29	6
49		5	max	-.28	6	34.841	5	0	4	0	4	0	4	77.306	5
50			min	-.724	5	14.026	6	0	4	0	4	0	4	31.051	6
51		6	max	-.28	6	34.82	5	0	4	0	4	0	4	61.826	5
52			min	-.724	5	14.005	6	0	4	0	4	0	4	24.822	6
53		7	max	-.28	6	34.799	5	0	4	0	4	0	4	46.355	5
54			min	-.724	5	13.984	6	0	4	0	4	0	4	18.602	6
55		8	max	-.28	6	34.777	5	0	4	0	4	0	4	30.894	5
56			min	-.724	5	13.962	6	0	4	0	4	0	4	12.392	6
57		9	max	-.28	6	34.756	5	0	4	0	4	0	4	15.442	5
58			min	-.724	5	13.941	6	0	4	0	4	0	4	6.191	6
59		10	max	-.28	6	34.734	5	0	4	0	4	0	4	0	4
60			min	-.724	5	13.919	6	0	4	0	4	0	4	0	4
61	M14	1	max	-.28	6	34.746	5	0	4	0	4	0	4	0	4
62			min	-.724	5	13.921	6	0	4	0	4	0	4	0	4
63		2	max	-.28	6	19.982	5	0	4	0	4	0	4	-42.353	6
64			min	-.724	5	8.117	6	0	4	0	4	0	4	-105.825	5
65		3	max	-.28	6	19.782	5	0	4	0	4	0	4	-69.077	6
66			min	-.724	5	7.917	6	0	4	0	4	0	4	-172.097	5
67		4	max	-.28	6	5.017	5	0	4	0	4	0	4	-91.378	6
68			min	-.724	5	2.113	6	0	4	0	4	0	4	-227.944	5
69		5	max	-.28	6	4.817	5	0	4	0	4	0	4	-98.088	6
70			min	-.724	5	1.913	6	0	4	0	4	0	4	-244.335	5
71		6	max	-.28	6	-4.035	6	0	4	0	4	0	4	-100.299	6
72			min	-.724	5	-10.331	5	0	4	0	4	0	4	-250.094	5
73		7	max	-.28	6	-4.235	6	0	4	0	4	0	4	-86.515	6
74			min	-.724	5	-10.531	5	0	4	0	4	0	4	-215.325	5
75		8	max	-.28	6	-10.315	6	0	4	0	4	0	4	-70.103	6
76			min	-.724	5	-26.019	5	0	4	0	4	0	4	-174.793	5
77		9	max	-.28	6	-10.515	6	0	4	0	4	0	4	-35.385	6
78			min	-.724	5	-26.219	5	0	4	0	4	0	4	-87.73	5
79		10	max	-.28	6	-10.716	6	0	4	0	4	0	4	0	4
80			min	-.724	5	-26.419	5	0	4	0	4	0	4	0	4
81	M15	1	max	23.605	5	0	4	.824	5	0	4	-4.433	6	0	4
82			min	10.053	6	0	4	.296	6	0	4	-12.363	5	0	4
83		2	max	23.469	5	0	4	.824	5	0	4	-3.941	6	0	4
84			min	9.917	6	0	4	.296	6	0	4	-10.989	5	0	4
85		3	max	23.334	5	0	4	.824	5	0	4	-3.448	6	0	4
86			min	9.782	6	0	4	.296	6	0	4	-9.615	5	0	4
87		4	max	23.199	5	0	4	.824	5	0	4	-2.956	6	0	4
88			min	9.646	6	0	4	.296	6	0	4	-8.242	5	0	4
89		5	max	23.063	5	0	4	.824	5	0	4	-2.463	6	0	4
90			min	9.511	6	0	4	.296	6	0	4	-6.868	5	0	4
91		6	max	22.928	5	0	4	.824	5	0	4	-1.97	6	0	4
92			min	9.376	6	0	4	.296	6	0	4	-5.494	5	0	4
93		7	max	22.792	5	0	4	.824	5	0	4	-1.478	6	0	4
94			min	9.24	6	0	4	.296	6	0	4	-4.121	5	0	4
95		8	max	22.657	5	0	4	.824	5	0	4	-.985	6	0	4
96			min	9.105	6	0	4	.296	6	0	4	-2.747	5	0	4

RISA TECHNOLOGIES

Company : SDG
Designer :
Job Number :
Model Name : cont beam check

Feb 26, 2015
Checked By:_____

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
97		9	max	22.521	5	0	4	.824	5	0	4	-.493	6	0	4
98			min	8.969	6	0	4	.296	6	0	4	-1.374	5	0	4
99		10	max	22.386	5	0	4	.824	5	0	4	0	4	0	4
100			min	8.834	6	0	4	.296	6	0	4	0	4	0	4
101	M16	1	max	35.283	5	0	4	.823	5	0	4	-4.426	6	0	4
102			min	14.875	6	0	4	.295	6	0	4	-12.345	5	0	4
103		2	max	35.148	5	0	4	.823	5	0	4	-3.934	6	0	4
104			min	14.739	6	0	4	.295	6	0	4	-10.973	5	0	4
105		3	max	35.013	5	0	4	.823	5	0	4	-3.442	6	0	4
106			min	14.604	6	0	4	.295	6	0	4	-9.602	5	0	4
107		4	max	34.877	5	0	4	.823	5	0	4	-2.951	6	0	4
108			min	14.468	6	0	4	.295	6	0	4	-8.23	5	0	4
109		5	max	34.742	5	0	4	.823	5	0	4	-2.459	6	0	4
110			min	14.333	6	0	4	.295	6	0	4	-6.858	5	0	4
111		6	max	34.606	5	0	4	.823	5	0	4	-1.967	6	0	4
112			min	14.198	6	0	4	.295	6	0	4	-5.487	5	0	4
113		7	max	34.471	5	0	4	.823	5	0	4	-1.475	6	0	4
114			min	14.062	6	0	4	.295	6	0	4	-4.115	5	0	4
115		8	max	34.335	5	0	4	.823	5	0	4	-.984	6	0	4
116			min	13.927	6	0	4	.295	6	0	4	-2.743	5	0	4
117		9	max	34.2	5	0	4	.823	5	0	4	-.492	6	0	4
118			min	13.791	6	0	4	.295	6	0	4	-1.372	5	0	4
119		10	max	34.065	5	0	4	.823	5	0	4	0	4	0	4
120			min	13.656	6	0	4	.295	6	0	4	0	4	0	4
121	M18	1	max	57.523	5	-.315	6	0	4	0	4	0	4	0	4
122			min	23.283	6	-.806	5	0	4	0	4	0	4	0	4
123		2	max	57.488	5	-.315	6	0	4	0	4	0	4	1.343	5
124			min	23.247	6	-.806	5	0	4	0	4	0	4	.524	6
125		3	max	57.452	5	-.315	6	0	4	0	4	0	4	2.685	5
126			min	23.212	6	-.806	5	0	4	0	4	0	4	1.049	6
127		4	max	57.417	5	-.315	6	0	4	0	4	0	4	4.028	5
128			min	23.176	6	-.806	5	0	4	0	4	0	4	1.573	6
129		5	max	57.381	5	-.315	6	0	4	0	4	0	4	5.371	5
130			min	23.141	6	-.806	5	0	4	0	4	0	4	2.098	6
131		6	max	57.346	5	-.315	6	0	4	0	4	0	4	6.713	5
132			min	23.106	6	-.806	5	0	4	0	4	0	4	2.622	6
133		7	max	57.311	5	-.315	6	0	4	0	4	0	4	8.056	5
134			min	23.07	6	-.806	5	0	4	0	4	0	4	3.147	6
135		8	max	57.275	5	-.315	6	0	4	0	4	0	4	9.399	5
136			min	23.035	6	-.806	5	0	4	0	4	0	4	3.671	6
137		9	max	57.24	5	-.315	6	0	4	0	4	0	4	10.741	5
138			min	22.999	6	-.806	5	0	4	0	4	0	4	4.196	6
139		10	max	57.204	5	-.315	6	0	4	0	4	0	4	12.084	5
140			min	22.964	6	-.806	5	0	4	0	4	0	4	4.72	6
141	M19	1	max	81.273	5	1.891	5	0	4	0	4	0	4	4.092	5
142			min	32.834	6	.824	6	0	4	0	4	0	4	2.19	6
143		2	max	81.213	5	1.891	5	0	4	0	4	0	4	.941	5
144			min	32.774	6	.824	6	0	4	0	4	0	4	.817	6
145		3	max	81.154	5	1.891	5	0	4	0	4	0	4	-.556	6
146			min	32.715	6	.824	6	0	4	0	4	0	4	-2.21	5
147		4	max	81.094	5	1.891	5	0	4	0	4	0	4	-1.929	6
148			min	32.655	6	.824	6	0	4	0	4	0	4	-5.36	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
149		5	max	81.034	5	1.891	5	0	4	0	4	0	4	-3.301	6
150			min	32.596	6	.824	6	0	4	0	4	0	4	-8.511	5
151		6	max	80.975	5	1.891	5	0	4	0	4	0	4	-4.674	6
152			min	32.536	6	.824	6	0	4	0	4	0	4	-11.662	5
153		7	max	80.915	5	1.891	5	0	4	0	4	0	4	-6.047	6
154			min	32.476	6	.824	6	0	4	0	4	0	4	-14.813	5
155		8	max	80.855	5	1.891	5	0	4	0	4	0	4	-7.419	6
156			min	32.417	6	.824	6	0	4	0	4	0	4	-17.964	5
157		9	max	80.796	5	1.891	5	0	4	0	4	0	4	-8.792	6
158			min	32.357	6	.824	6	0	4	0	4	0	4	-21.115	5
159		10	max	80.736	5	1.891	5	0	4	0	4	0	4	-10.165	6
160			min	32.297	6	.824	6	0	4	0	4	0	4	-24.266	5
161	M18A	1	max	-.571	6	30.711	5	0	4	0	4	0	4	345.593	5
162			min	-1.365	5	12.343	6	0	4	0	4	0	4	136.81	6
163		2	max	-.571	6	30.65	5	0	4	0	4	0	4	325.139	5
164			min	-1.365	5	12.282	6	0	4	0	4	0	4	128.601	6
165		3	max	-.571	6	30.589	5	0	4	0	4	0	4	304.726	5
166			min	-1.365	5	12.221	6	0	4	0	4	0	4	120.433	6
167		4	max	-.571	6	30.528	5	0	4	0	4	0	4	284.353	5
168			min	-1.365	5	12.16	6	0	4	0	4	0	4	112.306	6
169		5	max	-.571	6	30.467	5	0	4	0	4	0	4	264.021	5
170			min	-1.365	5	12.099	6	0	4	0	4	0	4	104.22	6
171		6	max	-.571	6	30.406	5	0	4	0	4	0	4	243.73	5
172			min	-1.365	5	12.038	6	0	4	0	4	0	4	96.174	6
173		7	max	-.571	6	30.346	5	0	4	0	4	0	4	223.479	5
174			min	-1.365	5	11.977	6	0	4	0	4	0	4	88.168	6
175		8	max	-.571	6	17.621	5	0	4	0	4	0	4	204.114	5
176			min	-1.365	5	7.044	6	0	4	0	4	0	4	80.529	6
177		9	max	-.571	6	17.56	5	0	4	0	4	0	4	192.387	5
178			min	-1.365	5	6.983	6	0	4	0	4	0	4	75.853	6
179		10	max	-.571	6	17.499	5	0	4	0	4	0	4	180.701	5
180			min	-1.365	5	6.922	6	0	4	0	4	0	4	71.217	6
181	M19A	1	max	.758	5	-14.537	6	0	4	0	4	0	4	132.013	5
182			min	.286	6	-36.834	5	0	4	0	4	0	4	52.26	6
183		2	max	.758	5	-14.598	6	0	4	0	4	0	4	156.589	5
184			min	.286	6	-36.895	5	0	4	0	4	0	4	61.972	6
185		3	max	.758	5	-14.659	6	0	4	0	4	0	4	181.206	5
186			min	.286	6	-36.956	5	0	4	0	4	0	4	71.724	6
187		4	max	.758	5	-14.72	6	0	4	0	4	0	4	205.864	5
188			min	.286	6	-37.017	5	0	4	0	4	0	4	81.517	6
189		5	max	.758	5	-14.781	6	0	4	0	4	0	4	230.562	5
190			min	.286	6	-37.078	5	0	4	0	4	0	4	91.351	6
191		6	max	.758	5	-14.842	6	0	4	0	4	0	4	255.3	5
192			min	.286	6	-37.139	5	0	4	0	4	0	4	101.225	6
193		7	max	.758	5	-14.903	6	0	4	0	4	0	4	280.08	5
194			min	.286	6	-37.2	5	0	4	0	4	0	4	111.14	6
195		8	max	.758	5	-14.964	6	0	4	0	4	0	4	304.9	5
196			min	.286	6	-37.261	5	0	4	0	4	0	4	121.095	6
197		9	max	.758	5	-19.897	6	0	4	0	4	0	4	336.515	5
198			min	.286	6	-49.986	5	0	4	0	4	0	4	133.69	6
199		10	max	.758	5	-19.958	6	0	4	0	4	0	4	369.859	5
200			min	.286	6	-50.047	5	0	4	0	4	0	4	146.974	6

Permit #: 2015-916743-LT
RSN: 966198

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k...	LC	z-z Moment[k-ft]	LC
201	M20	1	max	-.571	6	17.483	5	0	4	0	4	0	4	180.701	5
202			min	-1.365	5	6.92	6	0	4	0	4	0	4	71.217	6
203		2	max	-.571	6	17.397	5	0	4	0	4	0	4	149.696	5
204			min	-1.365	5	6.834	6	0	4	0	4	0	4	58.992	6
205		3	max	-.571	6	17.312	5	0	4	0	4	0	4	118.843	5
206			min	-1.365	5	6.749	6	0	4	0	4	0	4	46.918	6
207		4	max	-.571	6	4.562	5	0	4	0	4	0	4	99.836	5
208			min	-1.365	5	1.791	6	0	4	0	4	0	4	39.495	6
209		5	max	-.571	6	4.476	5	0	4	0	4	0	4	91.802	5
210			min	-1.365	5	1.705	6	0	4	0	4	0	4	36.388	6
211		6	max	-.571	6	4.391	5	0	4	0	4	0	4	83.92	5
212			min	-1.365	5	1.62	6	0	4	0	4	0	4	33.432	6
213		7	max	-.571	6	-3.338	6	0	4	0	4	0	4	81.973	5
214			min	-1.365	5	-8.359	5	0	4	0	4	0	4	32.854	6
215		8	max	-.571	6	-3.424	6	0	4	0	4	0	4	96.909	5
216			min	-1.365	5	-8.445	5	0	4	0	4	0	4	38.865	6
217		9	max	-.571	6	-3.509	6	0	4	0	4	0	4	111.998	5
218			min	-1.365	5	-8.53	5	0	4	0	4	0	4	45.028	6
219		10	max	-.571	6	-3.595	6	0	4	0	4	0	4	127.239	5
220			min	-1.365	5	-8.616	5	0	4	0	4	0	4	51.343	6

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code ...	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z [...	Cb	Eqn
1	M10	W16x31	.752	11.77	5	.251	19.75	y	5	257.241	295.812	18.981	145.8	1	H1-1b
2	M11	W18x40	.625	5	5	.302	5	y	5	348.866	382.32	27	211.68	1	H1-1b
3	M12	W18x40	.659	0	5	.287	0	y	5	348.866	382.32	27	211.68	1	H1-1b
4	M14	W18x50	.941	16.0...	5	.252	0	y	5	413.766	476.28	44.82	272.7	1	H1-1b
5	M15	W10x68	.138	0	5	.003	0	z	5	500.482	644.76	108.27	222.08	1	H1-1b
6	M16	W10x68	.149	0	5	.003	0	z	5	500.482	644.76	108.27	222.08	1	H1-1b
7	M18	PIPE_6.0	.850	15	5	.016	0		5	120.556	168.48	28.62	28.62	1.678	H1-1a
8	M19	HSS8x8x5	.527	15	5	.018	0	y	5	290.161	362.664	86.595	86.595	1.895	H1-1a
9	M18A	W24x76	.641	0	5	.135	0	y	5	677.471	725.76	77.22	540	1	H1-1b
10	M19A	W24x76	.685	6	5	.220	6	y	5	677.471	725.76	77.22	540	1	H1-1b
11	M20	W18x40	.870	0	5	.144	0	y	5	343.847	382.32	27	208.204	1	H1-1b

Permit #: 2015-916743-LT
RSN: 966198

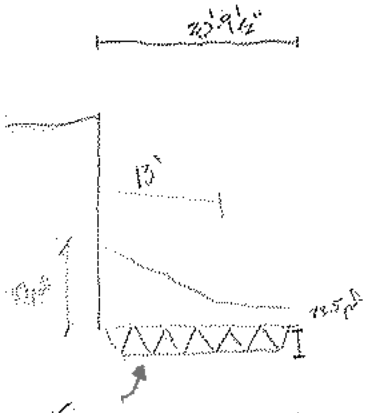
Bearing Wall Removal Calculations

An existing interior bearing wall supporting roof joists needs to be removed for the architectural layout. The existing loads on the wall were determined and new beams and columns were designed to replace the bearing wall. No foundation strengthening is required for the alteration.

Structural Design Group

DL: 20psf

SL



Joist 20psf × 4 ft. = 80plf

Snow 91psf × 4 ft. = 382 plf
28.5 × 4 ft. = 114plf

M_u = 17 kip-ft = 204 k-in < 227 k-in ✓

V_u = 3500 lb < 8600 lb ✓

12HS Joist
2 spacing
Above 4' spacing from 1997 Code

DL: 25psf × 10.4ft = 260plf

SL: 28.5psf × 7.8 ft = 40.6 × 24 ft = 328plf

Column Load 12K = P_u Factored (8K Service)

15 ft Column 3½" ϕ 40 Pipe ϕP_n = 31K ✓

2000psf Bearing 2'-6" × 2'-6" Footing

U-9 Uplift Uplift 3-HS Cl B

A_c = 21' × 9' = 189 ft²

Uplift 224 psf

At Main 224psf × 10.4ft × 23'/2 = 2.7K Uplift = 9.8K Uplift

Project Bearing Wall Removal Project No.

By Date Sheet of

Permit #: 2015-916743-LT
RSN: 966198

Gravity Beam Design

RAM SBeam v5.01
Short Span

02/26/15 18:42:00

STEEL CODE: AISC 360-05 LRFD

SPAN INFORMATION (ft): I-End (0.00,0.00) J-End (21.00,0.00)

Beam Size (User Selected) = W16X31 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Cantilever on left (ft) = 2.00
Cantilever on right (ft) = 1.00
Mp (kip-ft) = 225.00
Top flange not braced by decking.

LINE LOADS (k/ft):

Load	Dist (ft)	DL	LL
1	0.000	0.031	0.000
	2.000	0.031	0.000
2	0.000	0.260	0.330
	2.000	0.260	0.330
3	2.000	0.031	0.000
	20.000	0.031	0.000
4	2.000	0.260	0.330
	20.000	0.260	0.330
5	20.000	0.031	0.000
	21.000	0.031	0.000
6	20.000	0.260	0.330
	21.000	0.260	0.330

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 7.98 kips 1.00Vn = 131.18 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Left	Max -	1.2DL+1.6LL	-1.8	2.0	2.0	1.00	0.90	202.50
Center	Max +	1.2DL+1.6LL	35.1	11.0	18.0	1.14	0.90	73.23
	Max -	1.2DL+1.6LL	-1.8	2.0	18.0	1.15	0.90	73.98
Right	Max -	1.2DL+1.6LL	-0.4	20.0	1.0	1.00	0.90	202.50
Controlling		1.2DL+1.6LL	35.1	11.0	18.0	1.14	0.90	73.23

REACTIONS (kips):

	Left	**Right**
DL reaction	3.23	2.89
Max +LL reaction	3.67	3.31
Max -LL reaction	-0.01	-0.04
Max +total reaction (factored)	9.74	8.76

DEFLECTIONS:

Left cantilever:

Dead load (in) = 0.021 L/D = 2271
Pos Live load (in) = -0.002 L/D = 31569
Neg Live load (in) = 0.025 L/D = 1884
Neg Total load (in) = 0.047 L/D = 1030

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Gravity Beam Design

Center span:							
Dead load (in)	at	11.00 ft	=	-0.061	L/D	=	3548
Live load (in)	at	11.00 ft	=	-0.072	L/D	=	3014
Net Total load (in)	at	11.00 ft	=	-0.133	L/D	=	1630
Right cantilever:							
Dead load (in)	=	0.011		L/D	=	2219	
Neg Live load (in)	=	0.013		L/D	=	1884	
Neg Total load (in)	=	0.024		L/D	=	1019	

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Gravity Beam Design

RAM SBeam v5.01
Long Span

02/26/15 18:41:19

STEEL CODE: AISC 360-05 LRFD

SPAN INFORMATION (ft): I-End (0.00,0.00) J-End (25.00,0.00)

Beam Size (User Selected) = W16X36 Fy = 50.0 ksi
Total Beam Length (ft) = 25.00
Cantilever on left (ft) = 1.00
Cantilever on right (ft) = 1.00
Mp (kip-ft) = 266.67
Top flange not braced by decking.

LINE LOADS (k/ft):

Load	Dist (ft)	DL	LL
1	0.000	0.036	0.000
	1.000	0.036	0.000
2	0.000	0.260	0.330
	1.000	0.260	0.330
3	1.000	0.036	0.000
	24.000	0.036	0.000
4	1.000	0.260	0.330
	24.000	0.260	0.330
5	24.000	0.036	0.000
	25.000	0.036	0.000
6	24.000	0.260	0.330
	25.000	0.260	0.330

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.17 kips 1.00Vn = 140.71 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Left	Max -	1.2DL+1.6LL	-0.4	1.0	1.0	1.00	0.90	240.00
Center	Max +	1.2DL+1.6LL	58.2	12.5	23.0	1.14	0.90	87.94
	Max -	1.2DL+1.6LL	-0.4	24.0	23.0	1.14	0.90	88.14
Right	Max -	1.2DL+1.6LL	-0.4	24.0	1.0	1.00	0.90	240.00
Controlling		1.2DL+1.6LL	58.2	12.5	23.0	1.14	0.90	87.94

REACTIONS (kips):

	Left	Right
DL reaction	3.70	3.70
Max +LL reaction	4.13	4.13
Max -LL reaction	-0.01	-0.01
Max +total reaction (factored)	11.05	11.05

DEFLECTIONS:

Left cantilever:

Dead load (in) = 0.020 L/D = 1216
Neg Live load (in) = 0.022 L/D = 1079
Neg Total load (in) = 0.042 L/D = 572

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Gravity Beam Design

Center span:							
Dead load (in)	at	12.50 ft	=	-0.142	L/D	=	1941
Live load (in)	at	12.50 ft	=	-0.160	L/D	=	1726
Net Total load (in)	at	12.50 ft	=	-0.302	L/D	=	914
Right cantilever:							
Dead load (in)	=	0.020		L/D	=	1216	
Neg Live load (in)	=	0.022		L/D	=	1079	
Neg Total load (in)	=	0.042		L/D	=	572	

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Boom Support Calculations

All existing members that were to support new surgical booms were checked for the additional gravity loads. No strengthening is required to support any of the new booms.

Structural Design Group

Floor 2

OR 9

DL = 20 psf × 6.83' = 140 plf
SL = 30 psf × 6.83' = 205 plf



Half to
both beams

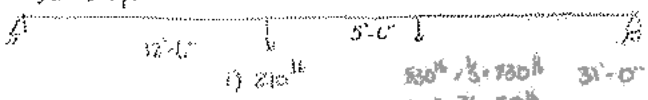
LLD/Hdgr Dual
210 lb/2 = 105 lb

Tenant Partition
Dual Flat Panel
830 lb/2 = 415 lb

Factored: Mu = 80 in-k φMn = 124 in-k ✓

OR 10

DL 140 plf
SL = 205 plf



1) 210 lb
2) 0

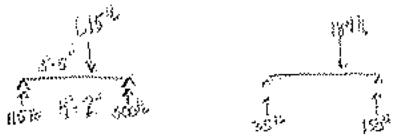
830 lb × 1/3 = 280 lb
830 lb × 2/3 = 550 lb

Factored: Mu = 68 in-k φMn = 124 in-k ✓

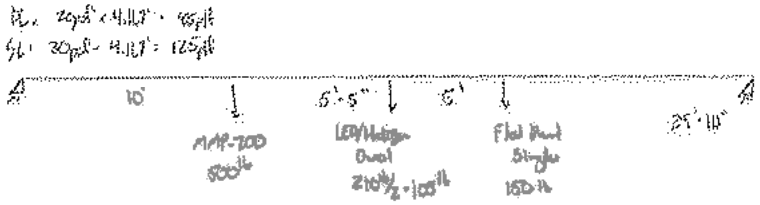
Structural Design Group

Phase 3

OR 7

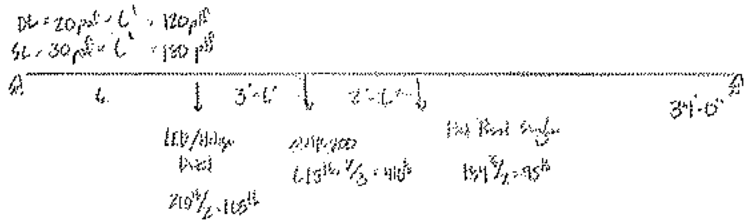


1RH5



Factored $M_u = 27^{k-ft}$ Allowable Moment = 27^{k-ft}

OR 8



Factored $M_u = 70^{k-ft}$ $\phi M_n = 124^{k-ft}$

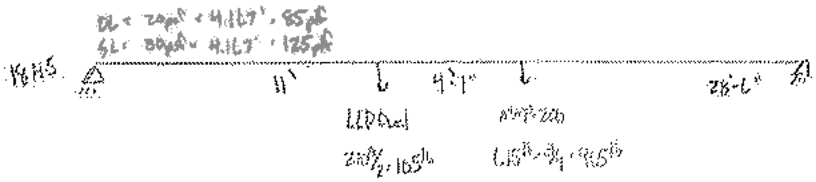
Project _____ Project No. _____

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Structural Design Group

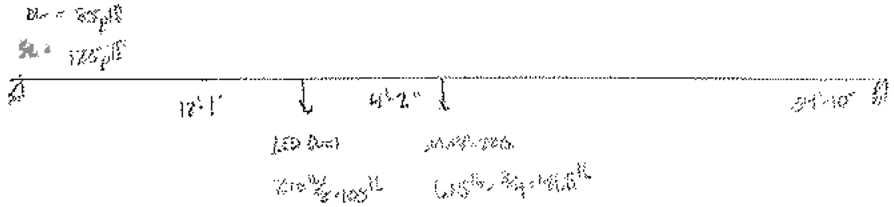
Phase 4

OR 5



Provide $M_u = 25^{k\text{-}ft}$ Allowable Moment = $27^{k\text{-}ft}$ ✓

OR 6



Provided $M_u = 32.5^{k\text{-}ft}$ Allowable Moment = $35^{k\text{-}ft}$ ✓

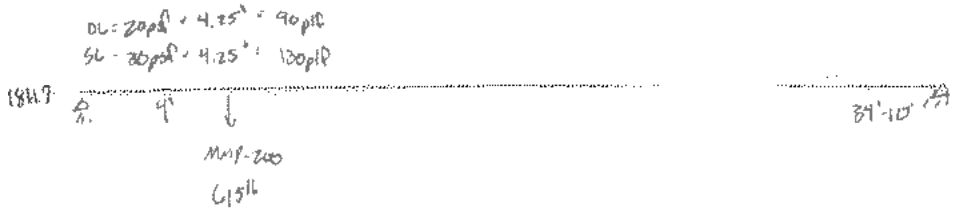
Project _____ Project No. _____

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Structural Design Group

Phase 5

OR 11



Section M_u: 35^{k-ft} Allowable Moment = 38^{k-ft} ✓

W21×62 Fixed End Girder

Ample capacity for 2 LED Quad Lights

Structural Design Group

Phase 6

OR 1 + OR 2

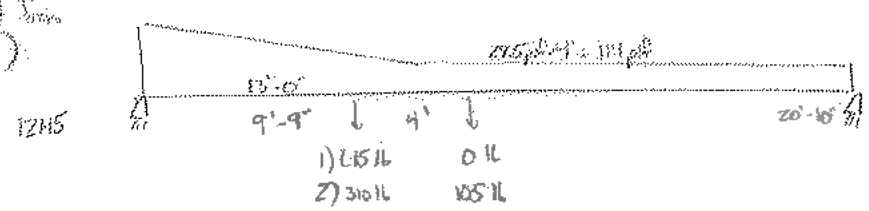
Existing Drawings of Concrete slabs not available

Assume no reinforcement required for concrete attachment

OR 3

(See Calc from Tedds)

LL = 20psf × 4' = 80plf
SL = 89psf × 4' = 356plf



12HS

* Joist Spacing Unknown
Assume 4'-0" From 1997 Drawings

2 Scenarios - All weight from 1 beam on joist
- Half weight from 2 beams on joist

Service Mmax: 1) 17.5 k-ft
2) 16.0 k-ft

Allowable Moment = 18.5 k-ft ✓ ✓

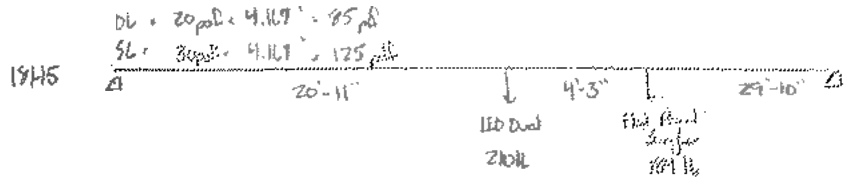
Project _____ Project No. _____

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Structural Design Group

Phase 7

OR 4



Service Max = 25k-ft Allowable Moment = 27k-ft ✓

Project _____ Project No. _____

By _____ Date _____ Sheet _____ of _____

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STANDARD LOAD TABLE
OPEN WEB STEEL JOISTS, H SERIES

Based on a Maximum Allowable Tensile Stress of 30,000 PSI††

Adopted by the Steel Joist Institute October 1, 1974, Revised to November 7, 1983.
Standard Load Table, Copyright Steel Joist Institute. Reprinted by permission.

The black figures in the following table give the TOTAL safe uniformly distributed load-carrying capacities, in pounds per linear foot, of H Series Steel Joists. The weight of DEAD loads, including the joists, must be deducted to determine the LIVE load carrying capacities of the joists. The load table may be used for parallel chord joists installed to a maximum slope of ½ inch per foot.

The figures shown in blue in this load table are the LIVE loads per linear foot of joist which will produce an approximate deflection of 1/360 of the span. LIVE loads which will produce a deflection of 1/240 of the span may be obtained by multiplying the figures in blue by 1.5. In no case shall the total load capacity of the joists be exceeded.**

Tests on steel joists designed in accordance with the Standard Specifications have demonstrated that the Standard Load Tables are applicable for concentrated top chord loadings (such as are developed in bulb-tee roof construction) when the sum of the equal concentrated top chord loadings does not exceed the allowable uniform loading for the joist type and span and the loads are placed at spacings not exceeding 33″ along the top chord.

Allowable total safe loads in pounds per linear foot of H Series Steel Joists — for joist depths 8″ to 16″

JOIST TYPE	8H3	10H3	10H4	12H3	12H4	12H5	12H6	14H3	14H4	14H5	14H6	14H7	16H4	16H5	16H6	16H7	16H8
OVERALL DEPTH (inches)	8	10	10	12	12	12	12	14	14	14	14	14	16	16	16	16	16
RESISTING MOM. (inch-kips)	91	116	148	140	180	222	260	165	212	259	307	369	221	289	344	413	478
MAX. END REAC. (pounds)	2400	2500	2800	2800	3200	3600	3900	3200	3500	3800	4200	4600	3800	4300	4600	4900	5200
MOM. OF INERTIA (inches⁴)	12.3	19.8	24.5	28.9	37.8	44.3	52.6	40.1	52.4	61.4	73.2	86.2	64.5	79.3	93.5	112.6	129.5
†APPROX. WEIGHT (lbs./ft.)	5.0	5.0	6.1	5.2	6.2	7.1	8.2	5.5	6.5	7.4	8.6	10.0	6.6	7.8	8.6	10.3	11.4
SPAN (ft.)																	
8	600	500	560	467	533	600	650	457	500	543	600	657	475	538	575	613	650
9	533	500	560	467	533	600	650	457	500	543	600	657	475	538	575	613	650
10	480	500	560	467	533	600	650	457	500	543	600	657	475	538	575	613	650
11	436	455	509	467	533	600	650	457	500	543	600	657	475	538	575	613	650
12	400	417	467	467	533	600	650	457	500	543	600	657	475	538	575	613	650
13	359	385	431	431	492	554	600	457	500	543	600	657	475	538	575	613	650
14	310	357	400	400	457	514	557	457	500	543	600	657	475	538	575	613	650
15	270	333	373	373	427	480	520	427	467	507	560	613	475	538	575	613	650
16	232	302	350	350	400	450	488	400	438	475	525	575	475	538	575	613	650
17		268	329	323	376	424	459	376	412	447	494	541	447	506	541	576	612
18		239	305	288	356	400	433	340	389	422	467	511	422	478	511	544	578
19		214	273	259	332	379	411	305	368	400	442	484	400	453	484	516	547
20		193	247	233	300	360	390	275	350	380	420	460	368	430	460	490	520
21				212	272	336	371	249	320	362	400	438	334	410	438	467	495
22				193	248	306	355	227	292	345	382	418	304	391	418	445	473
23				176	227	280	328	208	267	326	365	400	279	364	400	426	452
24				162	208	257	301	191	245	300	350	383	256	334	383	408	433
25								176	226	276	327	368	236	308	367	392	416
26								163	209	255	303	354	218	285	339	377	400
27								151	194	237	281	337	202	264	315	363	385
28								140	180	220	261	314	188	246	293	350	371
29													175	229	273	327	359
30													164	214	255	306	347
31													153	200	239	287	332
32													144	188	224	269	311

† Approximate Weights per Linear Foot of steel joists only. Accessories not included.
†† For an approximate total load carrying capacity at a maximum allowable tensile stress of 22,000 psi, the total load carrying capacity shown in the load table should be multiplied by the ratio 22/30.
** Section 5.9 of the "Standard Specifications for Open Web Steel Joists, H Series" limits the design LIVE load deflection.

LOADS ABOVE THE COLORED LINES ARE GOVERNED BY SHEAR.

Permit #: 2015-916743-LT
REV 16 06/09

STANDARD LOAD TABLE / OPEN WEB STEEL JOISTS, H SERIES

Based on a Maximum Allowable Tensile Stress of 30,000 PSI††

Allowable total safe loads in pounds per linear foot of H Series Steel Joists — for joist depths 18" to 22"

JOIST TYPE	18H5	18H6	18H7	18H8	18H9	18H10	18H11	20H5	20H6	20H7	20H8	20H9	20H10	20H11	22H6	22H7	22H8	22H9	22H10	22H11
OVERALL DEPTH (inches)	18	18	18	18	18	18	18	20	20	20	20	20	20	20	22	22	22	22	22	22
RESISTING MOM. (inch-kips)	325	383	466	540	627	705	814	365	406	499	602	701	789	912	422	526	653	776	873	1009
MAX. END REAC. (pounds)	4500	4800	5200	5400	5900	6600	7600	4800	5100	5400	5600	6400	7000	7900	5400	5600	5800	6700	7200	8100
MOM. OF INERTIA (inches⁴)	101.5	119.8	143.5	164.3	179.0	202.0	229.0	123.9	141.2	171.7	206.5	224.0	253.0	287.0	165.1	200.4	247.6	275.0	309.0	352.0
APPROX. WEIGHT (lbs./ft.)†	8.0	9.2	10.4	11.6	12.6	14.0	15.8	8.4	9.6	10.7	12.2	13.2	14.6	16.4	9.7	10.7	12.0	13.8	15.2	16.9
SPAN (ft.)																				
18	500	533	578	600	621	629	633	480	510	540	560	640	636	632	491	509	527	609	626	648
19	474	505	547	568	621	629	633	480	510	540	560	640	636	632	491	509	527	609	626	648
20	450	480	520	540	590	629	633	480	510	540	560	640	636	632	491	509	527	609	626	648
21	429	457	495	514	562	629	633	457	486	514	533	610	636	632	491	509	527	609	626	648
22	409	436	473	491	536	600	633	436	464	491	509	582	636	632	491	509	527	609	626	648
23	391	417	452	470	513	574	633	417	443	470	487	557	609	632	470	487	504	583	626	648
24	375	400	433	450	492	550	633	400	425	450	467	533	583	632	450	467	483	558	600	648
25	347	384	416	432	472	528	608	384	408	432	448	512	560	632	432	448	464	536	576	648
26	321	369	400	415	454	508	585	360	392	415	431	492	538	608	415	431	446	515	554	623
27	297	350	385	400	437	489	563	334	371	400	415	474	519	585	386	415	430	496	533	600
28	276	326	371	386	421	471	543	310	345	386	400	457	500	564	359	400	414	479	514	579
29	258	304	359	372	407	455	524	289	322	372	386	441	483	545	335	386	400	462	497	559
30	241	284	345	360	393	440	507	270	301	360	373	427	467	527	313	373	387	447	480	540
31	225	266	323	348	381	426	490	253	282	346	361	413	452	510	293	361	374	432	465	523
32	212	249	303	338	369	413	475	238	264	325	350	400	438	494	275	342	363	419	450	506
33	199	234	285	327	358	400	461	223	249	305	339	388	424	479	258	322	352	406	436	491
34	187	221	269	311	347	388	447	210	234	288	329	376	412	465	243	303	341	394	424	476
35	177	208	254	294	337	377	434	199	221	272	320	366	400	451	230	286	331	383	411	463
36	167	197	240	278	323	363	419	188	209	257	310	356	389	439	217	271	322	372	400	450
37								178	198	243	293	341	378	427	206	256	314	362	389	438
38								169	187	230	278	324	364	416	195	243	301	353	379	426
39								160	178	219	264	307	346	400	185	231	286	340	369	415
40								152	169	208	251	292	329	380	176	219	272	323	360	405
41															167	209	259	308	346	395
42															159	199	247	293	330	381
43															152	190	235	280	315	364
44															145	181	225	267	301	347

† Approximate Weights per Linear Foot of steel joists only. Accessories not included.

†† For an approximate total load carrying capacity at a maximum allowable tensile stress of 22,000 psi, the total load carrying capacity shown in the load table should be multiplied by the ratio 22/30.

** Section 5.9 of the "Standard Specifications for Open Web Steel Joists, H Series" limits the design LIVE load deflection.

LOADS ABOVE THE COLORED LINES ARE GOVERNED BY SHEAR.

6.4 Mechanical Specifications

Max Load Capacity	With all models, including Stryker Visum™ Surgical Light
Navigation Spring Arm:	up to 7.0 kg (15.4 lbs)
Single Flat Panel Spring Arm:	up to 18 kg (39.6 lbs)
Dual Flat Panel Spring Arm:	up to 45 kg (99.2 lbs)
Horizontal Arm:	up to 45 kg (99.2 lbs)
Flat Panel Spring Arm on Light Suspensions	up to 21 kg* (46.3 lbs)
Medium Duty Dual Yoke Spring Arm Medium Duty Suspension Spring Arm	up to 45 kg (99.2 lbs)
Light Duty Suspension Spring Arm	up to 16 kg (35.3 lbs)

*Check load capacity of Spring Arm prior to loading.

6.5 Support Structure Loads

Support Structure Loads			Load Location	
Equipment	Suspension	Weight	x	y
LED and Halogen	Single	131 lbs (59 kg)	34.4" (874mm)	53" (1346mm)
	Dual	204 lbs (93 kg)	40.2" (1021mm)	61.6" (1564mm)
	Triple	282 lbs (128 kg)	45.6" (1158mm)	65.4" (1661mm)
Flat Panel Arm	Single	184 lbs (83 kg)	31" (787mm)	45" (1143mm)
	Dual	214 lbs (97 kg)	33" (838mm)	49" (1245mm)
EHA/Hybrid	Single	162 lbs (74 kg)	56.3" (1430mm)	53.2" (1351mm)
	Dual	268 lbs (122 kg)	66.2" (1681mm)	60.7" (1542mm)
Visum Blade LED	Single	145 lbs (66kg)	32.7" (831mm)	46.3" (1175mm)
	Dual	238 lbs (108 kg)	42.4" (1078mm)	53.8" (1366mm)
	Triple	328 lbs (149 kg)	43.9" (1116mm)	58.3" (1480mm)
Medium Duty Dual Yoke	N/A	238 lbs (108 kg)	51.2" (1300mm)	30.6" 9777mm)
Medium Duty Suspension				
Light Duty Suspension				

Surgical Light / Flat Panel Booms

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Specification for High Seismic Zone (Long Flange*)					
Mount	**Arm**	**Weight**	**X**	**Y**	**Arm Angle****
OSC600	800/600	825 lbs (374 kg)	41.4" (105.2 cm)	60.9" (154.7 cm)	45°
	800/800	810 lbs (367 kg)	45.8" (116.3 cm)	60.5" (153.7 cm)	45°
	800/1000	815 lbs (370 kg)	49.1" (124.7 cm)	58" (147.3 cm)	45°
	1000/1000	780 lbs (354 kg)	62.6" (159 cm)	55.2" (140.2 cm)	0°
	1000/800	805 lbs (365 kg)	51.3" (130.3 cm)	57.9" (147.1 cm)	45°
MMP	800/1000	603 lbs (274 kg)	50" (127 cm)	50.5" (128.3 cm)	Any
	1000/1000	615 lbs (279 kg)	55.8" (141.7cm)	49.8" (126.5 cm)	

* Long Flange is 1 inch +/- longer than Regular Flange for OSC 400 boom. Long Flange is 2 inches +/- longer than Regular Flange for OSC 600 and MMP boom.

** Where applicable, Arm Angle for High Seismic Zones is a minimum angle at which the armset has to be placed to ensure product safety in the field when installed in areas suspectible to high seismic activity.

Equipment Boom

Permit #: 2015-916743-LT
RSN: 966198

Mount 1	Mount 2	Weight	X	Y
TANDEM				
MMP200 (con't)	DUAL FLAT PANEL ARM	829 lbs (376 kg)	53" (134.5 cm)	49.6" (126 cm)
	SINGLE HYBRID	777 lbs (352 kg)	59.6" (151.3 cm)	50.5" (128.3 cm)
	DUAL HYBRID	883 lbs (401 kg)	61.4" (156 cm)	53.1" (134.9 cm)
SINGLE FLAT PANEL ARM	SINGLE FLAT PANEL ARM	368 lbs (167 kg)	31" (78.7 cm)	45" (114.3 cm)
	DUAL FLAT PANEL ARM	398 lbs (181 kg)	31.6" (80.3 cm)	47.2" (119.8 cm)
	SINGLE HYBRID	346 lbs (157 kg)	43.2" (109.8 cm)	48.8" (124.1 cm)
	DUAL HYBRID	452 lbs (205 kg)	50.7" (128.8 cm)	54.3" (137.9 cm)
DUAL FLAT PANEL ARM	SINGLE HALOGEN	327 lbs (148 kg)	36.3" (92.3 cm)	45.9" (116.6 cm)
	DUAL HALOGEN	393 lbs (178 kg)	36.3" (92.3 cm)	45.8" (116.4 cm)
	TRIPLE HALOGEN	460 lbs (209 kg)	36.8" (93.6 cm)	46.3" (117.7 cm)
	SINGLE LED	345 lbs (156 kg)	35" (89 cm)	50.5" (128.3 cm)
	DUAL LED	418 lbs (190 kg)	36.7" (93.1 cm)	55.1" (140.1 cm)
	TRIPLE LED	496 lbs (225 kg)	39.3" (99.8 cm)	58.3" (148.1 cm)
	DUAL FLAT PANEL ARM	428 lbs (194 kg)	33" (83.8 cm)	49" (124.5 cm)
	SINGLE HYBRID	376 lbs (171 kg)	43.9" (111.5 cm)	50.8" (129.1 cm)
	DUAL HYBRID	482 lbs (219 kg)	50.8" (128.9 cm)	55.5" (141 cm)
SINGLE HALOGEN	SINGLE HALOGEN	226 lbs (103 kg)	37" (94 cm)	40" (101.6 cm)
	DUAL HALOGEN	292 lbs (132 kg)	36.8" (93.5 cm)	41.2" (104.7 cm)
	TRIPLE HALOGEN	359 lbs (163 kg)	37.4" (95 cm)	42.7" (108.6 cm)
	SINGLE FLAT PANEL ARM	297 lbs (135 kg)	31.8" (80.7 cm)	43.1" (109.5 cm)
	SINGLE HYBRID	275 lbs (125 kg)	47.2" (120 cm)	47.8" (121.4 cm)
	DUAL HYBRID	381 lbs (173 kg)	55" (139.6 cm)	54.6" (138.7 cm)
DUAL HALOGEN	DUAL HALOGEN	358 lbs (162 kg)	39" (99.1 cm)	42" (106.7 cm)
	TRIPLE HALOGEN	425 lbs (193 kg)	39.2" (99.5 cm)	43.2" (109.6 cm)
	SINGLE FLAT PANEL ARM	363 lbs (165 kg)	34.9" (88.5 cm)	43.5" (110.5 cm)
	SINGLE HYBRID	341 lbs (155 kg)	47.5" (120.7 cm)	47.3" (120.2 cm)
	DUAL HYBRID	447 lbs (203 kg)	54.1" (137.3 cm)	53.2" (135.2 cm)
TRIPLE HALOGEN	TRIPLE HALOGEN	492 lbs (223 kg)	41" (104.1 cm)	44" (111.8 cm)
	SINGLE FLAT PANEL ARM	430 lbs (195 kg)	37.6" (95.6 cm)	44.4" (112.8 cm)
	SINGLE HYBRID	408 lbs (185 kg)	48.4" (122.9 cm)	47.7" (121.2 cm)
	DUAL HYBRID	514 lbs (233 kg)	53.9" (136.8 cm)	52.7" (133.9 cm)

Tandem Equipment Boom + Light/Flat Panel (OR 9+10)