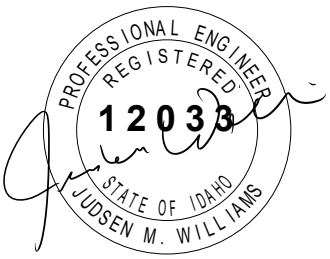
420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204 kpff.com

Twin Falls Judicial

Twin Falls, ID

Calculation Package



KPFF JOB # 10212200038

April 12, 2023

Twin Falls Judicial – Twin Falls, ID

Permit Submittal Structural Calculations

KPFF JOB # 10212200038

TABLE OF CONTENTS

Twin Falls Judicial – Twin Falls, ID

Permit Submittal Structural Calculations

KPFF JOB # 10212200038

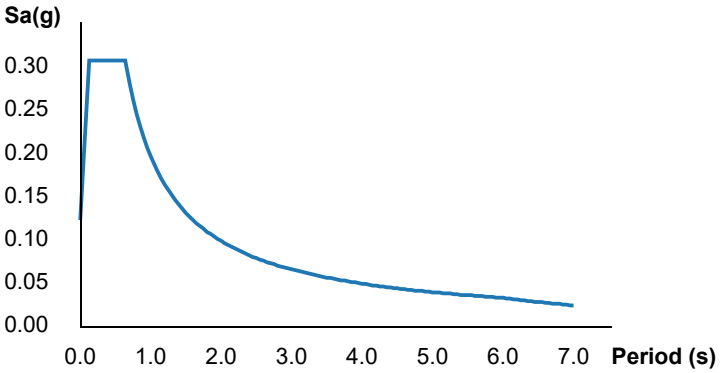
DESIGN LOAD CRITERIA

Hazards by Location

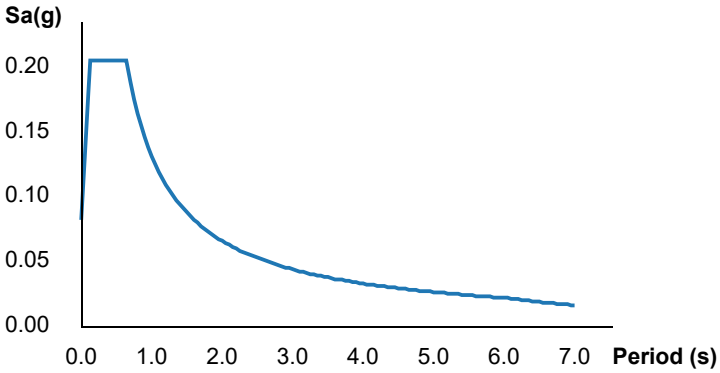
Search Information

Address:	427 Shoshone St N, Twin Falls, ID 83301
Coordinates:	42.5587269, -114.4668368
Elevation:	3729 ft
Timestamp:	2022-05-26T19:00:05.098Z
Hazard Type:	Seismic
Reference Document:	ASCE7-16
Risk Category:	III
Site Class:	D-default

MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.193	MCE_R ground motion (period=0.2s)
S_1	0.082	MCE_R ground motion (period=1.0s)
S_{MS}	0.308	Site-modified spectral acceleration value
S_{M1}	0.197	Site-modified spectral acceleration value
S_{DS}	0.205	Numeric seismic design value at 0.2s SA
S_{D1}	0.131	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2s
F_v	2.4	Site amplification factor at 1.0s

CR_S	0.918	Coefficient of risk (0.2s)
CR_1	0.944	Coefficient of risk (1.0s)
PGA	0.085	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.136	Site modified peak ground acceleration
T_L	6	Long-period transition period (s)
SsRT	0.193	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.21	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.082	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.087	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.5	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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⚠ This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

ℹ The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

Search Information

Address: 427 Shoshone St N, Twin Falls, ID 83301, USA

Coordinates: 42.5587269, -114.4668368

Elevation: 3729 ft

Timestamp: 2022-09-08T16:22:50.036Z

Hazard Type: Wind

ASCE 7-16

MRI 10-Year	72 mph
MRI 25-Year	78 mph
MRI 50-Year	83 mph
MRI 100-Year	88 mph
Risk Category I	96 mph
Risk Category II	103 mph
Risk Category III	109 mph
Risk Category IV	113 mph

ASCE 7-10

MRI 10-Year	76 mph
MRI 25-Year	84 mph
MRI 50-Year	90 mph
MRI 100-Year	96 mph
Risk Category I	105 mph
Risk Category II	115 mph
Risk Category III-IV	120 mph

ASCE 7-05

ASCE 7-05 Wind Speed	90 mph

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

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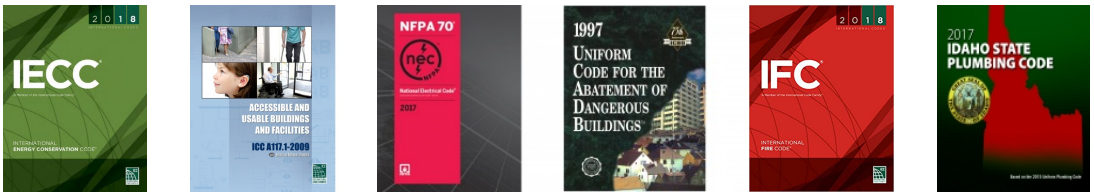
or liability for its accuracy. The material presented in the report should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. ATC does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the report provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the report.

Building Safety Department **P O Box 1907, Twin Falls, Id 83303** **208-735-7238**



Design Criteria for Commercial Construction in the jurisdiction of the City of Twin Falls

*****Effective January 1st , 2021*****

(See additional website links at bottom of last page)

Locally-adopted codes

2017 National Electrical Code (with Idaho State amendments)
2017 Idaho State Plumbing Code/website link: (see link on 2nd page/2017 Idaho State Plumbing Code)
2018 International Building Code (with Idaho State amendments)
2018 International Fire Code (see link at bottom of 2nd page)
2018 International Existing Building Code
2018 International Energy Conservation Code (with Idaho State amendments)
2018 International Mechanical Code (with Idaho State amendments)
2018 International Fuel Gas Code (with Idaho State amendments
2009 ICC A117.1-2009 Accessible and Usable Buildings and Facilities
1997 Uniform Code for the Abatement of Dangerous Buildings (per local ordinance)

Other criteria

- Wind speed – Designed per section 1609 of 2015 IBC (V_{ult}=(**105 mph**) Category I, (**115mph**) Category II, and (**120 mph**) Category III and IV)
- Wind exposure – "B" ("C" in some areas)
- Ground snow load – 15 psf
- Roof snow load – per IBC, but Section 1608 is amended to include that the minimum uniformly distributed design load shall be 25 psf. Table 1607.1 is amended to require a minimum uniform live load of 40 psf in habitable attics and sleeping rooms
- Seismic criteria –Per section 1613 of IBC https://earthquake.usgs.gov/hazards/designmaps/usedesign.php
- Frost depth – 24 inches
- Presumed soil bearing pressure–1500psf for "allowable stress design"; others to comply with chapter 16.
- Climate Zone – 5B

Building Department P O Box 1907, Twin Falls, Id 83303 208-735-7238

Design Criteria for Residential Construction in the jurisdiction of the City of Twin Falls
(One- and Two- Family Dwellings and Townhouses)

Effective January, 1st 2021

(See additional website links at bottom of page)

Locally-adopted codes

2018 International Residential Code, Parts I-VI and IX, appendices A, B and G (with State amendments).
2018 International Energy Conservation Code (with Idaho State amendments)
2017 National Electrical Code (with Idaho State amendments)
2017 Idaho State Plumbing Code/website: https://dbs.idaho.gov/programs/plumbing/

Other criteria

- Wind speed – 90 mph 3 sec. gust velocity
- Wind exposure – "B" ("C" in some areas)
- Seismic design category – "B" (IRC Structures Only-See Commercial Design Criteria for IBC)
- Presumed soil bearing pressure – 1500psf without soils investigation
- Frost depth – 24 inches
- Climate zone – 5B
- Winter heating design temperature is 2 degrees (99% dry bulb)
- Snow load – Ground snow load 15 psf. Minimum uniformly distributed design roof load shall be 25 psf per local ordinance.
- Table R301.5 is amended to require a minimum uniform live load of 40 psf in habitable attics and sleeping rooms.
- Foundations with stem walls shall be provided with a minimum of one # 4 bar at the top of the wall and one #4 bar at the bottom of the footing. #4 vertical bars are required at 6 feet on center.
- *Basement walls* to have one #4 horizontal bar at 4 feet on center. One #4 bar is also required horizontally and vertically around openings, extending 2 feet beyond the opening. One #4 bar to be placed diagonally at corners of openings subject to cracking. Vertical bars installed per IRC.
- Unvented fuel-burning appliances are not allowed.
- 30" minimum crawl space depth measured from bottom of floor joist (per local resolution)

State-adopted codes and other code links

Idaho Division of Building Safety Statutes and Rules
https://dbs.idaho.gov/wp-content/uploads/sites/105/2020/06/Building-Statutes-Rules-Book-2020.pdf

Idaho State Fire Marshal (DOI)
https://doi.idaho.gov/sfm/Prevention/Statutes

Idaho Manufactured Home Installation Standards
https://dbs.idaho.gov/programs/manufactured/

ICC Free e-Codes
https://codes.iccsafe.org/public/

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project	Twin Falls Judicial Building	by	CW	sheet no.
location	Twin Falls, ID	date	01/19/23	
client	CSHQA	job no.	10212200038	
	1.0 Design Criteria			

CODE: IBC 2018 Risk Category: III

Project Location

Latitude: 42.5588 Longitude: -114.4665 Address: 427 Shoshone St. N Twin Falls, ID

Snow Loading

p_g =	15.0 PSF	ASCE 7 Fig 7-1	p_m =	16.5 PSF	ASCE 7 Sec. 7.3.4
C_s =	1.0	ASCE 7 Fig 7-2	p_f =	11.6 PSF	ASCE 7 Eqn 7.3-1
C_e =	1.0	ASCE 7 Table 7-2	p_s =	11.6 PSF	ASCE 7 Eqn 7.4-1
C_t =	1.0	ASCE 7 Table 7-3	Υ =	16.0 PCF	ASCE 7 Eqn 7.7-1
I_s =	1.1	ASCE 7 Table 1.5-2	h_b =	0.7 FT	ASCE 7 Sec. 7.1

NOTE: Check local building jurisdiction for minimum snow loads! Jurisdiction min : 25.0 PSF

Rain Loading

Design Rainfall: 1.5 in/hr

Seismic Criteria

Lateral System: Intermediate Reinforced Masonry Shear Walls (Bearing)

Risk Category:	III	ASCE 7 Table 1.5-2	R:	3.5	ASCE 7 Table 12.2-1
Site Class:	C	ASCE 7 Sec. 20.1	Ω:	2.5	ASCE 7 Table 12.2-1
I_e :	1.25	ASCE 7 Table 1.5-2	C_d :	2.25	ASCE 7 Table 12.2-1
S_s :	0.193	ATC Seismic Maps	S_{DS} :	0.167	ATC Seismic Maps
S_1 :	0.082	ATC Seismic Maps	S_{D1} :	0.082	ATC Seismic Maps

Wind Criteria

Wind Speed, Vult :	120 MPH	ASCE 7 Sec 26.5	K_{zt} :	1.0	ASCE 7 Sec. 26.8
Exposure Category:	B	ASCE 7 Sec 26.7.3	K_d :	0.85	ASCE 7 Table 26.6-1
Risk Category:	III	ASCE 7 Table 1.5-1	K_z :	0.747	ASCE 7 Table 26.10-1
Mean Roof Height:	37.5 FT		K_e :	0.874	ASCE 7 Table 26.9-1
Roof Slope:	0.2:12	Enter as Rise to Run	G :	0.85	ASCE 7 Sec. 26.11
Elevation, Z_g :	3729 FT		θ (deg) :	0.90	

Foundation Criteria

Report :	Yes	Report Title :	TF21169B Final Report		
At Rest :	45 PSF/FT		Passive :	300 PSF/FT	
Bearing :	3000 PSF	6000 PSF	Friction φ :	0.55	0.7
Active :	60 PSF/FT		Frost Depth :	24 IN	

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project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	1.1 2nd Floor - Design Load		

Construction Type: IIB Fire Rating: No Rating Deck Type: W3 Deck

Dead Loads		typical	Raised Courtroom	courtroom	corridor ramp	corridor
Deck Self Weight:	Weight of MTL Deck and Conc per Catalogue	51.3 PSF	51.3 PSF	51.3 PSF	51.3 PSF	51.3 PSF
6" Concrete ramp:		0.0 PSF	0.0 PSF	0.0 PSF	75.0 PSF	0.0 PSF
1/2" Over Pour:		6.3 PSF	6.3 PSF	6.3 PSF	6.3 PSF	6.3 PSF
MEP:	Light ME Equipment (1psf), Plumbing, etc	6.0 PSF	6.0 PSF	6.0 PSF	6.0 PSF	6.0 PSF
Fire Sprinkler:		2.0 PSF	2.0 PSF	2.0 PSF	2.0 PSF	2.0 PSF
Ceiling Finish:	Suspended Accoustical Tile	2.0 PSF	2.0 PSF	2.0 PSF	2.0 PSF	2.0 PSF
Floor Finish:	Carpeting	1.0 PSF	1.0 PSF	1.0 PSF	1.0 PSF	1.0 PSF
Misc:	Courtroom Platform (10 psf)	2.0 PSF	21.0 PSF	12.0 PSF	2.0 PSF	2.0 PSF
	Superimposed Dead Load =	19.3 PSF	38.3 PSF	29.3 PSF	94.3 PSF	19.3 PSF
	Load for Joists, Beams and Girders =	70.6 PSF	89.6 PSF	80.6 PSF	145.6 PSF	70.6 PSF
Joist/Beam:	WF	4.4 PSF	4.4 PSF	4.4 PSF	4.4 PSF	4.4 PSF
	OWSJ	3.3 PSF	3.3 PSF	3.3 PSF	3.3 PSF	3.3 PSF
	Load for Columns =	78.2 PSF	97.2 PSF	88.2 PSF	153.2 PSF	78.2 PSF
Column Weight:	Steel Columns	1.3 PSF	1.3 PSF	1.3 PSF	1.3 PSF	1.3 PSF
	Load for Foundations =	79.5 PSF	98.5 PSF	89.5 PSF	154.5 PSF	79.5 PSF
Seismic Loads						
Partitions:	(If Required) Per ASCE 7 Sec 12.7.2	10.0 PSF	10.0 PSF	10.0 PSF	10.0 PSF	10.0 PSF
Storage Loads:	(If Required) Per ASCE 7 Sec 12.7.2	0.0 PSF	0.0 PSF	0.0 PSF	0.0 PSF	0.0 PSF
	Load used for Seismic Mass =	89.5 PSF	108.5 PSF	99.5 PSF	164.5 PSF	89.5 PSF

Live Loads

Load Type Per ASCE 7 Table 4-1	Reducible?	Load	Point Load
Offices	Yes	50 PSF	2.0 KIPS
Office First Floor Corridor	Yes	100 PSF	2.0 KIPS
Office Corridor Above 1st Floor	Yes	80 PSF	2.0 KIPS
Partitions	Yes	15 PSF	0.0 KIPS
Stairs and Exit Ways	Yes	100 PSF	0.3 KIPS
Library Stack Room	No	150 PSF	1.0 KIPS
Light Storage	No	125 PSF	0.0 KIPS

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project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	1.2 Roof - Design Load		

Construction Type: IIB Fire Rating: No Rating Deck Type: W3 Deck

Dead Loads		North of grid C	South of grid C
Deck Self Weight:	Weight of MTL Deck	3.0 PSF	3.0 PSF
Roof Insulation:	8" Rigid Insulation	12.0 PSF	12.0 PSF
Roof Covering:	Single Ply Waterproofing + Dens-glass	4.0 PSF	4.0 PSF
MEP:	Light ME Equipment (1.6psf), Plumbing, etc	6.6 PSF	6.6 PSF
Fire Sprinkler:		2.0 PSF	2.0 PSF
Ceiling Finish:	Suspended Accoustical Tile	2.0 PSF	2.0 PSF
Misc:	RTU and DOAS (1.1psf)	2.9 PSF	4.0 PSF
	Superimposed Dead Load =	29.5 PSF	30.6 PSF
	Load for Joists, Beams and Girders =	32.5 PSF	33.6 PSF
Joist/Beam:	WF	1.9 PSF	1.9 PSF
	OWSJ	2.0 PSF	2.0 PSF
	Load for Columns =	36.4 PSF	37.5 PSF
Column Weight:		0.6 PSF	0.6 PSF
	Load for Foundations =	37.0 PSF	38.1 PSF

Seismic Mass

Partitions:	(If Required) Per ASCE 7 Sec 12.7.2	5.0 PSF	5.0 PSF
Storage Loads:	(If Required) Per ASCE 7 Sec 12.7.2	0.0 PSF	0.0 PSF
Snow Loads:	(If Required) Per ASCE 7 Sec 12.7.2	0.0 PSF	0.0 PSF
	Load used for Seismic Mass =	42.0 PSF	43.1 PSF

Live Loads

Load Type Per ASCE 7 Table 4-1	Reducible?	Load	Point Load
Roof Live	Yes	20 PSF	0.0 KIPS

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project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	1.3 Wall - Design Load		

Construction Type: IIB Fire Rating: 0 HR

Dead Loads

Wall Type:	Exterior Metal Stud Walls w/ Brick	
Self Weight:	8" metal studs @ 16" OC	3 PSF
Wall Covering:	5/8" Gyp both face	6 PSF
Wall Insulation:	6" R-40 Fiberglass Insulation	8 PSF
Veneer	4" Brick	
Misc:		2 PSF
	Load used for Seismic Mass =	18 PSF

Wall Type:	Interior CMU Walls (CMU Cores)	
Self Weight:	8" Fully Grouted CMU Walls	83 PSF
Wall Covering:		0 PSF
Wall Insulation:		0 PSF
Veneer		0 PSF
Misc:		0 PSF
	Load used for Seismic Mass =	83 PSF

Wall Type:	Fire Wall	
Self Weight:	8" Fully Grouted CMU Walls	83 PSF
Wall Covering:		0 PSF
Wall Insulation:		0 PSF
Veneer		0 PSF
Misc:		0 PSF
	Load used for Seismic Mass =	83 PSF

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project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	1.4 Stair - Design Load		

Construction Type: IIB Fire Rating: No Rating Deck Type: B Deck

Dead Loads

Stair Component:	Stair Treads		
Deck Self Weight:	12 ga stair pan		4 PSF
Concrete Fill:	2" Conc Fill		25 PSF
Misc:			3 PSF
		Load for Stringers =	32 PSF
Stringer:	C12x20.7		4 PSF
		Seismic Mass =	36 PSF

Stair Component:	10 ft x 10 ft Landing		
Deck Self Weight:	Weight of MTL Deck and Conc		37 PSF
Ceiling Finish:	Suspended Accoustical Tile		2 PSF
Finish:	Carpeting		2 PSF
Misc:			3 PSF
		Load for Landing Support =	44 PSF
Landing Support:			2 PSF
		Load for Stringers =	46 PSF
Stringer:	C12x20.7		4 PSF
		Seismic Mass =	50 PSF

Live Loads

Load Type Per ASCE 7 Table 4-1	Reducible?	Load	Point Load
Stairs and Exit Ways	Yes	100 PSF	0.3 KIPS

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project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	1.5 Snow Drift		

Snow Loading

p_g =	15.0 PSF	ASCE 7 Fig 7-1	p_m =	16.5 PSF	ASCE 7 Sec. 7.3.4
C_s =	1.00	ASCE 7 Fig 7-2	p_f =	11.6 PSF	ASCE 7 Eqn 7.3-1
C_e =	1.00	ASCE 7 Table 7-2	p_s =	11.6 PSF	ASCE 7 Eqn 7.4-1 (balanced)
C_t =	1.00	ASCE 7 Table 7-3	γ =	16.0 PCF	ASCE 7 Eqn 7.7-1
I_s =	1.10	ASCE 7 Table 1.5-2	h_b =	0.7 FT	ASCE 7 Sec. 7.1

NOTE: Check local building jurisdiction for minimum snow loads! Jurisdiction min : 25.0 PSF

NOTE: Check local building jurisdiction if minimum needs to be applied in conjunction with Drift Loads!

Snow Drifts ASCE 7 Sec. 7.7 and 7.8

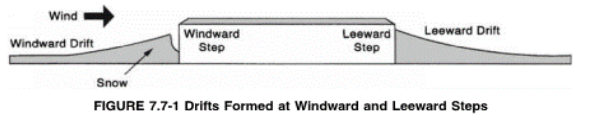

FIGURE 7.7-1 Drifts Formed at Windward and Leeward Steps

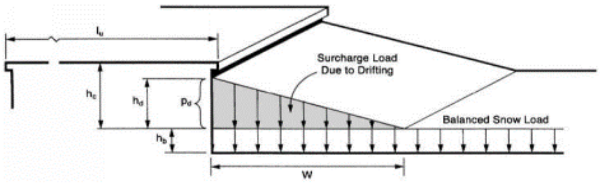

FIGURE 7.7-2 Configuration of Snowdrifts on Lower Roofs

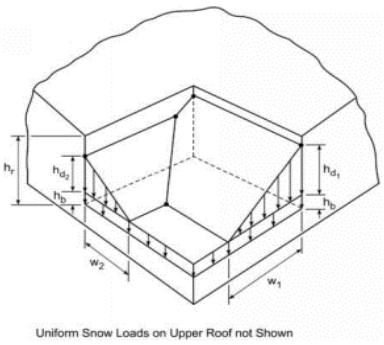

FIGURE 7.7-3 Configuration of Intersecting Snowdrifts at Lower Roof

Location	Total Step Height $h_c + h_b$	Upper Roof $l_{u\_leeward}$	Lower Roof $l_{u\_windward}$	Upper Roof $h_{d\_leeward}$	Lower Roof $h_{d\_windward}$	h_{d_max}	w	P_{d_max}
(E) Building - East	23.0 FT	252.0 FT	90.0 FT	4.8 FT	2.2 FT	4.8 FT	19.2 FT	76.5 PSF
(E) Building - South	23.0 FT	47.0 FT	190.0 FT	2.1 FT	3.2 FT	3.2 FT	12.7 FT	50.5 PSF
Area A - Low Roof	10.0 FT	333.0 FT	37.0 FT	5.4 FT	1.3 FT	5.4 FT	21.7 FT	86.4 PSF
Area A - Mid Roof	7.5 FT	305.0 FT	60.0 FT	5.2 FT	1.8 FT	5.2 FT	20.9 FT	83.2 PSF
Parapet - 10ft	10.0 FT	0.0 FT	305.0 FT	0.0 FT	3.9 FT	3.9 FT	15.6 FT	62.4 PSF
Parepet - 3ft	3.0 FT	0.0 FT	305.0 FT	0.0 FT	3.9 FT	2.3 FT	9.0 FT	35.9 PSF
(E) Building - Jail	25.0 FT	0	22	0.0 FT	0.9 FT	0.9 FT	3.8 FT	15.0 PSF

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project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	2.1 Seismic Mass - Area A + B		

Seismic Mass

Level 2 Diaphragm :

			Area	Weight	Floor Mass
Floor Weight :	Conc Metal Deck		27305 SF	89 PSF	2442.8 KIPS
		Length	**Height**	**Weight**	**Wall Mass**
Wall Weight :	Masonry (8" CMU)	269.0 FT	17.0 FT	83 PSF	379.6 KIPS
	8" CFS w/ Brick Ven.	771.0 FT	17.0 FT	18 PSF	239.9 KIPS

Total :	3062.2 KIPS
Total Area :	27305 SF
Normalized Mass :	112 PSF

Roof Diaphragm :

			Area	Weight	Floor Mass
Floor Weight :	Metal Deck		30400 SF	42 PSF	1278.2 KIPS
		Length	**Height**	**Weight**	**Wall Mass**
Wall Weight :	Masonry (8" CMU)	269.0 FT	12.0 FT	83 PSF	267.9 KIPS
	8" CFS w/ Brick Ven.	771.0 FT	12.0 FT	18 PSF	169.3 KIPS

Total :	1715.5 KIPS
Total Area :	30400 SF
Normalized Mass :	56 PSF

Totals :

Total Area :	57705 SF	
Total Mass :	4777.7 KIPS	
Normalized Mass :	82.8 PSF	
Seismic Cs :	0.060	See 2.0 Seismic Design
ELF Base Shear :	285.0 KIPS	

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	2.1 Seismic Mass - Area A		

Seismic Mass

Level 2 Diaphragm :

			Area	Weight	Floor Mass
Floor Weight :	Conc Metal Deck		1800 SF	89 PSF	161.0 KIPS
		Length	Height	Weight	Wall Mass
Wall Weight :	Masonry (8" CMU)	54.0 FT	28.5 FT	83 PSF	127.7 KIPS
	8" CFS w/ Brick Ven.	53.0 FT	28.5 FT	18 PSF	27.6 KIPS

Total :	316.4 KIPS
Total Area :	1800 SF
Normalized Mass :	176 PSF

Roof Diaphragm :

			Area	Weight	Floor Mass
Floor Weight :	Metal Deck		6000 SF	42 PSF	252.3 KIPS
		Length	Height	Weight	Wall Mass
Wall Weight :	Masonry (8" CMU)	54.0 FT	11.5 FT	83 PSF	51.5 KIPS
	Masonry (12" CMU)	19.0 FT	12.0 FT	123 PSF	28.0 KIPS
	GFRC COL (36" dia)	8	12.0 FT	115 PLF	11.0 KIPS
	8" CFS w/ Brick Ven.	53.0 FT	11.5 FT	18 PSF	11.2 KIPS
	8" CFS w/ Brick Ven.	57.0 FT	12.0 FT	18 PSF	12.5 KIPS

Total :	366.5 KIPS
Total Area :	6000 SF
Normalized Mass :	61 PSF

Totals :

Total Area :	7800 SF
Total Mass :	683.0 KIPS
Normalized Mass :	87.6 PSF

Seismic Cs : 0.060 See 2.0 Seismic Design

ELF Base Shear : 40.7 KIPS

Seismic Story Force

T : 0.288 Sec See page 2.0 Seismic Design

k : 1.000 ASCE 7 Sec. 12.8.3

V : 40.7 KIPS See page 2.1 Seismic Shear

Story	Height	Seismic Wt	$w_x h_x^k$	C_{vx}	F_x
Roof	40.0 FT	316.4 KIPS	12656.50	0.67	27.3 KIPS
Level 2	17.0 FT	366.5 KIPS	6231.14	0.33	13.4 KIPS
	Total :	683.0 KIPS	18887.64		40.7 KIPS

12.8.3 Vertical Distribution of Seismic Forces. The lateral seismic force (F_x) (kip or kN) induced at any level shall be determined from the following equations:

$$F_x = C_{vx} V \qquad (12.8\text{-}11)$$

and

$$C_{vx} = \frac{w_x h_x^k}{\sum_{i=1}^{n} w_i h_i^k} \qquad (12.8\text{-}12)$$

where

C_{vx} = vertical distribution factor;
V = total design lateral force or shear at the base of the structure [kip (kN)];
w_i and w_x = portion of the total effective seismic weight of the structure (W) located or assigned to level i or x;
h_i and h_x = height [ft (m)] from the base to level i or x; and
k = an exponent related to the structure period as follows:

- for structures that have a period of 0.5 s or less, $k = 1$;
- for structures that have a period of 2.5 s or more, $k = 2$; and
- for structures that have a period between 0.5 and 2.5 s, k shall be 2 or shall be determined by linear interpolation between 1 and 2.

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	2.1 Seismic Mass - Area B		

Seismic Mass

Level 2 Diaphragm :

		Area	Weight	Floor Mass
Floor Weight :	Conc Metal Deck	26000 SF	89 PSF	2326.0 KIPS

		Length	Height	Weight	Wall Mass
Wall Weight :	Masonry (8" CMU)	210.0 FT	19.0 FT	83 PSF	331.2 KIPS
	8" CFS w/ Brick Ven.	605.0 FT	19.0 FT	18 PSF	210.4 KIPS
	8" CMU Fire Wall	101.6 FT	20.5 FT	83 PSF	172.8 KIPS
				Total :	3040.4 KIPS
				Total Area :	26000 SF
				Normalized Mass :	117 PSF

Roof Diaphragm :

		Area	Weight	Floor Mass
Floor Weight :	Metal Deck	26000 SF	42 PSF	1093.2 KIPS

		Length	Height	Weight	Wall Mass
Wall Weight :	Masonry (8" CMU)	210.0 FT	10.5 FT	83 PSF	183.0 KIPS
	8" CFS w/ Brick Ven.	616.8 FT	16.5 FT	18 PSF	186.2 KIPS
	8" CMU Fire Wall	101.6 FT	15.0 FT	83 PSF	126.5 KIPS
				Total :	1589.0 KIPS
				Total Area :	26000 SF
				Normalized Mass :	61 PSF

Totals :

Total Area : 52000 SF

Total Mass : 4629.4 KIPS

Normalized Mass : 89.0 PSF

Seismic Cs : 0.060 See 2.0 Seismic Design

ELF Base Shear : 276.1 KIPS

Seismic Story Force

T : 0.288 Sec See page 2.0 Seismic Design

k : 1.000 ASCE 7 Sec. 12.8.3

V : 276.1 KIPS See page 2.1 Seismic Mass

Story	Height	Seismic Wt	$w_x h_x^k$	C_{vx}	F_x
Roof	37.5 FT	1589.0 KIPS	59586.01811	0.5355	147.9 KIPS
Level 2	17.0 FT	3040.4 KIPS	51686.93809	0.4645	128.3 KIPS
	Total :	4629.4 KIPS	111272.9562		276.1 KIPS

12.8.3 Vertical Distribution of Seismic Forces. The lateral seismic force (F_x) (kip or kN) induced at any level shall be determined from the following equations:

$$F_x = C_{vx} V \qquad (12.8\text{-}11)$$

and

$$C_{vx} = \frac{w_x h_x^k}{\sum_{i=1}^{n} w_i h_i^k} \qquad (12.8\text{-}12)$$

where

C_{vx} = vertical distribution factor;
V = total design lateral force or shear at the base of the structure [kip (kN)];
w_i and w_x = portion of the total effective seismic weight of the structure (W) located or assigned to level i or x;
h_i and h_x = height [ft (m)] from the base to level i or x; and
k = an exponent related to the structure period as follows:

- for structures that have a period of 0.5 s or less, $k = 1$;
- for structures that have a period of 2.5 s or more, $k = 2$; and
- for structures that have a period between 0.5 and 2.5 s, k shall be 2 or shall be determined by linear interpolation between 1 and 2.

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	2.2 Seismic Vertical Distribution - Area B			

S_{DS} : 0.167 g I_e : 1.25

Seismic Diaphragm Forces ASCE 7 Sec. 12.10.1

Diaphragm	w_{px}	Σw_i	ELF F_i	ΣF_i
Roof	1589 KIPS	1589 KIPS	148 KIPS	148 KIPS
Level 2	3040 KIPS	4629 KIPS	128 KIPS	276 KIPS

Diaphragm	ASCE 7 Eqn 12.10-1 F_{px}	ASCE 7 Eqn 12.10-2 F_{px_min}	ASCE 7 Eqn 12.10-3 F_{px_max}	F_{px_design}	Scale
Roof	148 KIPS	66 KIPS	133 KIPS	148 KIPS	1.00
Level 2	181 KIPS	127 KIPS	254 KIPS	181 KIPS	1.41

Seismic Collector Forces ASCE 7 Sec. 12.10.1

Ω : 2.00 (FLEXIBLE DIA)

Ω : 2.50 * Multiply Model ELF Forces by Scale value

p : 1

Diaphragm	$F_{px\_diaphragm}$	ELF F_i	ΩF_{px} ELF	Maximum of: ΩF_{px} 12.10-1	pF_{px_min}	F_{px_design}	Scale*
Roof	148 KIPS	148 KIPS	296 KIPS	296 KIPS	66 KIPS	296 KIPS	2.00
Level 2	276 KIPS	128 KIPS	321 KIPS	453 KIPS	127 KIPS	453 KIPS	3.53

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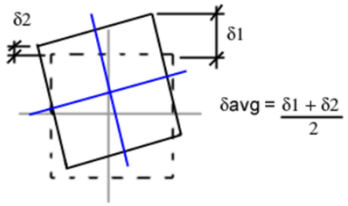
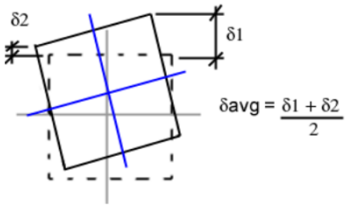
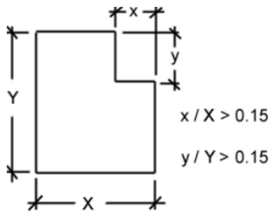
	2.1 Horrizontal Irregularities		

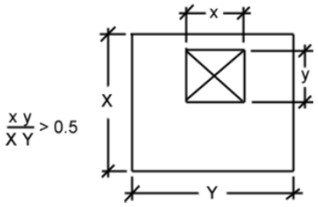
Horrizontal Irregularities (ASCE 7-16, Ch. 12)

Seismic Design Category: B

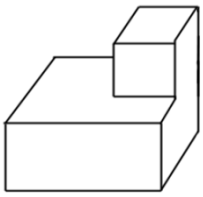
Table 12.3-1 Horizontal Structural Irregularities

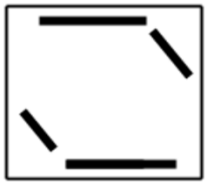
	Reference	Categories		Applicable?
TORSIONAL IRREGULARITY This is defined to exist where the maximum story drift, computed including accidental torsion, at one end of the structure transverse to an axis is more than 1.2 times the average of the story drifts at the two ends of the structure. Torsional irregularity requirements in the reference sections apply only to structures in which the diaphragms are rigid or semirigid.	12.7.3 16.2.2	B, C, D, E & F B, C, D, E & F		**YES** **See Torsional Irregularity Spreadsheet**
EXTREME TORSIONAL IRREGULARITY This is defined to exist where the maximum story drift, computed including accidental torsion, at one end of the structure transverse to an axis is more than 1.4 times the average of the story drifts at the two ends of the structure. Torsional irregularity requirements in the reference sections apply only to structures in which the diaphragms are rigid or semirigid.	12.7.3 16.2.2	B, C & D B, C & D		**YES** **See Torsional Irregularity Spreadsheet**
REENTRANT CORNERS This is defined to exist where both plan projections of the structure beyond a reentrant corner are greater than 15% of the plan dimension of the structure in the given direction				**N/A**

x =	240 FT	X =	252 FT	x/X =	0.95
y =	7 FT	Y =	107 FT	y/Y =	0.06

DIAPHRAGM DISCONTINUITY	Reference	Categories		Applicable?
This is defined to exist where there are diaphragms with abrupt discontinuities or variations in stiffness, including those having cutout or open areas greater than 50% of the gross enclosed diaphragm area, or changes in effective diaphragm stiffness of more than 50% from one story to the next.				**N/A**

x =	11 FT	X =	252 FT	x*y =	184 SF	Ratio =	0.01
y =	18 FT	Y =	107 FT	X*Y =	26964 SF		

OUT-OF-PLANE OFFSETS	Reference	Categories		Applicable?
This is defined to exist where there are discontinuities in a lateral force-resistance path, such as out-of-plane offsets of the vertical elements.	12.3.3.3 12.7.3 16.2.2	B, C, D, E & F B, C, D, E & F B, C, D, E & F		**NO**

NONPARALLEL SYSTEMS	Reference	Categories		Applicable?
This is defined to exist where the vertical lateral force-resisting elements are not parallel to or symmetric about the major orthogonal axes of the seismic force-resisting system.	12.7.3 16.2.2	B, C, D, E & F B, C, D, E & F		**NO**

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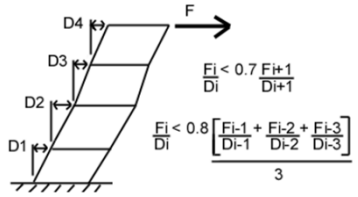
	2.2 Vertical Irregularities		

Vertical Irregularities (ASCE 7-16, Ch. 12)

Seismic Design Category: B

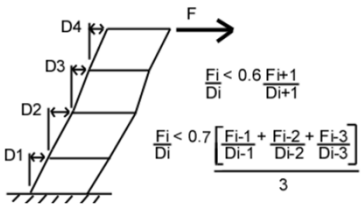
Table 12.3-2 Vertical Structural Irregularities

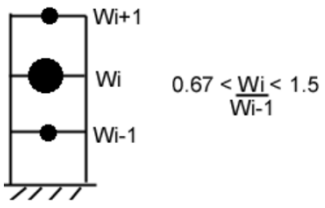
	Reference	Categories		Applicable?
SOFT STORY IRREGULARITY This is defined to exist where there is a story in which the lateral stiffness is less than 70% of that in the story above or less than 80% of the average stiffness of the three stories above.				**N/A**

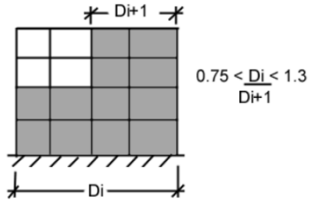
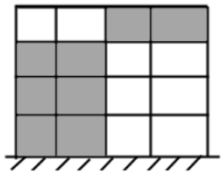
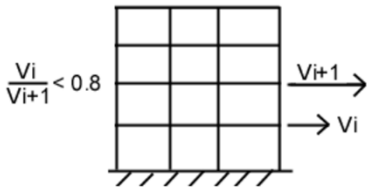
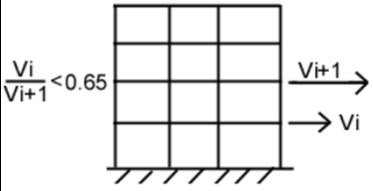
# of Stories = 2

One-Story Structure (any SDC)? NO Two-Story Structure in SDC B, C, or D? YES

EXCEPTIONS? YES (exception applies to 1a, 1b, 2)

	Reference	Categories		Applicable?
EXTREME SOFT STORY IRREGULARITY This is defined to exist where there is a story in which the lateral stiffness is less than 60% of that in the story above or less than 70% of the average stiffness of the three stories above.				**N/A**

	Reference	Categories		Applicable?
WEIGHT (MASS) IRREGULARITY This is defined to exist where the effective mass of any story is more than 150% of the effective mass of an adjacent story. A roof that is lighter than the floor below need not to be considered.				**N/A**

VERTICAL GEOMETRIC IRREGULARITY This is defined to exist where the horizontal dimension of the seismic force-resisting system in any story is more than 130% of that in an adjacent story.	Reference	Categories		Applicable? **NO**
IN-PLANE DISCONTINUITY OF LRFS This is defined to exist where an in-plane offset of the lateral force-resisting elements is greater than the length of those elements or there exists a reduction in stiffness of the resisting eelement in the story below.	Reference 12.3.3.3	Categories B, C, D, E & F		Applicable? **NO**
WEAK STORY IRREGULARITY This is defined to exist where the story lateral strength is less than 80% of that in the story above. The story lateral strength is the total lateral strength of all seismic-resisting elements sharing the story shear for the direction under consideration. **This is not allowed for seismic design categories D thru F as per 2007-CBC.**	Reference	Categories		Applicable? **NO**
This is not allowed for SDC categories D thru F as per 2007-CBC				
EXTREME WEAK STORY IRREGULARITY This is defined to exist where the story lateral strength is less than 65% of that in the story above. The story lateral strength is the total lateral strength of all seismic-resisting elements sharing the story shear for the direction under consideration. **This is not allowed for seismic design categories D thru F as per 2007-CBC.**	Reference 12.3.3.1 12.3.3.2 Table 12.6-1	Categories D, E & F B & C D, E & F		Applicable? **NO**
This is not allowed for SDC categories D thru F as per 2007-CBC				

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	2.3 Torsional Irregularities		

Torsional Irregularities (ASCE 7 Ch. 12)

Cd: 2.25 Allowable Story Drift: 0.007*hsx (Table 12.12-1)

Ie: 1.25

Interstory Drifts Check per ASCE 7 12.12

Level	Story Height	Elastic Deflection	Elastic Story Drift, δ_{xe}	Inelastic Story Drift, δ_x	Story Drift Limit	Check
Roof	252.00 in	0.10 in	0.02 in	0.04 in	1.76 in	OKAY
L2	204.00 in	0.08 in	0.08 in	0.14 in	1.43 in	OKAY

Torsional Irregularity Check Y-Direction per ASCE 7 12.3-1

Level	Leftside Elastic Story Drift, δ_{xe}	Rightside Elastic Story Drift, δ_{xe}	Leftside Inelastic Story Drift, δ_x	Rightside Inelastic Story Drift, δ_x	Average Inelastic Story Drift, δ_{avg}	$\delta_{max}/\delta_{avg}$	Check/ Ax
Roof	0.09 in	0.10 in	0.16 in	0.18 in	0.17 in	1.05	OKAY
L2*	0.05 in	0.20 in	0.09 in	0.36 in	0.23 in	1.60	NG

(x dir. Disp used)

Torsional Irregularity Check X-Direction per ASCE 7 12.3-1

Level	Leftside Elastic Story Drift, δ_{xe}	Rightside Elastic Story Drift, δ_{xe}	Leftside Inelastic Story Drift, δ_x	Rightside Inelastic Story Drift, δ_x	Average Inelastic Story Drift, δ_{avg}	$\delta_{max}/\delta_{avg}$	Check
Roof	0.13 in	0.04 in	0.23 in	0.07 in	0.15 in	1.53	NG
L2*	0.14 in	0.03 in	0.25 in	0.05 in	0.15 in	1.65	NG

(y-dir disp. Used)

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	2.6A - Drift Checks Area A		

Torsional Irregularities (ASCE 7 Ch. 12)

Cd: 2.25 Allowable Story Drift: 0.007*hsx (Table 12.12-1)

Ie: 1.25

Interstory Drifts Check per ASCE 7 12.12						
Level	Story Height	Elastic Deflection	Elastic Story Drift, δ_{xe}	Inelastic Story Drift, δ_x	Story Drift Limit	Check
Roof	288.00 in	1.20 in	1.01 in	1.82 in	2.02 in	OKAY
L2	204.00 in	0.19 in	0.19 in	0.34 in	1.43 in	OKAY

Torsional Irregularity Check Y-Direction per ASCE 7 12.3-1							
Level	Leftside Elastic Story Drift, δ_{xe}	Rightside Elastic Story Drift, δ_{xe}	Leftside Inelastic Story Drift, δ_x	Rightside Inelastic Story Drift, δ_x	Average Inelastic Story Drift, δ_{avg}	$\delta_{max}/\delta_{avg}$	Check/ Ax
Roof	0.59 in	0.73 in	1.06 in	1.31 in	1.19 in	1.11	N/A
L2*	0.04 in	0.07 in	0.07 in	0.13 in	0.10 in	1.27	EXT
*Check only require at L2 as roof is flexible							

Torsional Irregularity Check X-Direction per ASCE 7 12.3-1							
Level	Leftside Elastic Story Drift, δ_{xe}	Rightside Elastic Story Drift, δ_{xe}	Leftside Inelastic Story Drift, δ_x	Rightside Inelastic Story Drift, δ_x	Average Inelastic Story Drift, δ_{avg}	$\delta_{max}/\delta_{avg}$	Check
Roof	0.68 in	1.25 in	1.22 in	2.25 in	1.74 in	1.30	N/A
L2*	0.10 in	0.19 in	0.18 in	0.34 in	0.26 in	1.31	EXT
*Check only require at L2 as roof is flexible							

Irregularities (ASCE 7 Ch. 12)

Horizontal Irregularities

Type	Irregularity Description	Applies
1a	Torsional Irregularity	X
1b	Extreme Torsional Irregularity	X
2	Reentrant Corner Irregularity	
3	Diaphragm Discontinuity Irregularity	
4	Out-of-Plane Offset Irregularity	
5	Nonparallel System Irregularity	

Vertical Irregularities

Type	Irregularity Description	Applies
1a	Stiffness-Soft Story Irregularity	
1b	Stiffness-Extreme Soft Story Irregularity	
2	Weight (Mass) Irregularity	
3	Vertical Geometric Irregularity	
4	In-Plane Discontinuity in Vertical LFR Elemnt	
5a	Discontinuity in Lateral Strength- Weak Story	
5b	Discontinuity in Lateral Strength- Extreme Weak Story	

Code Requirements

12.3.3.4 Increase in Forces Due to Irregularities for Seismic Design Categories D through F

For structures assigned to Seismic Design Category D, E, or F and having a horizontal structural irregularity of Type 1a, 1b, 2, 3, or 4 in Table 12.3-1 or a vertical structural irregularity of Type 4 in Table 12.3-2, the design forces determined from Section 12.10.1.1 shall be increased 25 percent for the following elements of the seismic force-resisting system:

1. Connections of diaphragms to vertical elements and to collectors.
2. Collectors and their connections, including to vertical elements, of the seismic force-resisting system.

Therefore, an increase of 25% to the diaphragm forces is NOT required.

12.3.4 Redundancy

A redundancy factor, ρ, shall be assigned to the seismic force-resisting system in each of two orthogonal directions for all structures in accordance with this section.

12.3.4.1 Conditions Where Value of ρ is 1.0

The value of ρ is permitted to equal 1.0 for the following:

1. Structures assigned to Seismic Design Category B or C
2. Drift calculation and P-delta effects.
3. Design of nonstructural components.
4. Design of nonbuilding structures that are not similar to buildings.

connections for which the seismic load effects including

load effects including overstrength factor of Section

7. Diaphragm loads determined using Eq. 12.10-1.
8. Structures with damping systems designed in accordance with Chapter 18.
9. Design of structural walls for out-of-plane forces, including their anchorage.

12.3.4.2 Redundancy Factor, ρ, for Seismic Design Categories D through F **(N/A)**

For structures assigned to Seismic Design Category D, E, or F, ρ shall equal 1.3 unless one of the following two conditions is met, whereby ρ is permitted to be taken as 1.0:

a. Each story resisting more than 35 percent of the base shear in the direction of interest shall comply with Table 12.3-3.

b. Structures that are regular in plan at all levels provided that the seismic force-resisting systems consist of at least two bays of seismic force-resisting perimeter framing on each side of the structure in each orthogonal direction at each story resisting more than 35 percent of the base shear. The number of bays for a shear wall shall be calculated as the length of shear wall divided by the story height or two times the length of shear wall divided by the story height, hsx, for light-frame construction.

Elevator core walls have L = 10.83' & 7.88' in X/Y direction, and H = 15' per floor. Height-to-length ratios greater than 1.0.

Removing one wall in either direction would not result in more than a 33% reduction in story strength by inspection

but would result in an extreme torsional irregularity type 1b per Table 12.3.3.

Therefore, ρ to be equal to 1.0.

412 E Parkcenter Blvd, Suite 200
Boise, ID 83706
(208) 336-6985

project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	3.0 Wind Design		

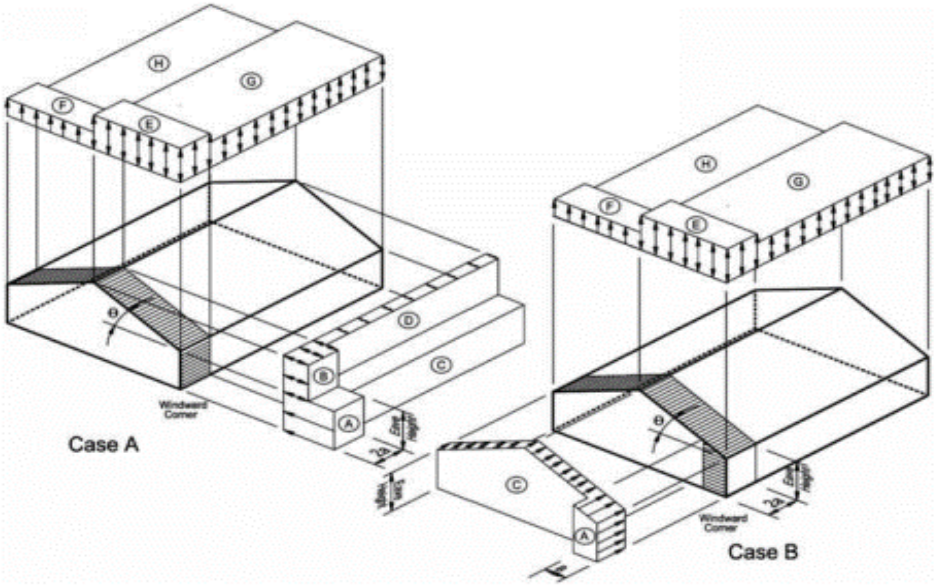
Wind Criteria

Wind Speed, Vult :	120	ASCE 7 Sec 26.5	K_{zt} :	1.00	ASCE 7 Sec. 26.8
Exposure Category:	B	ASCE 7 Sec 26.7.3	K_d :	0.85	ASCE 7 Table 26.6-1
Risk Category:	III	ASCE 7 Table 1.5-1	K_z :	0.75	ASCE 7 Table 26.10-1
Mean Roof Height:	37.5 FT		K_e :	0.87	ASCE 7 Table 26.9-1
Roof Slope:	0.2:12		G :	0.85	ASCE 7 Sec. 26.11
θ (deg) :	0.90		Least Horiz Dim:	107 FT	
Elevation, Z_g :	3729.0 FT		a:	10.7 FT	

NOTE: Applicable to enclosed, simple diaphragm, low-rise building (<60') per ASCE 7 Chapt. 28 Part 2

	Horizontal Pressures:				Vertical Pressures				Overhangs	
Zone:	A	B	C	D	E	F	G	H	E_{OH}	G_{OH}
Case 1:	24.4	-12.7	16.2	-7.5	-29.3	-16.7	-20.4	-12.9	-41.1	-32.2
Case 2:	-	-	-	-	-	-	-	-	-	-

Diagrams



Notation

a 10% of least horizontal dimension or 0.4*h*, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
EXCEPTION: For buildings with θ = 0 to 7° and a least horizontal dimension greater than 300 ft (90 m), dimension *a* shall be limited to a maximum of 0.8*h*.

h Mean roof height, in ft (m), except that eave height shall be used for roof angles < 10°.

θ Angle of plane of roof from horizontal, in degrees.

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412 E Parkcenter Blvd, Suite 200
Boise, ID 83706
(208) 336-6985

project	Twin Falls Judicial Building	by	CW	sheet no.
location	Twin Falls, ID	date	01/19/23	
client	CSHQA	job no.	10212200038	
	3.1 Wind C&C Design			

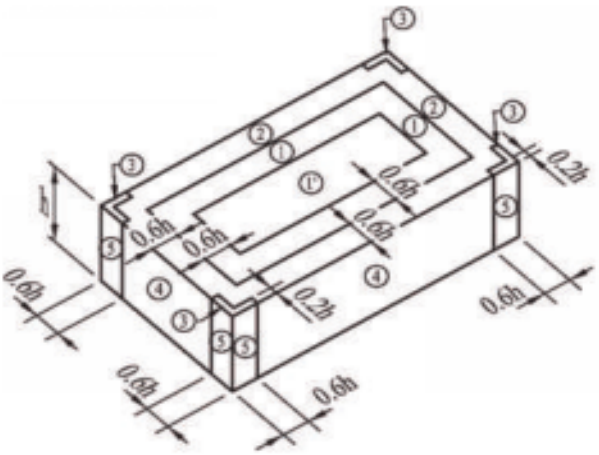
Wind Components & Cladding Criteria

Wind Speed, Vult :	120	ASCE 7 Sec 26.5	K_{zt} :	1.00	ASCE 7 Sec. 26.8
Exposure Category:	B	ASCE 7 Sec 26.7.3	K_d :	0.85	ASCE 7 Table 26.6-1
Risk Category:	III	ASCE 7 Table 1.5-1	K_z :	0.75	ASCE 7 Table 26.10-1
Mean Roof Height:	37.5 FT		K_e :	0.87	ASCE 7 Table 26.9-1
Roof Slope:	0.2:12		G :	0.85	ASCE 7 Sec. 26.11
θ (deg) :	0.90		Least Horiz Dim:	107 FT	
Elevation, Z_g :	3729.0 FT		a:	10.7 FT	0.2h: 7.5 FT
					0.6h: 22.5 FT

NOTE: Applicable to enclosed buildings that are regular in shape, h ≤ 60', Flat/Hip/Gable roof θ < 7°

Effective Wind Area (ft^2)	Roof Pressures								Wall Pressures			
	1+	1-	1'+	1'-	2+	2-	3+	3-	4+	4-	5+	5-
10	11.2	-44.2	11.2	-25.4	11.2	-58.2	11.2	-79.4	27.7	-30.1	27.7	-37.1
20	10.6	-41.2	10.6	-25.4	10.6	-54.5	10.6	-71.9	26.4	-28.8	26.4	-34.7
50	9.6	-37.3	9.6	-25.4	9.6	-49.5	9.6	-62.0	24.8	-27.2	24.8	-31.4
100	8.9	-34.5	8.9	-25.4	8.9	-45.8	8.9	-54.5	23.5	-25.9	23.5	-28.8

Effective Wind	Overhangs			Parapets per Fig 30.9-1			
	1/1'o	2o	3o	4+	4-	5+	5-
10	-39.9	-54.0	-75.1	85.9	-57.8	107.1	-64.8
20	-39.3	-49.0	-66.4	80.9	-55.2	98.3	-61.1
50	-38.3	-42.5	-54.9	74.4	-52.0	86.8	-56.2
100	-37.6	-37.5	-46.1	69.3	-49.4	78.0	-52.3



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

kpff
412 E Parkcenter Blvd, Suite 200
Boise, ID 83706
(208) 336-6985

project	Twin Falls Judicial Building	by CW	sheet no.
location	Twin Falls, ID	date 01/19/23	
client	CSHQA	job no.	10212200038
	3.2 Wind Design		

Wind Distribution

Level	Floor Elev
Parapet	44.0 FT
Roof (AVG.)	37.5 FT
2	17.0 FT

a: 10.7 FT
A: 24.4 PSF
C: 16.2 PSF

Level 2 Diaphragm :

	North-South	East-West
Face Length:	251.6 FT	107.0 FT
Trib Height:	17.0 FT	17.0 FT
A Forces	8875 LB	8875 LB
C Forces:	63224 LB	23512 LB
SUM:	72.1 KIPS	32.4 KIPS

Roof Diaphragm :

	North-South	East-West
Face Length:	347.5 FT	107.0 FT
Trib Height:	14.5 FT	14.5 FT
A Forces	7570 LB	7570 LB
C Forces:	76398 LB	20054 LB
SUM:	84.0 KIPS	27.6 KIPS

Totals:

	North-South	East-West
SUM:	156.1 KIPS	60.0 KIPS

Twin Falls Judicial – Twin Falls, ID

Permit Submittal Structural Calculations

KPFF JOB # 10212200038

GRAVITY DESIGN

18 Gage PLB™-36 Grade 50

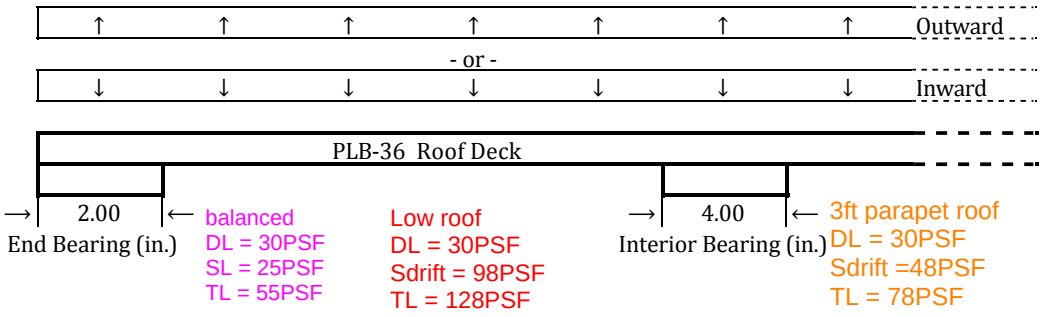
AREA A - ROOF DECK CALCULATIONS

Uniform Allowable Load Table, ASD (psf)

For End Lapped Deck

36/4 Connection Pattern to Supports with
Hilti X-ENP-19 PAF

Support Member A572 GR50
$0.26 \le t_2$ (in.)



Inward Uniform Allowable Load Table, ASD (psf)

Span	Span	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"
1	Wn/Ω	251	207	174	148	128	111	98	87
	L/240	158	119	92	72	58	47	39	32
2	Wn/Ω	259	215	181	155	134	116	102	91
	L/240	-	-	-	-	-	115	94	79
3	Wn/Ω	322	267	225	192	166	145	128	113
	L/240	303	228	175	138	110	90	74	62

Outward (Uplift) Uniform Allowable Load Table, ASD (psf)

Span	Span	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"
1	Wn/Ω	264	218	183	156	135	117	103	91
	Rn/Ω	245	223	204	188	175	163	153	144
	L/240	160	121	93	73	58	48	39	33
2	Wn/Ω	247	204	172	147	127	111	97	86
	Rn/Ω	196	178	163	151	140	131	122	115
	L/240	-	-	-	-	-	-	93	78
3	Wn/Ω	306	254	214	183	158	138	121	108
	Rn/Ω	223	202	185	171	159	148	139	131
	L/240	-	-	173	136	109	89	73	61

Steel Deck Properties

t	Fy	wdd	Id+	Id-	Se+	Se-	Mn+/Ω	Mn-/Ω	Vn/Ω
in	ksi	psf	$in.^4/ft$	$in.^4/ft$	$in.^3/ft$	$in.^3/ft$	lbs-ft/ft	lbs-ft/ft	lbs/ft
0.0478	50	2.90	0.302	0.306	0.314	0.331	783	826	4264

Where: $W \le Wn/\Omega$

W = Required strength of the governing ASD load combination
Wn/Ω = Allowable strength governed by the steel deck
Rn/Ω = Allowable strength governed by connection tension

Steel Deck Uniform V1.0.5 in accordance with AISI S100-16 and AISI S310-16. Date: 10/16/2022

20 Gage PLB™-36 Grade 50

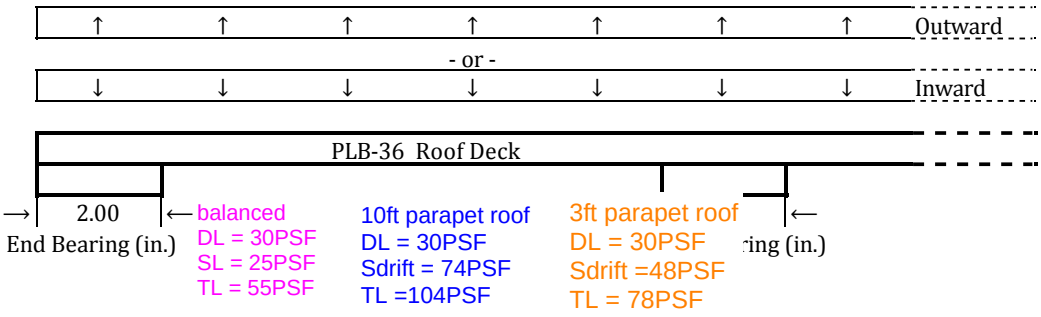
AREA B - ROOF DECK CALCULATIONS

Uniform Allowable Load Table, ASD (psf)

For End Lapped Deck

36/4 Connection Pattern to Supports with
Hilti X-HSN 24 PAF

Support Member A572 GR50
$0.125 \le t_2$ (in.) ≤ 0.375



Inward Uniform Allowable Load Table, ASD (psf)

Span	Span	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"
1	Wn/Ω	127	109	94	82	72	64	57	51
	L/240	66	52	42	34	28	23	20	17
2	Wn/Ω	130	111	96	84	73	65	58	52
	L/240	-	-	-	-	71	59	50	43
3	Wn/Ω	162	138	119	104	92	81	72	65
	L/240	132	104	83	68	56	47	39	33

Outward (Uplift) Uniform Allowable Load Table, ASD (psf)

Span	Span	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"
1	Wn/Ω	131	112	97	84	74	66	58	52
	Rn/Ω	97	89	83	77	73	68	64	61
	L/240	70	55	44	36	30	25	21	18
2	Wn/Ω	126	108	93	81	71	63	56	51
	Rn/Ω	77	71	66	62	58	55	52	49
	L/240	-	-	-	-	-	-	47	40
3	Wn/Ω	157	134	116	101	89	79	70	63
	Rn/Ω	88	81	75	70	66	62	59	56
	L/240	-	-	-	64	53	44	37	32

Steel Deck Properties

t	Fy	wdd	Id+	Id-	Se+	Se-	Mn+/Ω	Mn-/Ω	Vn/Ω
in	ksi	psf	$in.^4/ft$	$in.^4/ft$	$in.^3/ft$	$in.^3/ft$	lbs-ft/ft	lbs-ft/ft	lbs/ft
0.0359	50	2.30	0.219	0.231	0.230	0.237	574	592	3220

Where: $W \le Wn/\Omega$

W = Required strength of the governing ASD load combination
Wn/Ω = Allowable strength governed by the steel deck
Rn/Ω = Allowable strength governed by connection tension

Steel Deck Uniform V1.0.5 in accordance with AISI S100-16 and AISI S310-16. Date: 10/6/2022

PLW3-36 FormLok® Composite Steel Deck-Slab (ASD)

with 5.5 in. 150 pcf 4000 psi NWC

FLOOR DECK CALCULATIONS

VERCO DECKING, INC. NUCOR

Maximum Unshored Span

Gage	1 Span	2 Span	3 Span
22	7'-11"	8'-0"	9'-1"
21	8'-3"	9'-7"	10'-2"
20	8'-6"	11'-2"	10'-6"
19	8'-11"	12'-0"	11'-0"
18	9'-4"	12'-6"	11'-6"
16	10'-0"	13'-5"	12'-4"

Maximum Unshored Span based on:

Uniform Construction Load	20.00	psf	Minimum End Bearing	2.00	in.
Concentrated Construction Load	150.00	plf	Minimum Interior Bearing	4.00	in.
Concrete Ponding Allowance	6.00	psf	Maximum Deflection L/	400	≤ 0.5 in.
Concrete Volume	1.23	yd^3 / 100 ft^2 (Note: Does not include allowance for ponding)			

Composite Steel Deck Properties (steel deck only)

Gage	Fy ksi	wdd psf	Se+ $in.^3/ft$	Se- $in.^3/ft$	Id+ $in.^4/ft$	Id- $in.^4/ft$	Vn/Ω kip/ft
22	50	1.90	0.393	0.410	0.736	0.730	1.364
21	50	2.10	0.453	0.470	0.824	0.817	1.832
20	50	2.30	0.510	0.528	0.907	0.899	2.360
19	50	2.70	0.636	0.652	1.067	1.061	3.309
18	50	2.90	0.752	0.768	1.213	1.211	4.286
16	50	3.50	0.968	0.966	1.516	1.516	6.199

Superimposed Allowable Load, Wn/Ω, Limited by L/400 ,psf [1]

Gage	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
22	430	329	257	203	162	130	105	85	68
21	475	364	285	226	182	147	120	97	79
20	516	396	311	248	200	163	133	109	89
19	600	463	365	292	237	194	160	133	110
18	679	525	415	334	272	224	186	152	125
16	835	648	515	416	321	252	202	164	135

Notes: [1] For high loads, commonly in excess of 200 psf, dynamic or impact loading, and long term concrete creep should be considered. Contact Verco for further assistance.

Composite Steel Deck-Slab Properties							Min. Temperature & Shrinkage	
Gage	w_1 psf	Ic $in.^4/ft$	Iu $in.^4/ft$	Id [1] $in.^4/ft$	Mno/Ω kip-ft/ft	Vno/Ω kip/ft	As min [2] $in.^2/ft$	or Dramix® Steel Fiber 4D 65/60BG, lbs/cy
22	51.9	5.59	17.00	11.29	3.86	3.77	0.028	18
21	52.1	6.03	17.21	11.62	4.22	4.20	0.028	18
20	52.3	6.43	17.40	11.91	4.55	4.68	0.028	18
19	52.7	7.23	17.80	12.51	5.23	5.04	0.028	18
18	52.9	7.95	18.17	13.06	5.86	5.04	0.028	18
16	53.5	9.34	18.90	14.12	7.11	5.04	0.028	18

Notes: [1] Id = (Ic + Iu)/2

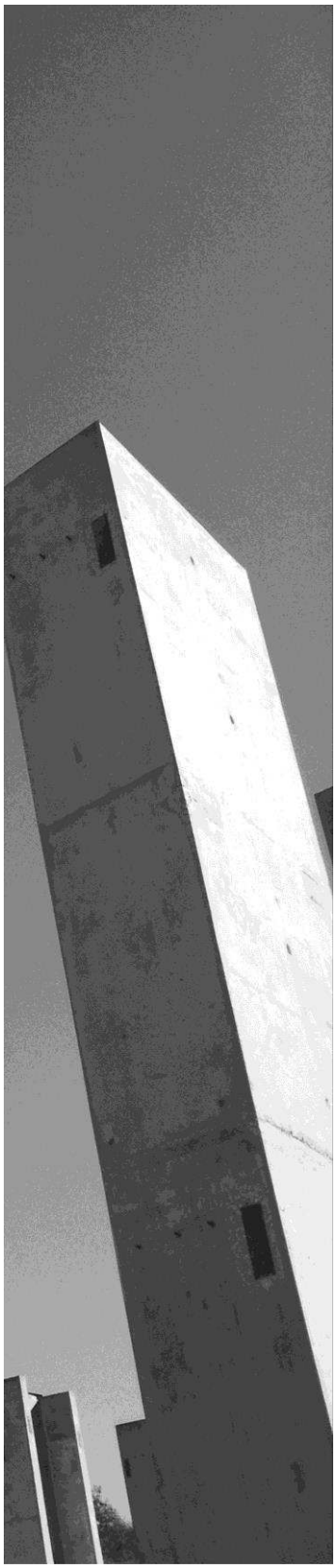
[2] Minimum area of steel for temperature and shrinkage

Tables generated using calculator V3.3 based on ANSI/SDI C-2017 in accordance with 2018 IBC Section 2210.

Date: 10/6/2022

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

GRAVITY BEAM AND GIRDER DESIGN



KPFF JOB # 10212200038

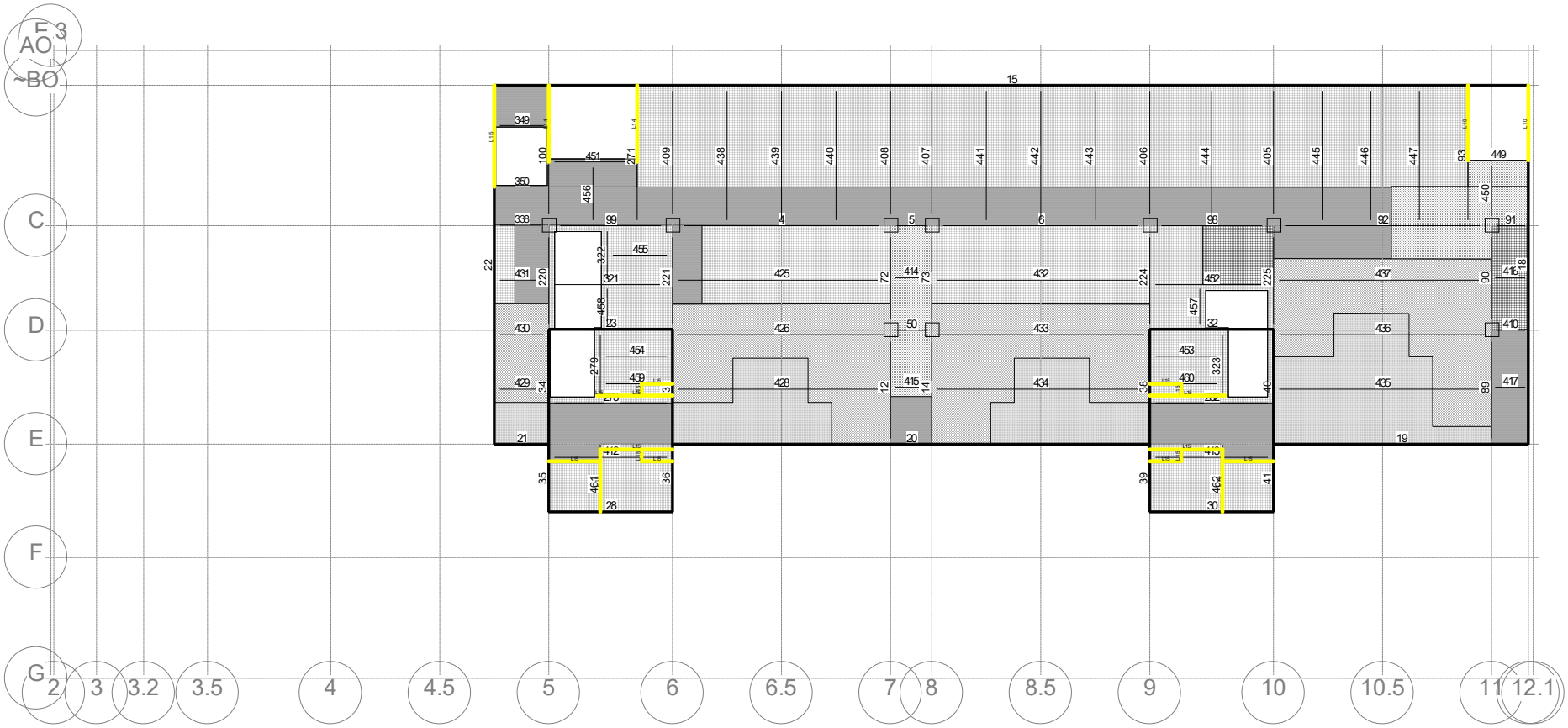
Floor Map

RAM Steel 17.04.00.184
DataBase: TF Judicial 01092023 (area B only)
Building Code: IBC

01/09/23 15:45:26
Steel Code: AISC 360-16 LRFD

Floor Type: First Floor

Beam Numbers



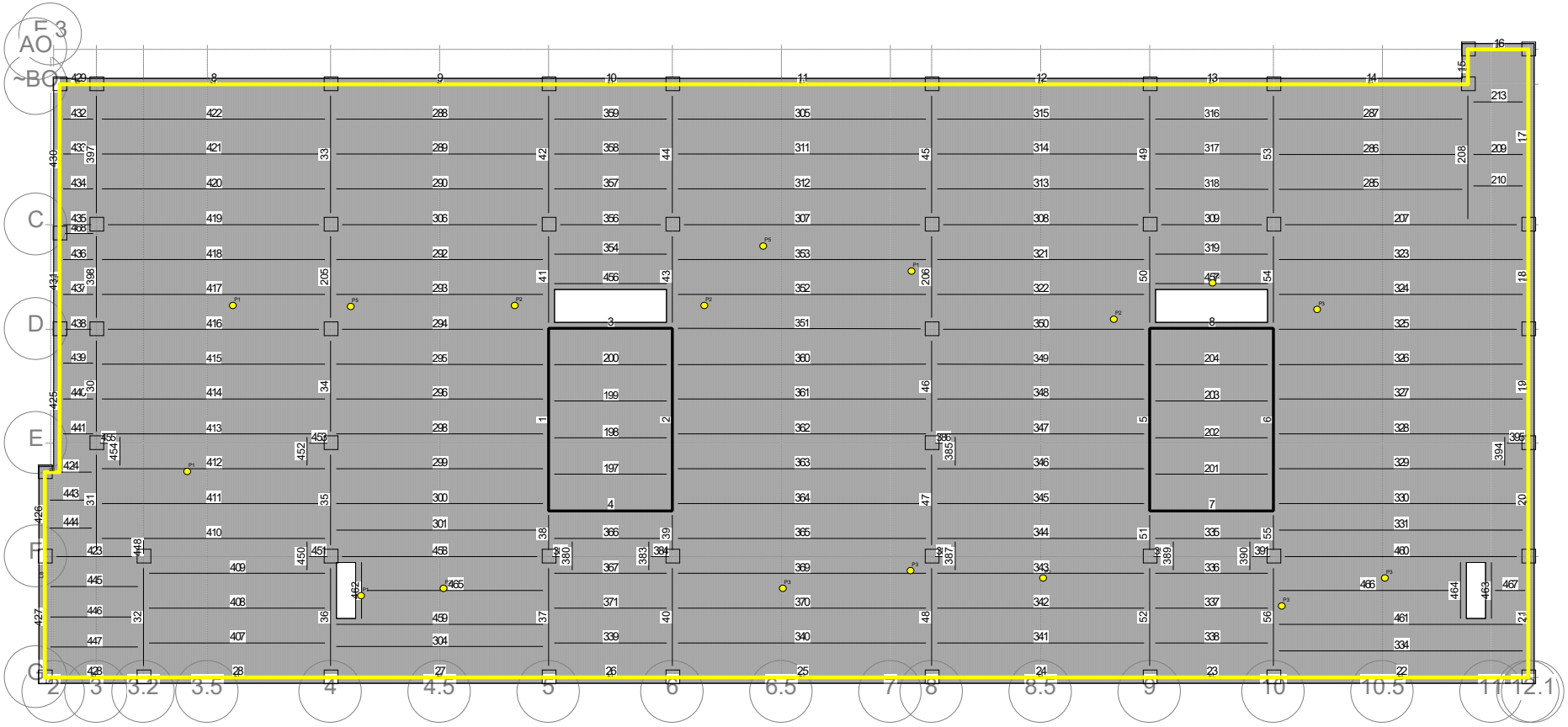
Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	PLL psf	CLL psf	Mass DL psf
	Court RM	32.6	20.0	100.0	Unreducible	15.0	25.0	42.6
	Corridor+conc ramp	97.6	20.0	100.0	Reducible	15.0	25.0	107.6
	Corridor	22.6	20.0	100.0	Reducible	15.0	25.0	32.6
	TYP Office	22.6	20.0	50.0	Reducible	15.0	25.0	32.6
	Raised Court RM	41.6	20.0	100.0	Unreducible	15.0	25.0	51.6
	Light Storage	22.6	20.0	125.0	Unreducible	15.0	25.0	32.6

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	PLL k/ft	CLL k/ft	Mass DL k/ft
L10	Stair load	0.275	0.220	0.550	Reducible	0.000	0.000	0.275
L14	15' Stair load	0.375	0.300	0.750	Reducible	0.000	0.000	0.375
L15	10.5ft 6CMU wall	0.672	0.000	0.000	Reducible	0.000	0.000	0.672

Floor Type: Main Roof **Beam Numbers**



Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	PLL psf	CLL psf	Mass DL psf
	TYP Roof	31.5	20.0	20.0	Roof	0.0	25.0	36.5

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	PLL k/ft	CLL k/ft	Mass DL k/ft
L1	Roof ExtWall Mass B	0.000	0.000	0.000	Reducible	0.000	0.000	0.980
L8	Roof CMU Fire Mas B	0.000	0.000	0.000	Reducible	0.000	0.000	1.250

Point Loads

	Label	DL kips	CDL kips	LL kips	Reduction Type	PLL kips	CLL kips	Mass DL kips
P1	RTU Group1	0.921	0.000	0.000	Reducible	0.000	0.000	0.921
P2	RTU Group2	1.108	0.000	0.000	Reducible	0.000	0.000	1.108
P3	RTU Group3	1.655	0.000	0.000	Reducible	0.000	0.000	1.655
P5	DOAS	2.450	0.000	0.000	Reducible	0.000	0.000	2.450

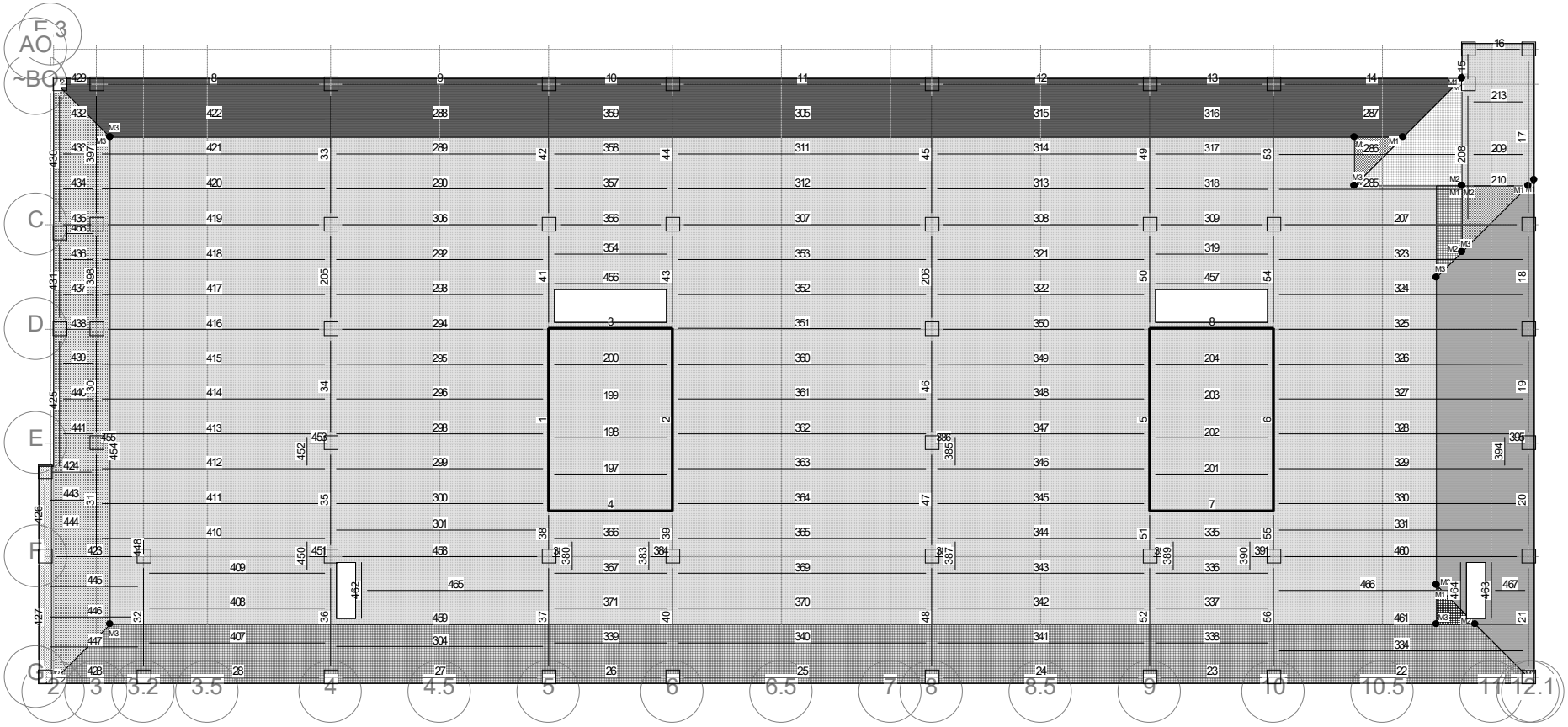
Floor Map

RAM Steel 17.04.00.184
DataBase: TF Judicial 01092023 (area B only)
Building Code: IBC

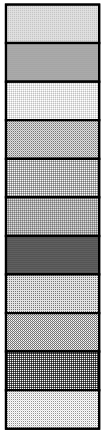
SNOW LOAD MAP

01/09/23 15:45:26
Steel Code: AISC 360-16 LRFD

Floor Type: Main Roof **Beam Numbers**



Snow Loads



Label	Type	Magnitude 1 psf	Magnitude 2 psf	Magnitude 3 psf
Jurisdiction MIN Snow	Constant	25.000	---	---
10' parapet drift	Drift	73.900	73.900	11.600
10' parapet drift	Drift	73.900	73.900	11.600
S of stair pop up	Drift	73.900	73.900	28.900
S of stair pop up trapezoid	Drift	28.900	28.900	11.600
3'-10' parapet drift (N&S)	Drift	73.900	47.400	11.600
3'-10' parapet drift (N&S)	Drift	73.900	47.400	11.600
3' parapet drift	Drift	47.400	47.400	11.600
10' parapet leftover	Drift	33.900	11.600	11.600
10' parapet leftover	Drift	33.900	11.600	11.600
3' parapet max	Constant	47.400	---	---

Floor Type: Second Floor **Beam Numbers**

Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	PLL psf	CLL psf	Mass DL psf
	Court RM	32.6	20.0	100.0	Unreducible	15.0	25.0	42.6
	Corridor+conc ramp	97.6	20.0	100.0	Reducible	15.0	25.0	107.6
	Corridor	22.6	20.0	100.0	Reducible	15.0	25.0	32.6
	TYP Office	22.6	20.0	50.0	Reducible	15.0	25.0	32.6
	Raised Court RM	41.6	20.0	100.0	Unreducible	15.0	25.0	51.6
	Light Storage	22.6	20.0	125.0	Unreducible	15.0	25.0	32.6

Line Loads

	Label	DL k/ft	CDL k/ft	LL k/ft	Reduction Type	PLL k/ft	CLL k/ft	Mass DL k/ft
L2	L2 ExtWall Mass B	0.000	0.000	0.000	Reducible	0.000	0.000	1.130
L9	L2 CMU Fire Mass B	0.000	0.000	0.000	Reducible	0.000	0.000	1.700
L10	Stair load	0.275	0.220	0.550	Reducible	0.000	0.000	0.275
L11	L2 ExtWMass B+stair	0.275	0.220	0.550	Reducible	0.000	0.000	1.405
L12	E Stair load	0.156	0.125	0.313	Reducible	0.000	0.000	0.156
L13	L2 ExtWMassB+Estair	0.156	0.125	0.313	Reducible	0.000	0.000	1.286
L15	10.5ft 6CMU wall	0.672	0.000	0.000	Reducible	0.000	0.000	0.672

Floor Type: Main Roof **Beam Number = 8**

SPAN INFORMATION (ft): I-End (106.00,113.17) J-End (145.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 39.75
Mp (kip-ft) = 397.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	39.750	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	39.750	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	39.750	0.032	0.000			0.000
4	0.000	0.000	0.046	---	Snow	0.000
	39.750	0.000	0.051			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	39.750	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	39.750	0.093	0.000			0.000
7	0.000	0.000	0.110	---	Snow	0.000
	39.750	0.000	0.123			0.000
8	0.000	0.044	0.000	---	NonR	0.000
	39.750	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.61 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	94.6	20.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	94.6	20.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	3.55	3.55
Max +LL reaction	3.23	3.35
Max +total reaction (factored)	9.42	9.61

DEFLECTIONS:

					Ratio
Dead load (in)	at 19.87 ft = -0.410		L/D = 1164 > 300		0.26
Live load (in)	at 19.87 ft = -0.380	< -1.000	L/D = 1254 > 360		0.38
Net Total load (in)	at 19.87 ft = -0.790		L/D = 604 > 240		0.40

Floor Type: Main Roof **Beam Number = 9**

SPAN INFORMATION (ft): I-End (145.75,113.17) J-End (182.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	37.000	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	37.000	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	37.000	0.032	0.000			0.000
4	0.000	0.000	0.051	---	Snow	0.000
	37.000	0.000	0.055			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	37.000	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	37.000	0.093	0.000			0.000
7	0.000	0.000	0.123	---	Snow	0.000
	37.000	0.000	0.136			0.000
8	0.000	0.035	0.000	---	NonR	0.000
	37.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.23 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	84.7	18.6	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	84.7	18.6	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	3.13	3.13
Max +LL reaction	3.32	3.42
Max +total reaction (factored)	9.07	9.23

DEFLECTIONS:

						Ratio
Dead load (in)	at 18.50 ft =	-0.482		L/D = 920	> 300	0.33
Live load (in)	at 18.50 ft =	-0.520	< -1.000	L/D = 854	> 360	0.52
Net Total load (in)	at 18.50 ft =	-1.002		L/D = 443	> 240	0.54

Floor Type: Main Roof **Beam Number = 10**

SPAN INFORMATION (ft): I-End (182.75,113.17) J-End (203.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	21.000	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	21.000	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	21.000	0.032	0.000			0.000
4	0.000	0.000	0.055	---	Snow	0.000
	21.000	0.000	0.057			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	21.000	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	21.000	0.093	0.000			0.000
7	0.000	0.000	0.136	---	Snow	0.000
	21.000	0.000	0.142			0.000
8	0.000	0.022	0.000	---	NonR	0.000
	21.000	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.27 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	27.5	10.5	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	27.5	10.5	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.64	1.64
Max +LL reaction	2.03	2.06
Max +total reaction (factored)	5.22	5.27

DEFLECTIONS:

					Ratio
Dead load (in)	at 10.50 ft = -0.118		L/D = 2127 > 300		0.14
Live load (in)	at 10.50 ft = -0.148	< -1.000	L/D = 1704 > 360		0.21
Net Total load (in)	at 10.50 ft = -0.266		L/D = 946 > 240		0.25

Floor Type: Main Roof **Beam Number = 11**

SPAN INFORMATION (ft): I-End (203.75,113.17) J-End (247.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 44.00
Mp (kip-ft) = 397.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	44.000	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	44.000	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	44.000	0.032	0.000			0.000
4	0.000	0.000	0.057	---	Snow	0.000
	44.000	0.000	0.062			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	44.000	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	44.000	0.093	0.000			0.000
7	0.000	0.000	0.142	---	Snow	0.000
	44.000	0.000	0.157			0.000
8	0.000	0.044	0.000	---	NonR	0.000
	44.000	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 12.19 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	132.8	22.1	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	132.8	22.1	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	3.92	3.92
Max +LL reaction	4.53	4.67
Max +total reaction (factored)	11.96	12.19

DEFLECTIONS:

					Ratio
Dead load (in)	at 22.00 ft = -0.615		L/D = 858	> 300	0.35
Live load (in)	at 22.00 ft = -0.722	< -1.000	L/D = 731	> 360	0.72
Net Total load (in)	at 22.00 ft = -1.337		L/D = 395	> 240	0.61

Floor Type: Main Roof **Beam Number = 12**

SPAN INFORMATION (ft): I-End (247.75,113.17) J-End (284.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	37.000	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	37.000	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	37.000	0.032	0.000			0.000
4	0.000	0.000	0.062	---	Snow	0.000
	37.000	0.000	0.066			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	37.000	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	37.000	0.093	0.000			0.000
7	0.000	0.000	0.157	---	Snow	0.000
	37.000	0.000	0.169			0.000
8	0.000	0.035	0.000	---	NonR	0.000
	37.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.56 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	96.9	18.6	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	96.9	18.6	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	3.13	3.13
Max +LL reaction	4.15	4.25
Max +total reaction (factored)	10.40	10.56

DEFLECTIONS:

					Ratio
Dead load (in)	at 18.50 ft = -0.482		L/D = 920	> 300	0.33
Live load (in)	at 18.50 ft = -0.647	< -1.000	L/D = 686	> 360	0.65
Net Total load (in)	at 18.50 ft = -1.130		L/D = 393	> 240	0.61

Floor Type: Main Roof **Beam Number = 13**

SPAN INFORMATION (ft): I-End (284.75,113.17) J-End (305.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	21.000	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	21.000	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	21.000	0.032	0.000			0.000
4	0.000	0.000	0.066	---	Snow	0.000
	21.000	0.000	0.069			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	21.000	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	21.000	0.094	0.000			0.000
7	0.000	0.000	0.169	---	Snow	0.000
	21.000	0.000	0.177			0.000
8	0.000	0.022	0.000	---	NonR	0.000
	21.000	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.04 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	31.5	10.5	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	31.5	10.5	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.64	1.64
Max +LL reaction	2.50	2.54
Max +total reaction (factored)	5.98	6.04

DEFLECTIONS:

					Ratio
Dead load (in)	at 10.50 ft = -0.119		L/D = 2123 > 300		0.14
Live load (in)	at 10.50 ft = -0.182	< -1.000	L/D = 1384 > 360		0.26
Net Total load (in)	at 10.50 ft = -0.301		L/D = 838 > 240		0.29

Floor Type: Main Roof **Beam Number = 14**

SPAN INFORMATION (ft): I-End (305.75,113.17) J-End (338.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 33.00
Mp (kip-ft) = 184.17

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	33.000	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	31.991	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	31.991	0.032	0.000			0.000
4	31.992	0.002	0.000	---	NonR	0.000
	33.000	0.000	0.000			0.000
5	31.992	0.032	0.000	---	Snow	0.000
	33.000	0.000	0.000			0.000
6	0.000	0.000	0.069	---	Snow	0.000
	31.000	0.000	0.072			0.000
7	31.000	0.000	0.000	---	Snow	0.000
	31.661	0.000	0.048			0.000
8	31.000	0.000	0.072	---	Snow	0.000
	31.661	0.000	0.025			0.000
9	31.662	0.000	0.048	---	Snow	0.000
	31.991	0.000	0.073			0.000
10	31.662	0.000	0.025	---	Snow	0.000
	31.991	0.000	0.000			0.000
11	32.000	0.000	0.025	---	Snow	0.000
	33.000	0.000	0.000			0.000
12	0.000	0.007	0.000	---	NonR	0.000
	33.000	0.007	0.000			0.000
13	0.000	0.094	0.000	---	Snow	0.000
	33.000	0.094	0.000			0.000
14	0.000	0.000	0.177	---	Snow	0.000
	25.041	0.000	0.185			0.000
15	25.042	0.000	0.185	---	Snow	0.000
	27.027	0.000	0.168			0.000
16	25.042	0.000	0.000	---	Snow	0.000
	27.027	0.000	0.019			0.000
17	27.028	0.000	0.168	---	Snow	0.000
	29.013	0.000	0.110			0.000
18	27.028	0.000	0.019	---	Snow	0.000
	29.013	0.000	0.084			0.000
19	29.014	0.000	0.110	---	Snow	0.000

Load	Dist	DL	LL	Red%	Type	PartL
	31.000	0.000	0.000			0.000
20	29.014	0.000	0.084	---	Snow	0.000
	31.000	0.000	0.210			0.000
21	31.000	0.000	0.210	---	Snow	0.000
	32.000	0.000	0.220			0.000
22	32.000	0.000	0.074	---	Snow	0.000
	33.000	0.000	0.074			0.000
23	0.000	0.026	0.000	---	NonR	0.000
	33.000	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.79 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	81.4	16.6	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	81.4	16.6	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	2.65	2.64
Max +LL reaction	4.13	4.10
Max +total reaction (factored)	9.79	9.73

DEFLECTIONS:

					Ratio
Dead load (in)	at 16.50 ft = -0.492		L/D = 805	> 300	0.37
Live load (in)	at 16.50 ft = -0.773	< -1.000	L/D = 512	> 360	0.77
Net Total load (in)	at 16.50 ft = -1.265		L/D = 313	> 240	0.77

Floor Type: Main Roof **Beam Number = 15**

SPAN INFORMATION (ft): I-End (338.75,113.17) J-End (338.75,119.08)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 72.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	5.916	0.000	0.000			0.000
2	0.000	0.000	0.000	---	NonR	0.000
	1.008	0.002	0.000			0.000
3	0.000	0.000	0.000	---	Snow	0.000
	1.008	0.032	0.000			0.000
4	1.009	0.002	0.000	---	NonR	0.000
	5.916	0.002	0.000			0.000
5	1.009	0.032	0.000	---	Snow	0.000
	5.916	0.032	0.000			0.000
6	0.000	0.000	0.000	---	Snow	0.000
	1.008	0.000	0.025			0.000
7	1.009	0.000	0.025	---	Snow	0.000
	5.916	0.000	0.025			0.000
8	0.000	0.014	0.000	---	NonR	0.000
	5.916	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.29 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.4	3.0	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	0.4	3.0	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.13	0.14
Max +LL reaction	0.06	0.07
Max +total reaction (factored)	0.25	0.29

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.96 ft	=	-0.001		L/D	=	1394 27 > 300	0.00
Live load (in)	at	2.96 ft	=	-0.000	< -1.000	L/D	=	2686 68 > 360	0.00
Net Total load (in)	at	2.96 ft	=	-0.001		L/D	=	9179 1 > 240	0.00

Floor Type: Main Roof **Beam Number = 16**

SPAN INFORMATION (ft): I-End (338.75,119.08) J-End (349.00,119.08)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14x22 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	10.250	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	10.250	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	10.250	0.032	0.000			0.000
4	0.000	0.000	0.025	---	Snow	0.000
	10.250	0.000	0.025			0.000
5	0.000	0.010	0.000	---	NonR	0.000
	10.250	0.010	0.000			0.000
6	0.000	0.140	0.000	---	Snow	0.000
	10.250	0.140	0.000			0.000
7	0.000	0.000	0.111	---	Snow	0.000
	10.250	0.000	0.111			0.000
8	0.000	0.022	0.000	---	NonR	0.000
	10.250	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.39 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	6.1	5.1	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	6.1	5.1	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.06	1.06
Max +LL reaction	0.70	0.70
Max +total reaction (factored)	2.39	2.39

DEFLECTIONS:

										Ratio
Dead load (in)	at	5.13 ft	=	-0.009		L/D	=	13817	> 300	0.02
Live load (in)	at	5.13 ft	=	-0.006	< -1.000	L/D	=	20913	> 360	0.02
Net Total load (in)	at	5.13 ft	=	-0.015		L/D	=	8320	> 240	0.03

Floor Type: Main Roof **Beam Number = 17**

SPAN INFORMATION (ft): I-End (349.00,89.33) J-End (349.00,119.08)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 29.75
Mp (kip-ft) = 558.33

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.523	1.15	0.00	0.0	0.00	0.00	0.0	1.46	Snow	0.00
11.917	1.35	0.00	0.0	0.00	0.00	0.0	0.92	Snow	0.00
20.833	1.66	0.00	0.0	0.00	0.00	0.0	1.14	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	29.750	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	29.750	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	29.750	0.032	0.000			0.000
4	7.523	0.000	0.025	---	Snow	0.000
	29.750	0.000	0.025			0.000
5	6.523	0.000	0.000	---	Snow	0.000
	7.522	0.000	0.025			0.000
6	6.523	0.000	0.072	---	Snow	0.000
	7.522	0.000	0.000			0.000
7	0.000	0.000	0.072	---	Snow	0.000
	6.522	0.000	0.072			0.000
8	0.000	0.055	0.000	---	NonR	0.000
	29.750	0.055	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 8.55 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	67.0	11.9	0.0	1.00	0.90	502.50
Controlling		1.2DL+1.6LL	67.0	11.9	0.0	1.00	0.90	502.50

REACTIONS (kips):

	Left	**Right**
DL reaction	3.53	3.28
Max +LL reaction	2.69	1.90
Max +total reaction (factored)	8.55	6.98

DEFLECTIONS:

				Ratio
Dead load (in)	at 14.73 ft = -0.120	L/D = 2977 > 300		0.10
Live load (in)	at 14.73 ft = -0.076	L/D = 4537 > 360		0.08

Net Total load (in)	at	14.73 ft	=	-0.199	L/D	=	1797 > 240	0.13

Floor Type: Main Roof **Beam Number = 18**

SPAN INFORMATION (ft): I-End (349.00,71.58) J-End (349.00,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.907	4.48	0.00	0.0	0.00	0.00	0.0	4.56	Snow	0.00
11.828	4.33	0.00	0.0	0.00	0.00	0.0	4.58	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	17.750	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	17.750	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	17.750	0.032	0.000			0.000
4	0.000	0.000	0.072	---	Snow	0.000
	17.750	0.000	0.072			0.000
5	0.000	0.026	0.000	---	NonR	0.000
	17.750	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 14.30 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	81.9	8.7	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	81.9	8.7	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	4.97	4.91
Max +LL reaction	5.21	5.21
Max +total reaction (factored)	14.30	14.23

DEFLECTIONS:

									Ratio
Dead load (in)	at	8.88 ft	=	-0.188		L/D	=	1131 > 300	0.27
Live load (in)	at	8.88 ft	=	-0.198	< -1.000	L/D	=	1076 > 360	0.33
Net Total load (in)	at	8.88 ft	=	-0.386		L/D	=	551 > 240	0.44

Floor Type: Main Roof **Beam Number = 19**

SPAN INFORMATION (ft): I-End (349.00,52.25) J-End (349.00,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.554	4.21	0.00	0.0	0.00	0.00	0.0	4.28	Snow	0.00
7.475	4.32	0.00	0.0	0.00	0.00	0.0	4.56	Snow	0.00
13.397	4.33	0.00	0.0	0.00	0.00	0.0	4.57	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	19.333	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	19.333	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	19.333	0.032	0.000			0.000
4	0.000	0.000	0.072	---	Snow	0.000
	19.333	0.000	0.072			0.000
5	0.000	0.026	0.000	---	NonR	0.000
	19.333	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 24.25 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	105.6	7.5	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	105.6	7.5	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	8.43	5.59
Max +LL reaction	8.83	5.97
Max +total reaction (factored)	24.25	16.26

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.57 ft	=	-0.275		L/D	= 843	> 300	0.36
Live load (in)	at	9.57 ft	=	-0.292	< -1.000	L/D	= 794	> 360	0.45
Net Total load (in)	at	9.57 ft	=	-0.567		L/D	= 409	> 240	0.59

Floor Type: Main Roof **Beam Number = 20**

SPAN INFORMATION (ft): I-End (349.00,33.00) J-End (349.00,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.480	3.27	0.00	0.0	0.00	0.00	0.0	3.45	Snow	0.00
8.961	3.80	0.00	0.0	0.00	0.00	0.0	4.01	Snow	0.00
14.882	4.30	0.00	0.0	0.00	0.00	0.0	4.46	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	19.250	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	19.250	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	19.250	0.032	0.000			0.000
4	0.000	0.000	0.072	---	Snow	0.000
	19.250	0.000	0.072			0.000
5	0.000	0.026	0.000	---	NonR	0.000
	19.250	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 18.62 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	108.9	9.0	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	108.9	9.0	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	6.10	6.43
Max +LL reaction	6.50	6.82
Max +total reaction (factored)	17.72	18.62

DEFLECTIONS:

										Ratio
Dead load (in)	at	9.62 ft	=	-0.275		L/D	=	840	> 300	0.36
Live load (in)	at	9.62 ft	=	-0.292	< -1.000	L/D	=	792	> 360	0.45
Net Total load (in)	at	9.62 ft	=	-0.567		L/D	=	408	> 240	0.59

Floor Type: Main Roof **Beam Number = 21**

SPAN INFORMATION (ft): I-End (349.00,12.50) J-End (349.00,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.500	3.29	0.00	0.0	0.00	0.00	0.0	5.25	Snow	0.00
9.000	6.86	0.00	0.0	0.00	0.00	0.0	5.66	Snow	0.00
14.750	0.64	0.00	0.0	0.00	0.00	0.0	1.12	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	20.500	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	20.500	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	20.500	0.032	0.000			0.000
4	0.000	0.000	0.072	---	Snow	0.000
	20.500	0.000	0.072			0.000
5	0.000	0.026	0.000	---	NonR	0.000
	20.500	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 21.97 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	134.6	9.0	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	134.6	9.0	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	7.21	4.81
Max +LL reaction	8.32	5.18
Max +total reaction (factored)	21.97	14.06

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.84 ft	=	-0.356		L/D	= 691	> 300	0.43
Live load (in)	at	9.74 ft	=	-0.376	< -1.000	L/D	= 655	> 360	0.55
Net Total load (in)	at	9.74 ft	=	-0.732		L/D	= 336	> 240	0.71

Floor Type: Main Roof **Beam Number = 22**

SPAN INFORMATION (ft): I-End (305.75,12.50) J-End (349.00,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 43.25
Mp (kip-ft) = 397.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	43.250	0.000	0.000			0.000
2	0.000	0.005	0.000	---	NonR	0.000
	43.250	0.005	0.000			0.000
3	0.000	0.071	0.000	---	Snow	0.000
	43.250	0.071	0.000			0.000
4	0.000	0.000	0.135	---	Snow	0.000
	38.750	0.000	0.144			0.000
5	38.750	0.000	0.144	---	Snow	0.000
	40.250	0.000	0.130			0.000
6	38.750	0.000	0.000	---	Snow	0.000
	40.250	0.000	0.015			0.000
7	40.250	0.000	0.130	---	Snow	0.000
	41.750	0.000	0.084			0.000
8	40.250	0.000	0.015	---	Snow	0.000
	41.750	0.000	0.064			0.000
9	41.750	0.000	0.084	---	Snow	0.000
	43.250	0.000	0.000			0.000
10	41.750	0.000	0.065	---	Snow	0.000
	43.250	0.000	0.158			0.000
11	0.000	0.002	0.000	---	NonR	0.000
	43.250	0.002	0.000			0.000
12	0.000	0.032	0.000	---	Snow	0.000
	43.250	0.032	0.000			0.000
13	0.000	0.000	0.067	---	Snow	0.000
	43.250	0.000	0.072			0.000
14	0.000	0.044	0.000	---	NonR	0.000
	43.250	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 11.38 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	121.8	21.7	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	121.8	21.7	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
DL reaction	3.34	3.34
Max +LL reaction	4.49	4.61
Max +total reaction (factored)	11.18	11.38

DEFLECTIONS:

									Ratio
Dead load (in)	at 21.62 ft	=	-0.497		L/D	=	1044	> 300	0.29
Live load (in)	at 21.62 ft	=	-0.676	< -1.000	L/D	=	768	> 360	0.68
Net Total load (in)	at 21.62 ft	=	-1.173		L/D	=	442	> 240	0.54

Floor Type: Main Roof **Beam Number = 23**

SPAN INFORMATION (ft): I-End (284.75,12.50) J-End (305.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	21.000	0.000	0.000			0.000
2	0.000	0.007	0.000	---	NonR	0.000
	21.000	0.007	0.000			0.000
3	0.000	0.091	0.000	---	Snow	0.000
	21.000	0.091	0.000			0.000
4	0.000	0.000	0.162	---	Snow	0.000
	21.000	0.000	0.169			0.000
5	0.000	0.002	0.000	---	NonR	0.000
	21.000	0.002	0.000			0.000
6	0.000	0.032	0.000	---	Snow	0.000
	21.000	0.032	0.000			0.000
7	0.000	0.000	0.065	---	Snow	0.000
	21.000	0.000	0.067			0.000
8	0.000	0.022	0.000	---	NonR	0.000
	21.000	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.86 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	30.6	10.5	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	30.6	10.5	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.61	1.61
Max +LL reaction	2.42	2.45
Max +total reaction (factored)	5.81	5.86

DEFLECTIONS:

					Ratio
Dead load (in)	at 10.50 ft = -0.117		L/D = 2162 > 300		0.14
Live load (in)	at 10.50 ft = -0.176	< -1.000	L/D = 1433 > 360		0.25
Net Total load (in)	at 10.50 ft = -0.292		L/D = 862 > 240		0.28

Floor Type: Main Roof **Beam Number = 24**

SPAN INFORMATION (ft): I-End (247.75,12.50) J-End (284.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	37.000	0.000	0.000			0.000
2	0.000	0.007	0.000	---	NonR	0.000
	37.000	0.007	0.000			0.000
3	0.000	0.091	0.000	---	Snow	0.000
	37.000	0.091	0.000			0.000
4	0.000	0.000	0.151	---	Snow	0.000
	37.000	0.000	0.162			0.000
5	0.000	0.002	0.000	---	NonR	0.000
	37.000	0.002	0.000			0.000
6	0.000	0.032	0.000	---	Snow	0.000
	37.000	0.032	0.000			0.000
7	0.000	0.000	0.061	---	Snow	0.000
	37.000	0.000	0.065			0.000
8	0.000	0.035	0.000	---	NonR	0.000
	37.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.29 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	94.5	18.6	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	94.5	18.6	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	3.08	3.08
Max +LL reaction	4.02	4.12
Max +total reaction (factored)	10.14	10.29

DEFLECTIONS:

						Ratio
Dead load (in)	at 18.50 ft =	-0.475		L/D = 934	> 300	0.32
Live load (in)	at 18.50 ft =	-0.627	< -1.000	L/D = 708	> 360	0.63
Net Total load (in)	at 18.50 ft =	-1.103		L/D = 403	> 240	0.60

Floor Type: Main Roof **Beam Number = 25**

SPAN INFORMATION (ft): I-End (203.75,12.50) J-End (247.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 44.00
Mp (kip-ft) = 397.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	44.000	0.000	0.000			0.000
2	0.000	0.007	0.000	---	NonR	0.000
	44.000	0.007	0.000			0.000
3	0.000	0.091	0.000	---	Snow	0.000
	44.000	0.091	0.000			0.000
4	0.000	0.000	0.138	---	Snow	0.000
	44.000	0.000	0.151			0.000
5	0.000	0.002	0.000	---	NonR	0.000
	44.000	0.002	0.000			0.000
6	0.000	0.032	0.000	---	Snow	0.000
	44.000	0.032	0.000			0.000
7	0.000	0.000	0.057	---	Snow	0.000
	44.000	0.000	0.061			0.000
8	0.000	0.044	0.000	---	NonR	0.000
	44.000	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 11.91 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	129.9	22.1	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	129.9	22.1	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	3.87	3.87
Max +LL reaction	4.41	4.54
Max +total reaction (factored)	11.70	11.91

DEFLECTIONS:

					Ratio
Dead load (in)	at 22.00 ft = -0.607		L/D = 870	> 300	0.34
Live load (in)	at 22.00 ft = -0.702	< -1.000	L/D = 752	> 360	0.70
Net Total load (in)	at 22.00 ft = -1.309		L/D = 403	> 240	0.59

Floor Type: Main Roof **Beam Number = 26**

SPAN INFORMATION (ft): I-End (182.75,12.50) J-End (203.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	21.000	0.000	0.000			0.000
2	0.000	0.007	0.000	---	NonR	0.000
	21.000	0.007	0.000			0.000
3	0.000	0.091	0.000	---	Snow	0.000
	21.000	0.091	0.000			0.000
4	0.000	0.000	0.131	---	Snow	0.000
	21.000	0.000	0.138			0.000
5	0.000	0.002	0.000	---	NonR	0.000
	21.000	0.002	0.000			0.000
6	0.000	0.032	0.000	---	Snow	0.000
	21.000	0.032	0.000			0.000
7	0.000	0.000	0.054	---	Snow	0.000
	21.000	0.000	0.057			0.000
8	0.000	0.022	0.000	---	NonR	0.000
	21.000	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.16 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	26.9	10.5	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	26.9	10.5	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.61	1.61
Max +LL reaction	1.98	2.01
Max +total reaction (factored)	5.11	5.16

DEFLECTIONS:

					Ratio
Dead load (in)	at 10.50 ft = -0.117		L/D = 2162 > 300		0.14
Live load (in)	at 10.50 ft = -0.144	< -1.000	L/D = 1748 > 360		0.21
Net Total load (in)	at 10.50 ft = -0.261		L/D = 966 > 240		0.25

Floor Type: Main Roof **Beam Number = 27**

SPAN INFORMATION (ft): I-End (145.75,12.50) J-End (182.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	37.000	0.000	0.000			0.000
2	0.000	0.006	0.000	---	NonR	0.000
	37.000	0.006	0.000			0.000
3	0.000	0.083	0.000	---	Snow	0.000
	37.000	0.083	0.000			0.000
4	0.000	0.000	0.111	---	Snow	0.000
	37.000	0.000	0.121			0.000
5	0.000	0.002	0.000	---	NonR	0.000
	37.000	0.002	0.000			0.000
6	0.000	0.032	0.000	---	Snow	0.000
	37.000	0.032	0.000			0.000
7	0.000	0.000	0.051	---	Snow	0.000
	37.000	0.000	0.054			0.000
8	0.000	0.035	0.000	---	NonR	0.000
	37.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 8.56 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	78.6	18.6	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	78.6	18.6	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.92	2.92
Max +LL reaction	3.07	3.16
Max +total reaction (factored)	8.42	8.56

DEFLECTIONS:

					Ratio
Dead load (in)	at 18.50 ft = -0.450		L/D = 987	> 300	0.30
Live load (in)	at 18.50 ft = -0.481	< -1.000	L/D = 924	> 360	0.48
Net Total load (in)	at 18.50 ft = -0.931		L/D = 477	> 240	0.50

Floor Type: Main Roof **Beam Number = 28**

SPAN INFORMATION (ft): I-End (114.00,12.50) J-End (145.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 31.75
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	31.750	0.000	0.000			0.000
2	0.000	0.007	0.000	---	NonR	0.000
	31.750	0.007	0.000			0.000
3	0.000	0.091	0.000	---	Snow	0.000
	31.750	0.091	0.000			0.000
4	0.000	0.000	0.110	---	Snow	0.000
	31.750	0.000	0.120			0.000
5	0.000	0.002	0.000	---	NonR	0.000
	31.750	0.002	0.000			0.000
6	0.000	0.032	0.000	---	Snow	0.000
	31.750	0.032	0.000			0.000
7	0.000	0.000	0.047	---	Snow	0.000
	31.750	0.000	0.051			0.000
8	0.000	0.035	0.000	---	NonR	0.000
	31.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 7.40 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	58.3	15.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	58.3	15.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.65	2.65
Max +LL reaction	2.57	2.64
Max +total reaction (factored)	7.29	7.40

DEFLECTIONS:

					Ratio
Dead load (in)	at 15.88 ft = -0.258		L/D = 1478 > 300		0.20
Live load (in)	at 15.88 ft = -0.254	< -1.000	L/D = 1501 > 360		0.25
Net Total load (in)	at 15.88 ft = -0.512		L/D = 745 > 240		0.32

Floor Type: Main Roof **Beam Number = 30**

SPAN INFORMATION (ft): I-End (106.00,52.25) J-End (106.00,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.554	4.51	0.00	0.0	0.00	0.00	0.0	3.27	Snow	0.00
7.475	4.61	0.00	0.0	0.00	0.00	0.0	3.33	Snow	0.00
13.397	3.98	0.00	0.0	0.00	0.00	0.0	2.82	Snow	0.00
13.501	0.63	0.00	0.0	0.00	0.00	0.0	0.51	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.026	0.000	---	NonR	0.000
	19.333	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 20.08 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	86.2	7.5	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	86.2	7.5	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	8.64	5.59
Max +LL reaction	6.07	3.86
Max +total reaction (factored)	20.08	12.89

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.57 ft	=	-0.280	L/D	=	830	> 300	0.36
Live load (in)	at	9.57 ft	=	-0.195	L/D	=	1188	> 480	0.40
Net Total load (in)	at	9.57 ft	=	-0.475	L/D	=	489	> 240	0.49

Floor Type: Main Roof **Beam Number = 31**

SPAN INFORMATION (ft): I-End (106.00,33.00) J-End (106.00,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	3.64	0.00	0.0	0.00	0.00	0.0	2.59	Snow	0.00
4.778	0.71	0.00	0.0	0.00	0.00	0.0	0.63	Snow	0.00
8.961	4.03	0.00	0.0	0.00	0.00	0.0	2.82	Snow	0.00
9.555	0.71	0.00	0.0	0.00	0.00	0.0	0.63	Snow	0.00
14.333	1.35	0.00	0.0	0.00	0.00	0.0	1.13	Snow	0.00
14.882	4.46	0.00	0.0	0.00	0.00	0.0	2.79	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.026	0.000	---	NonR	0.000
	19.250	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 17.90 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	101.0	9.0	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	101.0	9.0	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	7.71	7.67
Max +LL reaction	5.41	5.19
Max +total reaction (factored)	17.90	17.52

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.72 ft	=	-0.322	L/D	=	718	> 300	0.42
Live load (in)	at	9.62 ft	=	-0.224	L/D	=	1031	> 480	0.47
Net Total load (in)	at	9.62 ft	=	-0.546	L/D	=	423	> 240	0.57

Floor Type: Main Roof **Beam Number = 32**

SPAN INFORMATION (ft): I-End (114.00,12.50) J-End (114.00,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.125	1.45	0.00	0.0	0.00	0.00	0.0	1.19	Snow	0.00
5.774	3.14	0.00	0.0	0.00	0.00	0.0	2.47	Snow	0.00
10.250	1.45	0.00	0.0	0.00	0.00	0.0	1.01	Snow	0.00
11.696	3.18	0.00	0.0	0.00	0.00	0.0	2.24	Snow	0.00
15.375	1.45	0.00	0.0	0.00	0.00	0.0	1.07	Snow	0.00
17.617	3.18	0.00	0.0	0.00	0.00	0.0	2.35	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.026	0.000	---	NonR	0.000
	20.500	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 18.41 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	103.3	11.7	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	103.3	11.7	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	6.51	7.87
Max +LL reaction	4.74	5.60
Max +total reaction (factored)	15.39	18.41

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.35 ft = -0.375	L/D = 657 > 300		0.46
Live load (in)	at 10.35 ft = -0.269	L/D = 914 > 480		0.53
Net Total load (in)	at 10.35 ft = -0.644	L/D = 382 > 240		0.63

Floor Type: Main Roof **Beam Number = 33**

SPAN INFORMATION (ft): I-End (145.75,89.33) J-End (145.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.069	7.78	0.00	0.0	0.00	0.00	0.0	5.75	Snow	0.00
11.990	7.68	0.00	0.0	0.00	0.00	0.0	5.51	Snow	0.00
17.912	7.68	0.00	0.0	0.00	0.00	0.0	6.47	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.044	0.000	---	NonR	0.000
	23.833	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 29.13 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	225.3	12.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	225.3	12.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	12.05	12.14
Max +LL reaction	8.63	9.10
Max +total reaction (factored)	28.26	29.13

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.379	L/D = 754 > 300		0.40
Live load (in)	at 11.92 ft = -0.278	L/D = 1029 > 480		0.47
Net Total load (in)	at 11.92 ft = -0.657	L/D = 435 > 240		0.55

Floor Type: Main Roof **Beam Number = 34**

SPAN INFORMATION (ft): I-End (145.75,52.25) J-End (145.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.554	7.56	0.00	0.0	0.00	0.00	0.0	5.57	Snow	0.00
7.475	7.67	0.00	0.0	0.00	0.00	0.0	5.67	Snow	0.00
13.397	7.69	0.00	0.0	0.00	0.00	0.0	5.68	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	19.333	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 33.77 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	144.8	7.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	144.8	7.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	14.35	9.24
Max +LL reaction	10.34	6.58
Max +total reaction (factored)	33.77	21.61

DEFLECTIONS:

					Ratio
Dead load (in)	at 9.57 ft =	-0.273	L/D = 848 > 300		0.35
Live load (in)	at 9.57 ft =	-0.197	L/D = 1180 > 480		0.41
Net Total load (in)	at 9.57 ft =	-0.470	L/D = 494 > 240		0.49

Floor Type: Main Roof **Beam Number = 35**

SPAN INFORMATION (ft): I-End (145.75,33.00) J-End (145.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	3.86	0.00	0.0	0.00	0.00	0.0	2.84	Snow	0.00
4.480	2.80	0.00	0.0	0.00	0.00	0.0	2.07	Snow	0.00
8.961	7.26	0.00	0.0	0.00	0.00	0.0	5.34	Snow	0.00
14.882	7.97	0.00	0.0	0.00	0.00	0.0	5.64	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	19.250	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.70 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	153.3	9.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	153.3	9.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	11.43	11.14
Max +LL reaction	8.12	7.78
Max +total reaction (factored)	26.70	25.81

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.62 ft	=	-0.283	L/D	=	818	> 300	0.37
Live load (in)	at	9.62 ft	=	-0.200	L/D	=	1155	> 480	0.42
Net Total load (in)	at	9.62 ft	=	-0.483	L/D	=	479	> 240	0.50

Floor Type: Main Roof **Beam Number = 36**

SPAN INFORMATION (ft): I-End (145.75,12.50) J-End (145.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.250	2.81	0.00	0.0	0.00	0.00	0.0	2.71	Snow	0.00
5.774	3.14	0.00	0.0	0.00	0.00	0.0	2.56	Snow	0.00
9.000	6.10	0.00	0.0	0.00	0.00	0.0	2.95	Snow	0.00
11.696	3.18	0.00	0.0	0.00	0.00	0.0	2.26	Snow	0.00
17.617	3.09	0.00	0.0	0.00	0.00	0.0	2.27	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	9.000	0.002	0.000	---	NonR	0.000
	20.500	0.002	0.000			0.000
2	9.000	0.032	0.000	---	Snow	0.000
	20.500	0.032	0.000			0.000
3	9.000	0.000	0.025	---	Snow	0.000
	20.500	0.000	0.025			0.000
4	0.000	0.044	0.000	---	NonR	0.000
	20.500	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 23.16 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	152.0	9.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	152.0	9.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	10.13	9.49
Max +LL reaction	6.88	6.16
Max +total reaction (factored)	23.16	21.24

DEFLECTIONS:

					Ratio
Dead load (in)	at 10.05 ft =	-0.197	L/D = 1250 >	300	0.24
Live load (in)	at 9.94 ft =	-0.127	L/D = 1930 >	480	0.25
Net Total load (in)	at 9.94 ft =	-0.324	L/D = 759 >	240	0.32

Floor Type: Main Roof **Beam Number = 37**

SPAN INFORMATION (ft): I-End (182.75,12.50) J-End (182.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.250	2.81	0.00	0.0	0.00	0.00	0.0	2.81	Snow	0.00
5.774	2.08	0.00	0.0	0.00	0.00	0.0	2.01	Snow	0.00
9.000	4.20	0.00	0.0	0.00	0.00	0.0	2.28	Snow	0.00
11.696	2.10	0.00	0.0	0.00	0.00	0.0	1.55	Snow	0.00
14.750	4.11	0.00	0.0	0.00	0.00	0.0	2.28	Snow	0.00
17.617	2.03	0.00	0.0	0.00	0.00	0.0	1.48	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.044	0.000	---	NonR	0.000
	20.500	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 21.13 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	135.4	9.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	135.4	9.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	8.73	9.50
Max +LL reaction	6.33	6.08
Max +total reaction (factored)	20.61	21.13

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.25 ft = -0.180	L/D = 1367 > 300		0.22
Live load (in)	at 10.15 ft = -0.121	L/D = 2029 > 480		0.24
Net Total load (in)	at 10.15 ft = -0.301	L/D = 817 > 240		0.29

Floor Type: Main Roof **Beam Number = 38**

SPAN INFORMATION (ft): I-End (182.75,33.00) J-End (182.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	1.82	0.00	0.0	0.00	0.00	0.0	1.32	Snow	0.00
4.480	2.80	0.00	0.0	0.00	0.00	0.0	2.07	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	7.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.71 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	18.4	4.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	18.4	4.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.42	2.47
Max +LL reaction	1.68	1.72
Max +total reaction (factored)	5.59	5.71

DEFLECTIONS:

								Ratio
Dead load (in)	at	3.91 ft	=	-0.005	L/D	=	17954 > 300	0.02
Live load (in)	at	3.91 ft	=	-0.004	L/D	=	25350 > 480	0.02
Net Total load (in)	at	3.91 ft	=	-0.009	L/D	=	10510 > 240	0.02

Floor Type: Main Roof **Beam Number = 39**

SPAN INFORMATION (ft): I-End (203.75,33.00) J-End (203.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	6.23	0.00	0.0	0.00	0.00	0.0	4.58	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	7.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.16 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	27.6	3.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	27.6	3.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	3.92	2.58
Max +LL reaction	2.78	1.80
Max +total reaction (factored)	9.16	5.97

DEFLECTIONS:

									Ratio
Dead load (in)	at	3.64 ft	=	-0.007	L/D	=	13630	> 300	0.02
Live load (in)	at	3.64 ft	=	-0.005	L/D	=	19066	> 480	0.03
Net Total load (in)	at	3.64 ft	=	-0.012	L/D	=	7948	> 240	0.03

Floor Type: Main Roof **Beam Number = 40**

SPAN INFORMATION (ft): I-End (203.75,12.50) J-End (203.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.774	6.42	0.00	0.0	0.00	0.00	0.0	6.61	Snow	0.00
11.696	6.92	0.00	0.0	0.00	0.00	0.0	4.85	Snow	0.00
17.617	7.08	0.00	0.0	0.00	0.00	0.0	4.74	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	20.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 28.56 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	154.7	11.7	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	154.7	11.7	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	8.94	12.21
Max +LL reaction	7.50	8.70
Max +total reaction (factored)	22.73	28.56

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.35 ft = -0.313	L/D = 785 > 300		0.38
Live load (in)	at 10.35 ft = -0.244	L/D = 1007 > 480		0.48
Net Total load (in)	at 10.35 ft = -0.558	L/D = 441 > 240		0.54

Floor Type: Main Roof **Beam Number = 41**

SPAN INFORMATION (ft): I-End (182.75,71.75) J-End (182.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.740	4.46	0.00	0.0	0.00	0.00	0.0	2.74	Snow	0.00
7.536	1.61	0.00	0.0	0.00	0.00	0.0	0.92	Snow	0.00
11.662	3.70	0.00	0.0	0.00	0.00	0.0	2.74	Snow	0.00
12.556	1.78	0.00	0.0	0.00	0.00	0.0	1.32	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	7.535	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	7.535	0.032	0.000			0.000
3	0.000	0.000	0.025	---	Snow	0.000
	7.535	0.000	0.025			0.000
4	0.000	0.044	0.000	---	NonR	0.000
	17.583	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 14.12 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	81.5	7.5	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	81.5	7.5	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	6.27	6.32
Max +LL reaction	3.82	4.09
Max +total reaction (factored)	13.63	14.12

DEFLECTIONS:

					Ratio
Dead load (in)	at	8.79 ft =	-0.084	L/D = 2515 > 300	0.12
Live load (in)	at	8.79 ft =	-0.053	L/D = 3960 > 480	0.12
Net Total load (in)	at	8.79 ft =	-0.137	L/D = 1538 > 240	0.16

Floor Type: Main Roof **Beam Number = 42**

SPAN INFORMATION (ft): I-End (182.75,89.33) J-End (182.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.069	5.88	0.00	0.0	0.00	0.00	0.0	4.35	Snow	0.00
11.990	5.80	0.00	0.0	0.00	0.00	0.0	4.25	Snow	0.00
17.912	5.80	0.00	0.0	0.00	0.00	0.0	5.44	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.044	0.000	---	NonR	0.000
	23.833	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 22.90 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	174.7	12.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	174.7	12.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
DL reaction	9.23	9.31
Max +LL reaction	6.70	7.33
Max +total reaction (factored)	21.80	22.90

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.290	L/D = 987 > 300		0.30
Live load (in)	at 11.92 ft = -0.219	L/D = 1304 > 480		0.37
Net Total load (in)	at 11.92 ft = -0.509	L/D = 562 > 240		0.43

Floor Type: Main Roof **Beam Number = 43**

SPAN INFORMATION (ft): I-End (203.75,71.75) J-End (203.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.740	5.01	0.00	0.0	0.00	0.00	0.0	3.22	Snow	0.00
7.536	1.61	0.00	0.0	0.00	0.00	0.0	0.92	Snow	0.00
11.662	5.48	0.00	0.0	0.00	0.00	0.0	3.26	Snow	0.00
12.556	1.78	0.00	0.0	0.00	0.00	0.0	1.32	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	7.535	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	7.535	0.032	0.000			0.000
3	0.000	0.000	0.025	---	Snow	0.000
	7.535	0.000	0.025			0.000
4	0.000	0.035	0.000	---	NonR	0.000
	17.583	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 16.45 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	93.3	7.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	93.3	7.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	7.16	7.59
Max +LL reaction	4.32	4.59
Max +total reaction (factored)	15.50	16.45

DEFLECTIONS:

					Ratio
Dead load (in)	at 8.88 ft =	-0.164	L/D = 1290 >	300	0.23
Live load (in)	at 8.88 ft =	-0.099	L/D = 2124 >	480	0.23
Net Total load (in)	at 8.88 ft =	-0.263	L/D = 803 >	240	0.30

Floor Type: Main Roof **Beam Number = 44**

SPAN INFORMATION (ft): I-End (203.75,89.33) J-End (203.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.069	6.59	0.00	0.0	0.00	0.00	0.0	4.87	Snow	0.00
11.990	6.50	0.00	0.0	0.00	0.00	0.0	4.86	Snow	0.00
17.912	6.50	0.00	0.0	0.00	0.00	0.0	6.74	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.30 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	198.5	12.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	198.5	12.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
DL reaction	10.17	10.26
Max +LL reaction	7.72	8.75
Max +total reaction (factored)	24.56	26.30

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.530	L/D = 540	> 300	0.56
Live load (in)	at 12.04 ft = -0.424	L/D = 675	> 480	0.71
Net Total load (in)	at 12.04 ft = -0.954	L/D = 300	> 240	0.80

Floor Type: Main Roof **Beam Number = 45**

SPAN INFORMATION (ft): I-End (247.75,89.33) J-End (247.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.069	8.21	0.00	0.0	0.00	0.00	0.0	6.07	Snow	0.00
11.990	8.11	0.00	0.0	0.00	0.00	0.0	6.18	Snow	0.00
17.912	8.11	0.00	0.0	0.00	0.00	0.0	9.19	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.044	0.000	---	NonR	0.000
	23.833	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 33.84 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	252.4	12.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	252.4	12.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	12.69	12.79
Max +LL reaction	9.88	11.56
Max +total reaction (factored)	31.03	33.84

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.399	L/D = 716	> 300	0.42
Live load (in)	at 12.04 ft = -0.333	L/D = 859	> 480	0.56
Net Total load (in)	at 12.04 ft = -0.732	L/D = 391	> 240	0.61

Floor Type: Main Roof **Beam Number = 46**

SPAN INFORMATION (ft): I-End (247.75,52.25) J-End (247.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.554	7.98	0.00	0.0	0.00	0.00	0.0	5.89	Snow	0.00
7.475	8.08	0.00	0.0	0.00	0.00	0.0	5.98	Snow	0.00
13.397	8.14	0.00	0.0	0.00	0.00	0.0	6.02	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	19.333	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 35.65 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	152.8	7.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	152.8	7.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	15.14	9.74
Max +LL reaction	10.93	6.96
Max +total reaction (factored)	35.65	22.82

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.57 ft	=	-0.288	L/D	=	805	> 300	0.37
Live load (in)	at	9.57 ft	=	-0.208	L/D	=	1117	> 480	0.43
Net Total load (in)	at	9.57 ft	=	-0.496	L/D	=	468	> 240	0.51

Floor Type: Main Roof **Beam Number = 47**

SPAN INFORMATION (ft): I-End (247.75,33.00) J-End (247.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	8.13	0.00	0.0	0.00	0.00	0.0	5.92	Snow	0.00
8.961	8.11	0.00	0.0	0.00	0.00	0.0	6.00	Snow	0.00
14.882	8.07	0.00	0.0	0.00	0.00	0.0	5.96	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	19.250	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 31.29 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	164.8	9.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	164.8	9.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	13.35	11.64
Max +LL reaction	9.54	8.33
Max +total reaction (factored)	31.29	27.29

DEFLECTIONS:

					Ratio
Dead load (in)	at	9.62 ft =	-0.301	L/D = 768 > 300	0.39
Live load (in)	at	9.62 ft =	-0.216	L/D = 1069 > 480	0.45
Net Total load (in)	at	9.62 ft =	-0.517	L/D = 447 > 240	0.54

Floor Type: Main Roof **Beam Number = 48**

SPAN INFORMATION (ft): I-End (247.75,12.50) J-End (247.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.774	8.00	0.00	0.0	0.00	0.00	0.0	9.00	Snow	0.00
11.696	8.50	0.00	0.0	0.00	0.00	0.0	6.17	Snow	0.00
17.617	10.31	0.00	0.0	0.00	0.00	0.0	5.92	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.044	0.000	---	NonR	0.000
	20.500	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 37.52 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	199.0	11.7	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	199.0	11.7	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	11.30	16.41
Max +LL reaction	9.95	11.14
Max +total reaction (factored)	29.48	37.52

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.46 ft = -0.242	L/D = 1015 > 300		0.30
Live load (in)	at 10.35 ft = -0.193	L/D = 1274 > 480		0.38
Net Total load (in)	at 10.35 ft = -0.436	L/D = 565 > 240		0.42

Floor Type: Main Roof **Beam Number = 49**

SPAN INFORMATION (ft): I-End (284.75,89.33) J-End (284.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.069	5.87	0.00	0.0	0.00	0.00	0.0	4.34	Snow	0.00
11.990	5.81	0.00	0.0	0.00	0.00	0.0	4.51	Snow	0.00
17.912	5.81	0.00	0.0	0.00	0.00	0.0	7.16	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 25.05 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	184.6	12.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	184.6	12.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	9.12	9.20
Max +LL reaction	7.26	8.75
Max +total reaction (factored)	22.56	25.05

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.475	L/D = 603	> 300	0.50
Live load (in)	at 12.04 ft = -0.410	L/D = 698	> 480	0.69
Net Total load (in)	at 12.04 ft = -0.884	L/D = 323	> 240	0.74

Floor Type: Main Roof **Beam Number = 50**

SPAN INFORMATION (ft): I-End (284.75,71.75) J-End (284.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.740	3.94	0.00	0.0	0.00	0.00	0.0	2.74	Snow	0.00
7.536	2.15	0.00	0.0	0.00	0.00	0.0	0.92	Snow	0.00
11.662	3.70	0.00	0.0	0.00	0.00	0.0	2.74	Snow	0.00
12.556	1.78	0.00	0.0	0.00	0.00	0.0	1.32	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	7.535	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	7.535	0.032	0.000			0.000
3	0.000	0.000	0.025	---	Snow	0.000
	7.535	0.000	0.025			0.000
4	0.000	0.035	0.000	---	NonR	0.000
	17.583	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 14.10 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	81.8	7.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	81.8	7.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
DL reaction	6.15	6.30
Max +LL reaction	3.82	4.09
Max +total reaction (factored)	13.48	14.10

DEFLECTIONS:

					Ratio
Dead load (in)	at	8.79 ft =	-0.139	L/D = 1523 > 300	0.20
Live load (in)	at	8.79 ft =	-0.088	L/D = 2396 > 480	0.20
Net Total load (in)	at	8.79 ft =	-0.227	L/D = 931 > 240	0.26

Floor Type: Main Roof **Beam Number = 51**

SPAN INFORMATION (ft): I-End (284.75,33.00) J-End (284.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	5.52	0.00	0.0	0.00	0.00	0.0	4.06	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	7.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 8.14 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	24.5	3.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	24.5	3.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	3.49	2.30
Max +LL reaction	2.47	1.59
Max +total reaction (factored)	8.14	5.31

DEFLECTIONS:

									Ratio
Dead load (in)	at	3.64 ft	=	-0.006	L/D	=	15319	> 300	0.02
Live load (in)	at	3.64 ft	=	-0.004	L/D	=	21498	> 480	0.02
Net Total load (in)	at	3.64 ft	=	-0.010	L/D	=	8945	> 240	0.03

Floor Type: Main Roof **Beam Number = 52**

SPAN INFORMATION (ft): I-End (284.75,12.50) J-End (284.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.774	5.73	0.00	0.0	0.00	0.00	0.0	6.98	Snow	0.00
11.696	5.89	0.00	0.0	0.00	0.00	0.0	4.51	Snow	0.00
17.617	6.21	0.00	0.0	0.00	0.00	0.0	4.22	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	20.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 25.87 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	142.0	11.7	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	142.0	11.7	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	7.88	10.67
Max +LL reaction	7.55	8.17
Max +total reaction (factored)	21.53	25.87

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.35 ft = -0.274	L/D = 899 > 300		0.33
Live load (in)	at 10.25 ft = -0.239	L/D = 1030 > 480		0.47
Net Total load (in)	at 10.25 ft = -0.513	L/D = 480 > 240		0.50

Floor Type: Main Roof **Beam Number = 53**

SPAN INFORMATION (ft): I-End (305.75,89.33) J-End (305.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.958	5.44	0.00	0.0	0.00	0.00	0.0	4.13	Snow	0.00
11.917	5.43	0.00	0.0	0.00	0.00	0.0	4.52	Snow	0.00
17.875	5.43	0.00	0.0	0.00	0.00	0.0	7.23	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 24.23 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	177.9	11.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	177.9	11.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
DL reaction	8.57	8.57
Max +LL reaction	7.16	8.72
Max +total reaction (factored)	21.75	24.23

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.443	L/D = 646 > 300		0.46
Live load (in)	at 12.04 ft = -0.406	L/D = 704 > 480		0.68
Net Total load (in)	at 12.04 ft = -0.849	L/D = 337 > 240		0.71

Floor Type: Main Roof **Beam Number = 54**

SPAN INFORMATION (ft): I-End (305.75,71.75) J-End (305.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.740	5.06	0.00	0.0	0.00	0.00	0.0	3.30	Snow	0.00
7.536	2.18	0.00	0.0	0.00	0.00	0.0	0.92	Snow	0.00
11.662	4.33	0.00	0.0	0.00	0.00	0.0	3.31	Snow	0.00
12.556	1.78	0.00	0.0	0.00	0.00	0.0	1.32	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	7.535	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	7.535	0.032	0.000			0.000
3	0.000	0.000	0.025	---	Snow	0.000
	7.535	0.000	0.025			0.000
4	0.000	0.035	0.000	---	NonR	0.000
	17.583	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 15.95 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	93.5	7.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	93.5	7.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	7.13	7.09
Max +LL reaction	4.39	4.65
Max +total reaction (factored)	15.58	15.95

DEFLECTIONS:

					Ratio
Dead load (in)	at	8.79 ft =	-0.158	L/D = 1332 > 300	0.23
Live load (in)	at	8.79 ft =	-0.101	L/D = 2093 > 480	0.23
Net Total load (in)	at	8.79 ft =	-0.259	L/D = 814 > 240	0.29

Floor Type: Main Roof **Beam Number = 55**

SPAN INFORMATION (ft): I-End (305.75,33.00) J-End (305.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.039	1.82	0.00	0.0	0.00	0.00	0.0	1.32	Snow	0.00
4.480	3.27	0.00	0.0	0.00	0.00	0.0	2.50	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	7.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.43 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	20.8	4.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	20.8	4.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.62	2.74
Max +LL reaction	1.86	1.96
Max +total reaction (factored)	6.12	6.43

DEFLECTIONS:

								Ratio
Dead load (in)	at	3.91 ft	=	-0.006	L/D	=	1632 > 300	0.02
Live load (in)	at	3.91 ft	=	-0.004	L/D	=	22481 > 480	0.02
Net Total load (in)	at	3.91 ft	=	-0.010	L/D	=	9457 > 240	0.03

Floor Type: Main Roof **Beam Number = 56**

SPAN INFORMATION (ft): I-End (305.75,12.50) J-End (305.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.500	3.29	0.00	0.0	0.00	0.00	0.0	4.92	Snow	0.00
5.774	2.08	0.00	0.0	0.00	0.00	0.0	2.64	Snow	0.00
9.000	6.17	0.00	0.0	0.00	0.00	0.0	3.89	Snow	0.00
11.696	2.10	0.00	0.0	0.00	0.00	0.0	1.65	Snow	0.00
14.750	4.90	0.00	0.0	0.00	0.00	0.0	2.28	Snow	0.00
17.617	2.03	0.00	0.0	0.00	0.00	0.0	1.48	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	20.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 27.69 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	172.6	9.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	172.6	9.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	10.44	10.84
Max +LL reaction	9.48	7.38
Max +total reaction (factored)	27.69	24.81

DEFLECTIONS:

					Ratio
Dead load (in)	at 10.25 ft =	-0.349	L/D = 705 > 300		0.43
Live load (in)	at 10.05 ft =	-0.268	L/D = 918 > 480		0.52
Net Total load (in)	at 10.05 ft =	-0.617	L/D = 399 > 240		0.60

Floor Type: Main Roof **Beam Number = 205**

SPAN INFORMATION (ft): I-End (145.75,71.58) J-End (145.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.907	9.54	0.00	0.0	0.00	0.00	0.0	5.67	Snow	0.00
11.828	7.68	0.00	0.0	0.00	0.00	0.0	5.68	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	17.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 20.17 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	118.4	5.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	118.4	5.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	9.24	8.60
Max +LL reaction	5.68	5.67
Max +total reaction (factored)	20.17	19.40

DEFLECTIONS:

									Ratio
Dead load (in)	at	8.79 ft	=	-0.205	L/D	=	1039	> 300	0.29
Live load (in)	at	8.79 ft	=	-0.132	L/D	=	1620	> 480	0.30
Net Total load (in)	at	8.79 ft	=	-0.336	L/D	=	633	> 240	0.38

Floor Type: Main Roof **Beam Number = 206**

SPAN INFORMATION (ft): I-End (247.75,71.58) J-End (247.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.907	8.51	0.00	0.0	0.00	0.00	0.0	5.97	Snow	0.00
11.828	9.22	0.00	0.0	0.00	0.00	0.0	6.00	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	17.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 20.71 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	121.9	11.8	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	121.9	11.8	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	9.06	9.28
Max +LL reaction	5.99	5.98
Max +total reaction (factored)	20.45	20.71

DEFLECTIONS:

					Ratio
Dead load (in)	at	8.88 ft =	-0.211	L/D = 1011 > 300	0.30
Live load (in)	at	8.88 ft =	-0.139	L/D = 1535 > 480	0.31
Net Total load (in)	at	8.88 ft =	-0.350	L/D = 609 > 240	0.39

Floor Type: Main Roof **Beam Number = 207**

SPAN INFORMATION (ft): I-End (305.75,89.33) J-End (349.00,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 43.25
Mp (kip-ft) = 558.33

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
33.000	7.12	0.00	0.0	0.00	0.00	0.0	7.38	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.014	0.000	---	NonR	0.000
	43.250	0.014	0.000			0.000
2	0.000	0.094	0.000	---	Snow	0.000
	33.000	0.094	0.000			0.000
3	0.000	0.000	0.148	---	Snow	0.000
	27.650	0.000	0.148			0.000
4	27.650	0.000	0.035	---	Snow	0.000
	32.000	0.000	0.086			0.000
5	32.000	0.000	0.166	---	Snow	0.000
	33.000	0.000	0.166			0.000
6	33.000	0.103	0.000	---	Snow	0.000
	43.250	0.103	0.000			0.000
7	33.000	0.000	0.184	---	Snow	0.000
	36.727	0.000	0.184			0.000
8	36.728	0.000	0.135	---	Snow	0.000
	38.901	0.000	0.257			0.000
9	36.728	0.000	0.184	---	Snow	0.000
	38.901	0.000	0.090			0.000
10	38.902	0.000	0.257	---	Snow	0.000
	41.075	0.000	0.363			0.000
11	38.902	0.000	0.090	---	Snow	0.000
	41.075	0.000	0.025			0.000
12	41.076	0.000	0.363	---	Snow	0.000
	43.250	0.000	0.436			0.000
13	41.076	0.000	0.025	---	Snow	0.000
	43.250	0.000	0.000			0.000
14	0.000	0.093	0.000	---	Snow	0.000
	43.250	0.093	0.000			0.000
15	27.650	0.000	0.034	---	Snow	0.000
	31.203	0.000	0.076			0.000
16	31.204	0.000	0.076	---	Snow	0.000
	32.000	0.000	0.082			0.000
17	32.000	0.000	0.115	---	Snow	0.000
	33.575	0.000	0.098			0.000

Load	Dist	DL	LL	Red%	Type	PartL
18	32.000	0.000	0.000	---	Snow	0.000
	33.575	0.000	0.022			0.000
19	33.576	0.000	0.098	---	Snow	0.000
	35.151	0.000	0.061			0.000
20	33.576	0.000	0.022	---	Snow	0.000
	35.151	0.000	0.063			0.000
21	35.152	0.000	0.061	---	Snow	0.000
	36.727	0.000	0.000			0.000
22	35.152	0.000	0.063	---	Snow	0.000
	36.727	0.000	0.135			0.000
23	0.000	0.055	0.000	---	NonR	0.000
	43.250	0.055	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 30.38 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	264.2	31.5	0.0	1.00	0.90	502.50
Controlling		1.2DL+1.6LL	264.2	31.5	0.0	1.00	0.90	502.50

REACTIONS (kips):

	Left	**Right**
DL reaction	7.24	11.05
Max +LL reaction	5.17	10.70
Max +total reaction (factored)	16.95	30.38

DEFLECTIONS:

					Ratio
Dead load (in)	at 22.71 ft	= -0.868	L/D = 598	> 300	0.50
Live load (in)	at 22.92 ft	= -0.709	L/D = 732	> 480	0.66
Net Total load (in)	at 22.92 ft	= -1.577	L/D = 329	> 240	0.73

Floor Type: Main Roof **Beam Number = 208**

SPAN INFORMATION (ft): I-End (338.75,89.33) J-End (338.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.958	3.32	0.00	0.0	0.00	0.00	0.0	3.21	Snow	0.00
6.523	1.15	0.00	0.0	0.00	0.00	0.0	1.44	Snow	0.00
11.917	4.68	0.00	0.0	0.00	0.00	0.0	5.05	Snow	0.00
17.875	3.32	0.00	0.0	0.00	0.00	0.0	5.04	Snow	0.00
20.833	1.66	0.00	0.0	0.00	0.00	0.0	1.14	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 23.01 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	165.4	11.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	165.4	11.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	7.12	7.84
Max +LL reaction	7.38	8.50
Max +total reaction (factored)	20.35	23.01

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.370	L/D = 773 > 300		0.39
Live load (in)	at 11.92 ft = -0.402	L/D = 711 > 480		0.68
Net Total load (in)	at 11.92 ft = -0.772	L/D = 370 > 240		0.65

Floor Type: Main Roof **Beam Number = 209**

SPAN INFORMATION (ft): I-End (338.75,101.25) J-End (349.00,101.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14x22 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.016	0.000	---	NonR	0.000
	10.250	0.016	0.000			0.000
2	0.000	0.225	0.000	---	Snow	0.000
	10.250	0.225	0.000			0.000
3	0.000	0.000	0.179	---	Snow	0.000
	10.250	0.000	0.179			0.000
4	0.000	0.022	0.000	---	NonR	0.000
	10.250	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.09 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	7.9	5.1	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	7.9	5.1	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.35	1.35
Max +LL reaction	0.92	0.92
Max +total reaction (factored)	3.09	3.09

DEFLECTIONS:

					Ratio
Dead load (in)	at 5.13 ft =	-0.011	L/D = 10829	> 300	0.03
Live load (in)	at 5.13 ft =	-0.008	L/D = 15978	> 360	0.02
Net Total load (in)	at 5.13 ft =	-0.019	L/D = 6454	> 240	0.04

Floor Type: Main Roof **Beam Number = 210**

SPAN INFORMATION (ft): I-End (338.75,95.86) J-End (349.00,95.86)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14x22 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.014	0.000	---	NonR	0.000
	10.250	0.014	0.000			0.000
2	0.000	0.188	0.000	---	Snow	0.000
	10.250	0.188	0.000			0.000
3	0.000	0.000	0.067	---	Snow	0.000
	10.250	0.000	0.067			0.000
4	0.000	0.000	0.213	---	Snow	0.000
	3.727	0.000	0.213			0.000
5	3.728	0.000	0.213	---	Snow	0.000
	5.901	0.000	0.193			0.000
6	3.728	0.000	0.000	---	Snow	0.000
	5.901	0.000	0.019			0.000
7	5.902	0.000	0.193	---	Snow	0.000
	8.075	0.000	0.127			0.000
8	5.902	0.000	0.020	---	Snow	0.000
	8.075	0.000	0.090			0.000
9	8.076	0.000	0.126	---	Snow	0.000
	10.250	0.000	0.000			0.000
10	8.076	0.000	0.090	---	Snow	0.000
	10.250	0.000	0.229			0.000
11	0.000	0.022	0.000	---	NonR	0.000
	10.250	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.71 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	9.4	5.1	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	9.4	5.1	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	Right
DL reaction	1.15	1.15
Max +LL reaction	1.44	1.46
Max +total reaction (factored)	3.68	3.71

DEFLECTIONS: **Ratio**

Dead load (in)	at	5.13 ft	=	-0.010	L/D	=	12789	>	300	0.02
Live load (in)	at	5.13 ft	=	-0.012	L/D	=	10159	>	360	0.04
Net Total load (in)	at	5.13 ft	=	-0.022	L/D	=	5662	>	240	0.04

Floor Type: Main Roof **Beam Number = 213**

SPAN INFORMATION (ft): I-End (338.75,110.17) J-End (349.00,110.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W14x22 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.021	0.000	---	NonR	0.000
	10.250	0.021	0.000			0.000
2	0.000	0.281	0.000	---	Snow	0.000
	10.250	0.281	0.000			0.000
3	0.000	0.000	0.223	---	Snow	0.000
	10.250	0.000	0.223			0.000
4	0.000	0.022	0.000	---	NonR	0.000
	10.250	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.82 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	9.8	5.1	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	9.8	5.1	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.66	1.66
Max +LL reaction	1.14	1.14
Max +total reaction (factored)	3.82	3.82

DEFLECTIONS:

					Ratio
Dead load (in)	at 5.13 ft =	-0.014	L/D = 8836 >	300	0.03
Live load (in)	at 5.13 ft =	-0.010	L/D = 1282 >	360	0.03
Net Total load (in)	at 5.13 ft =	-0.024	L/D = 5231 >	240	0.05

Floor Type: Main Roof **Beam Number = 380**

SPAN INFORMATION (ft): I-End (186.75,30.12) J-End (186.75,36.04)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.883	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.28 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.13	0.12
Max +LL reaction	0.08	0.07
Max +total reaction (factored)	0.28	0.26

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.93 ft	=	-0.003	L/D	=	26555	> 300	0.01
Live load (in)	at	2.93 ft	=	-0.002	L/D	=	42692	> 360	0.01
Net Total load (in)	at	2.93 ft	=	-0.004	L/D	=	16372	> 240	0.01

Floor Type: Main Roof **Beam Number = 381**

SPAN INFORMATION (ft): I-End (182.75,33.00) J-End (186.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 1 > 300	0.01
Live load (in)	at 2.00 ft =	-0.001	L/D =	7476 6 > 360	0.00
Net Total load (in)	at 2.00 ft =	-0.002	L/D =	3062 1 > 240	0.01

Floor Type: Main Roof **Beam Number = 383**

SPAN INFORMATION (ft): I-End (199.75,30.12) J-End (199.75,36.04)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.883	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.28 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.13	0.12
Max +LL reaction	0.08	0.07
Max +total reaction (factored)	0.28	0.26

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.93 ft	=	-0.003	L/D	=	26555	> 300	0.01
Live load (in)	at	2.93 ft	=	-0.002	L/D	=	42692	> 360	0.01
Net Total load (in)	at	2.93 ft	=	-0.004	L/D	=	16372	> 240	0.01

Floor Type: Main Roof **Beam Number = 384**

SPAN INFORMATION (ft): I-End (199.75,33.00) J-End (203.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 1 > 300	0.01
Live load (in)	at 2.00 ft =	-0.001	L/D =	7476 6 > 360	0.00
Net Total load (in)	at 2.00 ft =	-0.002	L/D =	3062 1 > 240	0.01

Floor Type: Main Roof **Beam Number = 385**

SPAN INFORMATION (ft): I-End (251.75,47.88) J-End (251.75,53.80)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.368	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.39 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.6	4.4	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.6	4.4	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.08	0.18
Max +LL reaction	0.04	0.11
Max +total reaction (factored)	0.15	0.39

DEFLECTIONS:

									Ratio
Dead load (in)	at	3.26 ft	=	-0.002	L/D	=	35244	> 300	0.01
Live load (in)	at	3.26 ft	=	-0.001	L/D	=	58769	> 360	0.01
Net Total load (in)	at	3.26 ft	=	-0.003	L/D	=	22031	> 240	0.01

Floor Type: Main Roof **Beam Number = 386**

SPAN INFORMATION (ft): I-End (247.75,52.25) J-End (251.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 1 > 300	0.01
Live load (in)	at 2.00 ft =	-0.001	L/D =	7476 6 > 360	0.00
Net Total load (in)	at 2.00 ft =	-0.002	L/D =	3062 1 > 240	0.01

Floor Type: Main Roof **Beam Number = 387**

SPAN INFORMATION (ft): I-End (251.75,30.12) J-End (251.75,36.04)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.883	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.28 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.13	0.12
Max +LL reaction	0.08	0.07
Max +total reaction (factored)	0.28	0.26

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.93 ft	=	-0.003	L/D	=	26555	> 300	0.01
Live load (in)	at	2.93 ft	=	-0.002	L/D	=	42692	> 360	0.01
Net Total load (in)	at	2.93 ft	=	-0.004	L/D	=	16372	> 240	0.01

Floor Type: Main Roof **Beam Number = 388**

SPAN INFORMATION (ft): I-End (247.75,33.00) J-End (251.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 > 300	0.01
Live load (in)	at 2.00 ft =	-0.001	L/D =	7476 > 360	0.00
Net Total load (in)	at 2.00 ft =	-0.002	L/D =	3062 > 240	0.01

Floor Type: Main Roof **Beam Number = 389**

SPAN INFORMATION (ft): I-End (288.75,30.12) J-End (288.75,36.04)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.883	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.28 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.13	0.12
Max +LL reaction	0.08	0.07
Max +total reaction (factored)	0.28	0.26

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.93 ft	=	-0.003	L/D	=	26555	> 300	0.01
Live load (in)	at	2.93 ft	=	-0.002	L/D	=	42692	> 360	0.01
Net Total load (in)	at	2.93 ft	=	-0.004	L/D	=	16372	> 240	0.01

Floor Type: Main Roof **Beam Number = 390**

SPAN INFORMATION (ft): I-End (301.75,30.12) J-End (301.75,36.04)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.883	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.28 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.13	0.12
Max +LL reaction	0.08	0.07
Max +total reaction (factored)	0.28	0.26

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.93 ft	=	-0.003	L/D	=	26555	> 300	0.01
Live load (in)	at	2.93 ft	=	-0.002	L/D	=	42692	> 360	0.01
Net Total load (in)	at	2.93 ft	=	-0.004	L/D	=	16372	> 240	0.01

Floor Type: Main Roof **Beam Number = 391**

SPAN INFORMATION (ft): I-End (301.75,33.00) J-End (305.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 1 > 300	0.01
Live load (in)	at 2.00 ft =	-0.001	L/D =	7476 6 > 360	0.00
Net Total load (in)	at 2.00 ft =	-0.002	L/D =	3062 1 > 240	0.01

Floor Type: Main Roof **Beam Number = 392**

SPAN INFORMATION (ft): I-End (284.75,33.00) J-End (288.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 1 > 300	0.01
Live load (in)	at 2.00 ft =	-0.001	L/D =	7476 6 > 360	0.00
Net Total load (in)	at 2.00 ft =	-0.002	L/D =	3062 1 > 240	0.01

Floor Type: Main Roof **Beam Number = 394**

SPAN INFORMATION (ft): I-End (345.00,47.88) J-End (345.00,53.80)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.368	0.21	0.00	0.0	0.00	0.00	0.0	0.36	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	5.921	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.63 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	1.0	4.4	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	1.0	4.4	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.08	0.18
Max +LL reaction	0.09	0.26
Max +total reaction (factored)	0.24	0.63

DEFLECTIONS:

									Ratio
Dead load (in)	at	3.26 ft	=	-0.002	L/D	=	3524	> 300	0.01
Live load (in)	at	3.29 ft	=	-0.003	L/D	=	2442	> 360	0.01
Net Total load (in)	at	3.29 ft	=	-0.005	L/D	=	1442	> 240	0.02

Floor Type: Main Roof **Beam Number = 395**

SPAN INFORMATION (ft): I-End (345.00,52.25) J-End (349.00,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 17.70

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.163	---	Snow	0.000
	4.000	0.000	0.208			0.000
4	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.87 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	0.8	2.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.36	0.39
Max +total reaction (factored)	0.83	0.87

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.001	L/D =	5186 > 300	0.01
Live load (in)	at 2.00 ft =	-0.002	L/D =	2983 > 360	0.01
Net Total load (in)	at 2.00 ft =	-0.003	L/D =	1894 > 240	0.01

Floor Type: Main Roof **Beam Number = 397**

SPAN INFORMATION (ft): I-End (106.00,89.33) J-End (106.00,113.17)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.069	4.66	0.00	0.0	0.00	0.00	0.0	3.37	Snow	0.00
11.990	4.60	0.00	0.0	0.00	0.00	0.0	3.21	Snow	0.00
17.912	4.60	0.00	0.0	0.00	0.00	0.0	3.59	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 17.13 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	133.2	12.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	133.2	12.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	7.32	7.38
Max +LL reaction	5.00	5.17
Max +total reaction (factored)	16.78	17.13

DEFLECTIONS:

				Ratio
Dead load (in)	at 11.92 ft = -0.380	L/D = 753 > 300		0.40
Live load (in)	at 11.92 ft = -0.264	L/D = 1083 > 480		0.44
Net Total load (in)	at 11.92 ft = -0.644	L/D = 444 > 240		0.54

Floor Type: Main Roof **Beam Number = 398**

SPAN INFORMATION (ft): I-End (106.00,71.58) J-End (106.00,89.33)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.907	4.85	0.00	0.0	0.00	0.00	0.0	3.32	Snow	0.00
11.828	4.52	0.00	0.0	0.00	0.00	0.0	3.26	Snow	0.00
16.250	0.31	0.00	0.0	0.00	0.00	0.0	0.25	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.026	0.000	---	NonR	0.000
	17.750	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 11.79 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	66.3	6.3	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	66.3	6.0	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	5.00	5.15
Max +LL reaction	3.33	3.51
Max +total reaction (factored)	11.32	11.79

DEFLECTIONS:

					Ratio
Dead load (in)	at	8.88 ft =	-0.193	L/D = 1106 > 300	0.27
Live load (in)	at	8.88 ft =	-0.131	L/D = 1629 > 480	0.29
Net Total load (in)	at	8.88 ft =	-0.323	L/D = 659 > 240	0.36

Floor Type: Main Roof **Beam Number = 423**

SPAN INFORMATION (ft): I-End (97.25,33.00) J-End (114.00,33.00)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 16.75
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
8.750	7.71	0.00	0.0	0.00	0.00	0.0	5.41	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	8.750	0.005	0.000			0.000
2	0.000	0.075	0.000	---	Snow	0.000
	8.750	0.075	0.000			0.000
3	0.000	0.000	0.235	---	Snow	0.000
	1.083	0.000	0.235			0.000
4	1.084	0.000	0.113	---	Snow	0.000
	8.750	0.000	0.048			0.000
5	8.750	0.003	0.000	---	NonR	0.000
	16.750	0.003	0.000			0.000
6	8.750	0.048	0.000	---	Snow	0.000
	16.750	0.048	0.000			0.000
7	8.750	0.000	0.030	---	Snow	0.000
	11.083	0.000	0.018			0.000
8	11.084	0.000	0.102	---	Snow	0.000
	16.750	0.000	0.102			0.000
9	0.000	0.006	0.000	---	NonR	0.000
	16.750	0.006	0.000			0.000
10	0.000	0.081	0.000	---	Snow	0.000
	16.750	0.081	0.000			0.000
11	1.084	0.000	0.121	---	Snow	0.000
	11.083	0.000	0.030			0.000
12	0.000	0.026	0.000	---	NonR	0.000
	16.750	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 12.59 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	89.0	8.8	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	89.0	8.8	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	Right
DL reaction	5.25	5.47
Max +LL reaction	3.93	4.45

	Left	Right
Max +total reaction (factored)	12.59	12.54

DEFLECTIONS:

									Ratio
Dead load (in)	at	8.46 ft	=	-0.185	L/D	=	1084	> 300	0.28
Live load (in)	at	8.46 ft	=	-0.129	L/D	=	1554	> 480	0.31
Net Total load (in)	at	8.46 ft	=	-0.315	L/D	=	638	> 240	0.38

Floor Type: Main Roof **Beam Number = 424**

SPAN INFORMATION (ft): I-End (97.25,47.33) J-End (106.00,47.33)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 8.75
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.500	1.51	0.00	0.0	0.00	0.00	0.0	1.49	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	2.500	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	1.491	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	1.491	0.032	0.000			0.000
4	1.492	0.002	0.000	---	NonR	0.000
	2.500	0.000	0.000			0.000
5	1.492	0.032	0.000	---	Snow	0.000
	2.500	0.000	0.000			0.000
6	0.000	0.000	0.047	---	Snow	0.000
	1.083	0.000	0.047			0.000
7	1.084	0.000	0.048	---	Snow	0.000
	1.491	0.000	0.046			0.000
8	1.492	0.000	0.046	---	Snow	0.000
	2.163	0.000	0.015			0.000
9	2.164	0.000	0.015	---	Snow	0.000
	2.500	0.000	0.000			0.000
10	2.500	0.007	0.000	---	NonR	0.000
	8.750	0.007	0.000			0.000
11	2.500	0.102	0.000	---	Snow	0.000
	8.750	0.102	0.000			0.000
12	2.500	0.000	0.137	---	Snow	0.000
	8.750	0.000	0.065			0.000
13	0.000	0.005	0.000	---	NonR	0.000
	8.750	0.005	0.000			0.000
14	0.000	0.075	0.000	---	Snow	0.000
	8.750	0.075	0.000			0.000
15	0.000	0.000	0.113	---	Snow	0.000
	1.083	0.000	0.113			0.000
16	1.084	0.000	0.113	---	Snow	0.000
	8.750	0.000	0.048			0.000
17	0.000	0.026	0.000	---	NonR	0.000
	8.750	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.13 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	11.5	2.5	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	11.5	2.5	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	Right
DL reaction	1.85	1.35
Max +LL reaction	1.82	1.13
Max +total reaction (factored)	5.13	3.42

DEFLECTIONS:

										Ratio
Dead load (in)	at	4.16 ft	=	-0.006		L/D	=	16876	>	300	0.02
Live load (in)	at	4.16 ft	=	-0.006	< -1.000	L/D	=	17921	>	360	0.02
Net Total load (in)	at	4.16 ft	=	-0.012		L/D	=	8691	>	240	0.03

Floor Type: Main Roof **Beam Number = 425**

SPAN INFORMATION (ft): I-End (99.75,47.33) J-End (99.75,71.58)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 24.25
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.470	0.65	0.00	0.0	0.00	0.00	0.0	0.68	Snow	0.00
12.392	0.63	0.00	0.0	0.00	0.00	0.0	0.65	Snow	0.00
18.434	0.63	0.00	0.0	0.00	0.00	0.0	0.65	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	24.250	0.000	0.000			0.000
2	0.000	0.000	0.000	---	NonR	0.000
	1.008	0.002	0.000			0.000
3	0.000	0.000	0.000	---	Snow	0.000
	1.008	0.032	0.000			0.000
4	1.009	0.002	0.000	---	NonR	0.000
	24.250	0.002	0.000			0.000
5	1.009	0.032	0.000	---	Snow	0.000
	24.250	0.032	0.000			0.000
6	0.000	0.000	0.000	---	Snow	0.000
	1.008	0.000	0.044			0.000
7	1.009	0.000	0.045	---	Snow	0.000
	24.250	0.000	0.045			0.000
8	0.000	0.014	0.000	---	NonR	0.000
	24.250	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.34 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	31.6	12.4	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	31.6	12.4	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	1.51	1.56
Max +LL reaction	1.49	1.54
Max +total reaction (factored)	4.19	4.34

DEFLECTIONS:

					Ratio
Dead load (in)	at 12.13 ft = -0.450		L/D = 647	> 300	0.46
Live load (in)	at 12.13 ft = -0.448	< -0.625	L/D = 649	> 360	0.72
Net Total load (in)	at 12.13 ft = -0.898		L/D = 324	> 240	0.74

Floor Type: Main Roof **Beam Number = 426**

SPAN INFORMATION (ft): I-End (97.25,33.00) J-End (97.25,47.33)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 14.33
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.778	0.71	0.00	0.0	0.00	0.00	0.0	0.84	Snow	0.00
9.555	0.71	0.00	0.0	0.00	0.00	0.0	0.84	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	14.333	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	14.333	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	14.333	0.032	0.000			0.000
4	0.000	0.000	0.047	---	Snow	0.000
	14.333	0.000	0.047			0.000
5	0.000	0.014	0.000	---	NonR	0.000
	14.333	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.16 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	13.9	7.2	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	13.9	7.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	1.05	1.05
Max +LL reaction	1.18	1.18
Max +total reaction (factored)	3.16	3.16

DEFLECTIONS:

										Ratio
Dead load (in)	at	7.17 ft	=	-0.067		L/D	=	2549	> 300	0.12
Live load (in)	at	7.17 ft	=	-0.077	< -0.625	L/D	=	2239	> 360	0.16
Net Total load (in)	at	7.17 ft	=	-0.144		L/D	=	1192	> 240	0.20

Floor Type: Main Roof **Beam Number = 427**

SPAN INFORMATION (ft): I-End (97.25,12.50) J-End (97.25,33.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.125	1.45	0.00	0.0	0.00	0.00	0.0	1.52	Snow	0.00
10.250	1.45	0.00	0.0	0.00	0.00	0.0	1.42	Snow	0.00
15.375	1.45	0.00	0.0	0.00	0.00	0.0	1.43	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	20.500	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	20.500	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	20.500	0.032	0.000			0.000
4	0.000	0.000	0.047	---	Snow	0.000
	20.500	0.000	0.047			0.000
5	0.000	0.014	0.000	---	NonR	0.000
	20.500	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 7.51 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	48.6	10.2	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	48.6	10.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	2.67	2.67
Max +LL reaction	2.69	2.65
Max +total reaction (factored)	7.51	7.44

DEFLECTIONS:

						Ratio
Dead load (in)	at 10.25 ft = -0.490		L/D = 502	> 300		0.60
Live load (in)	at 10.25 ft = -0.490	< -0.625	L/D = 503	> 360		0.78
Net Total load (in)	at 10.25 ft = -0.980		L/D = 251	> 240		0.96

Floor Type: Main Roof **Beam Number = 428**

SPAN INFORMATION (ft): I-End (97.25,12.50) J-End (114.00,12.50)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 16.75
Mp (kip-ft) = 138.33

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	16.750	0.000	0.000			0.000
2	0.000	0.006	0.000	---	NonR	0.000
	16.750	0.006	0.000			0.000
3	0.000	0.081	0.000	---	Snow	0.000
	16.750	0.081	0.000			0.000
4	0.000	0.000	0.121	---	Snow	0.000
	1.083	0.000	0.121			0.000
5	1.084	0.000	0.121	---	Snow	0.000
	2.083	0.000	0.112			0.000
6	2.084	0.000	0.000	---	Snow	0.000
	3.791	0.000	0.058			0.000
7	2.084	0.000	0.112	---	Snow	0.000
	3.791	0.000	0.043			0.000
8	3.792	0.000	0.058	---	Snow	0.000
	5.500	0.000	0.089			0.000
9	3.792	0.000	0.043	---	Snow	0.000
	5.500	0.000	0.009			0.000
10	5.500	0.000	0.089	---	Snow	0.000
	7.208	0.000	0.098			0.000
11	5.500	0.000	0.009	---	Snow	0.000
	7.208	0.000	0.000			0.000
12	7.209	0.000	0.098	---	Snow	0.000
	16.750	0.000	0.100			0.000
13	0.000	0.002	0.000	---	NonR	0.000
	16.750	0.002	0.000			0.000
14	0.000	0.032	0.000	---	Snow	0.000
	16.750	0.032	0.000			0.000
15	0.000	0.000	0.047	---	Snow	0.000
	1.083	0.000	0.047			0.000
16	1.084	0.000	0.047	---	Snow	0.000
	1.750	0.000	0.015			0.000
17	1.084	0.000	0.000	---	Snow	0.000
	2.083	0.000	0.046			0.000
18	1.750	0.000	0.015	---	Snow	0.000
	2.083	0.000	0.000			0.000
19	2.084	0.000	0.046	---	Snow	0.000
	16.750	0.000	0.047			0.000

Load	Dist	DL	LL	Red%	Type	PartL
20	0.000	0.022	0.000	---	NonR	0.000
	16.750	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.46 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	14.2	8.4	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	14.2	8.4	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	Right
DL reaction	1.20	1.20
Max +LL reaction	1.27	1.22
Max +total reaction (factored)	3.46	3.39

DEFLECTIONS:

										Ratio
Dead load (in)	at	8.37 ft	=	-0.044		L/D	=	4587	> 300	0.07
Live load (in)	at	8.37 ft	=	-0.045	< -1.000	L/D	=	4481	> 360	0.08
Net Total load (in)	at	8.37 ft	=	-0.089		L/D	=	2267	> 240	0.11

Floor Type: Main Roof **Beam Number = 429**

SPAN INFORMATION (ft): I-End (99.75,113.17) J-End (106.00,113.17)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25
Mp (kip-ft) = 72.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	6.250	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	6.250	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	6.250	0.032	0.000			0.000
4	0.000	0.000	0.046	---	Snow	0.000
	6.250	0.000	0.046			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	6.250	0.007	0.000			0.000
6	0.000	0.093	0.000	---	Snow	0.000
	6.250	0.093	0.000			0.000
7	0.000	0.000	0.017	---	Snow	0.000
	1.826	0.000	0.073			0.000
8	0.000	0.000	0.105	---	Snow	0.000
	1.826	0.000	0.040			0.000
9	1.827	0.000	0.073	---	Snow	0.000
	3.652	0.000	0.102			0.000
10	1.827	0.000	0.040	---	Snow	0.000
	3.652	0.000	0.008			0.000
11	3.653	0.000	0.102	---	Snow	0.000
	5.479	0.000	0.110			0.000
12	3.653	0.000	0.008	---	Snow	0.000
	5.479	0.000	0.000			0.000
13	5.505	0.000	0.110	---	Snow	0.000
	6.250	0.000	0.110			0.000
14	0.000	0.014	0.000	---	NonR	0.000
	6.250	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 1.36 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	2.1	3.1	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	2.1	3.1	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
DL reaction	0.46	0.46
Max +LL reaction	0.50	0.49
Max +total reaction (factored)	1.36	1.34

DEFLECTIONS:

										Ratio
Dead load (in)	at	3.12 ft	=	-0.002		L/D	=	3784 5	> 300	0.01
Live load (in)	at	3.12 ft	=	-0.002	< -1.000	L/D	=	3563 1	> 360	0.01
Net Total load (in)	at	3.12 ft	=	-0.004		L/D	=	1835 3	> 240	0.01

Floor Type: Main Roof **Beam Number = 430**

SPAN INFORMATION (ft): I-End (99.75,87.83) J-End (99.75,113.17)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 25.33
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.500	0.40	0.00	0.0	0.00	0.00	0.0	0.41	Snow	0.00
7.569	0.63	0.00	0.0	0.00	0.00	0.0	0.65	Snow	0.00
13.490	0.63	0.00	0.0	0.00	0.00	0.0	0.64	Snow	0.00
19.412	0.63	0.00	0.0	0.00	0.00	0.0	0.65	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	25.333	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	25.333	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	25.333	0.032	0.000			0.000
4	0.000	0.000	0.045	---	Snow	0.000
	24.845	0.000	0.045			0.000
5	24.846	0.000	0.044	---	Snow	0.000
	25.333	0.000	0.023			0.000
6	24.917	0.000	0.000	---	Snow	0.000
	25.333	0.000	0.018			0.000
7	0.000	0.014	0.000	---	NonR	0.000
	25.333	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.23 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	34.4	13.5	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	34.4	13.5	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	1.87	1.64
Max +LL reaction	1.86	1.63
Max +total reaction (factored)	5.23	4.57

DEFLECTIONS:

					Ratio
Dead load (in)	at 12.67 ft = -0.538		L/D = 565	> 300	0.53
Live load (in)	at 12.67 ft = -0.538	< -0.625	L/D = 566	> 360	0.86
Net Total load (in)	at 12.67 ft = -1.076		L/D = 283	> 240	0.85

Floor Type: Main Roof **Beam Number = 431**

SPAN INFORMATION (ft): I-End (99.75,71.58) J-End (99.75,87.83)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 16.25
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.907	0.62	0.00	0.0	0.00	0.00	0.0	0.64	Snow	0.00
11.828	0.55	0.00	0.0	0.00	0.00	0.0	0.56	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	16.250	0.000	0.000			0.000
2	0.000	0.002	0.000	---	NonR	0.000
	16.250	0.002	0.000			0.000
3	0.000	0.032	0.000	---	Snow	0.000
	16.250	0.032	0.000			0.000
4	0.000	0.000	0.045	---	Snow	0.000
	16.250	0.000	0.045			0.000
5	0.000	0.014	0.000	---	NonR	0.000
	16.250	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.83 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	13.2	6.4	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	13.2	6.4	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.94	1.02
Max +LL reaction	0.93	1.01
Max +total reaction (factored)	2.61	2.83

DEFLECTIONS:

									Ratio
Dead load (in)	at	8.12 ft	=	-0.087		L/D	=	2232 > 300	0.13
Live load (in)	at	8.12 ft	=	-0.087	< -0.625	L/D	=	2244 > 360	0.16
Net Total load (in)	at	8.12 ft	=	-0.174		L/D	=	1119 > 240	0.21

Floor Type: Main Roof **Beam Number = 448**

SPAN INFORMATION (ft): I-End (114.00,33.00) J-End (114.00,36.04)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 3.04
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	3.038	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.4DL) = 0.01 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Controlling		1.4DL	0.0	1.7	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	Right
DL reaction	0.01	0.01
Max +total reaction (factored)	0.01	0.01

DEFLECTIONS: **Ratio**

Dead load (in) at 1.52 ft = -0.000
Live load (in) at 1.52 ft = -0.000
Net Total load (in) at 1.52 ft = -0.000

Floor Type: Main Roof **Beam Number = 450**

SPAN INFORMATION (ft): I-End (141.75,30.12) J-End (141.75,36.04)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 6.87

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
2.883	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	5.921	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.27 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	0.8	2.9	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.12	0.12
Max +LL reaction	0.08	0.07
Max +total reaction (factored)	0.27	0.26

DEFLECTIONS:

					Ratio
Dead load (in)	at	2.93 ft =	-0.015	L/D = 4603 > 300	0.07
Live load (in)	at	2.93 ft =	-0.010	L/D = 7178 > 360	0.05
Net Total load (in)	at	2.93 ft =	-0.025	L/D = 2805 > 240	0.09

Floor Type: Main Roof **Beam Number = 451**

SPAN INFORMATION (ft): I-End (141.75,33.00) J-End (145.75,33.00)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 2.00 ft =	-0.005	L/D = 8823 > 300		0.03
Live load (in)	at 2.00 ft =	-0.004	L/D = 1257 > 360		0.03
			0		
Net Total load (in)	at 2.00 ft =	-0.009	L/D = 5184 > 240		0.05

Floor Type: Main Roof **Beam Number = 452**

SPAN INFORMATION (ft): I-End (141.75,47.88) J-End (141.75,53.80)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 6.87

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.368	0.21	0.00	0.0	0.00	0.00	0.0	0.15	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	5.921	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.38 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.6	4.4	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	0.6	4.4	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.07	0.17
Max +LL reaction	0.04	0.11
Max +total reaction (factored)	0.15	0.38

DEFLECTIONS:

					Ratio
Dead load (in)	at	3.26 ft =	-0.012	L/D = 6146 > 300	0.05
Live load (in)	at	3.29 ft =	-0.007	L/D = 9878 > 360	0.04
Net Total load (in)	at	3.29 ft =	-0.019	L/D = 3789 > 240	0.06

Floor Type: Main Roof **Beam Number = 453**

SPAN INFORMATION (ft): I-End (141.75,52.25) J-End (145.75,52.25)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
4	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.49 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	0.5	2.0	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	Right
DL reaction	0.21	0.21
Max +LL reaction	0.15	0.15
Max +total reaction (factored)	0.49	0.49

DEFLECTIONS:

						Ratio
Dead load (in)	at	2.00 ft	= -0.005	L/D = 8823 > 300		0.03
Live load (in)	at	2.00 ft	= -0.004	L/D = 1257 > 360		0.03
				0		
Net Total load (in)	at	2.00 ft	= -0.009	L/D = 5184 > 240		0.05

Floor Type: Main Roof **Beam Number = 454**

SPAN INFORMATION (ft): I-End (110.00,47.88) J-End (110.00,53.80)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 6.87

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.368	0.21	0.00	0.0	0.00	0.00	0.0	0.13	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	5.921	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.36 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.5	4.4	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	0.5	4.4	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.07	0.17
Max +LL reaction	0.03	0.09
Max +total reaction (factored)	0.14	0.36

DEFLECTIONS:

					Ratio
Dead load (in)	at 3.26 ft =	-0.012	L/D = 6146 >	300	0.05
Live load (in)	at 3.29 ft =	-0.006	L/D = 11549 >	360	0.03
Net Total load (in)	at 3.29 ft =	-0.018	L/D = 4012 >	240	0.06

Floor Type: Main Roof **Beam Number = 455**

SPAN INFORMATION (ft): I-End (106.00,52.25) J-End (110.00,52.25)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	4.000	0.007	0.000			0.000
2	0.000	0.093	0.000	---	Snow	0.000
	4.000	0.093	0.000			0.000
3	0.000	0.000	0.059	---	Snow	0.000
	2.333	0.000	0.034			0.000
4	2.334	0.000	0.074	---	Snow	0.000
	4.000	0.000	0.074			0.000
5	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.46 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	0.4	2.1	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	0.4	2.1	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.21	0.21
Max +LL reaction	0.11	0.13
Max +total reaction (factored)	0.42	0.46

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.00 ft	=	-0.005	L/D	=	8823	> 300	0.03
Live load (in)	at	2.02 ft	=	-0.003	L/D	=	1698	> 360	0.02
							5		
Net Total load (in)	at	2.02 ft	=	-0.008	L/D	=	5807	> 240	0.04

Floor Type: Main Roof **Beam Number = 456**

SPAN INFORMATION (ft): I-End (182.75,79.29) J-End (203.75,79.29)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.006	0.000	---	NonR	0.000
	21.000	0.006	0.000			0.000
2	0.000	0.079	0.000	---	Snow	0.000
	21.000	0.079	0.000			0.000
3	0.000	0.000	0.063	---	Snow	0.000
	21.000	0.000	0.063			0.000
4	0.000	0.002	0.000	---	NonR	0.000
	21.000	0.002	0.000			0.000
5	0.000	0.032	0.000	---	Snow	0.000
	21.000	0.032	0.000			0.000
6	0.000	0.000	0.025	---	Snow	0.000
	21.000	0.000	0.025			0.000
7	0.000	0.035	0.000	---	NonR	0.000
	21.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.41 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	17.9	10.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	17.9	10.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	1.61	1.61
Max +LL reaction	0.92	0.92
Max +total reaction (factored)	3.41	3.41

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.50 ft = -0.045	L/D = 5542 > 300		0.05
Live load (in)	at 10.50 ft = -0.026	L/D = 9706 > 360		0.04
Net Total load (in)	at 10.50 ft = -0.071	L/D = 3528 > 240		0.07

Floor Type: Main Roof **Beam Number = 457**

SPAN INFORMATION (ft): I-End (284.75,79.29) J-End (305.75,79.29)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
10.750	1.11								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.006	0.000	---	NonR	0.000
	21.000	0.006	0.000			0.000
2	0.000	0.079	0.000	---	Snow	0.000
	21.000	0.079	0.000			0.000
3	0.000	0.000	0.063	---	Snow	0.000
	21.000	0.000	0.063			0.000
4	0.000	0.002	0.000	---	NonR	0.000
	21.000	0.002	0.000			0.000
5	0.000	0.032	0.000	---	Snow	0.000
	21.000	0.032	0.000			0.000
6	0.000	0.000	0.025	---	Snow	0.000
	21.000	0.000	0.025			0.000
7	0.000	0.035	0.000	---	NonR	0.000
	21.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.09 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	24.9	10.8	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	24.9	10.8	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.15	2.18
Max +LL reaction	0.92	0.92
Max +total reaction (factored)	4.06	4.09

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.50 ft = -0.070	L/D = 3578 > 300		0.08
Live load (in)	at 10.50 ft = -0.026	L/D = 9706 > 360		0.04
Net Total load (in)	at 10.50 ft = -0.096	L/D = 2614 > 240		0.09

Floor Type: Main Roof **Beam Number = 458**

SPAN INFORMATION (ft): I-End (145.75,33.00) J-End (182.75,33.00)

Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.250	2.89	0.00	0.0	0.00	0.00	0.0	1.28	Snow	0.00
19.167	0.05								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	37.000	0.005	0.000			0.000
2	0.000	0.071	0.000	---	Snow	0.000
	37.000	0.071	0.000			0.000
3	0.000	0.000	0.056	---	Snow	0.000
	37.000	0.000	0.056			0.000
4	0.000	0.002	0.000	---	NonR	0.000
	5.250	0.002	0.000			0.000
5	0.000	0.032	0.000	---	Snow	0.000
	5.250	0.032	0.000			0.000
6	0.000	0.000	0.025	---	Snow	0.000
	5.250	0.000	0.025			0.000
7	5.250	0.007	0.000	---	NonR	0.000
	37.000	0.007	0.000			0.000
8	5.250	0.091	0.000	---	Snow	0.000
	37.000	0.091	0.000			0.000
9	5.250	0.000	0.072	---	Snow	0.000
	37.000	0.000	0.072			0.000
10	0.000	0.044	0.000	---	NonR	0.000
	37.000	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 12.64 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	94.1	17.0	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	94.1	17.0	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	**Right**
DL reaction	6.21	4.43
Max +LL reaction	3.24	2.53
Max +total reaction (factored)	12.64	9.36

DEFLECTIONS:

Ratio

Dead load (in)	at 18.13 ft = -0.463	L/D = 960 > 300	0.31
Live load (in)	at 18.13 ft = -0.257	L/D = 1731 > 480	0.28
Net Total load (in)	at 18.13 ft = -0.719	L/D = 617 > 240	0.39

Floor Type: Main Roof **Beam Number = 459**

SPAN INFORMATION (ft): I-End (145.75,21.50) J-End (182.75,21.50)

Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.250	3.05	0.00	0.0	0.00	0.00	0.0	1.28	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	5.250	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	5.250	0.032	0.000			0.000
3	0.000	0.000	0.025	---	Snow	0.000
	5.250	0.000	0.025			0.000
4	5.250	0.007	0.000	---	NonR	0.000
	37.000	0.007	0.000			0.000
5	5.250	0.091	0.000	---	Snow	0.000
	37.000	0.091	0.000			0.000
6	5.250	0.000	0.072	---	Snow	0.000
	37.000	0.000	0.072			0.000
7	0.000	0.004	0.000	---	NonR	0.000
	37.000	0.004	0.000			0.000
8	0.000	0.059	0.000	---	Snow	0.000
	37.000	0.059	0.000			0.000
9	0.000	0.000	0.038	---	Snow	0.000
	37.000	0.000	0.045			0.000
10	0.000	0.044	0.000	---	NonR	0.000
	37.000	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 12.04 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	87.7	16.8	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	87.7	16.8	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
DL reaction	6.10	4.20
Max +LL reaction	2.95	2.28
Max +total reaction (factored)	12.04	8.69

DEFLECTIONS: **Ratio**

Dead load (in) at 17.94 ft = -0.446 L/D = 1003 > 300 0.30

Live load (in)	at	18.13 ft	=	-0.231	L/D = 1919 >	480	0.25
Net Total load (in)	at	18.13 ft	=	-0.674	L/D = 659 >	240	0.36

Floor Type: Main Roof **Beam Number = 460**

SPAN INFORMATION (ft): I-End (305.75,33.00) J-End (349.00,33.00)

Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 43.25
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
31.750	2.56	0.00	0.0	0.00	0.00	0.0	1.27	Snow	0.00
37.000	0.60	0.00	0.0	0.00	0.00	0.0	0.75	Snow	0.00
19.000	0.58								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	43.250	0.005	0.000			0.000
2	0.000	0.071	0.000	---	Snow	0.000
	43.250	0.071	0.000			0.000
3	0.000	0.000	0.128	---	Snow	0.000
	27.650	0.000	0.128			0.000
4	27.650	0.000	0.026	---	Snow	0.000
	43.250	0.000	0.157			0.000
5	0.000	0.007	0.000	---	NonR	0.000
	31.750	0.007	0.000			0.000
6	0.000	0.091	0.000	---	Snow	0.000
	31.750	0.091	0.000			0.000
7	27.650	0.000	0.033	---	Snow	0.000
	31.750	0.000	0.078			0.000
8	31.750	0.002	0.000	---	NonR	0.000
	37.000	0.002	0.000			0.000
9	31.750	0.032	0.000	---	Snow	0.000
	37.000	0.032	0.000			0.000
10	31.750	0.000	0.027	---	Snow	0.000
	37.000	0.000	0.047			0.000
11	37.000	0.007	0.000	---	NonR	0.000
	43.250	0.007	0.000			0.000
12	37.000	0.091	0.000	---	Snow	0.000
	43.250	0.091	0.000			0.000
13	37.000	0.000	0.134	---	Snow	0.000
	43.250	0.000	0.202			0.000
14	0.000	0.044	0.000	---	NonR	0.000
	43.250	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 16.84 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	151.1	24.4	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	151.1	24.4	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
DL reaction	5.72	7.07
Max +LL reaction	3.22	5.22
Max +total reaction (factored)	12.02	16.84

DEFLECTIONS:

							Ratio
Dead load (in)	at 22.06 ft	=	-0.994	L/D	= 522	> 300	0.57
Live load (in)	at 22.27 ft	=	-0.567	L/D	= 916	> 480	0.52
Net Total load (in)	at 22.27 ft	=	-1.561	L/D	= 332	> 240	0.72

Floor Type: Main Roof **Beam Number = 461**

SPAN INFORMATION (ft): I-End (305.75,21.50) J-End (349.00,21.50)

Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 43.25
Mp (kip-ft) = 397.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
31.750	2.56	0.00	0.0	0.00	0.00	0.0	1.24	Snow	0.00
37.000	0.60	0.00	0.0	0.00	0.00	0.0	0.75	Snow	0.00
1.500	0.79								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	31.750	0.007	0.000			0.000
2	0.000	0.091	0.000	---	Snow	0.000
	31.750	0.091	0.000			0.000
3	0.000	0.000	0.072	---	Snow	0.000
	27.650	0.000	0.072			0.000
4	27.650	0.000	0.052	---	Snow	0.000
	28.500	0.000	0.052			0.000
5	28.500	0.000	0.052	---	Snow	0.000
	29.583	0.000	0.049			0.000
6	29.584	0.000	0.049	---	Snow	0.000
	30.666	0.000	0.041			0.000
7	29.584	0.000	0.000	---	Snow	0.000
	30.666	0.000	0.009			0.000
8	30.667	0.000	0.041	---	Snow	0.000
	31.750	0.000	0.030			0.000
9	30.667	0.000	0.009	---	Snow	0.000
	31.750	0.000	0.025			0.000
10	31.750	0.002	0.000	---	NonR	0.000
	37.000	0.002	0.000			0.000
11	31.750	0.032	0.000	---	Snow	0.000
	37.000	0.032	0.000			0.000
12	31.750	0.000	0.013	---	Snow	0.000
	33.250	0.000	0.013			0.000
13	33.250	0.000	0.013	---	Snow	0.000
	33.583	0.000	0.009			0.000
14	33.250	0.000	0.000	---	Snow	0.000
	33.916	0.000	0.023			0.000
15	33.584	0.000	0.008	---	Snow	0.000
	33.916	0.000	0.000			0.000
16	33.917	0.000	0.023	---	Snow	0.000
	34.250	0.000	0.036			0.000
17	34.250	0.000	0.036	---	Snow	0.000

Load	Dist	DL	LL	Red%	Type	PartL
	37.000	0.000	0.047			0.000
18	37.000	0.007	0.000	---	NonR	0.000
	43.250	0.007	0.000			0.000
19	37.000	0.091	0.000	---	Snow	0.000
	43.250	0.091	0.000			0.000
20	37.000	0.000	0.134	---	Snow	0.000
	43.250	0.000	0.202			0.000
21	0.000	0.005	0.000	---	NonR	0.000
	43.250	0.005	0.000			0.000
22	0.000	0.071	0.000	---	Snow	0.000
	43.250	0.071	0.000			0.000
23	0.000	0.000	0.085	---	Snow	0.000
	34.250	0.000	0.093			0.000
24	34.250	0.000	0.000	---	Snow	0.000
	35.750	0.000	0.052			0.000
25	34.250	0.000	0.093	---	Snow	0.000
	35.750	0.000	0.045			0.000
26	35.750	0.000	0.053	---	Snow	0.000
	37.250	0.000	0.095			0.000
27	35.750	0.000	0.045	---	Snow	0.000
	37.250	0.000	0.012			0.000
28	37.250	0.000	0.095	---	Snow	0.000
	38.750	0.000	0.120			0.000
29	37.250	0.000	0.012	---	Snow	0.000
	38.750	0.000	0.000			0.000
30	38.750	0.000	0.120	---	Snow	0.000
	43.250	0.000	0.158			0.000
31	0.000	0.044	0.000	---	NonR	0.000
	43.250	0.044	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 17.28 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	157.2	24.5	0.0	1.00	0.90	357.75
Controlling		1.2DL+1.6LL	157.2	24.5	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
DL reaction	6.17	6.86
Max +LL reaction	3.89	5.66
Max +total reaction (factored)	13.62	17.28

DEFLECTIONS:

				Ratio
Dead load (in)	at 22.27 ft = -0.938	L/D = 553 > 300		0.54
Live load (in)	at 22.27 ft = -0.662	L/D = 784 > 480		0.61

Net Total load (in)	at	22.27 ft	=	-1.601	L/D	=	324 > 240	0.74

Floor Type: Main Roof **Beam Number = 462**

SPAN INFORMATION (ft): I-End (151.00,21.50) J-End (151.00,33.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 11.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.750	4.24	0.00	0.0	0.00	0.00	0.0	2.28	Snow	0.00
4.750	0.92								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	11.500	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	11.500	0.032	0.000			0.000
3	0.000	0.000	0.025	---	Snow	0.000
	11.500	0.000	0.025			0.000
4	0.000	0.035	0.000	---	NonR	0.000
	11.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.72 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	29.8	5.8	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	29.8	5.8	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	3.05	2.89
Max +LL reaction	1.28	1.28
Max +total reaction (factored)	5.72	5.53

DEFLECTIONS:

					Ratio
Dead load (in)	at 5.69 ft =	-0.021	L/D = 6640 > 300		0.05
Live load (in)	at 5.69 ft =	-0.009	L/D = 1514 > 480		0.03
			6		
Net Total load (in)	at 5.69 ft =	-0.030	L/D = 4616 > 240		0.05

Floor Type: Main Roof **Beam Number = 463**

SPAN INFORMATION (ft): I-End (342.75,21.50) J-End (342.75,33.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 11.50
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.750	0.64	0.00	0.0	0.00	0.00	0.0	0.98	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	11.500	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	11.500	0.032	0.000			0.000
3	0.000	0.000	0.045	---	Snow	0.000
	11.500	0.000	0.045			0.000
4	0.000	0.014	0.000	---	NonR	0.000
	11.500	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 1.91 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	8.9	5.8	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	8.9	5.8	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.60	0.60
Max +LL reaction	0.75	0.75
Max +total reaction (factored)	1.91	1.91

DEFLECTIONS:

					Ratio
Dead load (in)	at	5.75 ft =	-0.021	L/D = 6544 > 300	0.05
Live load (in)	at	5.75 ft =	-0.028	L/D = 4976 > 480	0.10
Net Total load (in)	at	5.75 ft =	-0.049	L/D = 2827 > 240	0.08

Floor Type: Main Roof **Beam Number = 464**

SPAN INFORMATION (ft): I-End (337.50,21.50) J-End (337.50,33.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 11.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.750	4.33	0.00	0.0	0.00	0.00	0.0	2.20	Snow	0.00

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.002	0.000	---	NonR	0.000
	11.500	0.002	0.000			0.000
2	0.000	0.032	0.000	---	Snow	0.000
	11.500	0.032	0.000			0.000
3	0.000	0.000	0.012	---	Snow	0.000
	1.500	0.000	0.017			0.000
4	1.500	0.000	0.017	---	Snow	0.000
	2.166	0.000	0.006			0.000
5	1.500	0.000	0.000	---	Snow	0.000
	2.500	0.000	0.029			0.000
6	2.167	0.000	0.006	---	Snow	0.000
	2.500	0.000	0.000			0.000
7	2.500	0.000	0.029	---	Snow	0.000
	11.500	0.000	0.029			0.000
8	0.000	0.035	0.000	---	NonR	0.000
	11.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.10 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	27.2	5.8	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	27.2	5.8	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.56	2.56
Max +LL reaction	1.24	1.27
Max +total reaction (factored)	5.06	5.10

DEFLECTIONS:

					Ratio
Dead load (in)	at 5.75 ft =	-0.018	L/D = 7729 > 300		0.04
Live load (in)	at 5.75 ft =	-0.009	L/D = 1550 > 480		0.03
Net Total load (in)	at 5.75 ft =	-0.027	L/D = 5158 > 240		0.05

Floor Type: Main Roof **Beam Number = 465**

SPAN INFORMATION (ft): I-End (151.00,27.25) J-End (182.75,27.25)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 31.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
13.917	1.06								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.013	0.000	---	NonR	0.000
	31.750	0.013	0.000			0.000
2	0.000	0.181	0.000	---	Snow	0.000
	31.750	0.181	0.000			0.000
3	0.000	0.000	0.144	---	Snow	0.000
	31.750	0.000	0.144			0.000
4	0.000	0.035	0.000	---	NonR	0.000
	31.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 8.74 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	72.8	14.8	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	72.8	14.8	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	4.24	4.11
Max +LL reaction	2.28	2.28
Max +total reaction (factored)	8.74	8.58

DEFLECTIONS:

				Ratio
Dead load (in)	at 15.72 ft = -0.435	L/D = 875 > 300		0.34
Live load (in)	at 15.72 ft = -0.222	L/D = 1715 > 360		0.21
Net Total load (in)	at 15.72 ft = -0.658	L/D = 579 > 240		0.41

Floor Type: Main Roof **Beam Number = 466**

SPAN INFORMATION (ft): I-End (305.75,27.25) J-End (337.50,27.25)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 31.75
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
19.000	1.08								
1.500	0.86								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.013	0.000	---	NonR	0.000
	31.750	0.013	0.000			0.000
2	0.000	0.181	0.000	---	Snow	0.000
	31.750	0.181	0.000			0.000
3	0.000	0.000	0.144	---	Snow	0.000
	27.650	0.000	0.144			0.000
4	27.650	0.000	0.096	---	Snow	0.000
	28.500	0.000	0.071			0.000
5	27.650	0.000	0.024	---	Snow	0.000
	28.216	0.000	0.036			0.000
6	28.217	0.000	0.036	---	Snow	0.000
	28.500	0.000	0.042			0.000
7	28.500	0.000	0.043	---	Snow	0.000
	31.750	0.000	0.078			0.000
8	28.500	0.000	0.000	---	Snow	0.000
	29.583	0.000	0.018			0.000
9	28.500	0.000	0.071	---	Snow	0.000
	29.583	0.000	0.042			0.000
10	29.584	0.000	0.019	---	Snow	0.000
	31.750	0.000	0.063			0.000
11	29.584	0.000	0.042	---	Snow	0.000
	30.666	0.000	0.022			0.000
12	30.667	0.000	0.022	---	Snow	0.000
	31.750	0.000	0.009			0.000
13	0.000	0.035	0.000	---	NonR	0.000
	31.750	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.52 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	72.7	16.8	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	72.7	16.8	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
DL reaction	4.90	4.33
Max +LL reaction	2.28	2.20
Max +total reaction (factored)	9.52	8.72

DEFLECTIONS:

									Ratio
Dead load (in)	at	16.03 ft	=	-0.444	L/D	=	859	> 300	0.35
Live load (in)	at	16.03 ft	=	-0.221	L/D	=	1727	> 360	0.21
Net Total load (in)	at	16.03 ft	=	-0.664	L/D	=	574	> 240	0.42

Floor Type: Main Roof **Beam Number = 467**

SPAN INFORMATION (ft): I-End (342.75,27.25) J-End (349.00,27.25)

Beam Size (User Selected) = W10X12 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25
Mp (kip-ft) = 52.50

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.013	0.000	---	NonR	0.000
	6.250	0.013	0.000			0.000
2	0.000	0.181	0.000	---	Snow	0.000
	6.250	0.181	0.000			0.000
3	0.000	0.000	0.268	---	Snow	0.000
	6.250	0.000	0.403			0.000
4	0.000	0.012	0.000	---	NonR	0.000
	6.250	0.012	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.57 kips 1.00Vn = 56.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	3.8	3.2	0.0	1.00	0.90	46.90
Controlling		1.2DL+1.6LL	3.8	3.2	0.0	1.00	0.90	46.90

REACTIONS (kips):

	Left	Right
DL reaction	0.64	0.64
Max +LL reaction	0.98	1.12
Max +total reaction (factored)	2.34	2.57

DEFLECTIONS:

									Ratio
Dead load (in)	at	3.12 ft	=	-0.005	L/D	=	1651	> 300	0.02
Live load (in)	at	3.12 ft	=	-0.007	L/D	=	1014	> 360	0.04
Net Total load (in)	at	3.12 ft	=	-0.012	L/D	=	6285	> 240	0.04

Floor Type: Second Floor **Beam Number = 4**

SPAN INFORMATION (ft): I-End (203.75,89.33) J-End (240.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	103.79	Y bar(in)	=	21.26
Mnf (kip-ft)	=	1221.42	Mn (kip-ft)	=	1073.80
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3923.83	Itr (in4)	=	4888.26
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 78 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 46.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	8.16	25.9	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	8.22	7.93	8.24	25.9	0.00	0.00	0.0	0.00	Snow	1.67	2.78
27.917	8.15	7.86	8.16	25.9	0.00	0.00	0.0	0.00	Snow	1.65	2.76

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.207	0.207	0.000	---	NonR	0.000	0.000
	37.000	0.207	0.207	0.000			0.000	0.000
2	0.000	0.083	0.073	0.367	25.9%	Red	0.055	0.092
	5.000	0.083	0.073	0.367			0.055	0.092
3	0.000	0.015	0.007	0.035	---	NonR	0.005	0.009
	37.000	0.015	0.007	0.035			0.005	0.009
4	5.000	0.083	0.073	0.184	25.9%	Red	0.055	0.092
	37.000	0.083	0.073	0.184			0.055	0.092
5	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 49.28 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	356.6	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	238.8	18.5	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	550.0	18.5	---	---	0.90	966.42
Controlling		1.2DL+1.6LL	550.0	18.5	---	---	0.90	966.42

REACTIONS (kips):

	Left	Right
Initial reaction	24.36	24.46
DL reaction	19.12	19.19
Max +LL reaction	16.46	15.95
Max +total reaction (factored)	49.28	48.54

DEFLECTIONS:

									Ratio
Initial load (in)	at	18.50 ft	=	-0.924	L/D	=	481	> 240	0.50
Live load (in)	at	18.50 ft	=	-0.381	L/D	=	1166	> 480	0.41
Post Comp load (in)	at	18.50 ft	=	-0.398	L/D	=	1115	> 240	0.22
Net Total load (in)	at	18.50 ft	=	-1.322	L/D	=	336	> 240	0.71

Floor Type: Second Floor **Beam Number = 6**

SPAN INFORMATION (ft): I-End (247.75,89.33) J-End (284.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	103.79	Y bar(in)	=	21.26
Mnf (kip-ft)	=	1221.42	Mn (kip-ft)	=	1073.80
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3923.83	Itr (in4)	=	4888.26
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 78 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 46.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	8.16	26.6	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	8.15	7.86	8.16	26.6	0.00	0.00	0.0	0.00	Snow	1.65	2.76
27.750	8.15	7.86	8.16	26.6	0.00	0.00	0.0	0.00	Snow	1.65	2.76

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.207	0.207	0.000	---	NonR	0.000	0.000
	37.000	0.207	0.207	0.000			0.000	0.000
2	0.000	0.091	0.080	0.201	26.6%	Red	0.060	0.101
	37.000	0.091	0.080	0.201			0.060	0.101
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 47.31 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	356.6	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	288.8	18.5	---	---		
	Max +	1.2DL+1.6LL	539.4	18.5	---	---	0.90	966.42
Controlling		1.2DL+1.6LL	539.4	18.5	---	---	0.90	966.42

REACTIONS (kips):

	Left	Right
Initial reaction	24.36	24.36
DL reaction	18.99	18.99
Max +LL reaction	15.32	15.32
Max +total reaction (factored)	47.31	47.31

DEFLECTIONS:

				Ratio
Initial load (in)	at 18.50 ft = -0.924	L/D = 480 > 240		0.50
Live load (in)	at 18.50 ft = -0.368	L/D = 1206 > 480		0.40
Post Comp load (in)	at 18.50 ft = -0.383	L/D = 1159 > 240		0.21
Net Total load (in)	at 18.50 ft = -1.307	L/D = 340 > 240		0.71

Floor Type: Second Floor **Beam Number = 11**

SPAN INFORMATION (ft): I-End (240.75,33.00) J-End (240.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	57.75	Y bar(in)	=	16.76
Mnf (kip-ft)	=	508.75	Mn (kip-ft)	=	455.09
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1323.31	Itr (in4)	=	1585.84
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 46 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 44.10

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.167	11.13	9.46	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99	3.31
9.625	2.49	2.40	3.37	0.0	0.00	0.00	0.0	0.00	Snow	0.51	0.84
14.333	11.89	10.11	0.00	0.0	14.16	0.00	0.0	0.00	Snow	2.12	3.54

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 49.08 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	125.7	9.6	0.0	1.00	0.90	249.38
	Init DL	1.4DL	100.7	9.6	---	---		
	Max +	1.2DL+1.6LL	280.6	9.6	---	---	0.90	409.58
Controlling		1.2DL+1.6LL	278.4	7.2	---	---	0.90	375.61

REACTIONS (kips):

	Left	Right
Initial reaction	13.46	16.88
DL reaction	11.61	14.58
Max +LL reaction	15.67	19.74

	Left	Right
Max +total reaction (factored)	38.99	49.08

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.72 ft	=	-0.321	L/D	=	719	> 240	0.33
Live load (in)	at	9.72 ft	=	-0.195	L/D	=	1184	> 480	0.41
Post Comp load (in)	at	9.72 ft	=	-0.214	L/D	=	1078	> 240	0.22
Net Total load (in)	at	9.72 ft	=	-0.536	L/D	=	431	> 240	0.56

Floor Type: Second Floor **Beam Number = 12**

SPAN INFORMATION (ft): I-End (240.75,52.25) J-End (240.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	58.00	Y bar(in)	=	16.78
Mnf (kip-ft)	=	509.34	Mn (kip-ft)	=	431.44
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1237.14	Itr (in4)	=	1587.70
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 43 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 45.52

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
3.238	12.92	10.69	0.00	0.0	14.99	0.00	0.0	0.00	Snow	2.25	3.75
9.667	4.15	2.41	3.38	0.0	0.00	0.00	0.0	0.00	Snow	0.51	0.85
11.286	14.55	11.71	0.00	0.0	16.42	0.00	0.0	0.00	Snow	2.46	4.10

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.333	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 61.71 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	141.2	11.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	113.0	11.3	---	---		
	Max +	1.2DL+1.6LL	329.0	11.3	---	---	0.90	388.30
Controlling		1.2DL+1.6LL	329.0	11.3	---	---	0.90	388.30

REACTIONS (kips):

	Left	Right
Initial reaction	20.57	13.62
DL reaction	19.22	13.07
Max +LL reaction	24.15	15.85

	Left	Right
Max +total reaction (factored)	61.71	41.05

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.67 ft	=	-0.339	L/D	=	685	> 240	0.35
Live load (in)	at	9.67 ft	=	-0.220	L/D	=	1054	> 480	0.46
Post Comp load (in)	at	9.67 ft	=	-0.260	L/D	=	891	> 240	0.27
Net Total load (in)	at	9.67 ft	=	-0.599	L/D	=	387	> 240	0.62

Floor Type: Second Floor **Beam Number = 13**

SPAN INFORMATION (ft): I-End (247.75,33.00) J-End (247.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	57.75	Y bar(in)	=	16.76
Mnf (kip-ft)	=	508.75	Mn (kip-ft)	=	455.09
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1323.31	Itr (in4)	=	1585.84
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 46 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 44.26

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.167	11.13	9.46	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99	3.31
9.625	2.49	2.40	3.37	0.0	0.00	0.00	0.0	0.00	Snow	0.51	0.84
14.333	12.20	10.11	0.00	0.0	14.17	0.00	0.0	0.00	Snow	2.13	3.54

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 49.37 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	125.7	9.6	0.0	1.00	0.90	249.38
	Init DL	1.4DL	100.7	9.6	---	---		
	Max +	1.2DL+1.6LL	281.5	9.6	---	---	0.90	409.58
Controlling		1.2DL+1.6LL	279.1	7.2	---	---	0.90	375.61

REACTIONS (kips):

	Left	Right
Initial reaction	13.46	16.88
DL reaction	11.68	14.81
Max +LL reaction	15.67	19.75

	Left	Right
Max +total reaction (factored)	39.09	49.37

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.72 ft	=	-0.321	L/D	=	719	> 240	0.33
Live load (in)	at	9.72 ft	=	-0.195	L/D	=	1184	> 480	0.41
Post Comp load (in)	at	9.72 ft	=	-0.216	L/D	=	1071	> 240	0.22
Net Total load (in)	at	9.72 ft	=	-0.537	L/D	=	430	> 240	0.56

Floor Type: Second Floor **Beam Number = 14**

SPAN INFORMATION (ft): I-End (247.75,52.25) J-End (247.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	58.00	Y bar(in)	=	16.78
Mnf (kip-ft)	=	509.34	Mn (kip-ft)	=	431.44
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1237.14	Itr (in4)	=	1587.70
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 43 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 45.52

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
3.238	13.25	10.69	0.00	0.0	14.99	0.00	0.0	0.00	Snow	2.25	3.75
9.667	4.15	2.41	3.38	0.0	0.00	0.00	0.0	0.00	Snow	0.51	0.85
11.286	14.88	11.71	0.00	0.0	16.42	0.00	0.0	0.00	Snow	2.46	4.10

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.333	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 62.21 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	141.2	11.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	113.0	11.3	---	---		
	Max +	1.2DL+1.6LL	331.4	11.3	---	---	0.90	388.30
Controlling		1.2DL+1.6LL	331.4	11.3	---	---	0.90	388.30

REACTIONS (kips):

	Left	Right
Initial reaction	20.57	13.62
DL reaction	19.64	13.32
Max +LL reaction	24.15	15.85

	Left	Right
Max +total reaction (factored)	62.21	41.35

DEFLECTIONS:

										Ratio
Initial load (in)	at	9.67 ft	=	-0.339	L/D	=	685	>	240	0.35
Live load (in)	at	9.67 ft	=	-0.220	L/D	=	1054	>	480	0.46
Post Comp load (in)	at	9.67 ft	=	-0.264	L/D	=	880	>	240	0.27
Net Total load (in)	at	9.67 ft	=	-0.602	L/D	=	385	>	240	0.62

Floor Type: Second Floor **Beam Number = 20**

SPAN INFORMATION (ft): I-End (247.75,33.00) J-End (284.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	98.50	Y bar(in)	=	21.05
Mnf (kip-ft)	=	1208.39	Mn (kip-ft)	=	1072.99
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3932.06	Itr (in4)	=	4821.08
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 74 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 49.39

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	7.01	6.76	5.87	12.1	0.00	0.00	0.0	0.00	Snow	1.42	2.37
18.500	7.01	6.76	5.87	12.1	0.00	0.00	0.0	0.00	Snow	1.42	2.37
27.750	7.01	6.76	5.87	12.1	0.00	0.00	0.0	0.00	Snow	1.42	2.37

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	37.000	0.184	0.184	0.000			0.000	0.000
2	0.000	0.117	0.072	0.358	---	NonR	0.054	0.090
	37.000	0.117	0.072	0.358			0.054	0.090
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 48.80 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	311.4	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	252.8	18.5	---	---		
	Max +	1.2DL+1.6LL	539.0	18.5	---	---	0.90	965.69
Controlling		1.2DL+1.6LL	539.0	18.5	---	---	0.90	965.69

REACTIONS (kips):

	Left	Right
Initial reaction	21.35	21.35
DL reaction	17.34	17.34
Max +LL reaction	17.49	17.49
Max +total reaction (factored)	48.80	48.80

DEFLECTIONS:

				Ratio
Initial load (in)	at 18.50 ft = -0.809	L/D = 549 > 240		0.44
Live load (in)	at 18.50 ft = -0.402	L/D = 1104 > 480		0.43
Post Comp load (in)	at 18.50 ft = -0.428	L/D = 1037 > 240		0.23
Net Total load (in)	at 18.50 ft = -1.238	L/D = 359 > 240		0.67

Floor Type: Second Floor **Beam Number = 72**

SPAN INFORMATION (ft): I-End (240.75,71.58) J-End (240.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	430.73
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1242.77	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 37 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 49.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.655	14.93	11.71	0.00	0.0	16.42	0.00	0.0	0.00	Snow	2.46	4.10
8.875	4.63	2.22	3.11	0.0	0.00	0.00	0.0	0.00	Snow	0.47	0.78
9.702	13.13	10.62	1.88	0.0	11.20	0.00	0.0	0.00	Snow	2.23	3.72

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 67.89 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	115.1	9.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	92.1	9.7	---	---		
	Max +	1.2DL+1.6LL	260.1	9.7	---	---	0.90	387.66
Controlling		1.2DL+1.6LL	260.1	9.7	---	---	0.90	387.66

REACTIONS (kips):

	Left	Right
Initial reaction	22.65	11.12
DL reaction	22.11	11.19
Max +LL reaction	25.85	11.91

	Left	Right
Max +total reaction (factored)	67.89	32.49

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.88 ft	=	-0.222	L/D	=	958	> 240	0.25
Live load (in)	at	8.79 ft	=	-0.134	L/D	=	1595	> 480	0.30
Post Comp load (in)	at	8.79 ft	=	-0.166	L/D	=	1284	> 240	0.19
Net Total load (in)	at	8.79 ft	=	-0.388	L/D	=	549	> 240	0.44

Floor Type: Second Floor **Beam Number = 73**

SPAN INFORMATION (ft): I-End (247.75,71.58) J-End (247.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	430.73
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1242.77	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 37 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 49.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.655	14.61	11.71	1.61	0.6	13.18	0.00	0.0	0.00	Snow	2.46	4.10
8.875	4.63	2.22	3.11	0.6	0.00	0.00	0.0	0.00	Snow	0.47	0.78
9.702	11.17	10.62	7.01	0.6	0.86	0.00	0.0	0.00	Snow	2.23	3.72

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 60.27 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	115.0	9.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	92.1	9.7	---	---		
	Max +	1.2DL+1.6LL	210.4	9.7	---	---	0.90	387.66
Controlling		1.2DL+1.6LL	210.4	9.7	---	---	0.90	387.66

REACTIONS (kips):

	Left	Right
Initial reaction	22.64	11.12
DL reaction	20.94	10.09
Max +LL reaction	21.96	8.88

	Left	Right
Max +total reaction (factored)	60.27	26.32

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.79 ft	=	-0.222	L/D	=	959	> 240	0.25
Live load (in)	at	8.79 ft	=	-0.102	L/D	=	2089	> 480	0.23
Post Comp load (in)	at	8.79 ft	=	-0.123	L/D	=	1732	> 240	0.14
Net Total load (in)	at	8.79 ft	=	-0.345	L/D	=	617	> 240	0.39

Floor Type: Second Floor **Beam Number = 75**

SPAN INFORMATION (ft): I-End (338.75,119.08) J-End (349.00,119.08)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	10.250	0.000	0.000			0.000
2	0.000	0.056	0.000	---	NonR	0.000
	10.250	0.056	0.000			0.000
3	0.000	0.036	0.109	---	NonR	0.016
	10.250	0.036	0.109			0.016
4	0.000	0.035	0.000	---	NonR	0.000
	10.250	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 1.81 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	4.6	5.1	10.2	1.14	0.90	201.25
Controlling		1.2DL+1.6LL	4.6	5.1	10.2	1.14	0.90	201.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.65	0.65
Max +LL reaction	0.64	0.64
Max +total reaction (factored)	1.81	1.81

DEFLECTIONS:

									Ratio
Dead load (in)	at	5.13 ft	=	-0.002		L/D	=	57823 > 300	0.01
Live load (in)	at	5.13 ft	=	-0.002	< -1.000	L/D	=	58346 > 360	0.01
Net Total load (in)	at	5.13 ft	=	-0.004		L/D	=	29042 > 240	0.01

Floor Type: Second Floor **Beam Number = 76**

SPAN INFORMATION (ft): I-End (338.75,113.17) J-End (338.75,119.08)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 5.92
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.275	0.550	0.0%	Red	0.000
	5.916	0.275	0.550			0.000
2	0.000	0.000	0.000	---	NonR	0.000
	1.008	0.052	0.000			0.000
3	0.000	0.000	0.000	---	NonR	0.000
	1.008	0.033	0.101			0.015
4	1.009	0.052	0.000	---	NonR	0.000
	5.916	0.052	0.000			0.000
5	1.009	0.033	0.101	---	NonR	0.015
	5.916	0.033	0.101			0.015
6	0.000	0.004	0.000	---	NonR	0.000
	5.916	0.004	0.000			0.000
7	0.000	0.003	0.008	---	NonR	0.001
	5.916	0.003	0.008			0.001
8	0.000	0.035	0.000	---	NonR	0.000
	5.916	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.61 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	6.8	3.0	5.9	1.14	0.90	249.38
Controlling		1.2DL+1.6LL	6.8	3.0	5.9	1.14	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	1.15	1.19
Max +LL reaction	1.94	1.99
Max +total reaction (factored)	4.49	4.61

DEFLECTIONS:

									Ratio
Dead load (in)	at	2.96 ft	=	-0.001		L/D	=	9527 > 3003	0.00
Live load (in)	at	2.96 ft	=	-0.001	< -1.000	L/D	=	5659 > 3608	0.01
Net Total load (in)	at	2.96 ft	=	-0.002		L/D	=	3550 > 2405	0.01

Floor Type: Second Floor **Beam Number = 77**

SPAN INFORMATION (ft): I-End (349.00,89.33) J-End (349.00,119.08)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 29.75
Mp (kip-ft) = 558.33

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
11.039	1.93	1.10	0.0	0.04	0.00	0.0	0.00	Snow	0.17

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	11.039	0.275	0.550	0.0%	Red	0.000
	29.750	0.275	0.550			0.000
2	0.000	0.000	0.000	0.0%	Red	0.000
	11.038	0.000	0.000			0.000
3	0.000	0.160	0.000	---	NonR	0.000
	11.038	0.160	0.000			0.000
4	0.000	0.305	0.312	0.0%	Red	0.047
	11.038	0.305	0.312			0.047
5	11.039	0.056	0.000	---	NonR	0.000
	29.750	0.056	0.000			0.000
6	11.039	0.036	0.109	---	NonR	0.016
	29.750	0.036	0.109			0.016
7	0.000	0.052	0.000	---	NonR	0.000
	11.038	0.052	0.000			0.000
8	0.000	0.081	0.083	0.0%	Red	0.012
	11.038	0.081	0.083			0.012
9	0.000	0.006	0.018	---	NonR	0.003
	11.038	0.006	0.018			0.003
10	0.000	0.055	0.000	---	NonR	0.000
	29.750	0.055	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.08 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	199.7	13.9	18.7	1.21	0.90	219.36
Controlling		1.2DL+1.6LL	199.7	13.9	18.7	1.21	0.90	219.36

REACTIONS (kips):

	Left	**Right**
DL reaction	9.63	7.48
Max +LL reaction	9.08	10.13
Max +total reaction (factored)	26.08	25.18

DEFLECTIONS: **Ratio**

Dead load (in)	at	14.43 ft	=	-0.265		L/D	=	1349 > 300	0.22
Live load (in)	at	14.73 ft	=	-0.306	< -1.000	L/D	=	1167 > 360	0.31
Net Total load (in)	at	14.73 ft	=	-0.571		L/D	=	626 > 240	0.38

Floor Type: Second Floor **Beam Number = 78**

SPAN INFORMATION (ft): I-End (349.00,71.58) J-End (349.00,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	38.62	Y bar(in)	=	15.47
Mnf (kip-ft)	=	462.09	Mn (kip-ft)	=	438.96
C (kips)	=	189.36	PNA (in)	=	15.16
Ieff (in4)	=	1297.60	Itr (in4)	=	1408.12
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 24 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 76.90

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.875	2.05	1.98	0.00	0.0	3.47	0.00	0.0	0.00	Snow	0.42	0.69

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	17.750	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	17.750	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.104	---	NonR	0.012	0.021
	17.750	0.019	0.017	0.104			0.012	0.021
4	0.000	0.006	0.004	0.018	---	NonR	0.003	0.004
	17.750	0.006	0.004	0.018			0.003	0.004
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 7.46 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	22.1	8.9	0.0	1.00	0.90	249.38
	Init DL	1.4DL	18.2	8.9	---	---		
	Max +	1.2DL+1.6LL	52.4	8.9	---	---	0.90	395.07
Controlling		1.2DL+1.6LL	52.4	8.9	---	---	0.90	395.07

REACTIONS (kips):

	Left	Right
Initial reaction	2.51	2.51
DL reaction	2.01	2.01
Max +LL reaction	3.16	3.16
Max +total reaction (factored)	7.46	7.46

DEFLECTIONS:

										Ratio
Initial load (in)	at	8.88 ft	=	-0.043		L/D	=	4944	> 180	0.04
Live load (in)	at	8.88 ft	=	-0.029	< -1.000	L/D	=	7373	> 360	0.05
Post Comp load (in)	at	8.88 ft	=	-0.030		L/D	=	7212	> 240	0.03
Net Total load (in)	at	8.88 ft	=	-0.073		L/D	=	2933	> 240	0.08

Floor Type: Second Floor **Beam Number = 80**

SPAN INFORMATION (ft): I-End (349.00,12.50) J-End (349.00,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	42.75	Y bar(in)	=	15.80
Mnf (kip-ft)	=	472.36	Mn (kip-ft)	=	420.34
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1221.67	Itr (in4)	=	1453.47
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 39 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 56.90

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	20.500	0.000	0.000	0.000			0.000	0.000
2	0.000	0.160	0.160	0.000	---	NonR	0.000	0.000
	20.500	0.160	0.160	0.000			0.000	0.000
3	0.000	0.071	0.063	0.312	0.0%	Red	0.047	0.078
	9.000	0.071	0.063	0.312			0.047	0.078
4	9.000	0.071	0.063	0.313	0.0%	Red	0.047	0.078
	10.323	0.071	0.062	0.312			0.000	0.078
5	10.324	0.071	0.063	0.312	0.0%	Red	0.047	0.078
	20.500	0.071	0.063	0.312			0.047	0.078
6	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	20.500	0.052	0.052	0.000			0.000	0.000
7	0.000	0.022	0.020	0.099	0.0%	Red	0.015	0.025
	10.323	0.019	0.017	0.084			0.013	0.021
8	0.000	0.001	0.000	0.002	---	NonR	0.000	0.001
	10.500	0.006	0.004	0.018			0.003	0.004
9	10.324	0.019	0.017	0.084	0.0%	Red	0.013	0.021
	20.500	0.019	0.017	0.083			0.012	0.021
10	10.500	0.006	0.004	0.018	---	NonR	0.003	0.004
	20.500	0.006	0.004	0.018			0.003	0.004
11	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	20.500	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 11.98 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	29.5	10.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	24.3	10.2	---	---		
	Max +	1.2DL+1.6LL	61.3	10.3	---	---	0.90	378.30
Controlling		1.2DL+1.6LL	61.3	10.3	---	---	0.90	378.30

REACTIONS (kips):

	Left	Right
Initial reaction	4.44	4.44
DL reaction	3.50	3.51
Max +LL reaction	4.86	4.86
Max +total reaction (factored)	11.97	11.98

DEFLECTIONS:

						Ratio
Initial load (in)	at 10.25 ft =	-0.089		L/D = 2775 > 180		0.06
Live load (in)	at 10.25 ft =	-0.053	< -1.000	L/D = 4637 > 360		0.08
Post Comp load (in)	at 10.25 ft =	-0.054		L/D = 4521 > 240		0.05
Net Total load (in)	at 10.25 ft =	-0.143		L/D = 1720 > 240		0.14

Floor Type: Second Floor **Beam Number = 81**

SPAN INFORMATION (ft): I-End (305.75,12.50) J-End (349.00,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 43.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	66.00	Y bar(in)	=	19.45
Mnf (kip-ft)	=	1123.88	Mn (kip-ft)	=	1068.76
C (kips)	=	315.60	PNA (in)	=	19.45
Ieff (in4)	=	3967.19	Itr (in4)	=	4297.66
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 47 Partial = 44 Actual = 34
Number of Stud Rows = 1 Percent of Full Composite Action = 71.02

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	7.01	6.76	8.24	22.1	0.00	0.00	0.0	0.00	Snow	1.42	2.37
18.500	7.01	6.76	8.24	22.1	0.00	0.00	0.0	0.00	Snow	1.42	2.37
27.750	7.32	7.07	8.17	22.1	0.00	0.00	0.0	0.00	Snow	1.40	2.33
37.000	6.00	5.80	7.16	22.1	0.00	0.00	0.0	0.00	Snow	1.15	1.88

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	43.250	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	43.250	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	22.1%	Red	0.015	0.025
	43.250	0.023	0.020	0.100			0.015	0.025
4	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	43.250	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 49.34 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	344.4	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	282.6	18.5	---	---		
	Max +	1.2DL+1.6LL	534.1	18.7	---	---	0.90	961.88

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
Controlling		1.2DL+1.6LL	594.7	18.5	---	---	0.90	961.88

REACTIONS (kips):

	Left	Right
Initial reaction	20.46	22.04
DL reaction	16.10	17.41
Max +LL reaction	16.42	17.78
Max +total reaction (factored)	45.58	49.34

DEFLECTIONS: (Camber = 1)

										Ratio
Initial load (in)	at	21.62 ft	=	-1.272		L/D	=	408	> 180	0.44
Live load (in)	at	21.62 ft	=	-0.623	< -1.000	L/D	=	833	> 360	0.62
Post Comp load (in)	at	21.62 ft	=	-0.642		L/D	=	808	> 240	0.30
Net Total load (in)	at	21.62 ft	=	-0.914		L/D	=	568	> 240	0.42

Floor Type: Second Floor **Beam Number = 83**

SPAN INFORMATION (ft): I-End (284.75,12.50) J-End (305.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	450.98
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1338.57	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 28 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 75.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	7.96	7.68	9.35	0.0	0.00	0.00	0.0	0.00	Snow	1.61	2.69

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	21.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	21.000	0.023	0.020	0.100			0.015	0.025
4	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 16.86 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	80.2	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	64.7	10.5	---	---		
	Max +	1.2DL+1.6LL	159.6	10.5	---	---	0.90	405.88
Controlling		1.2DL+1.6LL	159.6	10.5	---	---	0.90	405.88

REACTIONS (kips):

	Left	Right
Initial reaction	6.57	6.57
DL reaction	5.13	5.13
Max +LL reaction	6.69	6.69
Max +total reaction (factored)	16.86	16.86

DEFLECTIONS:

						Ratio
Initial load (in)	at 10.50 ft =	-0.205		L/D = 1231 >	180	0.15
Live load (in)	at 10.50 ft =	-0.107	< -1.000	L/D = 2352 >	360	0.15
Post Comp load (in)	at 10.50 ft =	-0.110		L/D = 2295 >	240	0.10
Net Total load (in)	at 10.50 ft =	-0.314		L/D = 801 >	240	0.30

Floor Type: Second Floor **Beam Number = 84**

SPAN INFORMATION (ft): I-End (284.75,33.00) J-End (305.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	63.00	Y bar(in)	=	17.03
Mnf (kip-ft)	=	521.19	Mn (kip-ft)	=	434.60
C (kips)	=	172.30	PNA (in)	=	14.59
Ieff (in4)	=	1239.01	Itr (in4)	=	1623.02
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 48 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 42.90

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	7.96	7.68	6.66	0.0	0.00	0.00	0.0	0.00	Snow	1.61	2.69

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.199	0.199	0.000	---	NonR	0.000	0.000
	21.000	0.199	0.199	0.000			0.000	0.000
2	0.000	0.088	0.077	0.194	0.0%	Red	0.058	0.097
	21.000	0.088	0.077	0.194			0.058	0.097
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 19.68 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	100.1	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	80.5	10.5	---	---		
	Max +	1.2DL+1.6LL	163.1	10.5	---	---	0.90	391.14
Controlling		1.2DL+1.6LL	163.1	10.5	---	---	0.90	391.14

REACTIONS (kips):

	Left	Right
Initial reaction	9.47	9.47
DL reaction	7.35	7.35
Max +LL reaction	6.78	6.78
Max +total reaction (factored)	19.68	19.68

DEFLECTIONS:

								Ratio
Initial load (in)	at 10.50 ft	=	-0.265	L/D	=	950	> 240	0.25
Live load (in)	at 10.50 ft	=	-0.107	L/D	=	2345	> 480	0.20
Post Comp load (in)	at 10.50 ft	=	-0.111	L/D	=	2264	> 240	0.11
Net Total load (in)	at 10.50 ft	=	-0.376	L/D	=	669	> 240	0.36

Floor Type: Second Floor **Beam Number = 85**

SPAN INFORMATION (ft): I-End (305.75,33.00) J-End (342.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	92.33	Y bar(in)	=	20.79
Mnf (kip-ft)	=	1193.05	Mn (kip-ft)	=	1071.93
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3940.35	Itr (in4)	=	4737.36
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 70 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 52.69

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	7.01	6.76	5.87	12.9	0.00	0.00	0.0	0.00	Snow	1.42	2.37
18.500	7.01	6.76	5.87	12.9	0.00	0.00	0.0	0.00	Snow	1.42	2.37
27.750	6.21	6.01	5.06	12.9	0.00	0.00	0.0	0.00	Snow	1.18	1.96
31.750	1.87	1.81	1.20	12.9	0.00	0.00	0.0	0.00	Snow	0.36	0.60

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	37.000	0.184	0.184	0.000			0.000	0.000
2	0.000	0.117	0.072	0.358	---	NonR	0.054	0.090
	37.000	0.117	0.072	0.358			0.054	0.090
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 50.68 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	312.3	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	254.5	18.5	---	---		
	Max +	1.2DL+1.6LL	537.9	18.5	---	---	0.90	964.73
Controlling		1.2DL+1.6LL	537.9	18.5	---	---	0.90	964.73

REACTIONS (kips):

	Left	Right
Initial reaction	21.40	22.54
DL reaction	17.41	18.35
Max +LL reaction	17.38	17.91
Max +total reaction (factored)	48.70	50.68

DEFLECTIONS:

				Ratio
Initial load (in)	at 18.50 ft = -0.817	L/D = 543 > 240		0.44
Live load (in)	at 18.50 ft = -0.398	L/D = 1114 > 480		0.43
Post Comp load (in)	at 18.50 ft = -0.424	L/D = 1046 > 240		0.23
Net Total load (in)	at 18.50 ft = -1.242	L/D = 358 > 240		0.67

Floor Type: Second Floor **Beam Number = 86**

SPAN INFORMATION (ft): I-End (349.00,33.00) J-End (349.00,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.156	0.313	0.0%	Red	0.000
	19.250	0.156	0.313			0.000
2	0.000	0.060	0.000	---	NonR	0.000
	19.250	0.060	0.000			0.000
3	0.000	0.023	0.100	0.0%	Red	0.015
	19.250	0.023	0.100			0.015
4	0.000	0.006	0.018	---	NonR	0.003
	19.250	0.006	0.018			0.003
5	0.000	0.035	0.000	---	NonR	0.000
	19.250	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.13 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	48.8	9.6	19.2	1.14	0.90	83.72
Controlling		1.2DL+1.6LL	48.8	9.6	19.2	1.14	0.90	83.72

REACTIONS (kips):

	Left	Right
DL reaction	2.69	2.69
Max +LL reaction	4.31	4.31
Max +total reaction (factored)	10.13	10.13

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.62 ft	=	-0.058		L/D	=	3954 > 300	0.08
Live load (in)	at	9.62 ft	=	-0.094	< -1.000	L/D	=	2468 > 360	0.15
Net Total load (in)	at	9.62 ft	=	-0.152		L/D	=	1519 > 240	0.16

Floor Type: Second Floor **Beam Number = 87**

SPAN INFORMATION (ft): I-End (349.00,52.25) J-End (349.00,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.156	0.313	0.0%	Red	0.000
	19.333	0.156	0.313			0.000
2	0.000	0.060	0.000	---	NonR	0.000
	19.333	0.060	0.000			0.000
3	0.000	0.023	0.100	0.0%	Red	0.015
	19.333	0.023	0.100			0.015
4	0.000	0.006	0.018	---	NonR	0.003
	19.333	0.006	0.018			0.003
5	0.000	0.035	0.000	---	NonR	0.000
	19.333	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.17 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	49.2	9.7	19.3	1.14	0.90	83.18
Controlling		1.2DL+1.6LL	49.2	9.7	19.3	1.14	0.90	83.18

REACTIONS (kips):

	Left	Right
DL reaction	2.70	2.70
Max +LL reaction	4.33	4.33
Max +total reaction (factored)	10.17	10.17

DEFLECTIONS:

									Ratio
Dead load (in)	at	9.67 ft	=	-0.059		L/D	=	3903 > 300	0.08
Live load (in)	at	9.67 ft	=	-0.095	< -1.000	L/D	=	2436 > 360	0.15
Net Total load (in)	at	9.67 ft	=	-0.155		L/D	=	1500 > 240	0.16

Floor Type: Second Floor **Beam Number = 88**

SPAN INFORMATION (ft): I-End (342.75,33.00) J-End (342.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	30.88	Y bar(in)	=	16.08
Mnf (kip-ft)	=	592.36	Mn (kip-ft)	=	556.24
C (kips)	=	147.28	PNA (in)	=	14.56
Ieff (in4)	=	1787.68	Itr (in4)	=	1935.08
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 26 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 74.83

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.167	11.13	9.46	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99	3.31
14.333	11.65	9.90	0.00	0.0	13.85	0.00	0.0	0.00	Snow	2.08	3.46

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.156	0.125	0.313	0.0%	Red	0.000	0.000
	19.250	0.156	0.125	0.313			0.000	0.000
2	0.000	0.009	0.009	0.000	---	NonR	0.000	0.000
	19.250	0.009	0.009	0.000			0.000	0.000
3	0.000	0.004	0.003	0.017	0.0%	Red	0.003	0.004
	19.250	0.004	0.003	0.017			0.003	0.004
4	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	19.250	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 51.00 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	116.5	7.2	0.0	1.00	0.90	357.75
	Init DL	1.4DL	95.9	7.2	---	---		
	Max +	1.2DL+1.6LL	276.1	7.2	---	---	0.90	500.62
Controlling		1.2DL+1.6LL	276.1	7.2	---	---	0.90	500.62

REACTIONS (kips):

	Left	Right
Initial reaction	13.21	16.49
DL reaction	12.01	14.86
Max +LL reaction	16.83	20.73
Max +total reaction (factored)	41.34	51.00

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.72 ft	=	-0.186	L/D	=	1241	> 240	0.19
Live load (in)	at	9.72 ft	=	-0.144	L/D	=	1607	> 480	0.30
Post Comp load (in)	at	9.72 ft	=	-0.159	L/D	=	1451	> 240	0.17
Net Total load (in)	at	9.72 ft	=	-0.345	L/D	=	669	> 240	0.36

Floor Type: Second Floor **Beam Number = 89**

SPAN INFORMATION (ft): I-End (342.75,52.25) J-End (342.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	31.00	Y bar(in)	=	16.09
Mnf (kip-ft)	=	592.96	Mn (kip-ft)	=	556.29
C (kips)	=	147.28	PNA (in)	=	14.56
Ieff (in4)	=	1788.10	Itr (in4)	=	1937.77
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 24 Partial = 20 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 74.53

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
3.238	12.23	10.37	0.00	0.0	14.49	0.00	0.0	0.00	Snow	2.17	3.62
11.286	14.33	11.71	0.00	0.0	16.41	0.00	0.0	0.00	Snow	2.46	4.10

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.156	0.125	0.313	0.0%	Red	0.000	0.000
	19.333	0.156	0.125	0.313			0.000	0.000
2	0.000	0.009	0.009	0.000	---	NonR	0.000	0.000
	19.333	0.009	0.009	0.000			0.000	0.000
3	0.000	0.004	0.003	0.017	0.0%	Red	0.003	0.004
	19.333	0.004	0.003	0.017			0.003	0.004
4	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	19.333	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 61.75 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	131.6	11.3	0.0	1.00	0.90	357.75
	Init DL	1.4DL	108.1	11.3	---	---		
	Max +	1.2DL+1.6LL	314.1	11.3	---	---	0.90	500.66
Controlling		1.2DL+1.6LL	314.1	11.3	---	---	0.90	500.66

REACTIONS (kips):

	Left	Right
Initial reaction	20.02	13.37
DL reaction	18.20	12.47
Max +LL reaction	24.94	17.02
Max +total reaction (factored)	61.75	42.20

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.67 ft	=	-0.196	L/D	=	1182	> 240	0.20
Live load (in)	at	9.67 ft	=	-0.152	L/D	=	1531	> 480	0.31
Post Comp load (in)	at	9.67 ft	=	-0.171	L/D	=	1360	> 240	0.18
Net Total load (in)	at	9.67 ft	=	-0.367	L/D	=	632	> 240	0.38

Floor Type: Second Floor **Beam Number = 90**

SPAN INFORMATION (ft): I-End (342.75,71.58) J-End (342.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	430.73
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1242.77	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 37 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 49.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.655	14.59	11.71	0.00	0.0	16.42	0.00	0.0	0.00	Snow	2.46	4.10
8.875	2.05	1.98	0.00	0.0	3.47	0.00	0.0	0.00	Snow	0.42	0.69
9.702	13.65	10.62	0.00	0.0	14.89	0.00	0.0	0.00	Snow	2.23	3.72

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 67.82 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	113.4	9.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	90.8	9.7	---	---		
	Max +	1.2DL+1.6LL	264.9	9.7	---	---	0.90	387.66
Controlling		1.2DL+1.6LL	264.9	9.7	---	---	0.90	387.66

REACTIONS (kips):

	Left	Right
Initial reaction	22.49	10.96
DL reaction	20.75	10.16
Max +LL reaction	26.82	13.06

	Left	Right
Max +total reaction (factored)	67.82	33.08

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.88 ft	=	-0.219	L/D	=	972	> 240	0.25
Live load (in)	at	8.88 ft	=	-0.145	L/D	=	1466	> 480	0.33
Post Comp load (in)	at	8.88 ft	=	-0.167	L/D	=	1277	> 240	0.19
Net Total load (in)	at	8.88 ft	=	-0.386	L/D	=	552	> 240	0.43

Floor Type: Second Floor **Beam Number = 92**

SPAN INFORMATION (ft): I-End (305.75,89.33) J-End (342.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	103.79	Y bar(in)	=	21.26
Mnf (kip-ft)	=	1221.42	Mn (kip-ft)	=	1073.80
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3923.83	Itr (in4)	=	4888.26
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 78 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 46.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	8.16	19.4	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	7.94	7.01	7.28	19.4	0.00	0.00	0.0	0.00	Snow	1.47	2.46
25.750	9.32	6.16	6.40	19.4	0.00	0.00	0.0	0.00	Snow	1.30	2.16
33.000	10.22	6.32	7.71	19.4	0.05	0.00	0.0	0.00	Snow	1.05	1.75

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.207	0.207	0.000	---	NonR	0.000	0.000
	37.000	0.207	0.207	0.000			0.000	0.000
2	0.000	0.167	0.080	0.402	---	NonR	0.060	0.101
	37.000	0.167	0.080	0.402			0.060	0.101
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 76.23 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	360.6	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	293.1	18.5	---	---		
	Max +	1.2DL+1.6LL	689.3	18.5	---	---	0.90	966.42
Controlling		1.2DL+1.6LL	689.3	18.5	---	---	0.90	966.42

REACTIONS (kips):

	Left	Right
Initial reaction	24.54	28.82
DL reaction	22.20	29.79
Max +LL reaction	21.15	25.30
Max +total reaction (factored)	60.49	76.23

DEFLECTIONS: (Camber = 3/4)

					Ratio
Initial load (in)	at 18.69 ft	= -0.948	L/D = 468	> 240	0.51
Live load (in)	at 18.69 ft	= -0.500	L/D = 888	> 480	0.54
Post Comp load (in)	at 18.69 ft	= -0.611	L/D = 727	> 240	0.33
Net Total load (in)	at 18.69 ft	= -0.808	L/D = 549	> 240	0.44

Floor Type: Second Floor **Beam Number = 93**

SPAN INFORMATION (ft): I-End (338.75,89.33) J-End (338.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	36.75	Y bar(in)	=	15.30
Mnf (kip-ft)	=	457.02	Mn (kip-ft)	=	429.10
C (kips)	=	172.30	PNA (in)	=	14.59
Ieff (in4)	=	1261.11	Itr (in4)	=	1385.86
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 34 Partial = 23 Actual = 23
Number of Stud Rows = 1 Percent of Full Composite Action = 73.54

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
11.039	2.90	1.56	1.72	0.0	0.04	0.00	0.0	0.00	Snow	0.27	0.44

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	11.039	0.275	0.220	0.550	0.0%	Red	0.000	0.000
	23.833	0.275	0.220	0.550			0.000	0.000
2	0.000	0.186	0.186	0.000	---	NonR	0.000	0.000
	23.833	0.186	0.186	0.000			0.000	0.000
3	0.000	0.549	0.113	0.562	0.0%	Red	0.084	0.141
	6.666	0.549	0.113	0.562			0.084	0.141
4	6.667	0.082	0.072	0.181	0.0%	Red	0.054	0.091
	23.833	0.082	0.072	0.181			0.054	0.091
5	0.000	0.103	0.103	0.000	---	NonR	0.000	0.000
	11.038	0.103	0.103	0.000			0.000	0.000
6	6.667	0.195	0.040	0.200	0.0%	Red	0.030	0.050
	11.038	0.195	0.040	0.200			0.030	0.050
7	11.039	0.004	0.004	0.000	---	NonR	0.000	0.000
	23.833	0.004	0.004	0.000			0.000	0.000
8	11.039	0.003	0.002	0.008	---	NonR	0.001	0.002
	23.833	0.003	0.002	0.008			0.001	0.002
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	23.833	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.36 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	69.0	11.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	60.5	11.0	---	---		
	Max +	1.2DL+1.6LL	170.1	11.0	---	---	0.90	386.19
Controlling		1.2DL+1.6LL	170.1	11.0	---	---	0.90	386.19

REACTIONS (kips):

	Left	Right
Initial reaction	8.07	8.13
DL reaction	10.22	8.61
Max +LL reaction	8.81	9.74
Max +total reaction (factored)	26.36	25.92

DEFLECTIONS:

				Ratio
Initial load (in)	at 11.92 ft = -0.288	L/D = 993 > 240		0.24
Live load (in)	at 11.92 ft = -0.162	L/D = 1763 > 480		0.27
Post Comp load (in)	at 11.92 ft = -0.211	L/D = 1354 > 240		0.18
Net Total load (in)	at 11.92 ft = -0.499	L/D = 573 > 240		0.42

Floor Type: Second Floor **Beam Number = 94**

SPAN INFORMATION (ft): I-End (284.75,113.17) J-End (305.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	450.98
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1338.57	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 28 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 75.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	9.25	8.93	6.75	0.0	0.00	0.00	0.0	0.00	Snow	1.88	3.13

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	21.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	0.0%	Red	0.013	0.021
	21.000	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	21.000	0.006	0.003	0.017			0.003	0.004
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 15.10 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	91.8	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	73.9	10.5	---	---		
	Max +	1.2DL+1.6LL	144.6	10.5	---	---	0.90	405.88
Controlling		1.2DL+1.6LL	91.8	10.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
Initial reaction	7.41	7.41
DL reaction	5.79	5.79
Max +LL reaction	5.09	5.09
Max +total reaction (factored)	15.10	15.10

DEFLECTIONS:

						Ratio
Initial load (in)	at 10.50 ft =	-0.233		L/D = 1082 >	180	0.17
Live load (in)	at 10.50 ft =	-0.082	< -1.000	L/D = 3057 >	360	0.12
Post Comp load (in)	at 10.50 ft =	-0.086		L/D = 2940 >	240	0.08
Net Total load (in)	at 10.50 ft =	-0.319		L/D = 791 >	240	0.30

Floor Type: Second Floor **Beam Number = 95**

SPAN INFORMATION (ft): I-End (305.75,113.17) J-End (338.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 33.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	61.50	Y bar(in)	=	18.57
Mnf (kip-ft)	=	695.37	Mn (kip-ft)	=	661.73
C (kips)	=	294.56	PNA (in)	=	18.77
Ieff (in4)	=	2202.26	Itr (in4)	=	2411.16
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 43 Partial = 33 Actual = 33
Number of Stud Rows = 1 Percent of Full Composite Action = 75.13

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	5.94	15.9	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	7.38	7.01	5.30	15.9	0.00	0.00	0.0	0.00	Snow	1.47	2.46
25.750	6.86	6.16	4.66	15.9	0.00	0.00	0.0	0.00	Snow	1.30	2.16

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	33.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	31.991	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	15.9%	Red	0.013	0.021
	31.991	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	31.991	0.006	0.003	0.017			0.003	0.004
5	32.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	33.000	0.000	0.000	0.000			0.000	0.000
6	32.000	0.019	0.017	0.042	15.9%	Red	0.013	0.021
	33.000	0.000	0.000	0.000			0.000	0.000
7	32.000	0.005	0.003	0.017	---	NonR	0.002	0.004
	33.000	0.000	0.000	0.000			0.000	0.000
8	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	33.000	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 33.01 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	224.8	18.5	0.0	1.00	0.90	357.75
	Init DL	1.4DL	181.4	18.5	---	---		
	Max +	1.2DL+1.6LL	333.4	18.5	---	---	0.90	595.56
Controlling		1.2DL+1.6LL	224.8	18.5	---	---	0.90	357.75

REACTIONS (kips):

	Left	Right
Initial reaction	15.96	17.06
DL reaction	12.60	13.73
Max +LL reaction	9.65	10.34
Max +total reaction (factored)	30.57	33.01

DEFLECTIONS: (Camber = 3/4)

										Ratio
Initial load (in)	at	16.66 ft	=	-1.004		L/D	=	394	> 180	0.46
Live load (in)	at	16.66 ft	=	-0.312	< -1.000	L/D	=	1267	> 360	0.31
Post Comp load (in)	at	16.66 ft	=	-0.335		L/D	=	1183	> 240	0.20
Net Total load (in)	at	16.66 ft	=	-0.589		L/D	=	672	> 240	0.36

Floor Type: Second Floor **Beam Number = 98**

SPAN INFORMATION (ft): I-End (284.75,89.33) J-End (305.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	61.79	Y bar(in)	=	16.97
Mnf (kip-ft)	=	518.32	Mn (kip-ft)	=	434.45
C (kips)	=	172.30	PNA (in)	=	14.59
Ieff (in4)	=	1240.67	Itr (in4)	=	1614.76
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 46 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 43.74

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	9.25	8.93	9.27	0.0	0.00	0.00	0.0	0.00	Snow	1.88	3.13

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.130	0.130	0.000	---	NonR	0.000	0.000
	21.000	0.130	0.130	0.000			0.000	0.000
2	0.000	0.056	0.049	0.308	---	NonR	0.037	0.062
	0.072	0.058	0.052	0.323			0.075	0.065
3	0.073	0.057	0.050	0.315	---	NonR	0.038	0.063
	15.000	0.057	0.050	0.315			0.038	0.063
4	15.000	0.057	0.050	0.252	0.0%	Red	0.038	0.063
	21.000	0.057	0.050	0.252			0.038	0.063
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 23.11 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	102.3	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	82.2	10.5	---	---		
	Max +	1.2DL+1.6LL	196.8	10.5	---	---	0.90	391.00
Controlling		1.2DL+1.6LL	196.8	10.5	---	---	0.90	391.00

REACTIONS (kips):

	Left	Right
Initial reaction	8.95	8.95
DL reaction	6.95	6.95
Max +LL reaction	9.23	8.96
Max +total reaction (factored)	23.11	22.67

DEFLECTIONS:

					Ratio
Initial load (in)	at 10.50 ft	= -0.265	L/D = 952	> 240	0.25
Live load (in)	at 10.50 ft	= -0.145	L/D = 1740	> 480	0.28
Post Comp load (in)	at 10.50 ft	= -0.149	L/D = 1696	> 240	0.14
Net Total load (in)	at 10.50 ft	= -0.413	L/D = 610	> 240	0.39

Floor Type: Second Floor **Beam Number = 99**

SPAN INFORMATION (ft): I-End (182.75,89.33) J-End (203.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	34.50	Y bar(in)	=	15.10
Mnf (kip-ft)	=	450.41	Mn (kip-ft)	=	428.24
C (kips)	=	172.30	PNA (in)	=	14.59
Ieff (in4)	=	1260.25	Itr (in4)	=	1357.65
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 26 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 78.34

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.875	1.35	1.31	0.76	0.0	0.00	0.00	0.0	0.00	Snow	0.23	0.38
10.500	9.25	8.93	9.27	0.0	0.00	0.00	0.0	0.00	Snow	1.88	3.13

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.013	0.013	0.000	---	NonR	0.000	0.000
	9.875	0.013	0.013	0.000			0.000	0.000
2	0.000	0.006	0.005	0.013	0.0%	Red	0.004	0.006
	9.875	0.006	0.005	0.013			0.004	0.006
3	9.875	0.128	0.128	0.000	---	NonR	0.000	0.000
	21.000	0.128	0.128	0.000			0.000	0.000
4	9.875	0.057	0.050	0.125	0.0%	Red	0.038	0.063
	21.000	0.057	0.050	0.125			0.038	0.063
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 20.47 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	106.0	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	85.6	10.5	---	---		
	Max +	1.2DL+1.6LL	164.0	10.5	---	---	0.90	385.41

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
Controlling		1.2DL+1.6LL	186.0	10.5	---	---	0.90	385.41

REACTIONS (kips):

	Left	Right
Initial reaction	8.18	9.21
DL reaction	6.39	7.18
Max +LL reaction	6.70	7.41
Max +total reaction (factored)	18.39	20.47

DEFLECTIONS:

									Ratio
Initial load (in)	at	10.50 ft	=	-0.272	L/D	=	926	> 240	0.26
Live load (in)	at	10.50 ft	=	-0.122	L/D	=	2062	> 480	0.23
Post Comp load (in)	at	10.50 ft	=	-0.126	L/D	=	2000	> 240	0.12
Net Total load (in)	at	10.50 ft	=	-0.398	L/D	=	633	> 240	0.38

Floor Type: Second Floor **Beam Number = 101**

SPAN INFORMATION (ft): I-End (182.75,113.17) J-End (203.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	450.98
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1338.57	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 28 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 75.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	9.25	8.93	6.75	0.0	0.00	0.00	0.0	0.00	Snow	1.88	3.13

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	21.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	0.0%	Red	0.013	0.021
	21.000	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	21.000	0.006	0.003	0.017			0.003	0.004
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 15.10 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	91.8	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	73.9	10.5	---	---		
	Max +	1.2DL+1.6LL	144.6	10.5	---	---	0.90	405.88
Controlling		1.2DL+1.6LL	91.8	10.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
Initial reaction	7.41	7.41
DL reaction	5.79	5.79
Max +LL reaction	5.09	5.09
Max +total reaction (factored)	15.10	15.10

DEFLECTIONS:

						Ratio
Initial load (in)	at 10.50 ft =	-0.233		L/D = 1082 >	180	0.17
Live load (in)	at 10.50 ft =	-0.082	< -1.000	L/D = 3057 >	360	0.12
Post Comp load (in)	at 10.50 ft =	-0.086		L/D = 2940 >	240	0.08
Net Total load (in)	at 10.50 ft =	-0.319		L/D = 791 >	240	0.30

Floor Type: Second Floor **Beam Number = 103**

SPAN INFORMATION (ft): I-End (145.75,113.17) J-End (182.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	67.50	Y bar(in)	=	18.90
Mnf (kip-ft)	=	710.05	Mn (kip-ft)	=	681.31
C (kips)	=	336.64	PNA (in)	=	19.97
Ieff (in4)	=	2286.55	Itr (in4)	=	2475.07
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 42 Partial = 37 Actual = 33
Number of Stud Rows = 1 Percent of Full Composite Action = 78.23

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	5.94	19.2	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	8.15	7.86	5.94	19.2	0.00	0.00	0.0	0.00	Snow	1.65	2.76
27.750	8.15	7.86	5.94	19.2	0.00	0.00	0.0	0.00	Snow	1.65	2.76

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	37.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	37.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	19.2%	Red	0.013	0.021
	37.000	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	37.000	0.006	0.003	0.017			0.003	0.004
5	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	37.000	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 34.80 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	286.9	18.5	0.0	1.00	0.90	357.75
	Init DL	1.4DL	214.7	18.5	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	414.8	18.5	---	---	0.90	613.18
Controlling		1.2DL+1.6LL	286.9	18.5	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
Initial reaction	18.54	18.54
DL reaction	14.45	14.45
Max +LL reaction	10.91	10.91
Max +total reaction (factored)	34.80	34.80

DEFLECTIONS: (Camber = 1-1/4)

										Ratio
Initial load (in)	at	18.50 ft	=	-1.593		L/D	=	279	> 180	0.65
Live load (in)	at	18.50 ft	=	-0.464	< -1.000	L/D	=	958	> 360	0.46
Post Comp load (in)	at	18.50 ft	=	-0.485		L/D	=	915	> 240	0.26
Net Total load (in)	at	18.50 ft	=	-0.828		L/D	=	536	> 240	0.45

Floor Type: Second Floor **Beam Number = 111**

SPAN INFORMATION (ft): I-End (106.00,89.33) J-End (145.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 39.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	107.91	Y bar(in)	=	21.41
Mnf (kip-ft)	=	1231.52	Mn (kip-ft)	=	1086.60
C (kips)	=	327.36	PNA (in)	=	19.74
Ieff (in4)	=	3974.00	Itr (in4)	=	4938.01
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 85 Partial = 40 Actual = 40
Number of Stud Rows = 1 Percent of Full Composite Action = 47.36

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.417	8.30	8.00	8.31	20.8	0.00	0.00	0.0	0.00	Snow	1.68	2.81
18.833	8.75	8.45	8.77	20.8	0.00	0.00	0.0	0.00	Snow	1.78	2.96
29.292	9.21	8.89	9.23	20.8	0.00	0.00	0.0	0.00	Snow	1.87	3.12

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.207	0.207	0.000	---	NonR	0.000	0.000
	39.750	0.207	0.207	0.000			0.000	0.000
2	0.000	0.393	0.080	0.402	20.8%	Red	0.060	0.101
	7.000	0.393	0.080	0.402			0.060	0.101
3	7.000	0.131	0.080	0.402	---	NonR	0.060	0.101
	39.750	0.131	0.080	0.402			0.060	0.101
4	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	39.750	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 62.87 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	410.5	18.8	0.0	1.00	0.90	663.75
	Init DL	1.4DL	332.4	18.8	---	---		
	Max +	1.2DL+1.6LL	728.9	18.8	---	---	0.90	977.94
Controlling		1.2DL+1.6LL	728.9	18.8	---	---	0.90	977.94

REACTIONS (kips):

	Left	Right
Initial reaction	26.47	25.88
DL reaction	23.10	21.14
Max +LL reaction	21.97	21.99
Max +total reaction (factored)	62.87	60.55

DEFLECTIONS: (Camber = 3/4)

							Ratio
Initial load (in)	at 19.87 ft	=	-1.230	L/D	= 388	> 240	0.62
Live load (in)	at 19.87 ft	=	-0.628	L/D	= 759	> 480	0.63
Post Comp load (in)	at 19.87 ft	=	-0.677	L/D	= 705	> 240	0.34
Net Total load (in)	at 19.87 ft	=	-1.157	L/D	= 412	> 240	0.58

Floor Type: Second Floor **Beam Number = 113**

SPAN INFORMATION (ft): I-End (145.75,89.33) J-End (182.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	103.79	Y bar(in)	=	21.26
Mnf (kip-ft)	=	1221.42	Mn (kip-ft)	=	1073.80
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3923.83	Itr (in4)	=	4888.26
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 78 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 46.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	8.16	23.0	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	8.15	7.86	8.16	23.0	0.00	0.00	0.0	0.00	Snow	1.65	2.76
27.750	8.15	7.86	8.16	23.0	0.00	0.00	0.0	0.00	Snow	1.65	2.76

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.207	0.207	0.000	---	NonR	0.000	0.000
	37.000	0.207	0.207	0.000			0.000	0.000
2	0.000	0.393	0.080	0.402	23.0%	Red	0.060	0.101
	7.000	0.393	0.080	0.402			0.060	0.101
3	7.000	0.091	0.080	0.503	---	NonR	0.060	0.101
	22.750	0.091	0.080	0.503			0.060	0.101
4	22.750	0.091	0.080	0.201	23.0%	Red	0.060	0.101
	31.250	0.091	0.080	0.201			0.060	0.101
5	31.250	0.000	0.000	0.000	23.0%	Red	0.000	0.000
	37.000	0.005	0.005	0.012			0.004	0.006
6	31.250	0.091	0.080	0.402	23.0%	Red	0.060	0.101
	37.000	0.086	0.076	0.379			0.059	0.095
7	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 57.43 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	356.6	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	288.8	18.5	---	---		
	Max +	1.2DL+1.6LL	619.6	18.5	---	---	0.90	966.42
Controlling		1.2DL+1.6LL	619.6	18.5	---	---	0.90	966.42

REACTIONS (kips):

	Left	Right
Initial reaction	24.36	24.36
DL reaction	20.90	19.19
Max +LL reaction	20.22	19.00
Max +total reaction (factored)	57.43	53.43

DEFLECTIONS:

					Ratio
Initial load (in)	at 18.50 ft	= -0.924	L/D = 480	> 240	0.50
Live load (in)	at 18.50 ft	= -0.467	L/D = 951	> 480	0.50
Post Comp load (in)	at 18.50 ft	= -0.491	L/D = 905	> 240	0.27
Net Total load (in)	at 18.50 ft	= -1.415	L/D = 314	> 240	0.76

Floor Type: Second Floor **Beam Number = 115**

SPAN INFORMATION (ft): I-End (145.75,71.58) J-End (145.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	19.38
Mnf (kip-ft)	=	892.58	Mn (kip-ft)	=	764.18
C (kips)	=	168.32	PNA (in)	=	16.06
Ieff (in4)	=	2742.59	Itr (in4)	=	3327.67
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 37 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 49.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.655	29.98	23.76	1.84	0.0	31.63	0.00	0.0	0.00	Snow	5.05	8.31
9.702	28.50	22.03	6.46	0.0	25.34	0.00	0.0	0.00	Snow	4.63	7.72

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.055	0.055	0.000	---	NonR	0.000	0.000
	17.750	0.055	0.055	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 131.02 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	204.6	9.7	0.0	1.00	0.90	502.50
	Init DL	1.4DL	163.6	9.7	---	---		
	Max +	1.2DL+1.6LL	482.7	9.7	---	---	0.90	687.76
Controlling		1.2DL+1.6LL	482.7	9.7	---	---	0.90	687.76

REACTIONS (kips):

	Left	Right
Initial reaction	43.06	19.74
DL reaction	40.59	18.86
Max +LL reaction	51.44	23.50
Max +total reaction (factored)	131.02	60.24

DEFLECTIONS:									Ratio
Initial load (in)	at	8.88 ft	=	-0.149	L/D	=	1432	> 240	0.17
Live load (in)	at	8.88 ft	=	-0.118	L/D	=	1805	> 480	0.27
Post Comp load (in)	at	8.88 ft	=	-0.139	L/D	=	1538	> 240	0.16
Net Total load (in)	at	8.88 ft	=	-0.287	L/D	=	741	> 240	0.32

Floor Type: Second Floor **Beam Number = 116**

SPAN INFORMATION (ft): I-End (145.75,52.25) J-End (145.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.00	Y bar(in)	=	19.36
Mnf (kip-ft)	=	891.58	Mn (kip-ft)	=	764.14
C (kips)	=	168.32	PNA (in)	=	16.06
Ieff (in4)	=	2742.39	Itr (in4)	=	3322.74
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 40 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 49.82

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
3.238	26.46	21.85	0.02	0.0	30.58	0.00	0.0	0.00	Snow	4.54	7.65
11.286	30.07	24.21	0.39	0.0	33.50	0.00	0.0	0.00	Snow	5.02	8.47

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.055	0.055	0.000	---	NonR	0.000	0.000
	19.333	0.055	0.055	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 114.81 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	255.0	11.3	0.0	1.00	0.90	502.50
	Init DL	1.4DL	203.9	11.3	---	---		
	Max +	1.2DL+1.6LL	583.6	11.3	---	---	0.90	687.73
Controlling		1.2DL+1.6LL	583.6	11.3	---	---	0.90	687.73

REACTIONS (kips):

	Left	Right
Initial reaction	38.70	24.55
DL reaction	35.08	22.52
Max +LL reaction	45.45	28.60
Max +total reaction (factored)	114.81	72.78

DEFLECTIONS:									Ratio
Initial load (in)	at	9.67 ft	=	-0.229	L/D	=	1013	> 240	0.24
Live load (in)	at	9.67 ft	=	-0.178	L/D	=	1305	> 480	0.37
Post Comp load (in)	at	9.67 ft	=	-0.204	L/D	=	1140	> 240	0.21
Net Total load (in)	at	9.67 ft	=	-0.433	L/D	=	536	> 240	0.45

Floor Type: Second Floor **Beam Number = 117**

SPAN INFORMATION (ft): I-End (145.75,33.00) J-End (145.75,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	57.75	Y bar(in)	=	19.70
Mnf (kip-ft)	=	909.53	Mn (kip-ft)	=	743.41
C (kips)	=	147.28	PNA (in)	=	15.53
Ieff (in4)	=	2654.73	Itr (in4)	=	3412.83
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 48 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 40.01

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.167	23.08	19.62	0.00	0.0	27.50	0.00	0.0	0.00	Snow	4.13	6.88
14.333	24.73	20.76	0.00	0.0	29.07	0.00	0.0	0.00	Snow	4.41	7.27

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.055	0.055	0.000	---	NonR	0.000	0.000
	19.250	0.055	0.055	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 91.78 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	225.2	7.2	0.0	1.00	0.90	502.50
	Init DL	1.4DL	180.1	7.2	---	---		
	Max +	1.2DL+1.6LL	507.5	7.2	---	---	0.90	669.07
Controlling		1.2DL+1.6LL	507.5	7.2	---	---	0.90	669.07

REACTIONS (kips):

	Left	Right
Initial reaction	24.32	31.27
DL reaction	21.34	27.54
Max +LL reaction	28.40	36.70
Max +total reaction (factored)	71.05	91.78

DEFLECTIONS:									Ratio
Initial load (in)	at	9.72 ft	=	-0.217	L/D	=	1065	> 240	0.23
Live load (in)	at	9.72 ft	=	-0.174	L/D	=	1326	> 480	0.36
Post Comp load (in)	at	9.72 ft	=	-0.194	L/D	=	1191	> 240	0.20
Net Total load (in)	at	9.72 ft	=	-0.411	L/D	=	562	> 240	0.43

Floor Type: Second Floor **Beam Number = 118**

SPAN INFORMATION (ft): I-End (145.75,33.00) J-End (182.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	55.00	Y bar(in)	=	18.72
Mnf (kip-ft)	=	1084.10	Mn (kip-ft)	=	1060.37
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3928.45	Itr (in4)	=	4061.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 42 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 88.45

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
5.250	1.86	1.80	1.21	12.2	0.00	0.00	0.0	0.00	Snow	0.36	0.60
11.626	6.21	6.00	5.05	12.2	0.00	0.00	0.0	0.00	Snow	1.18	1.96
18.500	6.11	5.89	5.11	12.2	0.00	0.00	0.0	0.00	Snow	1.24	2.07
27.750	7.01	6.76	5.87	12.2	0.00	0.00	0.0	0.00	Snow	1.42	2.37

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	37.000	0.184	0.184	0.000			0.000	0.000
2	0.000	0.117	0.072	0.358	---	NonR	0.054	0.090
	37.000	0.117	0.072	0.358			0.054	0.090
3	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	5.250	0.051	0.051	0.000			0.000	0.000
4	0.000	0.023	0.020	0.050	12.2%	Red	0.015	0.025
	5.250	0.023	0.020	0.050			0.015	0.025
5	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 49.41 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	332.7	18.5	0.0	1.00	0.90	663.75

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Init DL	1.4DL	253.9	18.5	---	---		
	Max +	1.2DL+1.6LL	537.4	18.5	---	---	0.90	954.33
Controlling		1.2DL+1.6LL	537.4	18.5	---	---	0.90	954.33

REACTIONS (kips):

	Left	Right
Initial reaction	21.90	21.36
DL reaction	17.85	17.38
Max +LL reaction	17.49	17.41
Max +total reaction (factored)	49.41	48.71

DEFLECTIONS:

									Ratio
Initial load (in)	at	18.50 ft	=	-0.817	L/D	=	544	> 240	0.44
Live load (in)	at	18.50 ft	=	-0.401	L/D	=	1108	> 480	0.43
Post Comp load (in)	at	18.50 ft	=	-0.427	L/D	=	1041	> 240	0.23
Net Total load (in)	at	18.50 ft	=	-1.244	L/D	=	357	> 240	0.67

Floor Type: Second Floor **Beam Number = 119**

SPAN INFORMATION (ft): I-End (182.75,33.00) J-End (203.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	63.00	Y bar(in)	=	17.03
Mnf (kip-ft)	=	521.19	Mn (kip-ft)	=	434.60
C (kips)	=	172.30	PNA (in)	=	14.59
Ieff (in4)	=	1239.01	Itr (in4)	=	1623.02
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 48 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 42.90

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	7.96	7.68	6.66	0.0	0.00	0.00	0.0	0.00	Snow	1.61	2.69

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.199	0.199	0.000	---	NonR	0.000	0.000
	21.000	0.199	0.199	0.000			0.000	0.000
2	0.000	0.088	0.077	0.194	0.0%	Red	0.058	0.097
	21.000	0.088	0.077	0.194			0.058	0.097
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 19.68 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	100.1	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	80.5	10.5	---	---		
	Max +	1.2DL+1.6LL	163.1	10.5	---	---	0.90	391.14
Controlling		1.2DL+1.6LL	163.1	10.5	---	---	0.90	391.14

REACTIONS (kips):

	Left	Right
Initial reaction	9.47	9.47
DL reaction	7.35	7.35
Max +LL reaction	6.78	6.78
Max +total reaction (factored)	19.68	19.68

DEFLECTIONS:

								Ratio
Initial load (in)	at 10.50 ft	=	-0.265	L/D	=	950	> 240	0.25
Live load (in)	at 10.50 ft	=	-0.107	L/D	=	2345	> 480	0.20
Post Comp load (in)	at 10.50 ft	=	-0.111	L/D	=	2264	> 240	0.11
Net Total load (in)	at 10.50 ft	=	-0.376	L/D	=	669	> 240	0.36

Floor Type: Second Floor **Beam Number = 123**

SPAN INFORMATION (ft): I-End (114.00,12.50) J-End (145.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 31.75

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		parallel			parallel
Decking type		ASC 3W			ASC 3W
beff (in)	= 59.62	Y bar(in)	=		18.45
Mnf (kip-ft)	= 690.75	Mn (kip-ft)	=		661.01
C (kips)	= 294.56	PNA (in)	=		18.77
Ieff (in4)	= 2204.61	Itr (in4)	=		2389.75
Stud length (in)	= 4.50	Stud diam (in)	=		0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 52 Partial = 32 Actual = 32
Number of Stud Rows = 1 Percent of Full Composite Action = 60.38

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.833	8.07	7.78	9.48	7.7	0.00	0.00	0.0	0.00	Snow	1.64	2.73
21.292	7.93	7.65	9.31	7.7	0.00	0.00	0.0	0.00	Snow	1.61	2.68

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	31.750	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	31.750	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	7.7%	Red	0.015	0.025
	31.750	0.023	0.020	0.100			0.015	0.025
4	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	31.750	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 31.29 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	167.4	14.5	0.0	1.00	0.90	357.75
	Init DL	1.4DL	135.6	14.7	---	---		
	Max +	1.2DL+1.6LL	317.5	14.4	---	---	0.90	594.90
Controlling		1.2DL+1.6LL	315.5	10.8	---	---	0.90	563.63

REACTIONS (kips):

	Left	Right
Initial reaction	12.56	12.75
DL reaction	9.81	9.95
Max +LL reaction	11.91	12.09
Max +total reaction (factored)	30.83	31.29

DEFLECTIONS:

						Ratio
Initial load (in)	at 15.88 ft =	-0.730		L/D = 522	> 180	0.35
Live load (in)	at 15.88 ft =	-0.356	< -1.000	L/D = 1071	> 360	0.36
Post Comp load (in)	at 15.88 ft =	-0.365		L/D = 1043	> 240	0.23
Net Total load (in)	at 15.88 ft =	-1.096		L/D = 348	> 240	0.69

Floor Type: Second Floor **Beam Number = 125**

SPAN INFORMATION (ft): I-End (203.75,113.17) J-End (247.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 44.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	78.00	Y bar(in)	=	20.90
Mnf (kip-ft)	=	966.95	Mn (kip-ft)	=	924.74
C (kips)	=	378.72	PNA (in)	=	21.39
Ieff (in4)	=	3424.97	Itr (in4)	=	3727.60
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 57 Partial = 44 Actual = 44
Number of Stud Rows = 1 Percent of Full Composite Action = 76.16

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	5.94	25.8	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	8.22	7.93	6.00	25.8	0.00	0.00	0.0	0.00	Snow	1.67	2.78
27.917	8.15	7.86	5.94	25.8	0.00	0.00	0.0	0.00	Snow	1.65	2.76
37.000	7.08	6.84	5.17	25.8	0.00	0.00	0.0	0.00	Snow	1.44	2.40

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	44.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	44.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	25.8%	Red	0.013	0.021
	44.000	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	44.000	0.006	0.003	0.017			0.003	0.004
5	0.000	0.055	0.055	0.000	---	NonR	0.000	0.000
	44.000	0.055	0.055	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 44.67 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	323.2	22.0	0.0	1.00	0.90	502.50

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Init DL	1.4DL	322.7	18.5	---	---		
	Max +	1.2DL+1.6LL	558.0	18.5	---	---	0.90	832.27
Controlling		1.2DL+1.6LL	398.5	18.5	---	---	0.90	502.50

REACTIONS (kips):

	Left	Right
Initial reaction	23.29	24.59
DL reaction	18.20	19.19
Max +LL reaction	12.79	13.53
Max +total reaction (factored)	42.30	44.67

DEFLECTIONS: (Camber = 1-1/2)

									Ratio
Initial load (in)	at 22.00 ft	=	-2.040		L/D	=	259	> 180	0.70
Live load (in)	at 22.00 ft	=	-0.591	< -1.000	L/D	=	893	> 360	0.59
Post Comp load (in)	at 22.00 ft	=	-0.620		L/D	=	851	> 240	0.28
Net Total load (in)	at 22.00 ft	=	-1.160		L/D	=	455	> 240	0.53

Floor Type: Second Floor **Beam Number = 127**

SPAN INFORMATION (ft): I-End (247.75,113.17) J-End (284.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		parallel			parallel
Decking type		ASC 3W			ASC 3W
beff (in)	= 67.50	Y bar(in)		=	18.90
Mnf (kip-ft)	= 710.05	Mn (kip-ft)		=	681.31
C (kips)	= 336.64	PNA (in)		=	19.97
Ieff (in4)	= 2286.55	Itr (in4)		=	2475.07
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 42 Partial = 37 Actual = 33
Number of Stud Rows = 1 Percent of Full Composite Action = 78.23

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	5.94	19.2	0.00	0.00	0.0	0.00	Snow	1.65	2.76
18.500	8.15	7.86	5.94	19.2	0.00	0.00	0.0	0.00	Snow	1.65	2.76
27.750	8.15	7.86	5.94	19.2	0.00	0.00	0.0	0.00	Snow	1.65	2.76

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	37.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	37.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	19.2%	Red	0.013	0.021
	37.000	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	37.000	0.006	0.003	0.017			0.003	0.004
5	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	37.000	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 34.80 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	286.9	18.5	0.0	1.00	0.90	357.75
	Init DL	1.4DL	234.7	18.5	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	414.8	18.5	---	---	0.90	613.18
Controlling		1.2DL+1.6LL	286.9	18.5	0.0	1.00	0.90	357.75

REACTIONS (kips):

	Left	Right
Initial reaction	18.54	18.54
DL reaction	14.45	14.45
Max +LL reaction	10.91	10.91
Max +total reaction (factored)	34.80	34.80

DEFLECTIONS: (Camber = 1-1/4)

										Ratio
Initial load (in)	at	18.50 ft	=	-1.593		L/D	=	279	> 180	0.65
Live load (in)	at	18.50 ft	=	-0.464	< -1.000	L/D	=	958	> 360	0.46
Post Comp load (in)	at	18.50 ft	=	-0.485		L/D	=	915	> 240	0.26
Net Total load (in)	at	18.50 ft	=	-0.828		L/D	=	536	> 240	0.45

Floor Type: Second Floor **Beam Number = 133**

SPAN INFORMATION (ft): I-End (247.75,12.50) J-End (284.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	67.50	Y bar(in)	=	18.90
Mnf (kip-ft)	=	710.05	Mn (kip-ft)	=	681.31
C (kips)	=	336.64	PNA (in)	=	19.97
Ieff (in4)	=	2286.55	Itr (in4)	=	2475.07
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 42 Partial = 37 Actual = 33
Number of Stud Rows = 1 Percent of Full Composite Action = 78.23

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	7.01	6.76	8.24	15.8	0.00	0.00	0.0	0.00	Snow	1.42	2.37
18.500	7.01	6.76	8.24	15.8	0.00	0.00	0.0	0.00	Snow	1.42	2.37
27.750	7.01	6.76	8.24	15.8	0.00	0.00	0.0	0.00	Snow	1.42	2.37

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	37.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	37.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	15.8%	Red	0.015	0.025
	37.000	0.023	0.020	0.100			0.015	0.025
4	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	37.000	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 38.24 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	251.0	18.5	0.0	1.00	0.90	357.75
	Init DL	1.4DL	203.0	18.5	---	---		
	Max +	1.2DL+1.6LL	454.4	18.5	---	---	0.90	613.18
Controlling		1.2DL+1.6LL	454.4	18.5	---	---	0.90	613.18

REACTIONS (kips):

	Left	Right
Initial reaction	16.31	16.31
DL reaction	12.71	12.71
Max +LL reaction	14.37	14.37
Max +total reaction (factored)	38.24	38.24

DEFLECTIONS: (Camber = 1)

									Ratio
Initial load (in)	at 18.50 ft	=	-1.398		L/D	=	318	> 180	0.57
Live load (in)	at 18.50 ft	=	-0.609	< -1.000	L/D	=	729	> 360	0.61
Post Comp load (in)	at 18.50 ft	=	-0.626		L/D	=	709	> 240	0.34
Net Total load (in)	at 18.50 ft	=	-1.025		L/D	=	433	> 240	0.55

Floor Type: Second Floor **Beam Number = 135**

SPAN INFORMATION (ft): I-End (203.75,12.50) J-End (247.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 44.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	78.00	Y bar(in)	=	20.90
Mnf (kip-ft)	=	966.95	Mn (kip-ft)	=	924.74
C (kips)	=	378.72	PNA (in)	=	21.39
Ieff (in4)	=	3424.97	Itr (in4)	=	3727.60
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 57 Partial = 44 Actual = 44
Number of Stud Rows = 1 Percent of Full Composite Action = 76.16

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	7.01	6.76	8.24	22.7	0.00	0.00	0.0	0.00	Snow	1.42	2.37
18.500	7.07	6.82	8.31	22.7	0.00	0.00	0.0	0.00	Snow	1.43	2.39
27.917	7.01	6.76	8.24	22.7	0.00	0.00	0.0	0.00	Snow	1.42	2.37
37.000	6.09	5.88	7.16	22.7	0.00	0.00	0.0	0.00	Snow	1.24	2.06

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	44.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	44.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	22.7%	Red	0.015	0.025
	44.000	0.023	0.020	0.100			0.015	0.025
4	0.000	0.055	0.055	0.000	---	NonR	0.000	0.000
	44.000	0.055	0.055	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 48.41 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	349.0	18.5	0.0	1.00	0.90	502.50
	Init DL	1.4DL	283.3	18.5	---	---		
	Max +	1.2DL+1.6LL	603.8	18.5	---	---	0.90	832.27

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
Controlling		1.2DL+1.6LL	603.7	18.5	---	---	0.90	832.27

REACTIONS (kips):

	Left	Right
Initial reaction	20.50	21.61
DL reaction	16.02	16.87
Max +LL reaction	16.66	17.60
Max +total reaction (factored)	45.87	48.41

DEFLECTIONS: (Camber = 1-1/4)

										Ratio
Initial load (in)	at	22.00 ft	=	-1.793		L/D	=	295	> 180	0.61
Live load (in)	at	22.00 ft	=	-0.768	< -1.000	L/D	=	688	> 360	0.77
Post Comp load (in)	at	22.00 ft	=	-0.792		L/D	=	667	> 240	0.36
Net Total load (in)	at	22.00 ft	=	-1.335		L/D	=	396	> 240	0.61

Floor Type: Second Floor **Beam Number = 136**

SPAN INFORMATION (ft): I-End (182.75,12.50) J-End (203.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	450.98
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1338.57	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 28 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 75.87

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	7.96	7.68	9.35	0.0	0.00	0.00	0.0	0.00	Snow	1.61	2.69

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	21.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	21.000	0.023	0.020	0.100			0.015	0.025
4	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 16.86 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	80.2	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	64.7	10.5	---	---		
	Max +	1.2DL+1.6LL	159.6	10.5	---	---	0.90	405.88
Controlling		1.2DL+1.6LL	159.6	10.5	---	---	0.90	405.88

REACTIONS (kips):

	Left	Right
Initial reaction	6.57	6.57
DL reaction	5.13	5.13
Max +LL reaction	6.69	6.69
Max +total reaction (factored)	16.86	16.86

DEFLECTIONS:

						Ratio
Initial load (in)	at 10.50 ft =	-0.205		L/D = 1231 >	180	0.15
Live load (in)	at 10.50 ft =	-0.107	< -1.000	L/D = 2352 >	360	0.15
Post Comp load (in)	at 10.50 ft =	-0.110		L/D = 2295 >	240	0.10
Net Total load (in)	at 10.50 ft =	-0.314		L/D = 801 >	240	0.30

Floor Type: Second Floor **Beam Number = 138**

SPAN INFORMATION (ft): I-End (145.75,12.50) J-End (182.75,12.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	67.50	Y bar(in)	=	18.90
Mnf (kip-ft)	=	710.05	Mn (kip-ft)	=	681.31
C (kips)	=	336.64	PNA (in)	=	19.97
Ieff (in4)	=	2286.55	Itr (in4)	=	2475.07
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 42 Partial = 37 Actual = 33
Number of Stud Rows = 1 Percent of Full Composite Action = 78.23

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
11.626	7.31	7.07	8.17	14.5	0.00	0.00	0.0	0.00	Snow	1.40	2.33
18.500	6.11	5.89	7.18	14.5	0.00	0.00	0.0	0.00	Snow	1.24	2.07
27.750	7.01	6.76	8.24	14.5	0.00	0.00	0.0	0.00	Snow	1.42	2.37

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	37.000	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	37.000	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	14.5%	Red	0.015	0.025
	37.000	0.023	0.020	0.100			0.015	0.025
4	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	37.000	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 38.61 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	252.7	18.5	0.0	1.00	0.90	357.75
	Init DL	1.4DL	205.4	18.5	---	---		
	Max +	1.2DL+1.6LL	459.3	18.5	---	---	0.90	613.18
Controlling		1.2DL+1.6LL	434.2	18.5	---	---	0.90	613.18

REACTIONS (kips):

	Left	Right
Initial reaction	15.31	16.39
DL reaction	12.01	12.80
Max +LL reaction	13.41	14.53
Max +total reaction (factored)	35.87	38.61

DEFLECTIONS: (Camber = 1)

										Ratio
Initial load (in)	at	18.50 ft	=	-1.418		L/D	=	313	> 180	0.57
Live load (in)	at	18.50 ft	=	-0.615	< -1.000	L/D	=	722	> 360	0.62
Post Comp load (in)	at	18.50 ft	=	-0.633		L/D	=	701	> 240	0.34
Net Total load (in)	at	18.50 ft	=	-1.051		L/D	=	422	> 240	0.57

Floor Type: Second Floor **Beam Number = 144**

SPAN INFORMATION (ft): I-End (106.00,33.00) J-End (106.00,52.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	57.75	Y bar(in)	=	16.76
Mnf (kip-ft)	=	508.75	Mn (kip-ft)	=	417.35
C (kips)	=	147.28	PNA (in)	=	13.76
Ieff (in4)	=	1190.47	Itr (in4)	=	1585.84
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 48 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 40.01

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.167	14.33	12.46	3.13	0.0	14.24	0.00	0.0	0.00	Snow	2.61	4.34
14.333	16.12	13.95	4.28	0.0	14.90	0.00	0.0	0.00	Snow	3.02	4.80

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 59.57 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	145.0	7.2	0.0	1.00	0.90	249.38
	Init DL	1.4DL	116.3	7.2	---	---		
	Max +	1.2DL+1.6LL	323.5	7.2	---	---	0.90	375.61
Controlling		1.2DL+1.6LL	323.5	7.2	---	---	0.90	375.61

REACTIONS (kips):

	Left	Right
Initial reaction	15.67	20.55
DL reaction	13.45	17.68
Max +LL reaction	18.22	23.97
Max +total reaction (factored)	45.29	59.57

DEFLECTIONS:									Ratio
Initial load (in)	at	9.72 ft	=	-0.374	L/D	=	618	> 240	0.39
Live load (in)	at	9.72 ft	=	-0.251	L/D	=	921	> 480	0.52
Post Comp load (in)	at	9.72 ft	=	-0.275	L/D	=	840	> 240	0.29
Net Total load (in)	at	9.72 ft	=	-0.649	L/D	=	356	> 240	0.67

Floor Type: Second Floor **Beam Number = 163**

SPAN INFORMATION (ft): I-End (338.75,100.37) J-End (349.00,100.37)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	16.38	Y bar(in)	=	12.81
Mnf (kip-ft)	=	376.32	Mn (kip-ft)	=	361.23
C (kips)	=	84.16	PNA (in)	=	11.66
Ieff (in4)	=	991.28	Itr (in4)	=	1046.01
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 13 Partial = 11 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 77.40

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
4.000	4.41	2.21	2.83	0.0	0.00	0.00	0.0	0.00	Snow	0.42	0.71

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.004	0.004	0.000	---	NonR	0.000	0.000
	10.250	0.004	0.004	0.000			0.000	0.000
2	0.000	0.003	0.002	0.008	---	NonR	0.001	0.002
	10.250	0.003	0.002	0.008			0.001	0.002
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	10.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.73 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.9	4.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	8.3	4.0	---	---		
	Max +	1.2DL+1.6LL	26.4	4.0	---	---	0.90	325.11
Controlling		1.2DL+1.6LL	26.4	4.0	---	---	0.90	325.11

REACTIONS (kips):

	Left	Right
Initial reaction	2.00	1.36
DL reaction	2.90	1.93
Max +LL reaction	2.03	1.32
Max +total reaction (factored)	6.73	4.43

DEFLECTIONS:

									Ratio
Initial load (in)	at	4.82 ft	=	-0.006	L/D	=	20095	> 240	0.01
Live load (in)	at	4.82 ft	=	-0.004	L/D	=	29311	> 480	0.02
Post Comp load (in)	at	4.82 ft	=	-0.007	L/D	=	17618	> 240	0.01
Net Total load (in)	at	4.82 ft	=	-0.013	L/D	=	9388	> 240	0.03

Floor Type: Second Floor **Beam Number = 164**

SPAN INFORMATION (ft): I-End (342.75,89.33) J-End (342.75,100.37)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 11.04

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	33.12	Y bar(in)	=	14.96
Mnf (kip-ft)	=	446.06	Mn (kip-ft)	=	366.54
C (kips)	=	86.15	PNA (in)	=	11.72
Ieff (in4)	=	1039.84	Itr (in4)	=	1339.42
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 22 Partial = 11 Actual = 11
Number of Stud Rows = 1 Percent of Full Composite Action = 40.80

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.263	0.263	0.000	---	NonR	0.000	0.000
	11.038	0.263	0.263	0.000			0.000	0.000
2	0.000	0.500	0.103	0.513	0.0%	Red	0.077	0.128
	11.038	0.500	0.103	0.513			0.077	0.128
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	11.038	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.49 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	10.4	5.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	8.5	5.5	---	---		
	Max +	1.2DL+1.6LL	29.0	5.5	---	---	0.90	329.89
Controlling		1.2DL+1.6LL	29.0	5.5	---	---	0.90	329.89

REACTIONS (kips):

	Left	Right
Initial reaction	2.92	2.92
DL reaction	4.41	4.41
Max +LL reaction	3.25	3.25
Max +total reaction (factored)	10.49	10.49

DEFLECTIONS:									Ratio
Initial load (in)	at	5.52 ft	=	-0.009	L/D	=	1463 8	> 180	0.01
Live load (in)	at	5.52 ft	=	-0.007	L/D	=	2028 8	> 360	0.02
Post Comp load (in)	at	5.52 ft	=	-0.011	L/D	=	1211 4	> 240	0.02
Net Total load (in)	at	5.52 ft	=	-0.020	L/D	=	6628	> 240	0.04

Floor Type: Second Floor **Beam Number = 213**

SPAN INFORMATION (ft): I-End (106.00,71.58) J-End (106.00,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	430.73
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1242.77	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 37 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 49.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.655	18.77	12.58	5.66	0.0	11.97	0.00	0.0	0.00	Snow	2.73	4.41
8.875	1.92	1.86	2.54	0.0	0.00	0.00	0.0	0.00	Snow	0.38	0.63
9.702	16.76	11.41	5.14	0.0	10.86	0.00	0.0	0.00	Snow	2.40	4.00
16.250	1.06	1.02	1.39	0.0	0.00	0.00	0.0	0.00	Snow	0.21	0.35

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 76.62 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	121.1	9.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	97.0	9.7	---	---		
	Max +	1.2DL+1.6LL	292.1	9.7	---	---	0.90	387.66
Controlling		1.2DL+1.6LL	292.1	9.7	---	---	0.90	387.66

REACTIONS (kips):

	Left	Right
Initial reaction	24.06	12.81
DL reaction	25.98	13.15

	Left	Right
Max +LL reaction	28.40	14.87
Max +total reaction (factored)	76.62	39.58

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.88 ft	=	-0.235	L/D	=	907	> 240	0.26
Live load (in)	at	8.88 ft	=	-0.151	L/D	=	1406	> 480	0.34
Post Comp load (in)	at	8.88 ft	=	-0.191	L/D	=	1116	> 240	0.22
Net Total load (in)	at	8.88 ft	=	-0.426	L/D	=	500	> 240	0.48

Floor Type: Second Floor **Beam Number = 214**

SPAN INFORMATION (ft): I-End (106.00,52.25) J-End (106.00,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	58.00	Y bar(in)	=	16.78
Mnf (kip-ft)	=	509.34	Mn (kip-ft)	=	431.44
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1237.14	Itr (in4)	=	1587.70
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 43 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 45.52

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
3.238	15.74	13.01	2.67	0.0	15.47	0.00	0.0	0.00	Snow	2.55	4.53
11.286	19.82	14.42	6.31	0.0	13.85	0.00	0.0	0.00	Snow	2.96	5.04

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.333	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 68.98 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	151.9	11.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	121.6	11.3	---	---		
	Max +	1.2DL+1.6LL	357.4	11.3	---	---	0.90	388.30
Controlling		1.2DL+1.6LL	357.4	11.3	---	---	0.90	388.30

REACTIONS (kips):

	Left	Right
Initial reaction	23.04	14.64
DL reaction	21.69	14.54
Max +LL reaction	26.85	16.96
Max +total reaction (factored)	68.98	44.58

DEFLECTIONS:								Ratio
Initial load (in)	at	9.67 ft	=	-0.362	L/D	= 641	> 240	0.37
Live load (in)	at	9.67 ft	=	-0.233	L/D	= 994	> 480	0.48
Post Comp load (in)	at	9.67 ft	=	-0.281	L/D	= 827	> 240	0.29
Net Total load (in)	at	9.67 ft	=	-0.642	L/D	= 361	> 240	0.66

Floor Type: Second Floor **Beam Number = 220**

SPAN INFORMATION (ft): I-End (182.75,71.75) J-End (182.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.488	14.72	1.50	0.0	14.68	0.00	0.0	0.00	Snow	2.46
7.536	1.68	0.81	0.0	0.00	0.00	0.0	0.00	Snow	0.24
9.536	11.55	6.83	0.0	6.90	0.00	0.0	0.00	Snow	2.23

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.013	0.000	---	NonR	0.000
	17.333	0.013	0.000			0.000
2	0.000	0.006	0.012	0.0%	Red	0.004
	4.250	0.006	0.012			0.004
3	4.251	0.000	0.000	0.0%	Red	0.000
	17.333	0.006	0.025			0.004
4	4.251	0.006	0.012	0.0%	Red	0.004
	17.333	0.000	0.000			0.000
5	17.344	0.013	0.000	---	NonR	0.000
	17.583	0.013	0.000			0.000
6	17.344	0.006	0.012	0.0%	Red	0.004
	17.583	0.006	0.012			0.004
7	0.000	0.035	0.000	---	NonR	0.000
	17.583	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 64.44 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	220.7	9.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	220.7	9.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	20.19	8.70
Max +LL reaction	25.13	10.88
Max +total reaction (factored)	64.44	27.85

DEFLECTIONS:

					Ratio
Dead load (in)	at 8.70 ft =	-0.230	L/D = 919 > 300		0.33
Live load (in)	at 8.70 ft =	-0.288	L/D = 734 > 480		0.65
Net Total load (in)	at 8.70 ft =	-0.517	L/D = 408 > 240		0.59

Floor Type: Second Floor **Beam Number = 221**

SPAN INFORMATION (ft): I-End (203.75,71.75) J-End (203.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	29.37	Y bar(in)	=	14.57
Mnf (kip-ft)	=	433.22	Mn (kip-ft)	=	411.42
C (kips)	=	147.28	PNA (in)	=	13.76
Ieff (in4)	=	1198.57	Itr (in4)	=	1286.43
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 20 Partial = 18 Actual = 16
Number of Stud Rows = 1 Percent of Full Composite Action = 78.65

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.488	14.82	11.71	0.00	0.0	16.42	0.00	0.0	0.00	Snow	2.47	4.10
7.536	2.67	2.60	1.49	0.0	0.00	0.00	0.0	0.00	Snow	0.45	0.75
9.536	13.13	10.62	2.31	0.0	11.20	0.00	0.0	0.00	Snow	2.23	3.72
12.583	2.14	2.07	1.40	0.0	0.00	0.00	0.0	0.00	Snow	0.42	0.70

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.013	0.013	0.000	---	NonR	0.000	0.000
	7.535	0.013	0.013	0.000			0.000	0.000
2	0.000	0.006	0.005	0.012	0.0%	Red	0.004	0.006
	7.535	0.006	0.005	0.012			0.004	0.006
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.583	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 68.50 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	122.3	9.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	98.7	9.5	---	---		
	Max +	1.2DL+1.6LL	250.2	9.5	---	---	0.90	370.28
Controlling		1.2DL+1.6LL	250.2	9.5	---	---	0.90	370.28

REACTIONS (kips):

	Left	Right
Initial reaction	24.19	12.88
DL reaction	22.13	11.39
Max +LL reaction	26.21	12.29
Max +total reaction (factored)	68.50	33.34

DEFLECTIONS:

										Ratio
Initial load (in)	at	8.79 ft	=	-0.238		L/D	=	885	> 240	0.27
Live load (in)	at	8.79 ft	=	-0.133		L/D	=	1584	> 480	0.30
Post Comp load (in)	at	8.79 ft	=	-0.152		L/D	=	1385	> 240	0.17
Net Total load (in)	at	8.79 ft	=	-0.391		L/D	=	540	> 240	0.44

Floor Type: Second Floor **Beam Number = 222**

SPAN INFORMATION (ft): I-End (203.75,33.00) J-End (203.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
7.167	11.13	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.014	0.000	---	NonR	0.000
	7.750	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 34.97 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	20.4	7.2	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	20.4	7.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.89	10.35
Max +LL reaction	1.15	14.10
Max +total reaction (factored)	2.91	34.97

DEFLECTIONS:

									Ratio
Dead load (in)	at	4.46 ft	=	-0.017	L/D	=	5435	> 300	0.06
Live load (in)	at	4.46 ft	=	-0.023	L/D	=	4070	> 360	0.09
Net Total load (in)	at	4.46 ft	=	-0.040	L/D	=	2327	> 240	0.10

Floor Type: Second Floor **Beam Number = 223**

SPAN INFORMATION (ft): I-End (182.75,33.00) J-End (182.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	23.25	Y bar(in)	=	13.83
Mnf (kip-ft)	=	408.78	Mn (kip-ft)	=	324.11
C (kips)	=	42.08	PNA (in)	=	10.25
Ieff (in4)	=	870.09	Itr (in4)	=	1185.80
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Max = 40 Partial = 24 Actual = 24
Number of Stud Rows = 2 Percent of Full Composite Action = 25.42

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.167	11.13	9.46	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99	3.31

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	7.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 35.07 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.1	7.2	0.0	1.00	0.90	249.38
	Init DL	1.4DL	7.2	7.2	---	---		
	Max +	1.2DL+1.6LL	20.4	7.2	---	---	0.90	291.70
Controlling		1.2DL+1.6LL	20.4	7.2	---	---	0.90	291.70

REACTIONS (kips):

	Left	Right
Initial reaction	1.10	11.95
DL reaction	0.97	10.43
Max +LL reaction	1.15	14.10
Max +total reaction (factored)	3.00	35.07

DEFLECTIONS:									Ratio
Initial load (in)	at	4.42 ft	=	-0.003	L/D	=	3509 8	> 180	0.01
Live load (in)	at	4.46 ft	=	-0.002	L/D	=	3997 0	> 360	0.01
Post Comp load (in)	at	4.46 ft	=	-0.003	L/D	=	3602 3	> 240	0.01
Net Total load (in)	at	4.46 ft	=	-0.005	L/D	=	1777 8	> 240	0.01

Floor Type: Second Floor **Beam Number = 224**

SPAN INFORMATION (ft): I-End (284.75,71.75) J-End (284.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
1.488	14.59	1.61	0.0	13.16	0.00	0.0	0.00	Snow	2.45
7.536	2.50	0.35	0.0	3.01	0.00	0.0	0.00	Snow	0.43
9.536	11.16	7.01	0.0	0.85	0.00	0.0	0.00	Snow	2.23
12.536	3.90	0.43	0.0	6.05	0.00	0.0	0.00	Snow	0.79

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.013	0.000	---	NonR	0.000
	7.535	0.013	0.000			0.000
2	0.000	0.006	0.013	0.0%	Red	0.004
	7.535	0.006	0.013			0.004
3	0.000	0.035	0.000	---	NonR	0.000
	17.583	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 65.28 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	237.8	9.5	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	237.8	9.5	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	21.43	11.48
Max +LL reaction	24.72	13.76
Max +total reaction (factored)	65.28	35.80

DEFLECTIONS:

					Ratio
Dead load (in)	at 8.79 ft =	-0.273	L/D = 774 > 300		0.39
Live load (in)	at 8.79 ft =	-0.313	L/D = 675 > 480		0.71
Net Total load (in)	at 8.79 ft =	-0.585	L/D = 360 > 240		0.67

Floor Type: Second Floor **Beam Number = 225**

SPAN INFORMATION (ft): I-End (305.75,71.75) J-End (305.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	29.37	Y bar(in)	=	14.57
Mnf (kip-ft)	=	433.22	Mn (kip-ft)	=	411.42
C (kips)	=	147.28	PNA (in)	=	13.76
Ieff (in4)	=	1198.57	Itr (in4)	=	1286.43
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 20 Partial = 18 Actual = 16
Number of Stud Rows = 1 Percent of Full Composite Action = 78.65

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.488	13.95	11.71	0.00	0.0	16.42	0.00	0.0	0.00	Snow	2.46	4.10
7.536	2.50	2.43	1.42	0.0	1.67	0.00	0.0	0.00	Snow	0.43	0.72
9.536	13.42	10.62	0.00	0.0	14.89	0.00	0.0	0.00	Snow	2.23	3.72
12.536	3.90	3.76	2.58	0.0	3.36	0.00	0.0	0.00	Snow	0.79	1.32

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.003	0.013	0.013	0.000	---	NonR	0.000	0.000
	7.535	0.013	0.013	0.000			0.000	0.000
2	0.003	0.006	0.005	0.012	0.0%	Red	0.004	0.006
	7.535	0.006	0.005	0.012			0.004	0.006
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.583	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 72.92 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	129.8	9.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	104.4	9.5	---	---		
	Max +	1.2DL+1.6LL	296.2	9.5	---	---	0.90	370.28
Controlling		1.2DL+1.6LL	296.2	9.5	---	---	0.90	370.28

REACTIONS (kips):

	Left	Right
Initial reaction	24.75	14.44
DL reaction	21.88	12.65
Max +LL reaction	29.16	17.22
Max +total reaction (factored)	72.92	42.74

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.88 ft	=	-0.253	L/D	=	832	> 240	0.29
Live load (in)	at	8.88 ft	=	-0.171	L/D	=	1235	> 480	0.39
Post Comp load (in)	at	8.88 ft	=	-0.191	L/D	=	1107	> 240	0.22
Net Total load (in)	at	8.88 ft	=	-0.444	L/D	=	475	> 240	0.51

Floor Type: Second Floor **Beam Number = 226**

SPAN INFORMATION (ft): I-End (305.75,33.00) J-End (305.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
7.167	11.13	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.014	0.000	---	NonR	0.000
	7.750	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 34.97 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	20.4	7.2	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	20.4	7.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.89	10.35
Max +LL reaction	1.15	14.10
Max +total reaction (factored)	2.91	34.97

DEFLECTIONS:

									Ratio
Dead load (in)	at	4.46 ft	=	-0.017	L/D	=	5435	> 300	0.06
Live load (in)	at	4.46 ft	=	-0.023	L/D	=	4070	> 360	0.09
Net Total load (in)	at	4.46 ft	=	-0.040	L/D	=	2327	> 240	0.10

Floor Type: Second Floor **Beam Number = 227**

SPAN INFORMATION (ft): I-End (284.75,33.00) J-End (284.75,40.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 7.75
Mp (kip-ft) = 72.50

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
7.167	11.13	0.00	0.0	13.26	0.00	0.0	0.00	Snow	1.99

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.014	0.000	---	NonR	0.000
	7.750	0.014	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 34.97 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	20.4	7.2	0.0	1.00	0.90	65.25
Controlling		1.2DL+1.6LL	20.4	7.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	**Right**
DL reaction	0.89	10.35
Max +LL reaction	1.15	14.10
Max +total reaction (factored)	2.91	34.97

DEFLECTIONS:

									Ratio
Dead load (in)	at	4.46 ft	=	-0.017	L/D	=	5435	> 300	0.06
Live load (in)	at	4.46 ft	=	-0.023	L/D	=	4070	> 360	0.09
Net Total load (in)	at	4.46 ft	=	-0.040	L/D	=	2327	> 240	0.10

Floor Type: Second Floor **Beam Number = 228**

SPAN INFORMATION (ft): I-End (284.75,79.29) J-End (305.75,79.29)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.128	0.000	---	NonR	0.000
	21.000	0.128	0.000			0.000
2	0.000	0.057	0.312	---	NonR	0.038
	0.072	0.057	0.312			0.038
3	0.073	0.058	0.320	---	NonR	0.038
	0.145	0.055	0.305			0.001
4	0.145	0.057	0.312	---	NonR	0.038
	15.000	0.057	0.312			0.038
5	15.000	0.057	0.250	0.0%	Red	0.038
	21.000	0.057	0.250			0.038
6	0.000	0.013	0.000	---	NonR	0.000
	0.145	0.013	0.000			0.000
7	0.000	0.006	0.013	0.0%	Red	0.004
	0.145	0.006	0.013			0.004
8	0.149	0.013	0.000	---	NonR	0.000
	21.000	0.013	0.000			0.000
9	0.149	0.006	0.013	0.0%	Red	0.004
	21.000	0.006	0.013			0.004
10	0.000	0.035	0.000	---	NonR	0.000
	21.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.07 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	47.2	10.4	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	47.2	10.4	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	2.50	2.50
Max +LL reaction	3.79	3.52
Max +total reaction (factored)	9.07	8.64

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.50 ft = -0.071	L/D = 3573 > 300		0.08
Live load (in)	at 10.50 ft = -0.105	L/D = 2402 > 360		0.15
Net Total load (in)	at 10.50 ft = -0.175	L/D = 1436 > 240		0.17

Floor Type: Second Floor **Beam Number = 273**

SPAN INFORMATION (ft): I-End (182.75,59.25) J-End (203.75,59.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	420.50
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1221.32	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 50.97

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.667	5.30	2.80	1.74	0.0	0.00	0.00	0.0	0.00	Snow	0.54	0.87
15.667	0.48	0.00									

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	8.666	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	8.666	0.023	0.020	0.050			0.015	0.025
3	8.667	0.510	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.510	0.000	0.000			0.000	0.000
4	8.667	0.321	0.321	0.000	---	NonR	0.000	0.000
	21.000	0.321	0.321	0.000			0.000	0.000
5	8.667	0.043	0.038	0.095	0.0%	Red	0.028	0.047
	21.000	0.043	0.038	0.095			0.016	0.047
6	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	8.666	0.237	0.237	0.000			0.000	0.000
7	0.000	0.151	0.093	0.463	---	NonR	0.069	0.116
	0.018	0.151	0.093	0.463			0.069	0.116
8	0.019	0.152	0.093	0.467	---	NonR	0.070	0.117
	0.197	0.000	0.000	0.000			0.000	0.000
9	0.019	0.000	0.000	0.000	0.0%	Red	0.000	0.000

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
	0.197	0.104	0.092	0.458			0.001	0.115
10	0.197	0.105	0.093	0.463	0.0%	Red	0.069	0.116
	8.666	0.105	0.093	0.463			0.069	0.116
11	8.667	0.098	0.087	0.435	0.0%	Red	0.065	0.109
	21.000	0.098	0.087	0.435			0.065	0.109
12	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.36 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.6	8.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.5	8.7	---	---		
	Max +	1.2DL+1.6LL	154.7	9.3	---	---	0.90	378.45
Controlling		1.2DL+1.6LL	154.3	8.7	---	---	0.90	367.92

REACTIONS (kips):

	Left	Right
Initial reaction	8.43	8.09
DL reaction	9.99	12.13
Max +LL reaction	7.68	7.38
Max +total reaction (factored)	24.28	26.36

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.40 ft = -0.198	L/D = 1274 > 240		0.19
Live load (in)	at 10.40 ft = -0.096	L/D = 2624 > 480		0.18
Post Comp load (in)	at 10.40 ft = -0.164	L/D = 1538 > 240		0.16
Net Total load (in)	at 10.40 ft = -0.362	L/D = 697 > 240		0.34

Floor Type: Second Floor **Beam Number = 279**

SPAN INFORMATION (ft): I-End (191.42,59.25) J-End (191.42,71.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 12.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.250	4.65	1.21	0.0	0.00	0.00	0.0	0.00	Snow	0.39
7.875	2.20	1.43	0.0	0.00	0.00	0.0	0.00	Snow	0.43
1.250	0.34								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.051	0.000	---	NonR	0.000
	12.500	0.051	0.000			0.000
2	0.000	0.023	0.050	0.0%	Red	0.015
	12.500	0.023	0.050			0.015
3	0.000	0.035	0.000	---	NonR	0.000
	12.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.93 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	31.0	5.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	31.0	5.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	5.24	3.31
Max +LL reaction	2.28	1.99
Max +total reaction (factored)	9.93	7.15

DEFLECTIONS:

					Ratio
Dead load (in)	at	6.00 ft =	-0.030	L/D = 5044 > 300	0.06
Live load (in)	at	6.12 ft =	-0.016	L/D = 9486 > 480	0.05
Net Total load (in)	at	6.12 ft =	-0.046	L/D = 3294 > 240	0.07

Floor Type: Second Floor **Beam Number = 282**

SPAN INFORMATION (ft): I-End (284.75,59.25) J-End (305.75,59.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	420.50
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1221.32	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 50.86

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
12.333	5.30	2.80	1.74	0.0	0.00	0.00	0.0	0.00	Snow	0.56	0.87
5.333	0.48	0.00									

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.510	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.510	0.000	0.000			0.000	0.000
2	0.000	0.321	0.321	0.000	---	NonR	0.000	0.000
	12.333	0.321	0.321	0.000			0.000	0.000
3	0.000	0.043	0.038	0.095	0.0%	Red	0.028	0.047
	12.333	0.043	0.038	0.095			0.017	0.047
4	12.334	0.051	0.051	0.000	---	NonR	0.000	0.000
	21.000	0.051	0.051	0.000			0.000	0.000
5	12.334	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	21.000	0.023	0.020	0.050			0.015	0.025
6	0.000	0.098	0.087	0.435	0.0%	Red	0.065	0.109
	12.333	0.098	0.087	0.435			0.065	0.109
7	12.334	0.237	0.237	0.000	---	NonR	0.000	0.000
	21.000	0.237	0.237	0.000			0.000	0.000
8	12.334	0.105	0.093	0.463	0.0%	Red	0.069	0.116
	21.000	0.105	0.093	0.463			0.069	0.116
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.40 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.6	12.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.5	12.3	---	---		
	Max +	1.2DL+1.6LL	154.6	11.7	---	---	0.90	378.45
Controlling		1.2DL+1.6LL	154.2	12.3	---	---	0.90	367.92

REACTIONS (kips):

	Left	Right
Initial reaction	8.09	8.43
DL reaction	12.13	9.99
Max +LL reaction	7.41	7.68
Max +total reaction (factored)	26.40	24.28

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.61 ft = -0.198	L/D = 1274 > 240		0.19
Live load (in)	at 10.61 ft = -0.096	L/D = 2625 > 480		0.18
Post Comp load (in)	at 10.61 ft = -0.164	L/D = 1538 > 240		0.16
Net Total load (in)	at 10.61 ft = -0.362	L/D = 697 > 240		0.34

Floor Type: Second Floor **Beam Number = 321**

SPAN INFORMATION (ft): I-End (182.75,79.29) J-End (203.75,79.29)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
9.875	1.34	0.76	0.0	0.00	0.00	0.0	0.00	Snow	0.23

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	9.875	0.130	0.000	---	NonR	0.000
	21.000	0.130	0.000			0.000
2	9.875	0.057	0.126	0.0%	Red	0.038
	21.000	0.057	0.126			0.038
3	9.875	0.013	0.000	---	NonR	0.000
	21.000	0.013	0.000			0.000
4	9.875	0.006	0.013	0.0%	Red	0.004
	21.000	0.006	0.013			0.004
5	0.000	0.035	0.000	---	NonR	0.000
	21.000	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.31 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	34.5	10.1	9.9	1.64	0.90	249.38
Controlling		1.2DL+1.6LL	34.5	10.1	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	Right
DL reaction	1.68	2.67
Max +LL reaction	1.05	1.94
Max +total reaction (factored)	3.70	6.31

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.71 ft = -0.074	L/D = 3424 > 300		0.09
Live load (in)	at 10.82 ft = -0.051	L/D = 4906 > 480		0.10
Net Total load (in)	at 10.82 ft = -0.125	L/D = 2017 > 240		0.12

Floor Type: Second Floor **Beam Number = 322**

SPAN INFORMATION (ft): I-End (192.63,79.29) J-End (192.63,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 10.05
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.048	2.14	1.40	0.0	0.00	0.00	0.0	0.00	Snow	0.42

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.013	0.000	---	NonR	0.000
	10.047	0.013	0.000			0.000
2	0.000	0.006	0.012	0.0%	Red	0.004
	10.047	0.006	0.012			0.004
3	0.000	0.035	0.000	---	NonR	0.000
	10.047	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.21 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	14.9	5.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	14.9	5.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	1.34	1.35
Max +LL reaction	0.99	0.99
Max +total reaction (factored)	3.18	3.21

DEFLECTIONS:

					Ratio
Dead load (in)	at 5.02 ft =	-0.006	L/D = 1968 5	> 300	0.02
Live load (in)	at 5.02 ft =	-0.005	L/D = 2545 7	> 480	0.02
Net Total load (in)	at 5.02 ft =	-0.011	L/D = 1110 1	> 240	0.02

Floor Type: Second Floor **Beam Number = 323**

SPAN INFORMATION (ft): I-End (297.08,59.25) J-End (297.08,71.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 12.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.250	4.65	1.21	0.0	0.00	0.00	0.0	0.00	Snow	0.41
7.875	2.20	1.43	0.0	0.00	0.00	0.0	0.00	Snow	0.43
1.250	0.34								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.051	0.000	---	NonR	0.000
	12.500	0.051	0.000			0.000
2	0.000	0.023	0.050	0.0%	Red	0.015
	12.500	0.023	0.050			0.015
3	0.000	0.035	0.000	---	NonR	0.000
	12.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.96 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	31.1	5.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	31.1	5.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	5.24	3.31
Max +LL reaction	2.29	2.00
Max +total reaction (factored)	9.96	7.16

DEFLECTIONS:

					Ratio
Dead load (in)	at	6.00 ft =	-0.030	L/D = 5043 > 300	0.06
Live load (in)	at	6.12 ft =	-0.016	L/D = 9446 > 480	0.05
Net Total load (in)	at	6.12 ft =	-0.046	L/D = 3289 > 240	0.07

Floor Type: Second Floor **Beam Number = 325**

SPAN INFORMATION (ft): I-End (106.00,113.17) J-End (145.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X55 Fy = 50.0 ksi
Total Beam Length (ft) = 39.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	71.62	Y bar(in)	=	20.56
Mnf (kip-ft)	=	950.99	Mn (kip-ft)	=	900.03
C (kips)	=	336.64	PNA (in)	=	20.32
Ieff (in4)	=	3315.34	Itr (in4)	=	3638.89
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 47 Partial = 40 Actual = 33
Number of Stud Rows = 1 Percent of Full Composite Action = 70.53

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.417	8.30	8.00	6.05	21.2	0.00	0.00	0.0	0.00	Snow	1.68	2.81
18.833	8.75	8.45	6.38	21.2	0.00	0.00	0.0	0.00	Snow	1.78	2.96
29.292	9.21	8.89	6.72	21.2	0.00	0.00	0.0	0.00	Snow	1.87	3.12

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	39.750	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	39.750	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	21.2%	Red	0.013	0.021
	39.750	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	39.750	0.006	0.003	0.017			0.003	0.004
5	0.000	0.055	0.055	0.000	---	NonR	0.000	0.000
	39.750	0.055	0.055	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 37.88 kips 0.90Vn = 251.69 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	332.8	18.8	0.0	1.00	0.90	502.50
	Init DL	1.4DL	277.7	18.8	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	475.8	18.8	---	---	0.90	810.02
Controlling		1.2DL+1.6LL	332.8	18.8	---	---	0.90	502.50

REACTIONS (kips):

	Left	Right
Initial reaction	20.44	19.84
DL reaction	15.97	15.51
Max +LL reaction	11.69	11.33
Max +total reaction (factored)	37.88	36.75

DEFLECTIONS: (Camber = 1)

										Ratio
Initial load (in)	at	19.87 ft	=	-1.340		L/D	=	356	> 180	0.51
Live load (in)	at	19.87 ft	=	-0.418	< -1.000	L/D	=	1141	> 360	0.42
Post Comp load (in)	at	19.87 ft	=	-0.438		L/D	=	1089	> 240	0.22
Net Total load (in)	at	19.87 ft	=	-0.778		L/D	=	613	> 240	0.39

Floor Type: Second Floor **Beam Number = 327**

SPAN INFORMATION (ft): I-End (114.00,33.00) J-End (145.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 31.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	90.63	Y bar(in)	=	20.72
Mnf (kip-ft)	=	1188.77	Mn (kip-ft)	=	1071.60
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3942.35	Itr (in4)	=	4713.07
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 80 Partial = 32 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 46.96

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.833	8.07	7.78	6.75	2.9	0.00	0.00	0.0	0.00	Snow	1.64	2.73
21.292	7.93	7.65	6.63	2.9	0.00	0.00	0.0	0.00	Snow	1.61	2.68

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	31.750	0.184	0.184	0.000			0.000	0.000
2	0.000	0.117	0.072	0.358	---	NonR	0.054	0.090
	31.750	0.117	0.072	0.358			0.054	0.090
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	31.750	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 40.29 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	211.7	15.4	0.0	1.00	0.90	663.75
	Init DL	1.4DL	172.2	15.5	---	---		
	Max +	1.2DL+1.6LL	379.5	15.5	---	---	0.90	964.44
Controlling		1.2DL+1.6LL	367.5	10.8	---	---	0.90	901.39

REACTIONS (kips):

	Left	Right
Initial reaction	16.89	17.08
DL reaction	13.79	13.93
Max +LL reaction	14.59	14.74
Max +total reaction (factored)	39.89	40.29

DEFLECTIONS:

				Ratio
Initial load (in)	at 15.88 ft = -0.426	L/D = 894 > 240		0.27
Live load (in)	at 15.88 ft = -0.222	L/D = 1713 > 480		0.28
Post Comp load (in)	at 15.88 ft = -0.236	L/D = 1612 > 240		0.15
Net Total load (in)	at 15.88 ft = -0.662	L/D = 575 > 240		0.42

Floor Type: Second Floor **Beam Number = 338**

SPAN INFORMATION (ft): I-End (151.00,21.50) J-End (151.00,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 11.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	29.25	Y bar(in)	=	12.65
Mnf (kip-ft)	=	169.13	Mn (kip-ft)	=	135.39
C (kips)	=	86.15	PNA (in)	=	10.26
Ieff (in4)	=	284.61	Itr (in4)	=	376.97
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 11 Partial = 11 Actual = 11
Number of Stud Rows = 1 Percent of Full Composite Action = 46.01

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	11.500	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	1.000	0.023	0.020	0.100			0.015	0.025
3	1.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	11.500	0.023	0.020	0.050			0.015	0.025
4	0.000	0.164	0.164	0.000	---	NonR	0.000	0.000
	11.500	0.164	0.164	0.000			0.000	0.000
5	0.000	0.072	0.064	0.319	0.0%	Red	0.048	0.080
	1.000	0.072	0.064	0.319			0.048	0.080
6	1.000	0.072	0.064	0.159	0.0%	Red	0.048	0.080
	11.500	0.072	0.064	0.159			0.048	0.080
7	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	11.500	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.06 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.0	5.8	0.0	1.00	0.90	65.25
	Init DL	1.4DL	7.2	5.8	---	---		
	Max +	1.2DL+1.6LL	13.7	5.7	---	---	0.90	121.85

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
Controlling		1.2DL+1.6LL	9.0	5.8	---	---	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.40	2.40
DL reaction	1.86	1.86
Max +LL reaction	1.77	1.57
Max +total reaction (factored)	5.06	4.75

DEFLECTIONS:

										Ratio
Initial load (in)	at	5.75 ft	=	-0.048	L/D	=	2880	>	240	0.08
Live load (in)	at	5.75 ft	=	-0.013	L/D	=	10487	>	480	0.05
Post Comp load (in)	at	5.75 ft	=	-0.014	L/D	=	10089	>	240	0.02
Net Total load (in)	at	5.75 ft	=	-0.062	L/D	=	2240	>	240	0.11

Floor Type: Second Floor **Beam Number = 339**

SPAN INFORMATION (ft): I-End (145.75,21.50) J-End (157.38,21.50)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 11.63

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	29.44	Y bar(in)	=	12.66
Mnf (kip-ft)	=	169.56	Mn (kip-ft)	=	143.98
C (kips)	=	105.20	PNA (in)	=	11.21
Ieff (in4)	=	304.99	Itr (in4)	=	377.63
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 20 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 56.05

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
5.250	1.86	1.80	1.40	0.0	0.00	0.00	0.0	0.00	Snow	0.36	0.60

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	5.250	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	5.250	0.023	0.020	0.100			0.015	0.025
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	11.626	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.98 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	10.2	5.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	8.3	5.2	---	---		
	Max +	1.2DL+1.6LL	16.9	5.2	---	---	0.90	129.58
Controlling		1.2DL+1.6LL	10.2	5.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	1.79	1.28
DL reaction	1.40	1.01
Max +LL reaction	1.44	0.93
Max +total reaction (factored)	3.98	2.71

DEFLECTIONS:

										Ratio
Initial load (in)	at	5.64 ft	=	-0.046	L/D	=	3017	>	180	0.06
Live load (in)	at	5.58 ft	=	-0.013	L/D	=	1039 2	>	360	0.03
Post Comp load (in)	at	5.58 ft	=	-0.014	L/D	=	1005 7	>	240	0.02
Net Total load (in)	at	5.58 ft	=	-0.060	L/D	=	2321	>	240	0.10

Floor Type: Second Floor **Beam Number = 340**

SPAN INFORMATION (ft): I-End (145.75,12.50) J-End (145.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	42.75	Y bar(in)	=	15.80
Mnf (kip-ft)	=	472.36	Mn (kip-ft)	=	408.67
C (kips)	=	137.84	PNA (in)	=	13.44
Ieff (in4)	=	1180.97	Itr (in4)	=	1453.47
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 40 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 50.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.000	1.40	1.36	1.18	0.0	0.00	0.00	0.0	0.00	Snow	0.26	0.43

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.268	0.268	0.000	---	NonR	0.000	0.000
	20.500	0.268	0.268	0.000			0.000	0.000
2	0.000	0.118	0.105	0.523	0.0%	Red	0.078	0.131
	10.000	0.118	0.105	0.523			0.078	0.131
3	10.000	0.118	0.105	0.261	0.0%	Red	0.078	0.131
	20.500	0.118	0.105	0.261			0.078	0.131
4	0.000	0.298	0.298	0.000	---	NonR	0.000	0.000
	9.000	0.298	0.298	0.000			0.000	0.000
5	0.000	0.131	0.116	0.581	0.0%	Red	0.087	0.145
	9.000	0.131	0.116	0.581			0.087	0.145
6	9.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	20.500	0.051	0.051	0.000			0.000	0.000
7	9.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	10.000	0.023	0.020	0.100			0.015	0.025
8	10.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	20.500	0.023	0.020	0.050			0.015	0.025
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	20.500	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 27.96 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	68.1	9.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	55.3	9.0	---	---		
	Max +	1.2DL+1.6LL	127.9	9.0	---	---	0.90	367.80
Controlling		1.2DL+1.6LL	127.9	9.0	---	---	0.90	367.80

REACTIONS (kips):

	Left	Right
Initial reaction	10.77	8.21
DL reaction	8.37	6.40
Max +LL reaction	11.20	6.63
Max +total reaction (factored)	27.96	18.29

DEFLECTIONS:

					Ratio
Initial load (in)	at 10.05 ft	= -0.194	L/D = 1268	> 240	0.19
Live load (in)	at 9.94 ft	= -0.103	L/D = 2385	> 480	0.20
Post Comp load (in)	at 9.94 ft	= -0.106	L/D = 2320	> 240	0.10
Net Total load (in)	at 9.94 ft	= -0.300	L/D = 820	> 240	0.29

Floor Type: Second Floor **Beam Number = 395**

SPAN INFORMATION (ft): I-End (157.38,12.50) J-End (157.38,33.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 61.50		Y bar(in)	=	16.96
Mnf (kip-ft)	= 517.65		Mn (kip-ft)	=	410.89
C (kips)	= 137.84		PNA (in)	=	13.44
Ieff (in4)	= 1163.88		Itr (in4)	=	1612.79
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 40 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 35.16

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.000	1.01	0.98	0.75	0.0	0.00	0.00	0.0	0.00	Snow	0.18	0.30

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.298	0.298	0.000	---	NonR	0.000	0.000
	9.000	0.298	0.298	0.000			0.000	0.000
2	0.000	0.131	0.116	0.581	0.0%	Red	0.087	0.145
	9.000	0.131	0.116	0.581			0.087	0.145
3	9.000	0.164	0.164	0.000	---	NonR	0.000	0.000
	20.500	0.164	0.164	0.000			0.000	0.000
4	9.000	0.072	0.064	0.319	0.0%	Red	0.048	0.080
	10.000	0.072	0.064	0.319			0.048	0.080
5	10.000	0.150	0.132	0.331	0.0%	Red	0.099	0.166
	20.500	0.150	0.132	0.331			0.099	0.166
6	0.000	0.176	0.176	0.000	---	NonR	0.000	0.000
	20.500	0.176	0.176	0.000			0.000	0.000
7	0.000	0.078	0.069	0.344	0.0%	Red	0.052	0.086
	10.000	0.078	0.069	0.344			0.052	0.086
8	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	20.500	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 24.07 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	61.1	9.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	49.7	9.0	---	---		
	Max +	1.2DL+1.6LL	112.8	9.0	---	---	0.90	369.80
Controlling		1.2DL+1.6LL	112.8	9.0	---	---	0.90	369.80

REACTIONS (kips):

	Left	Right
Initial reaction	9.39	7.96
DL reaction	7.31	6.21
Max +LL reaction	9.56	6.23
Max +total reaction (factored)	24.07	17.41

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.05 ft = -0.177	L/D = 1391 > 180		0.13
Live load (in)	at 10.05 ft = -0.092	L/D = 2666 > 360		0.14
Post Comp load (in)	at 10.05 ft = -0.095	L/D = 2592 > 240		0.09
Net Total load (in)	at 10.05 ft = -0.272	L/D = 905 > 240		0.27

Floor Type: Second Floor **Beam Number = 396**

SPAN INFORMATION (ft): I-End (333.50,12.50) J-End (333.50,33.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 54.75	Y bar(in)		=	16.59
Mnf (kip-ft)	= 501.57	Mn (kip-ft)		=	410.26
C (kips)	= 137.84	PNA (in)		=	13.44
Ieff (in4)	= 1171.57	Itr (in4)		=	1562.75
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 40 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 39.49

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.000	1.02	0.99	0.77	0.0	0.00	0.00	0.0	0.00	Snow	0.18	0.31

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	20.500	0.237	0.237	0.000			0.000	0.000
2	0.000	0.105	0.093	0.463	0.0%	Red	0.069	0.116
	10.000	0.105	0.093	0.463			0.069	0.116
3	10.000	0.150	0.132	0.331	0.0%	Red	0.099	0.166
	20.500	0.150	0.132	0.331			0.099	0.166
4	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	9.000	0.237	0.237	0.000			0.000	0.000
5	0.000	0.105	0.092	0.463	0.0%	Red	0.069	0.116
	9.000	0.105	0.092	0.463			0.069	0.116
6	9.000	0.103	0.103	0.000	---	NonR	0.000	0.000
	20.500	0.103	0.103	0.000			0.000	0.000
7	9.000	0.045	0.040	0.200	0.0%	Red	0.030	0.050
	10.000	0.045	0.040	0.200			0.030	0.050
8	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	20.500	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 24.09 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	61.2	9.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	49.7	9.0	---	---		
	Max +	1.2DL+1.6LL	113.0	9.0	---	---	0.90	369.24
Controlling		1.2DL+1.6LL	113.0	9.0	---	---	0.90	369.24

REACTIONS (kips):

	Left	Right
Initial reaction	9.40	7.97
DL reaction	7.32	6.21
Max +LL reaction	9.57	6.23
Max +total reaction (factored)	24.09	17.43

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.05 ft = -0.177	L/D = 1390 > 180		0.13
Live load (in)	at 10.05 ft = -0.092	L/D = 2679 > 360		0.13
Post Comp load (in)	at 10.05 ft = -0.094	L/D = 2605 > 240		0.09
Net Total load (in)	at 10.05 ft = -0.271	L/D = 906 > 240		0.26

Floor Type: Second Floor **Beam Number = 397**

SPAN INFORMATION (ft): I-End (182.75,50.00) J-End (203.75,50.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	63.00	Y bar(in)	=	17.03
Mnf (kip-ft)	=	521.19	Mn (kip-ft)	=	423.29
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1201.60	Itr (in4)	=	1623.02
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 35.53

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
8.667	4.00	0.07								
15.667	1.26	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.475	0.475	0.000	---	NonR	0.000	0.000
	21.000	0.475	0.475	0.000			0.000	0.000
2	0.000	0.181	0.111	0.555	---	NonR	0.083	0.139
	0.018	0.151	0.093	0.463			0.069	0.116
3	0.019	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	0.197	0.106	0.093	0.467			0.138	0.117
4	0.019	0.149	0.092	0.458	---	NonR	0.069	0.115
	0.197	0.000	0.000	0.000			0.000	0.000
5	0.197	0.105	0.093	0.463	0.0%	Red	0.069	0.116
	8.666	0.105	0.093	0.463			0.069	0.116
6	8.667	0.575	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.575	0.000	0.000			0.000	0.000
7	8.667	0.149	0.132	0.330	0.0%	Red	0.099	0.165
	21.000	0.149	0.132	0.330			0.099	0.165
8	8.667	0.060	0.053	0.265	0.0%	Red	0.040	0.066
	21.000	0.060	0.053	0.265			0.040	0.066
9	0.000	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	8.666	0.624	0.000	0.000			0.000	0.000

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
10	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	0.018	0.021	0.018	0.091			0.013	0.023
11	0.000	0.084	0.074	0.185	0.0%	Red	0.056	0.093
	8.666	0.084	0.074	0.185			0.056	0.093
12	0.019	0.021	0.018	0.092	0.0%	Red	0.014	0.023
	8.666	0.021	0.018	0.092			0.014	0.023
13	15.667	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.624	0.000	0.000			0.000	0.000
14	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 35.74 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.7	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.0	10.5	---	---		
	Max +	1.2DL+1.6LL	186.4	9.9	---	---	0.90	380.96
Controlling		1.2DL+1.6LL	184.3	8.7	---	---	0.90	369.91

REACTIONS (kips):

	Left	**Right**
Initial reaction	9.76	9.75
DL reaction	17.02	19.17
Max +LL reaction	8.70	7.96
Max +total reaction (factored)	34.35	35.74

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.50 ft = -0.207	L/D = 1217 > 240		0.20
Live load (in)	at 10.50 ft = -0.099	L/D = 2553 > 480		0.19
Post Comp load (in)	at 10.50 ft = -0.232	L/D = 1085 > 240		0.22
Net Total load (in)	at 10.50 ft = -0.439	L/D = 574 > 240		0.42

Floor Type: Second Floor **Beam Number = 398**

SPAN INFORMATION (ft): I-End (284.75,50.00) J-End (305.75,50.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 63.00	Y bar(in)	=	17.03	
Mnf (kip-ft)	= 521.19	Mn (kip-ft)	=	423.29	
C (kips)	= 155.07	PNA (in)	=	14.02	
Ieff (in4)	= 1201.60	Itr (in4)	=	1623.02	
Stud length (in)	= 4.50	Stud diam (in)	=	0.75	

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 35.53

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
12.333	4.00	0.07								
5.333	1.26	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.575	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.575	0.000	0.000			0.000	0.000
2	0.000	0.475	0.475	0.000	---	NonR	0.000	0.000
	21.000	0.475	0.475	0.000			0.000	0.000
3	0.000	0.149	0.132	0.330	0.0%	Red	0.099	0.165
	12.333	0.149	0.132	0.330			0.099	0.165
4	0.000	0.060	0.053	0.265	0.0%	Red	0.040	0.066
	12.333	0.060	0.053	0.265			0.040	0.066
5	12.334	0.125	0.111	0.554	0.0%	Red	0.083	0.139
	21.000	0.125	0.111	0.554			0.083	0.139
6	0.000	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	5.333	0.624	0.000	0.000			0.000	0.000
7	12.334	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.624	0.000	0.000			0.000	0.000
8	12.334	0.084	0.074	0.185	0.0%	Red	0.056	0.093
	21.000	0.084	0.074	0.185			0.056	0.093
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 35.74 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.7	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.0	10.5	---	---		
	Max +	1.2DL+1.6LL	186.4	11.1	---	---	0.90	380.96
Controlling		1.2DL+1.6LL	184.3	12.3	---	---	0.90	369.91

REACTIONS (kips):

	Left	Right
Initial reaction	9.75	9.76
DL reaction	19.17	17.01
Max +LL reaction	7.96	8.70
Max +total reaction (factored)	35.74	34.34

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.50 ft = -0.207	L/D = 1217 > 240		0.20
Live load (in)	at 10.50 ft = -0.099	L/D = 2553 > 480		0.19
Post Comp load (in)	at 10.50 ft = -0.232	L/D = 1085 > 240		0.22
Net Total load (in)	at 10.50 ft = -0.439	L/D = 574 > 240		0.42

Floor Type: Second Floor **Beam Number = 441**

SPAN INFORMATION (ft): I-End (203.75,33.00) J-End (240.75,33.00)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	98.50	Y bar(in)	=	21.05
Mnf (kip-ft)	=	1208.39	Mn (kip-ft)	=	1072.99
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3932.06	Itr (in4)	=	4821.08
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 74 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 49.39

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	7.01	6.76	5.87	12.2	0.00	0.00	0.0	0.00	Snow	1.42	2.37
18.500	7.07	6.82	5.92	12.2	0.00	0.00	0.0	0.00	Snow	1.43	2.39
27.917	7.01	6.76	5.87	12.2	0.00	0.00	0.0	0.00	Snow	1.42	2.37

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	37.000	0.184	0.184	0.000			0.000	0.000
2	0.000	0.117	0.072	0.358	---	NonR	0.054	0.090
	37.000	0.117	0.072	0.358			0.054	0.090
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 48.96 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	311.4	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	252.8	18.5	---	---		
	Max +	1.2DL+1.6LL	538.8	18.5	---	---	0.90	965.69
Controlling		1.2DL+1.6LL	538.8	18.5	---	---	0.90	965.69

REACTIONS (kips):

	Left	Right
Initial reaction	21.35	21.43
DL reaction	17.34	17.41
Max +LL reaction	17.48	17.54
Max +total reaction (factored)	48.79	48.96

DEFLECTIONS:

				Ratio
Initial load (in)	at 18.50 ft = -0.809	L/D = 549 > 240		0.44
Live load (in)	at 18.50 ft = -0.402	L/D = 1105 > 480		0.43
Post Comp load (in)	at 18.50 ft = -0.428	L/D = 1037 > 240		0.23
Net Total load (in)	at 18.50 ft = -1.237	L/D = 359 > 240		0.67

Floor Type: Second Floor **Beam Number = 446**

SPAN INFORMATION (ft): I-End (342.75,12.50) J-End (342.75,33.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	42.75	Y bar(in)	=	15.80
Mnf (kip-ft)	=	472.36	Mn (kip-ft)	=	408.67
C (kips)	=	137.84	PNA (in)	=	13.44
Ieff (in4)	=	1180.97	Itr (in4)	=	1453.47
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 40 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 50.58

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.000	0.99	0.96	0.85	0.0	0.00	0.00	0.0	0.00	Snow	0.18	0.30
17.000	0.23	0.22	0.13	0.0	0.00	0.00	0.0	0.00	Snow	0.04	0.07

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.398	0.398	0.000	---	NonR	0.000	0.000
	9.000	0.398	0.398	0.000			0.000	0.000
2	0.000	0.175	0.155	0.775	0.0%	Red	0.116	0.194
	9.000	0.175	0.155	0.775			0.116	0.194
3	9.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	17.000	0.051	0.051	0.000			0.000	0.000
4	9.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	10.000	0.023	0.020	0.100			0.015	0.025
5	10.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	17.000	0.023	0.020	0.050			0.015	0.025
6	17.000	0.135	0.135	0.000	---	NonR	0.000	0.000
	20.500	0.135	0.135	0.000			0.000	0.000
7	17.000	0.059	0.053	0.131	0.0%	Red	0.039	0.066
	20.500	0.059	0.053	0.131			0.039	0.066
8	9.000	0.160	0.160	0.000	---	NonR	0.000	0.000
	20.500	0.160	0.160	0.000			0.000	0.000
9	9.000	0.071	0.062	0.312	0.0%	Red	0.047	0.078
	10.323	0.071	0.063	0.313			0.094	0.078

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
10	10.324	0.071	0.063	0.312	0.0%	Red	0.047	0.078
	20.500	0.071	0.063	0.312			0.047	0.078
11	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	20.500	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 20.49 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	48.6	9.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	39.7	9.0	---	---		
	Max +	1.2DL+1.6LL	97.1	9.0	---	---	0.90	367.80
Controlling		1.2DL+1.6LL	97.1	9.0	---	---	0.90	367.80

REACTIONS (kips):

	Left	Right
Initial reaction	7.68	6.41
DL reaction	6.00	5.02
Max +LL reaction	8.31	6.24
Max +total reaction (factored)	20.49	16.01

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.05 ft = -0.141	L/D = 1750 > 240		0.14
Live load (in)	at 10.05 ft = -0.083	L/D = 2980 > 480		0.16
Post Comp load (in)	at 10.05 ft = -0.085	L/D = 2908 > 240		0.08
Net Total load (in)	at 10.05 ft = -0.225	L/D = 1093 > 240		0.22

Floor Type: Second Floor **Beam Number = 447**

SPAN INFORMATION (ft): I-End (337.50,21.50) J-End (337.50,33.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 11.50

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 29.25	Y bar(in)		=	12.65
Mnf (kip-ft)	= 169.13	Mn (kip-ft)		=	126.01
C (kips)	= 68.92	PNA (in)		=	9.40
Ieff (in4)	= 263.91	Itr (in4)		=	376.97
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 11 Partial = 11 Actual = 11
Number of Stud Rows = 1 Percent of Full Composite Action = 32.32

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.000	0.23	0.22	0.13	0.0	0.00	0.00	0.0	0.00	Snow	0.04	0.07

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.103	0.103	0.000	---	NonR	0.000	0.000
	11.500	0.103	0.103	0.000			0.000	0.000
2	0.000	0.045	0.040	0.200	0.0%	Red	0.030	0.050
	1.000	0.045	0.040	0.200			0.030	0.050
3	1.000	0.045	0.040	0.100	0.0%	Red	0.030	0.050
	11.500	0.045	0.040	0.100			0.030	0.050
4	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	8.000	0.051	0.051	0.000			0.000	0.000
5	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	1.000	0.023	0.020	0.100			0.015	0.025
6	1.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	8.000	0.023	0.020	0.050			0.015	0.025
7	8.000	0.135	0.135	0.000	---	NonR	0.000	0.000
	11.500	0.135	0.135	0.000			0.000	0.000
8	8.000	0.059	0.053	0.131	0.0%	Red	0.039	0.066
	11.500	0.059	0.053	0.131			0.039	0.066
9	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	11.500	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.74 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	7.8	6.3	0.0	1.00	0.90	65.25
	Init DL	1.4DL	6.4	6.3	---	---		
	Max +	1.2DL+1.6LL	11.9	6.3	---	---	0.90	113.41
Controlling		1.2DL+1.6LL	7.8	6.3	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	1.91	2.41
DL reaction	1.49	1.87
Max +LL reaction	1.37	1.56
Max +total reaction (factored)	3.98	4.74

DEFLECTIONS:

									Ratio
Initial load (in)	at	5.87 ft	=	-0.042	L/D	=	3255	> 240	0.07
Live load (in)	at	5.87 ft	=	-0.012	L/D	=	11239	> 480	0.04
Post Comp load (in)	at	5.87 ft	=	-0.013	L/D	=	10811	> 240	0.02
Net Total load (in)	at	5.87 ft	=	-0.055	L/D	=	2502	> 240	0.10

Floor Type: Second Floor **Beam Number = 449**

SPAN INFORMATION (ft): I-End (333.50,21.50) J-End (342.75,21.50)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	25.88	Y bar(in)	=	12.36
Mnf (kip-ft)	=	161.37	Mn (kip-ft)	=	133.87
C (kips)	=	84.16	PNA (in)	=	10.16
Ieff (in4)	=	285.54	Itr (in4)	=	364.31
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 19 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 51.02

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
4.000	1.49	1.44	1.09	0.0	0.00	0.00	0.0	0.00	Snow	0.28	0.47

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	4.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	9.250	0.051	0.051	0.000			0.000	0.000
2	4.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	9.250	0.023	0.020	0.100			0.015	0.025
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	9.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.83 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	6.6	4.0	0.0	1.00	0.90	65.25
	Init DL	1.4DL	5.4	4.0	---	---		
	Max +	1.2DL+1.6LL	10.8	4.0	---	---	0.90	120.48
Controlling		1.2DL+1.6LL	6.6	4.0	---	---	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	1.29	1.25
DL reaction	1.02	0.99

	Left	Right
Max +LL reaction	0.95	1.03
Max +total reaction (factored)	2.75	2.83

DEFLECTIONS:

										Ratio
Initial load (in)	at	4.49 ft	=	-0.019	L/D	=	5766	>	180	0.03
Live load (in)	at	4.53 ft	=	-0.006	L/D	=	1852	>	360	0.02
							8			
Post Comp load (in)	at	4.53 ft	=	-0.006	L/D	=	1794	>	240	0.01
							1			
Net Total load (in)	at	4.53 ft	=	-0.025	L/D	=	4364	>	240	0.06

Floor Type: Second Floor **Beam Number = 450**

SPAN INFORMATION (ft): I-End (191.42,67.12) J-End (203.75,67.12)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.00	Y bar(in)	=	13.17
Mnf (kip-ft)	=	179.36	Mn (kip-ft)	=	144.45
C (kips)	=	103.38	PNA (in)	=	11.12
Ieff (in4)	=	308.20	Itr (in4)	=	400.09
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 49.70

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	12.333	0.237	0.237	0.000			0.000	0.000
2	0.000	0.105	0.093	0.231	0.0%	Red	0.069	0.116
	12.333	0.105	0.093	0.231			0.069	0.116
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.60 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	9.2	6.2	---	---		
	Max +	1.2DL+1.6LL	17.3	6.2	---	---	0.90	130.01
Controlling		1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.83	2.83
DL reaction	2.20	2.20
Max +LL reaction	1.85	1.85
Max +total reaction (factored)	5.60	5.60

DEFLECTIONS:

Ratio

Initial load (in)	at	6.17 ft	=	-0.070	L/D	=	2123	>	180	0.08
Live load (in)	at	6.17 ft	=	-0.018	L/D	=	8452	>	360	0.04
Post Comp load (in)	at	6.17 ft	=	-0.018	L/D	=	8127	>	240	0.03
Net Total load (in)	at	6.17 ft	=	-0.088	L/D	=	1683	>	240	0.14

Floor Type: Second Floor **Beam Number = 451**

SPAN INFORMATION (ft): I-End (192.63,84.33) J-End (203.75,84.33)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 11.12

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	33.38	Y bar(in)	=	12.95
Mnf (kip-ft)	=	177.29	Mn (kip-ft)	=	135.90
C (kips)	=	86.15	PNA (in)	=	10.26
Ieff (in4)	=	282.67	Itr (in4)	=	390.15
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 11 Partial = 11 Actual = 11
Number of Stud Rows = 1 Percent of Full Composite Action = 41.41

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.258	0.258	0.000	---	NonR	0.000	0.000
	11.125	0.258	0.258	0.000			0.000	0.000
2	0.000	0.114	0.100	0.251	0.0%	Red	0.075	0.126
	11.125	0.114	0.100	0.251			0.075	0.126
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	11.125	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.48 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	10.0	5.6	0.0	1.00	0.90	65.25
	Init DL	1.4DL	8.1	5.6	---	---		
	Max +	1.2DL+1.6LL	15.2	5.6	---	---	0.90	122.31
Controlling		1.2DL+1.6LL	10.0	5.6	---	---	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.77	2.77
DL reaction	2.14	2.14
Max +LL reaction	1.82	1.82
Max +total reaction (factored)	5.48	5.48

DEFLECTIONS:

Ratio

Initial load (in)	at	5.56 ft	=	-0.050	L/D	=	2672	>	180	0.07
Live load (in)	at	5.56 ft	=	-0.014	L/D	=	9724	>	360	0.04
Post Comp load (in)	at	5.56 ft	=	-0.014	L/D	=	9350	>	240	0.03
Net Total load (in)	at	5.56 ft	=	-0.064	L/D	=	2078	>	240	0.12

Floor Type: Second Floor **Beam Number = 452**

SPAN INFORMATION (ft): I-End (284.75,67.12) J-End (297.08,67.12)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.00	Y bar(in)	=	13.17
Mnf (kip-ft)	=	179.36	Mn (kip-ft)	=	144.45
C (kips)	=	103.38	PNA (in)	=	11.12
Ieff (in4)	=	308.20	Itr (in4)	=	400.09
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 49.70

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	12.333	0.237	0.237	0.000			0.000	0.000
2	0.000	0.105	0.093	0.231	0.0%	Red	0.069	0.116
	12.333	0.105	0.093	0.231			0.069	0.116
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.60 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	9.2	6.2	---	---		
	Max +	1.2DL+1.6LL	17.3	6.2	---	---	0.90	130.01
Controlling		1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.83	2.83
DL reaction	2.20	2.20
Max +LL reaction	1.85	1.85
Max +total reaction (factored)	5.60	5.60

DEFLECTIONS: **Ratio**

Initial load (in)	at	6.17 ft	=	-0.070	L/D	=	2123	>	180	0.08
Live load (in)	at	6.17 ft	=	-0.018	L/D	=	8452	>	360	0.04
Post Comp load (in)	at	6.17 ft	=	-0.018	L/D	=	8127	>	240	0.03
Net Total load (in)	at	6.17 ft	=	-0.088	L/D	=	1683	>	240	0.14

Floor Type: Second Floor **Beam Number = 453**

SPAN INFORMATION (ft): I-End (99.75,113.17) J-End (106.00,113.17)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.75	Y bar(in)	=	13.19
Mnf (kip-ft)	=	388.14	Mn (kip-ft)	=	343.97
C (kips)	=	63.12	PNA (in)	=	10.95
Ieff (in4)	=	937.37	Itr (in4)	=	1098.12
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 12 Partial = 7 Actual = 7
Number of Stud Rows = 1 Percent of Full Composite Action = 52.80

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	6.250	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	6.250	0.052	0.052	0.000			0.000	0.000
3	0.000	0.019	0.017	0.042	0.0%	Red	0.013	0.021
	6.250	0.019	0.017	0.042			0.013	0.021
4	0.000	0.006	0.003	0.017	---	NonR	0.003	0.004
	6.250	0.006	0.003	0.017			0.003	0.004
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	6.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.79 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	0.8	3.1	0.0	1.00	0.90	249.38
	Init DL	1.4DL	0.7	3.1	---	---		
	Max +	1.2DL+1.6LL	1.2	3.1	---	---	0.90	309.57
Controlling		1.2DL+1.6LL	1.2	3.1	---	---	0.90	309.57

REACTIONS (kips):

	Left	Right
Initial reaction	0.41	0.41
DL reaction	0.35	0.35

	Left	Right
Max +LL reaction	0.23	0.23
Max +total reaction (factored)	0.79	0.79

DEFLECTIONS:

										Ratio
Initial load (in)	at	3.12 ft	=	-0.000		L/D	=	3020 22	> 180	0.00
Live load (in)	at	3.12 ft	=	-0.000	< -1.000			0.00		
Post Comp load (in)	at	3.12 ft	=	-0.000						
Net Total load (in)	at	3.12 ft	=	-0.000		L/D	=	2157 22	> 240	0.00

Floor Type: Second Floor **Beam Number = 455**

SPAN INFORMATION (ft): I-End (97.25,47.33) J-End (106.00,47.33)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 8.75

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 26.25	Y bar(in)		=	14.21
Mnf (kip-ft)	= 421.28	Mn (kip-ft)		=	333.93
C (kips)	= 51.69	PNA (in)		=	10.57
Ieff (in4)	= 914.31	Itr (in4)		=	1237.47
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Rg Stud Red. Factor Rg[1] = 1.00 Rg[2] = 0.85
Rp Stud Red. Factor Rp[1] = 0.60 Rp[2] = 0.60
Stud Capacity (kips) Qn[1] = 17.2 Qn[2] = 14.6
# of studs: Max = 16 Partial = 10 Actual = 10
Number of Stud Rows = 2 Percent of Full Composite Action = 26.06

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
2.500	3.04	2.94	3.69	0.0	0.00	0.00	0.0	0.00	Snow	0.55	0.92

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	2.500	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	1.491	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	1.491	0.023	0.020	0.101			0.015	0.025
4	1.492	0.052	0.052	0.000	---	NonR	0.000	0.000
	2.500	0.000	0.000	0.000			0.000	0.000
5	1.492	0.023	0.020	0.101	0.0%	Red	0.015	0.025
	2.500	0.000	0.000	0.000			0.000	0.000
6	2.500	0.209	0.209	0.000	---	NonR	0.000	0.000
	8.750	0.209	0.209	0.000			0.000	0.000
7	2.500	0.092	0.082	0.408	0.0%	Red	0.061	0.102
	8.750	0.092	0.082	0.408			0.061	0.102
8	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	1.000	0.184	0.184	0.000			0.000	0.000
9	0.000	0.081	0.072	0.358	0.0%	Red	0.054	0.090

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
	1.000	0.081	0.072	0.358			0.054	0.090
10	1.019	0.184	0.184	0.000	---	NonR	0.000	0.000
	8.750	0.184	0.184	0.000			0.000	0.000
11	1.019	0.081	0.072	0.358	0.0%	Red	0.054	0.090
	8.750	0.081	0.072	0.358			0.054	0.090
12	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	8.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 14.86 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	16.0	3.1	0.0	1.00	0.90	249.38
	Init DL	1.4DL	13.1	3.1	---	---		
	Max +	1.2DL+1.6LL	33.6	3.1	---	---	0.90	300.54
Controlling		1.2DL+1.6LL	33.2	2.5	---	---	0.90	284.68

REACTIONS (kips):

	Left	Right
Initial reaction	5.46	4.37
DL reaction	4.28	3.41
Max +LL reaction	6.07	4.92
Max +total reaction (factored)	14.86	11.97

DEFLECTIONS:

										Ratio
Initial load (in)	at	4.20 ft	=	-0.008		L/D	=	12409	>	180	0.01
Live load (in)	at	4.20 ft	=	-0.007	< -1.000	L/D	=	15051	>	360	0.02
Post Comp load (in)	at	4.20 ft	=	-0.007		L/D	=	14718	>	240	0.02
Net Total load (in)	at	4.20 ft	=	-0.016		L/D	=	6733	>	240	0.04

Floor Type: Second Floor **Beam Number = 456**

SPAN INFORMATION (ft): I-End (99.75,47.33) J-End (99.75,71.58)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 24.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	48.38	Y bar(in)	=	14.28
Mnf (kip-ft)	=	294.44	Mn (kip-ft)	=	279.01
C (kips)	=	252.48	PNA (in)	=	13.56
Ieff (in4)	=	689.78	Itr (in4)	=	741.40
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 40 Partial = 25 Actual = 25
Number of Stud Rows = 1 Percent of Full Composite Action = 61.74

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.155	1.92	1.85	2.53	0.0	0.00	0.00	0.0	0.00	Snow	0.38	0.63
16.202	1.90	1.84	2.51	0.0	0.00	0.00	0.0	0.00	Snow	0.38	0.63

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	24.250	0.000	0.000	0.000			0.000	0.000
2	0.000	0.000	0.000	0.000	---	NonR	0.000	0.000
	1.008	0.052	0.052	0.000			0.000	0.000
3	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	1.008	0.023	0.020	0.101			0.015	0.025
4	1.009	0.052	0.052	0.000	---	NonR	0.000	0.000
	24.250	0.052	0.052	0.000			0.000	0.000
5	1.009	0.023	0.020	0.101	0.0%	Red	0.015	0.025
	24.250	0.023	0.020	0.101			0.015	0.025
6	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	24.250	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.61 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	37.3	12.0	0.0	1.00	0.90	124.50
	Init DL	1.4DL	31.0	12.0	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	78.3	12.0	---	---	0.90	251.11
Controlling		1.2DL+1.6LL	76.1	8.2	---	---	0.90	225.78

REACTIONS (kips):

	Left	Right
Initial reaction	3.86	3.93
DL reaction	3.04	3.09
Max +LL reaction	4.24	4.32
Max +total reaction (factored)	10.43	10.61

DEFLECTIONS:

						Ratio
Initial load (in)	at 12.13 ft = -0.406		L/D = 716	> 180		0.25
Live load (in)	at 12.13 ft = -0.172	< -1.000	L/D = 1691	> 360		0.21
Post Comp load (in)	at 12.13 ft = -0.176		L/D = 1654	> 240		0.15
Net Total load (in)	at 12.13 ft = -0.582		L/D = 500	> 240		0.48

Floor Type: Second Floor **Beam Number = 457**

SPAN INFORMATION (ft): I-End (97.25,33.00) J-End (97.25,47.33)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 14.33
Mp (kip-ft) = 138.33

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
7.167	2.37	3.12	0.0	0.00	0.00	0.0	0.00	Snow	0.47

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.000	0.000	0.0%	Red	0.000
	14.333	0.000	0.000			0.000
2	0.000	0.052	0.000	---	NonR	0.000
	14.333	0.052	0.000			0.000
3	0.000	0.023	0.100	0.0%	Red	0.015
	14.333	0.023	0.100			0.015
4	0.000	0.022	0.000	---	NonR	0.000
	14.333	0.022	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.44 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	38.5	7.2	0.0	1.00	0.90	124.50
Controlling		1.2DL+1.6LL	38.5	7.2	0.0	1.00	0.90	124.50

REACTIONS (kips):

	Left	**Right**
DL reaction	1.88	1.88
Max +LL reaction	2.62	2.62
Max +total reaction (factored)	6.44	6.44

DEFLECTIONS: **Ratio**

Dead load (in)	at	7.17 ft	=	-0.059		L/D	=	2894	> 300	0.10
Live load (in)	at	7.17 ft	=	-0.085	< -1.000	L/D	=	2026	> 360	0.18
Net Total load (in)	at	7.17 ft	=	-0.144		L/D	=	1192	> 240	0.20

Floor Type: Second Floor **Beam Number = 458**

SPAN INFORMATION (ft): I-End (97.25,12.50) J-End (97.25,33.00)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 20.50

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	42.75	Y bar(in)	=	13.97
Mnf (kip-ft)	=	281.54	Mn (kip-ft)	=	251.01
C (kips)	=	172.30	PNA (in)	=	13.40
Ieff (in4)	=	611.90	Itr (in4)	=	718.30
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 32 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 63.22

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	20.500	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	20.500	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	20.500	0.023	0.020	0.100			0.015	0.025
4	0.000	0.215	0.215	0.000	---	NonR	0.000	0.000
	20.500	0.215	0.215	0.000			0.000	0.000
5	0.000	0.095	0.084	0.419	0.0%	Red	0.063	0.105
	20.500	0.095	0.084	0.419			0.063	0.105
6	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	20.500	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 14.78 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	35.6	10.3	0.0	1.00	0.90	124.50
	Init DL	1.4DL	28.9	10.3	---	---		
	Max +	1.2DL+1.6LL	75.7	10.3	---	---	0.90	225.91
Controlling		1.2DL+1.6LL	75.7	10.3	---	---	0.90	225.91

REACTIONS (kips):

	Left	Right
Initial reaction	5.35	5.35
DL reaction	4.16	4.16
Max +LL reaction	6.11	6.11
Max +total reaction (factored)	14.78	14.78

DEFLECTIONS:

						Ratio
Initial load (in)	at 10.25 ft =	-0.270		L/D = 910	> 180	0.20
Live load (in)	at 10.25 ft =	-0.134	< -1.000	L/D = 1842	> 360	0.20
Post Comp load (in)	at 10.25 ft =	-0.137		L/D = 1801	> 240	0.13
Net Total load (in)	at 10.25 ft =	-0.407		L/D = 605	> 240	0.40

Floor Type: Second Floor **Beam Number = 459**

SPAN INFORMATION (ft): I-End (97.25,12.50) J-End (114.00,12.50)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 16.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.12	Y bar(in)	=	15.34
Mnf (kip-ft)	=	458.06	Mn (kip-ft)	=	426.96
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1252.47	Itr (in4)	=	1390.40
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 24 Partial = 17 Actual = 17
Number of Stud Rows = 1 Percent of Full Composite Action = 71.12

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.375	6.35	6.12	8.07	0.0	0.00	0.00	0.0	0.00	Snow	1.29	2.14

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	2.667	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	16.750	0.000	0.000	0.000			0.000	0.000
2	1.084	0.052	0.052	0.000	---	NonR	0.000	0.000
	16.750	0.052	0.052	0.000			0.000	0.000
3	1.084	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	16.750	0.023	0.020	0.100			0.015	0.025
4	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	1.076	0.052	0.052	0.000			0.000	0.000
5	0.000	0.023	0.020	0.100	0.0%	Red	0.015	0.025
	1.076	0.023	0.020	0.100			0.015	0.025
6	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	16.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 13.93 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	51.0	8.4	0.0	1.00	0.90	249.38
	Init DL	1.4DL	41.1	8.4	---	---		
	Max +	1.2DL+1.6LL	51.0	8.4	---	---	0.90	384.26

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
Controlling		1.2DL+1.6LL	105.6	8.4	---	---	0.90	384.26

REACTIONS (kips):

	Left	Right
Initial reaction	5.24	5.24
DL reaction	4.09	4.09
Max +LL reaction	5.64	5.64
Max +total reaction (factored)	13.93	13.93

DEFLECTIONS:

										Ratio
Initial load (in)	at	8.37 ft	=	-0.083		L/D	=	2427	> 180	0.07
Live load (in)	at	8.37 ft	=	-0.049	< -1.000	L/D	=	4088	> 360	0.09
Post Comp load (in)	at	8.37 ft	=	-0.050		L/D	=	3993	> 240	0.06
Net Total load (in)	at	8.37 ft	=	-0.133		L/D	=	1509	> 240	0.16

Floor Type: Second Floor **Beam Number = 461**

SPAN INFORMATION (ft): I-End (99.75,87.83) J-End (99.75,113.17)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 25.33

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 49.50	Y bar(in)		=	14.34
Mnf (kip-ft)	= 296.99	Mn (kip-ft)		=	258.79
C (kips)	= 189.53	PNA (in)		=	13.43
Ieff (in4)	= 622.61	Itr (in4)		=	745.61
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 25 Partial = 25 Actual = 23
Number of Stud Rows = 1 Percent of Full Composite Action = 55.26

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
1.500	0.22	0.21	0.23	0.0	0.00	0.00	0.0	0.00	Snow	0.04	0.06

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	25.333	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	25.333	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.101	0.0%	Red	0.015	0.025
	8.166	0.023	0.020	0.101			0.015	0.025
4	8.167	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	25.333	0.023	0.020	0.050			0.015	0.025
5	1.500	0.160	0.160	0.000	---	NonR	0.000	0.000
	25.333	0.160	0.160	0.000			0.000	0.000
6	1.500	0.071	0.063	0.313	0.0%	Red	0.047	0.078
	8.166	0.071	0.063	0.313			0.047	0.078
7	8.167	0.071	0.063	0.156	0.0%	Red	0.047	0.078
	25.333	0.071	0.063	0.156			0.047	0.078
8	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	25.333	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 12.10 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	43.8	12.7	0.0	1.00	0.90	124.50
	Init DL	1.4DL	35.6	12.7	---	---		
	Max +	1.2DL+1.6LL	71.7	12.1	---	---	0.90	232.91
Controlling		1.2DL+1.6LL	43.8	12.7	---	---	0.90	124.50

REACTIONS (kips):

	Left	Right
Initial reaction	5.14	5.33
DL reaction	4.02	4.15
Max +LL reaction	4.55	3.67
Max +total reaction (factored)	12.10	10.86

DEFLECTIONS:

						Ratio
Initial load (in)	at 12.67 ft	= -0.510		L/D = 596	> 180	0.30
Live load (in)	at 12.67 ft	= -0.163	< -1.000	L/D = 1871	> 360	0.19
Post Comp load (in)	at 12.67 ft	= -0.168		L/D = 1809	> 240	0.13
Net Total load (in)	at 12.67 ft	= -0.678		L/D = 449	> 240	0.54

Floor Type: Second Floor **Beam Number = 462**

SPAN INFORMATION (ft): I-End (99.75,71.58) J-End (99.75,87.83)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 16.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	36.38	Y bar(in)	=	13.55
Mnf (kip-ft)	=	266.68	Mn (kip-ft)	=	247.71
C (kips)	=	168.32	PNA (in)	=	13.39
Ieff (in4)	=	614.83	Itr (in4)	=	687.08
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 26 Partial = 17 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 72.59

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.875	1.92	1.86	2.54	0.0	0.00	0.00	0.0	0.00	Snow	0.38	0.63

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	16.250	0.000	0.000	0.000			0.000	0.000
2	0.000	0.052	0.052	0.000	---	NonR	0.000	0.000
	16.250	0.052	0.052	0.000			0.000	0.000
3	0.000	0.023	0.020	0.101	0.0%	Red	0.015	0.025
	16.250	0.023	0.020	0.101			0.015	0.025
4	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	16.250	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.26 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	18.1	8.9	0.0	1.00	0.90	124.50
	Init DL	1.4DL	14.8	8.9	---	---		
	Max +	1.2DL+1.6LL	38.0	8.9	---	---	0.90	222.94
Controlling		1.2DL+1.6LL	38.0	8.9	---	---	0.90	222.94

REACTIONS (kips):

	Left	Right
Initial reaction	2.10	2.33
DL reaction	1.66	1.83
Max +LL reaction	2.27	2.54
Max +total reaction (factored)	5.62	6.26

DEFLECTIONS:

										Ratio
Initial load (in)	at	8.29 ft	=	-0.075		L/D	=	2612	> 180	0.07
Live load (in)	at	8.29 ft	=	-0.035	< -1.000	L/D	=	5539	> 360	0.06
Post Comp load (in)	at	8.29 ft	=	-0.036		L/D	=	5416	> 240	0.04
Net Total load (in)	at	8.29 ft	=	-0.111		L/D	=	1762	> 240	0.14

Floor Type: Second Floor **Beam Number = 476**

SPAN INFORMATION (ft): I-End (110.00,47.33) J-End (110.00,55.49)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 8.15
Mp (kip-ft) = 6.87

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.917	0.77	0.00	0.0	0.82	0.00	0.0	0.00	Snow	0.12

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	8.154	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 1.49 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	4.8	4.9	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	4.8	4.9	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.33	0.48
Max +LL reaction	0.37	0.57
Max +total reaction (factored)	0.99	1.49

DEFLECTIONS:

								Ratio
Dead load (in)	at	4.32 ft	=	-0.131	L/D	= 744	> 300	0.40
Live load (in)	at	4.32 ft	=	-0.155	L/D	= 631	> 360	0.57
Net Total load (in)	at	4.32 ft	=	-0.286	L/D	= 342	> 240	0.70

Floor Type: Second Floor **Beam Number = 477**

SPAN INFORMATION (ft): I-End (106.00,52.25) J-End (110.00,52.25)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.209	0.000	---	NonR	0.000
	4.000	0.209	0.000			0.000
2	0.000	0.165	0.398	---	NonR	0.060
	4.000	0.165	0.398			0.060
3	0.000	0.003	0.010	---	NonR	0.002
	4.000	0.003	0.010			0.002
4	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.42 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	2.4	2.0	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	2.4	2.0	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.77	0.77
Max +LL reaction	0.94	0.94
Max +total reaction (factored)	2.42	2.42

DEFLECTIONS:

					Ratio
Dead load (in)	at	2.00 ft =	-0.020	L/D = 2427 > 300	0.12
Live load (in)	at	2.00 ft =	-0.024	L/D = 1984 > 360	0.18
Net Total load (in)	at	2.00 ft =	-0.044	L/D = 1092 > 240	0.22

Floor Type: Second Floor **Beam Number = 478**

SPAN INFORMATION (ft): I-End (149.75,63.54) J-End (149.75,73.24)

Beam Size (User Selected) = MC10X6.5 Fy = 36.0 ksi
Total Beam Length (ft) = 9.70
Mp (kip-ft) = 17.70

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
8.048	0.91	0.00	0.0	0.97	0.00	0.0	0.00	Snow	0.15

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.007	0.000	---	NonR	0.000
	9.702	0.007	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.43 kips 0.90Vn = 29.55 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	4.0	8.0	0.0	1.00	0.90	15.93
Controlling		1.2DL+1.6LL	4.0	8.0	0.0	1.00	0.90	15.93

REACTIONS (kips):

	Left	**Right**
DL reaction	0.19	0.79
Max +LL reaction	0.19	0.93
Max +total reaction (factored)	0.53	2.43

DEFLECTIONS:

					Ratio
Dead load (in)	at 5.48 ft =	-0.025	L/D = 4725 > 300		0.06
Live load (in)	at 5.48 ft =	-0.028	L/D = 4196 > 360		0.09
Net Total load (in)	at 5.48 ft =	-0.052	L/D = 2222 > 240		0.11

Floor Type: Second Floor **Beam Number = 479**

SPAN INFORMATION (ft): I-End (145.75,71.58) J-End (149.75,71.58)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.249	0.000	---	NonR	0.000
	4.000	0.249	0.000			0.000
2	0.000	0.202	0.485	---	NonR	0.073
	4.000	0.202	0.485			0.073
3	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.88 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	2.9	2.0	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	2.9	2.0	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.91	0.91
Max +LL reaction	1.12	1.12
Max +total reaction (factored)	2.88	2.88

DEFLECTIONS: **Ratio**

Dead load (in)	at	2.00 ft	=	-0.024	L/D	=	2039	> 300	0.15
Live load (in)	at	2.00 ft	=	-0.029	L/D	=	1668	> 360	0.22
Net Total load (in)	at	2.00 ft	=	-0.052	L/D	=	917	> 240	0.26

Floor Type: Second Floor **Beam Number = 480**

SPAN INFORMATION (ft): I-End (149.75,47.33) J-End (149.75,55.49)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 8.15
Mp (kip-ft) = 6.87

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.917	0.77	0.00	0.0	0.82	0.00	0.0	0.00	Snow	0.12

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	8.154	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 1.49 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	4.8	4.9	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	4.8	4.9	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.33	0.49
Max +LL reaction	0.37	0.57
Max +total reaction (factored)	0.99	1.49

DEFLECTIONS:

					Ratio
Dead load (in)	at 4.32 ft =	-0.132	L/D = 743 > 300		0.40
Live load (in)	at 4.32 ft =	-0.155	L/D = 632 > 360		0.57
Net Total load (in)	at 4.32 ft =	-0.287	L/D = 341 > 240		0.70

Floor Type: Second Floor **Beam Number = 481**

SPAN INFORMATION (ft): I-End (145.75,52.25) J-End (149.75,52.25)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.209	0.000	---	NonR	0.000
	4.000	0.209	0.000			0.000
2	0.000	0.170	0.408	---	NonR	0.061
	4.000	0.170	0.408			0.061
3	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.42 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	2.4	2.0	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	2.4	2.0	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.77	0.77
Max +LL reaction	0.94	0.94
Max +total reaction (factored)	2.42	2.42

DEFLECTIONS:

					Ratio
Dead load (in)	at	2.00 ft =	-0.020	L/D = 2421 > 300	0.12
Live load (in)	at	2.00 ft =	-0.024	L/D = 1985 > 360	0.18
Net Total load (in)	at	2.00 ft =	-0.044	L/D = 1091 > 240	0.22

Floor Type: Second Floor **Beam Number = 482**

SPAN INFORMATION (ft): I-End (338.75,47.33) J-End (338.75,55.49)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 8.15
Mp (kip-ft) = 6.87

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
4.917	0.70	0.00	0.0	0.82	0.00	0.0	0.00	Snow	0.12

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	8.154	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 1.43 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	4.6	4.9	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	4.6	4.9	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.30	0.44
Max +LL reaction	0.37	0.57
Max +total reaction (factored)	0.95	1.43

DEFLECTIONS:

						Ratio
Dead load (in)	at	4.32 ft	= -0.120	L/D = 818	> 300	0.37
Live load (in)	at	4.32 ft	= -0.155	L/D = 631	> 360	0.57
Net Total load (in)	at	4.32 ft	= -0.275	L/D = 356	> 240	0.67

Floor Type: Second Floor **Beam Number = 483**

SPAN INFORMATION (ft): I-End (338.75,52.25) J-End (342.75,52.25)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 4.00
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.209	0.000	---	NonR	0.000
	4.000	0.209	0.000			0.000
2	0.000	0.133	0.408	---	NonR	0.061
	4.000	0.133	0.408			0.061
3	0.000	0.005	0.000	---	NonR	0.000
	4.000	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 2.33 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	2.3	2.0	0.0	1.00	0.90	6.18
Controlling		1.2DL+1.6LL	2.3	2.0	0.0	1.00	0.90	6.18

REACTIONS (kips):

	Left	**Right**
DL reaction	0.70	0.70
Max +LL reaction	0.94	0.94
Max +total reaction (factored)	2.33	2.33

DEFLECTIONS:

					Ratio
Dead load (in)	at	2.00 ft =	-0.018	L/D = 2677 > 300	0.11
Live load (in)	at	2.00 ft =	-0.024	L/D = 1984 > 360	0.18
Net Total load (in)	at	2.00 ft =	-0.042	L/D = 1140 > 240	0.21

Floor Type: Second Floor **Beam Number = 486**

SPAN INFORMATION (ft): I-End (97.25,33.00) J-End (114.00,33.00)

Beam Size (User Selected) = W21X44 Fy = 50.0 ksi
Total Beam Length (ft) = 16.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	50.25	Y bar(in)	=	17.83
Mnf (kip-ft)	=	666.59	Mn (kip-ft)	=	552.27
C (kips)	=	137.84	PNA (in)	=	14.29
Ieff (in4)	=	1779.40	Itr (in4)	=	2270.53
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 40 Partial = 17 Actual = 17
Number of Stud Rows = 1 Percent of Full Composite Action = 43.03

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.375	6.35	6.12	7.09	0.0	0.00	0.00	0.0	0.00	Snow	1.29	2.14
8.750	13.45	11.72	3.06	0.0	12.75	0.00	0.0	0.00	Snow	2.41	3.95

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	1.018	0.184	0.184	0.000			0.000	0.000
2	0.000	0.081	0.072	0.358	0.0%	Red	0.054	0.090
	1.018	0.081	0.072	0.358			0.054	0.090
3	1.035	0.184	0.184	0.000	---	NonR	0.000	0.000
	16.750	0.184	0.184	0.000			0.000	0.000
4	1.035	0.081	0.072	0.358	0.0%	Red	0.054	0.090
	8.750	0.081	0.072	0.358			0.054	0.090
5	8.750	0.117	0.072	0.358	---	NonR	0.054	0.090
	16.750	0.117	0.072	0.358			0.054	0.090
6	0.000	0.044	0.044	0.000	---	NonR	0.000	0.000
	16.750	0.044	0.044	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 43.05 kips 1.00Vn = 217.35 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	145.9	8.8	0.0	1.00	0.90	357.75
	Init DL	1.4DL	82.9	8.8	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	310.1	8.8	---	---	0.90	497.05
Controlling		1.2DL+1.6LL	310.1	8.8	---	---	0.90	497.05

REACTIONS (kips):

	Left	Right
Initial reaction	14.87	15.58
DL reaction	12.25	13.01
Max +LL reaction	16.33	17.15
Max +total reaction (factored)	40.83	43.05

DEFLECTIONS:

										Ratio
Initial load (in)	at	8.46 ft	=	-0.145	L/D	=	1387	>	240	0.17
Live load (in)	at	8.46 ft	=	-0.101	L/D	=	1987	>	480	0.24
Post Comp load (in)	at	8.46 ft	=	-0.108	L/D	=	1854	>	240	0.13
Net Total load (in)	at	8.46 ft	=	-0.253	L/D	=	793	>	240	0.30

Floor Type: Second Floor **Beam Number = 488**

SPAN INFORMATION (ft): I-End (342.75,71.58) J-End (349.00,71.58)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 11.38		Y bar(in)	=	10.43
Mnf (kip-ft)	= 195.49		Mn (kip-ft)	=	182.46
C (kips)	= 51.69		PNA (in)	=	9.10
Ieff (in4)	= 418.34		Itr (in4)	=	458.80
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 6 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 71.27

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.228	0.228	0.000	---	NonR	0.000	0.000
	6.250	0.228	0.228	0.000			0.000	0.000
2	0.000	0.100	0.089	0.555	---	NonR	0.067	0.111
	6.250	0.100	0.089	0.555			0.067	0.111
3	0.000	0.009	0.009	0.000	---	NonR	0.000	0.000
	6.250	0.009	0.009	0.000			0.000	0.000
4	0.000	0.004	0.003	0.017	0.0%	Red	0.002	0.004
	6.250	0.004	0.003	0.017			0.002	0.004
5	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	6.250	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.56 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	3.0	3.1	0.0	1.00	0.90	124.50
	Init DL	1.4DL	2.4	3.1	---	---		
	Max +	1.2DL+1.6LL	7.1	3.1	---	---	0.90	164.21
Controlling		1.2DL+1.6LL	7.1	3.1	---	---	0.90	164.21

REACTIONS (kips):

	Left	**Right**
Initial reaction	1.45	1.45
DL reaction	1.13	1.13

	Left	Right
Max +LL reaction	2.00	2.00
Max +total reaction (factored)	4.56	4.56

DEFLECTIONS:

									Ratio
Initial load (in)	at	3.12 ft	=	-0.002	L/D	=	3596 7	>	180	0.01
Live load (in)	at	3.12 ft	=	-0.002	L/D	=	4138 3	>	360	0.01
Post Comp load (in)	at	3.12 ft	=	-0.002	L/D	=	4062 4	>	240	0.01
Net Total load (in)	at	3.12 ft	=	-0.004	L/D	=	1907 7	>	240	0.01

Floor Type: Second Floor **Beam Number = 489**

SPAN INFORMATION (ft): I-End (342.75,33.00) J-End (349.00,33.00)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	11.38	Y bar(in)	=	10.43
Mnf (kip-ft)	=	195.49	Mn (kip-ft)	=	182.46
C (kips)	=	51.69	PNA (in)	=	9.10
Ieff (in4)	=	418.34	Itr (in4)	=	458.80
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 10 Partial = 7 Actual = 7
Number of Stud Rows = 1 Percent of Full Composite Action = 71.27

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.009	0.009	0.000	---	NonR	0.000	0.000
	6.250	0.009	0.009	0.000			0.000	0.000
2	0.000	0.004	0.003	0.017	0.0%	Red	0.002	0.004
	6.250	0.004	0.003	0.017			0.003	0.004
3	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	6.250	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.22 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.4DL	0.2	3.1	0.0	1.00	0.90	124.50
	Init DL	1.4DL	0.2	3.1	---	---		
	Max +	1.2DL+1.6LL	0.4	3.1	---	---	0.90	164.21
Controlling		1.2DL+1.6LL	0.4	3.1	---	---	0.90	164.21

REACTIONS (kips):

	Left	Right
Initial reaction	0.12	0.12
DL reaction	0.11	0.11
Max +LL reaction	0.06	0.06
Max +total reaction (factored)	0.22	0.22

DEFLECTIONS:

Ratio

Initial load (in)	at	3.12 ft	=	-0.000	L/D	=	3710 88	>	180	0.00
Live load (in)	at	3.12 ft	=	-0.000						
Post Comp load (in)	at	3.12 ft	=	-0.000						
Net Total load (in)	at	3.12 ft	=	-0.000	L/D	=	2922 90	>	240	0.00

Floor Type: Second Floor **Beam Number = 490**

SPAN INFORMATION (ft): I-End (99.75,89.33) J-End (106.00,89.33)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.38	Y bar(in)	=	11.52
Mnf (kip-ft)	=	143.79	Mn (kip-ft)	=	114.17
C (kips)	=	51.69	PNA (in)	=	8.53
Ieff (in4)	=	247.25	Itr (in4)	=	327.43
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 14 Partial = 7 Actual = 7
Number of Stud Rows = 1 Percent of Full Composite Action = 44.12

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.038	0.038	0.000	---	NonR	0.000	0.000
	6.250	0.038	0.038	0.000			0.000	0.000
2	0.000	0.017	0.015	0.075	0.0%	Red	0.011	0.019
	6.250	0.017	0.015	0.075			0.011	0.019
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	6.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.69 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	0.5	3.1	0.0	1.00	0.90	65.25
	Init DL	1.4DL	0.5	3.1	---	---		
	Max +	1.2DL+1.6LL	1.1	3.1	---	---	0.90	102.76
Controlling		1.2DL+1.6LL	1.1	3.1	---	---	0.90	102.76

REACTIONS (kips):

	Left	Right
Initial reaction	0.27	0.27
DL reaction	0.22	0.22
Max +LL reaction	0.27	0.27
Max +total reaction (factored)	0.69	0.69

DEFLECTIONS:

Ratio

Initial load (in)	at	3.12 ft	=	-0.001	L/D	=	8296 3	>	180	0.00
Live load (in)	at	3.12 ft	=	-0.000	L/D	=	1816 08	>	360	0.00
Post Comp load (in)	at	3.12 ft	=	-0.000	L/D	=	1775 92	>	240	0.00
Net Total load (in)	at	3.12 ft	=	-0.001	L/D	=	5654 7	>	240	0.00

Floor Type: Second Floor **Beam Number = 491**

SPAN INFORMATION (ft): I-End (99.75,71.58) J-End (106.00,71.58)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.75	Y bar(in)	=	11.57
Mnf (kip-ft)	=	144.68	Mn (kip-ft)	=	114.22
C (kips)	=	51.69	PNA (in)	=	8.53
Ieff (in4)	=	247.11	Itr (in4)	=	329.65
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 6 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 43.23

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.434	0.434	0.000	---	NonR	0.000	0.000
	6.250	0.434	0.434	0.000			0.000	0.000
2	0.000	0.191	0.169	0.846	0.0%	Red	0.127	0.212
	6.250	0.191	0.169	0.846			0.127	0.212
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	6.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 7.26 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	5.3	3.1	0.0	1.00	0.90	65.25
	Init DL	1.4DL	4.2	3.1	---	---		
	Max +	1.2DL+1.6LL	11.4	3.1	---	---	0.90	102.80
Controlling		1.2DL+1.6LL	11.4	3.1	---	---	0.90	102.80

REACTIONS (kips):

	Left	Right
Initial reaction	2.59	2.59
DL reaction	2.00	2.00
Max +LL reaction	3.04	3.04
Max +total reaction (factored)	7.26	7.26

DEFLECTIONS: **Ratio**

Initial load (in)	at	3.12 ft	=	-0.008	L/D	=	9086	>	180	0.02
Live load (in)	at	3.12 ft	=	-0.005	L/D	=	1608 9	>	360	0.02
Post Comp load (in)	at	3.12 ft	=	-0.005	L/D	=	1573 3	>	240	0.02
Net Total load (in)	at	3.12 ft	=	-0.013	L/D	=	5760	>	240	0.04

Floor Type: Second Floor **Beam Number = 492**

SPAN INFORMATION (ft): I-End (99.75,80.46) J-End (106.00,80.46)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.75	Y bar(in)	=	11.57
Mnf (kip-ft)	=	144.68	Mn (kip-ft)	=	114.22
C (kips)	=	51.69	PNA (in)	=	8.53
Ieff (in4)	=	247.11	Itr (in4)	=	329.65
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 6 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 43.23

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.417	0.417	0.000	---	NonR	0.000	0.000
	6.250	0.417	0.417	0.000			0.000	0.000
2	0.000	0.184	0.163	0.812	0.0%	Red	0.122	0.203
	6.250	0.184	0.163	0.812			0.122	0.203
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	6.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.98 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	5.1	3.1	0.0	1.00	0.90	65.25
	Init DL	1.4DL	4.1	3.1	---	---		
	Max +	1.2DL+1.6LL	10.9	3.1	---	---	0.90	102.80
Controlling		1.2DL+1.6LL	10.9	3.1	---	---	0.90	102.80

REACTIONS (kips):

	Left	Right
Initial reaction	2.49	2.49
DL reaction	1.92	1.92
Max +LL reaction	2.92	2.92
Max +total reaction (factored)	6.98	6.98

DEFLECTIONS:

Ratio

Initial load (in)	at	3.12 ft	=	-0.008	L/D	=	9454	>	180	0.02
Live load (in)	at	3.12 ft	=	-0.004	L/D	=	16755	>	360	0.02
Post Comp load (in)	at	3.12 ft	=	-0.005	L/D	=	16384	>	240	0.01
Net Total load (in)	at	3.12 ft	=	-0.013	L/D	=	5995	>	240	0.04

Floor Type: Second Floor **Beam Number = 493**

SPAN INFORMATION (ft): I-End (99.75,63.54) J-End (106.00,63.54)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.75	Y bar(in)	=	11.57
Mnf (kip-ft)	=	144.68	Mn (kip-ft)	=	114.22
C (kips)	=	51.69	PNA (in)	=	8.53
Ieff (in4)	=	247.11	Itr (in4)	=	329.65
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 6 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 43.23

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.413	0.413	0.000	---	NonR	0.000	0.000
	6.250	0.413	0.413	0.000			0.000	0.000
2	0.000	0.182	0.161	0.805	0.0%	Red	0.121	0.201
	6.250	0.182	0.161	0.805			0.121	0.201
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	6.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.91 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	5.0	3.1	0.0	1.00	0.90	65.25
	Init DL	1.4DL	4.0	3.1	---	---		
	Max +	1.2DL+1.6LL	10.8	3.1	---	---	0.90	102.80
Controlling		1.2DL+1.6LL	10.8	3.1	---	---	0.90	102.80

REACTIONS (kips):

	Left	Right
Initial reaction	2.47	2.47
DL reaction	1.90	1.90
Max +LL reaction	2.89	2.89
Max +total reaction (factored)	6.91	6.91

DEFLECTIONS:

Ratio

Initial load (in)	at	3.12 ft	=	-0.008	L/D	=	9542	>	180	0.02
Live load (in)	at	3.12 ft	=	-0.004	L/D	=	16916	>	360	0.02
Post Comp load (in)	at	3.12 ft	=	-0.005	L/D	=	16542	>	240	0.01
Net Total load (in)	at	3.12 ft	=	-0.012	L/D	=	6051	>	240	0.04

Floor Type: Second Floor **Beam Number = 494**

SPAN INFORMATION (ft): I-End (99.75,55.49) J-End (106.00,55.49)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.75	Y bar(in)	=	11.57
Mnf (kip-ft)	=	144.68	Mn (kip-ft)	=	114.22
C (kips)	=	51.69	PNA (in)	=	8.53
Ieff (in4)	=	247.11	Itr (in4)	=	329.65
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 6 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 43.23

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.416	0.416	0.000	---	NonR	0.000	0.000
	6.250	0.416	0.416	0.000			0.000	0.000
2	0.000	0.183	0.162	0.810	0.0%	Red	0.122	0.203
	6.250	0.183	0.162	0.810			0.122	0.203
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	6.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.96 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	5.1	3.1	0.0	1.00	0.90	65.25
	Init DL	1.4DL	4.0	3.1	---	---		
	Max +	1.2DL+1.6LL	10.9	3.1	---	---	0.90	102.80
Controlling		1.2DL+1.6LL	10.9	3.1	---	---	0.90	102.80

REACTIONS (kips):

	Left	Right
Initial reaction	2.48	2.48
DL reaction	1.92	1.92
Max +LL reaction	2.91	2.91
Max +total reaction (factored)	6.96	6.96

DEFLECTIONS:

Ratio

Initial load (in)	at	3.12 ft	=	-0.008	L/D	=	9481	>	180	0.02
Live load (in)	at	3.12 ft	=	-0.004	L/D	=	1680	>	360	0.02
							4			
Post Comp load (in)	at	3.12 ft	=	-0.005	L/D	=	1643	>	240	0.01
							2			
Net Total load (in)	at	3.12 ft	=	-0.012	L/D	=	6012	>	240	0.04

Floor Type: Second Floor **Beam Number = 495**

SPAN INFORMATION (ft): I-End (97.25,40.17) J-End (106.00,40.17)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 8.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	26.25	Y bar(in)	=	12.40
Mnf (kip-ft)	=	162.24	Mn (kip-ft)	=	125.70
C (kips)	=	68.92	PNA (in)	=	9.40
Ieff (in4)	=	266.50	Itr (in4)	=	365.82
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 8 Partial = 8 Actual = 8
Number of Stud Rows = 1 Percent of Full Composite Action = 41.15

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.368	0.368	0.000	---	NonR	0.000	0.000
	1.000	0.368	0.368	0.000			0.000	0.000
2	0.000	0.162	0.143	0.717	0.0%	Red	0.107	0.179
	1.000	0.162	0.143	0.717			0.107	0.179
3	1.000	0.184	0.184	0.000	---	NonR	0.000	0.000
	8.750	0.184	0.184	0.000			0.000	0.000
4	1.000	0.081	0.072	0.358	0.0%	Red	0.054	0.090
	8.750	0.081	0.072	0.358			0.054	0.090
5	1.035	0.184	0.184	0.000	---	NonR	0.000	0.000
	8.750	0.184	0.184	0.000			0.000	0.000
6	1.035	0.081	0.072	0.358	0.0%	Red	0.054	0.090
	8.750	0.081	0.072	0.358			0.054	0.090
7	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	8.750	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 8.62 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	8.8	4.4	0.0	1.00	0.90	65.25
	Init DL	1.4DL	7.0	4.4	---	---		
	Max +	1.2DL+1.6LL	18.8	4.4	---	---	0.90	113.13
Controlling		1.2DL+1.6LL	18.8	4.4	---	---	0.90	113.13

REACTIONS (kips):

	Left	Right
Initial reaction	3.07	3.08
DL reaction	2.37	2.38
Max +LL reaction	3.59	3.60
Max +total reaction (factored)	8.59	8.62

DEFLECTIONS:

									Ratio
Initial load (in)	at	4.38 ft	=	-0.027	L/D	=	3898	> 180	0.05
Live load (in)	at	4.38 ft	=	-0.014	L/D	=	7474	> 360	0.05
Post Comp load (in)	at	4.38 ft	=	-0.014	L/D	=	7309	> 240	0.03
Net Total load (in)	at	4.38 ft	=	-0.041	L/D	=	2542	> 240	0.09

Floor Type: Second Floor **Beam Number = 496**

SPAN INFORMATION (ft): I-End (337.50,29.50) J-End (342.75,29.50)

Beam Size (User Selected) = W10X12 Fy = 50.0 ksi
Total Beam Length (ft) = 5.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	15.75	Y bar(in)	=	9.96
Mnf (kip-ft)	=	107.76	Mn (kip-ft)	=	94.80
C (kips)	=	63.12	PNA (in)	=	8.26
Ieff (in4)	=	185.24	Itr (in4)	=	219.57
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 10 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 62.85

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	5.250	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	5.250	0.023	0.020	0.050			0.015	0.025
3	0.000	0.012	0.012	0.000	---	NonR	0.000	0.000
	5.250	0.012	0.012	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.54 kips 1.00Vn = 56.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	0.5	2.6	0.0	1.00	0.90	46.90
	Init DL	1.4DL	0.4	2.6	---	---		
	Max +	1.2DL+1.6LL	0.7	2.6	---	---	0.90	85.32
Controlling		1.2DL+1.6LL	0.5	2.6	0.0	1.00	0.90	46.90

REACTIONS (kips):

	Left	Right
Initial reaction	0.28	0.28
DL reaction	0.23	0.23
Max +LL reaction	0.17	0.17
Max +total reaction (factored)	0.54	0.54

DEFLECTIONS: **Ratio**

Initial load (in)	at	2.63 ft	=	-0.001	L/D	=	68967	>	180	0.00
Live load (in)	at	2.63 ft	=	-0.000	L/D	=	304603	>	360	0.00
Post Comp load (in)	at	2.63 ft	=	-0.000	L/D	=	292887	>	240	0.00
Net Total load (in)	at	2.63 ft	=	-0.001	L/D	=	55823	>	240	0.00

Floor Type: Second Floor **Beam Number = 498**

SPAN INFORMATION (ft): I-End (342.75,52.25) J-End (349.00,52.25)

Beam Size (User Selected) = C4X5.4 Fy = 36.0 ksi
Total Beam Length (ft) = 6.25
Mp (kip-ft) = 6.87

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.005	0.000	---	NonR	0.000
	6.250	0.005	0.000			0.000

SHEAR (Ultimate): Max Vu (1.4DL) = 0.02 kips 0.90Vn = 14.31 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Controlling		1.4DL	0.0	3.0	6.2	1.13	0.90	5.63

REACTIONS (kips):

	Left	**Right**
DL reaction	0.02	0.02
Max +total reaction (factored)	0.02	0.02

DEFLECTIONS: **Ratio**

Dead load (in)	at	3.12 ft	=	-0.002	L/D =	4536	>	300	0.01
						6			
Live load (in)	at	3.12 ft	=	-0.000					
Net Total load (in)	at	3.12 ft	=	-0.002	L/D =	4536	>	240	0.01
						6			

Floor Type: Second Floor **Beam Number = 499**

SPAN INFORMATION (ft): I-End (99.75,87.83) J-End (106.00,87.83)

Beam Size (User Selected) = W8X10 Fy = 50.0 ksi
Total Beam Length (ft) = 6.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	18.38	Y bar(in)	=	9.09
Mnf (kip-ft)	=	90.05	Mn (kip-ft)	=	68.70
C (kips)	=	51.69	PNA (in)	=	6.99
Ieff (in4)	=	115.47	Itr (in4)	=	158.26
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 6 Partial = 6 Actual = 6
Number of Stud Rows = 1 Percent of Full Composite Action = 44.12

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.228	0.228	0.000	---	NonR	0.000	0.000
	6.250	0.228	0.228	0.000			0.000	0.000
2	0.000	0.100	0.089	0.444	0.0%	Red	0.067	0.111
	6.250	0.100	0.089	0.444			0.067	0.111
3	0.000	0.010	0.010	0.000	---	NonR	0.000	0.000
	6.250	0.010	0.010	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.82 kips 1.00Vn = 40.24 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	2.8	3.1	0.0	1.00	0.90	32.87
	Init DL	1.4DL	2.2	3.1	---	---		
	Max +	1.2DL+1.6LL	6.0	3.1	---	---	0.90	61.83
Controlling		1.2DL+1.6LL	6.0	3.1	---	---	0.90	61.83

REACTIONS (kips):

	Left	Right
Initial reaction	1.37	1.37
DL reaction	1.06	1.06
Max +LL reaction	1.59	1.59
Max +total reaction (factored)	3.82	3.82

DEFLECTIONS:

Ratio

Initial load (in)	at	3.12 ft	=	-0.013	L/D	=	5974	>	180	0.03
Live load (in)	at	3.12 ft	=	-0.005	L/D	=	1433 5	>	360	0.03
Post Comp load (in)	at	3.12 ft	=	-0.005	L/D	=	1401 8	>	240	0.02
Net Total load (in)	at	3.12 ft	=	-0.018	L/D	=	4189	>	240	0.06

Floor Type: Second Floor **Beam Number = 500**

SPAN INFORMATION (ft): I-End (284.75,62.50) J-End (297.08,62.50)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.00	Y bar(in)	=	13.17
Mnf (kip-ft)	=	179.36	Mn (kip-ft)	=	136.26
C (kips)	=	86.15	PNA (in)	=	10.26
Ieff (in4)	=	289.06	Itr (in4)	=	400.09
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 37.86

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.333	0.93	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	5.333	0.672	0.000	0.000			0.000	0.000
2	0.000	0.202	0.202	0.000	---	NonR	0.000	0.000
	12.333	0.202	0.202	0.000			0.000	0.000
3	0.000	0.089	0.079	0.197	0.0%	Red	0.059	0.098
	12.333	0.089	0.079	0.197			0.070	0.098
4	0.000	0.258	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.258	0.000	0.000			0.000	0.000
5	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.74 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.7	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	7.9	6.2	---	---		
	Max +	1.2DL+1.6LL	30.3	5.3	---	---	0.90	122.63
Controlling		1.2DL+1.6LL	30.3	5.3	---	---	0.90	122.63

REACTIONS (kips):

	Left	Right
Initial reaction	2.43	2.43
DL reaction	6.81	4.65
Max +LL reaction	1.60	1.62
Max +total reaction (factored)	10.74	8.18

DEFLECTIONS:

									Ratio
Initial load (in)	at	6.04 ft	=	-0.060	L/D	=	2477	> 180	0.07
Live load (in)	at	6.04 ft	=	-0.016	L/D	=	9120	> 360	0.04
Post Comp load (in)	at	6.04 ft	=	-0.057	L/D	=	2611	> 240	0.09
Net Total load (in)	at	6.04 ft	=	-0.116	L/D	=	1271	> 240	0.19

Floor Type: Second Floor **Beam Number = 501**

SPAN INFORMATION (ft): I-End (191.42,62.50) J-End (203.75,62.50)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.00	Y bar(in)	=	13.17
Mnf (kip-ft)	=	179.36	Mn (kip-ft)	=	136.26
C (kips)	=	86.15	PNA (in)	=	10.26
Ieff (in4)	=	289.06	Itr (in4)	=	400.09
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 37.86

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
7.000	0.93	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	7.001	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.672	0.000	0.000			0.000	0.000
2	0.000	0.202	0.202	0.000	---	NonR	0.000	0.000
	12.333	0.202	0.202	0.000			0.000	0.000
3	0.000	0.089	0.079	0.197	0.0%	Red	0.059	0.098
	12.333	0.089	0.079	0.197			0.071	0.098
4	0.000	0.258	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.258	0.000	0.000			0.000	0.000
5	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.78 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.7	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	7.9	6.2	---	---		
	Max +	1.2DL+1.6LL	30.3	7.0	---	---	0.90	122.63
Controlling		1.2DL+1.6LL	30.3	7.0	---	---	0.90	122.63

REACTIONS (kips):

	Left	Right
Initial reaction	2.43	2.43
DL reaction	4.65	6.81
Max +LL reaction	1.60	1.63
Max +total reaction (factored)	8.15	10.78

DEFLECTIONS:

									Ratio
Initial load (in)	at	6.29 ft	=	-0.060	L/D	=	2477	> 180	0.07
Live load (in)	at	6.29 ft	=	-0.016	L/D	=	9098	> 360	0.04
Post Comp load (in)	at	6.29 ft	=	-0.057	L/D	=	2609	> 240	0.09
Net Total load (in)	at	6.29 ft	=	-0.116	L/D	=	1271	> 240	0.19

Floor Type: Second Floor **Beam Number = 502**

SPAN INFORMATION (ft): I-End (191.42,40.75) J-End (191.42,50.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	27.75	Y bar(in)	=	12.53
Mnf (kip-ft)	=	165.69	Mn (kip-ft)	=	143.60
C (kips)	=	105.20	PNA (in)	=	11.21
Ieff (in4)	=	306.82	Itr (in4)	=	371.58
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 18 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 59.46

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	9.250	0.672	0.000	0.000			0.000	0.000
2	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	9.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.4DL) = 4.44 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.4DL	0.2	4.6	0.0	1.00	0.90	65.25
	Init DL	1.4DL	0.2	4.6	---	---		
	Max +	1.4DL	10.3	4.6	---	---	0.90	129.24
Controlling		1.4DL	10.3	4.6	---	---	0.90	129.24

REACTIONS (kips):

	Left	Right
Initial reaction	0.07	0.07
DL reaction	3.17	3.17
Max +total reaction (factored)	4.44	4.44

DEFLECTIONS: **Ratio**

Initial load (in) at 4.62 ft = -0.001 L/D = 1223 > 180 0.00
15

Live load (in) at 4.62 ft = -0.001

Post Comp load (in)	at	4.62 ft	=	-0.012	L/D	=	8922 > 240	0.03
Net Total load (in)	at	4.62 ft	=	-0.013	L/D	=	8316 > 240	0.03

Floor Type: Second Floor **Beam Number = 503**

SPAN INFORMATION (ft): I-End (297.08,40.75) J-End (297.08,50.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	27.75	Y bar(in)	=	12.53
Mnf (kip-ft)	=	165.69	Mn (kip-ft)	=	143.60
C (kips)	=	105.20	PNA (in)	=	11.21
Ieff (in4)	=	306.82	Itr (in4)	=	371.58
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 18 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 59.46

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	9.250	0.672	0.000	0.000			0.000	0.000
2	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	9.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.4DL) = 4.44 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.4DL	0.2	4.6	0.0	1.00	0.90	65.25
	Init DL	1.4DL	0.2	4.6	---	---		
	Max +	1.4DL	10.3	4.6	---	---	0.90	129.24
Controlling		1.4DL	10.3	4.6	---	---	0.90	129.24

REACTIONS (kips):

	Left	Right
Initial reaction	0.07	0.07
DL reaction	3.17	3.17
Max +total reaction (factored)	4.44	4.44

DEFLECTIONS: **Ratio**

Initial load (in) at 4.62 ft = -0.001 L/D = 1223 > 180 0.00
15

Live load (in) at 4.62 ft = -0.000

Post Comp load (in)	at	4.62 ft	=	-0.012	L/D	=	8922 > 240	0.03
Net Total load (in)	at	4.62 ft	=	-0.013	L/D	=	8316 > 240	0.03

Floor Type: First Floor **Beam Number = 4**

SPAN INFORMATION (ft): I-End (203.75,89.33) J-End (240.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	111.00	Y bar(in)	=	21.52
Mnf (kip-ft)	=	1239.04	Mn (kip-ft)	=	1074.79
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3911.29	Itr (in4)	=	4973.83
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 84 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 43.83

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.14	7.85	8.10	27.7	0.00	0.00	0.0	0.00	Snow	1.65	2.75
18.500	8.14	7.86	8.10	27.7	0.00	0.00	0.0	0.00	Snow	1.65	2.75
27.750	8.14	7.86	8.10	27.7	0.00	0.00	0.0	0.00	Snow	1.65	2.75

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.238	0.238	0.000	---	NonR	0.000	0.000
	37.000	0.238	0.238	0.000			0.000	0.000
2	0.000	0.105	0.093	0.464	27.7%	Red	0.070	0.116
	5.000	0.105	0.093	0.464			0.070	0.116
3	5.000	0.105	0.093	0.232	27.7%	Red	0.070	0.116
	37.000	0.105	0.093	0.232			0.070	0.116
4	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 50.08 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	369.6	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	299.1	18.5	---	---		
	Max +	1.2DL+1.6LL	554.1	18.5	---	---	0.90	967.31
Controlling		1.2DL+1.6LL	554.1	18.5	---	---	0.90	967.31

REACTIONS (kips):

	Left	Right
Initial reaction	25.44	25.44
DL reaction	19.82	19.82
Max +LL reaction	16.43	15.71
Max +total reaction (factored)	50.08	48.92

DEFLECTIONS: (Camber = 3/4)

					Ratio
Initial load (in)	at 18.50 ft	=	-0.958	L/D = 463 > 240	0.52
Live load (in)	at 18.50 ft	=	-0.378	L/D = 1176 > 480	0.41
Post Comp load (in)	at 18.50 ft	=	-0.393	L/D = 1130 > 240	0.21
Net Total load (in)	at 18.50 ft	=	-0.601	L/D = 738 > 240	0.33

Floor Type: First Floor **Beam Number = 6**

SPAN INFORMATION (ft): I-End (247.75,89.33) J-End (284.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	111.00	Y bar(in)	=	21.52
Mnf (kip-ft)	=	1239.04	Mn (kip-ft)	=	1074.79
C (kips)	=	310.13	PNA (in)	=	19.32
Ieff (in4)	=	3911.29	Itr (in4)	=	4973.83
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 84 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 43.83

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.250	8.15	7.86	8.09	27.7	0.00	0.00	0.0	0.00	Snow	1.65	2.75
18.500	8.15	7.86	8.09	27.7	0.00	0.00	0.0	0.00	Snow	1.65	2.75
27.750	8.15	7.86	8.09	27.7	0.00	0.00	0.0	0.00	Snow	1.65	2.75

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.238	0.238	0.000	---	NonR	0.000	0.000
	37.000	0.238	0.238	0.000			0.000	0.000
2	0.000	0.105	0.093	0.232	27.7%	Red	0.070	0.116
	37.000	0.105	0.093	0.232			0.070	0.116
3	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 48.83 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	369.7	18.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	299.2	18.5	---	---		
	Max +	1.2DL+1.6LL	552.5	18.5	---	---	0.90	967.31
Controlling		1.2DL+1.6LL	552.5	18.5	---	---	0.90	967.31

REACTIONS (kips):

	Left	Right
Initial reaction	25.45	25.45
DL reaction	19.83	19.83
Max +LL reaction	15.65	15.65
Max +total reaction (factored)	48.83	48.83

DEFLECTIONS: (Camber = 3/4)

					Ratio
Initial load (in)	at 18.50 ft	=	-0.959	L/D = 463 > 240	0.52
Live load (in)	at 18.50 ft	=	-0.375	L/D = 1185 > 480	0.41
Post Comp load (in)	at 18.50 ft	=	-0.390	L/D = 1138 > 240	0.21
Net Total load (in)	at 18.50 ft	=	-0.599	L/D = 741 > 240	0.32

Floor Type: First Floor **Beam Number = 12**

SPAN INFORMATION (ft): I-End (240.75,52.25) J-End (240.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	58.00	Y bar(in)	=	16.78
Mnf (kip-ft)	=	509.34	Mn (kip-ft)	=	455.14
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1322.96	Itr (in4)	=	1587.70
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 38 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 52.27

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.257	15.40	12.23	0.00	0.0	17.14	0.00	0.0	0.00	Snow	2.57	4.29
9.667	4.15	2.41	3.38	0.0	0.00	0.00	0.0	0.00	Snow	0.51	0.85
18.532	15.55	12.24	0.84	0.0	15.50	0.00	0.0	0.00	Snow	2.39	4.29

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.333	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 76.57 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	133.8	9.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	107.1	9.3	---	---		
	Max +	1.2DL+1.6LL	313.8	9.3	---	---	0.90	409.63
Controlling		1.2DL+1.6LL	313.8	9.3	---	---	0.90	409.63

REACTIONS (kips):

	Left	Right
Initial reaction	11.26	25.71
DL reaction	11.08	24.69
Max +LL reaction	13.00	29.34

	Left	Right
Max +total reaction (factored)	34.09	76.57

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.67 ft	=	-0.291	L/D	=	797	> 240	0.30
Live load (in)	at	9.67 ft	=	-0.175	L/D	=	1322	> 480	0.36
Post Comp load (in)	at	9.67 ft	=	-0.211	L/D	=	1097	> 240	0.22
Net Total load (in)	at	9.67 ft	=	-0.503	L/D	=	462	> 240	0.52

Floor Type: First Floor **Beam Number = 14**

SPAN INFORMATION (ft): I-End (247.75,52.25) J-End (247.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	58.00	Y bar(in)	=	16.78
Mnf (kip-ft)	=	509.34	Mn (kip-ft)	=	455.14
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1322.96	Itr (in4)	=	1587.70
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 38 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 52.27

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.257	15.40	12.23	0.00	0.0	17.14	0.00	0.0	0.00	Snow	2.57	4.29
9.667	4.15	2.41	3.38	0.0	0.00	0.00	0.0	0.00	Snow	0.51	0.85
18.532	15.55	12.24	0.82	0.0	15.50	0.00	0.0	0.00	Snow	2.68	4.29

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.333	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 76.99 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	133.8	9.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	107.1	9.3	---	---		
	Max +	1.2DL+1.6LL	314.0	9.3	---	---	0.90	409.63
Controlling		1.2DL+1.6LL	314.0	9.3	---	---	0.90	409.63

REACTIONS (kips):

	Left	Right
Initial reaction	11.26	25.71
DL reaction	11.08	24.69
Max +LL reaction	13.01	29.60

	Left	Right
Max +total reaction (factored)	34.11	76.99

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.67 ft	=	-0.291	L/D	=	797	> 240	0.30
Live load (in)	at	9.67 ft	=	-0.176	L/D	=	1321	> 480	0.36
Post Comp load (in)	at	9.67 ft	=	-0.212	L/D	=	1096	> 240	0.22
Net Total load (in)	at	9.67 ft	=	-0.503	L/D	=	461	> 240	0.52

Floor Type: First Floor **Beam Number = 72**

SPAN INFORMATION (ft): I-End (240.75,71.58) J-End (240.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	443.13
C (kips)	=	189.36	PNA (in)	=	15.16
Ieff (in4)	=	1287.22	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 35 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 50.96

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.474	13.19	12.24	7.35	0.0	2.69	0.00	0.0	0.00	Snow	2.75	4.28
8.875	4.63	2.22	3.11	0.0	0.00	0.00	0.0	0.00	Snow	0.47	0.78

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 24.98 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	113.6	8.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	90.9	8.5	---	---		
	Max +	1.2DL+1.6LL	210.2	8.5	---	---	0.90	398.82
Controlling		1.2DL+1.6LL	210.2	8.5	---	---	0.90	398.82

REACTIONS (kips):

	Left	Right
Initial reaction	10.44	9.69
DL reaction	9.52	8.92
Max +LL reaction	8.47	7.90
Max +total reaction (factored)	24.98	23.34

DEFLECTIONS:									Ratio
Initial load (in)	at	8.79 ft	=	-0.202	L/D	=	1057	> 240	0.23
Live load (in)	at	8.79 ft	=	-0.088	L/D	=	2418	> 480	0.20
Post Comp load (in)	at	8.79 ft	=	-0.106	L/D	=	2005	> 240	0.12
Net Total load (in)	at	8.79 ft	=	-0.308	L/D	=	692	> 240	0.35

Floor Type: First Floor **Beam Number = 73**

SPAN INFORMATION (ft): I-End (247.75,71.58) J-End (247.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	443.13
C (kips)	=	189.36	PNA (in)	=	15.16
Ieff (in4)	=	1287.22	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 35 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 50.96

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.474	13.19	12.24	7.22	0.0	2.69	0.00	0.0	0.00	Snow	2.46	4.28
8.875	4.63	2.22	3.11	0.0	0.00	0.00	0.0	0.00	Snow	0.47	0.78

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 24.63 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	113.6	8.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	90.9	8.5	---	---		
	Max +	1.2DL+1.6LL	207.2	8.5	---	---	0.90	398.82
Controlling		1.2DL+1.6LL	207.2	8.5	---	---	0.90	398.82

REACTIONS (kips):

	Left	Right
Initial reaction	10.44	9.69
DL reaction	9.52	8.92
Max +LL reaction	8.25	7.69
Max +total reaction (factored)	24.63	23.02

DEFLECTIONS:									Ratio
Initial load (in)	at	8.79 ft	=	-0.202	L/D	=	1057	> 240	0.23
Live load (in)	at	8.79 ft	=	-0.086	L/D	=	2482	> 480	0.19
Post Comp load (in)	at	8.79 ft	=	-0.104	L/D	=	2049	> 240	0.12
Net Total load (in)	at	8.79 ft	=	-0.306	L/D	=	697	> 240	0.34

Floor Type: First Floor **Beam Number = 89**

SPAN INFORMATION (ft): I-End (342.75,52.25) J-End (342.75,71.58)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 19.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	58.00	Y bar(in)	=	16.78
Mnf (kip-ft)	=	509.34	Mn (kip-ft)	=	455.14
C (kips)	=	210.40	PNA (in)	=	15.86
Ieff (in4)	=	1322.96	Itr (in4)	=	1587.70
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 38 Partial = 20 Actual = 20
Number of Stud Rows = 1 Percent of Full Composite Action = 52.27

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
9.257	15.10	12.23	0.00	0.0	17.14	0.00	0.0	0.00	Snow	2.57	4.29
9.667	2.23	2.15	3.02	0.0	0.00	0.00	0.0	0.00	Snow	0.45	0.76
18.532	15.49	12.24	0.00	0.0	17.16	0.00	0.0	0.00	Snow	2.57	4.29

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	19.333	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 76.38 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	131.7	9.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	105.4	9.3	---	---		
	Max +	1.2DL+1.6LL	298.9	9.3	---	---	0.90	409.63
Controlling		1.2DL+1.6LL	298.9	9.3	---	---	0.90	409.63

REACTIONS (kips):

	Left	Right
Initial reaction	11.09	25.54
DL reaction	9.97	23.54
Max +LL reaction	12.83	30.09

	Left	Right
Max +total reaction (factored)	32.49	76.38

DEFLECTIONS:

									Ratio
Initial load (in)	at	9.67 ft	=	-0.287	L/D	=	810	> 240	0.30
Live load (in)	at	9.67 ft	=	-0.173	L/D	=	1338	> 480	0.36
Post Comp load (in)	at	9.67 ft	=	-0.196	L/D	=	1183	> 240	0.20
Net Total load (in)	at	9.67 ft	=	-0.483	L/D	=	481	> 240	0.50

Floor Type: First Floor **Beam Number = 90**

SPAN INFORMATION (ft): I-End (342.75,71.58) J-End (342.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.75

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	53.25	Y bar(in)	=	16.51
Mnf (kip-ft)	=	497.96	Mn (kip-ft)	=	443.13
C (kips)	=	189.36	PNA (in)	=	15.16
Ieff (in4)	=	1287.22	Itr (in4)	=	1550.64
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 35 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 50.96

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.474	16.99	12.24	3.16	0.0	13.97	0.00	0.0	0.00	Snow	2.57	4.28
8.875	2.05	1.98	0.00	0.0	3.47	0.00	0.0	0.00	Snow	0.41	0.69

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.750	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 31.84 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	111.8	8.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	89.5	8.5	---	---		
	Max +	1.2DL+1.6LL	268.3	8.5	---	---	0.90	398.82
Controlling		1.2DL+1.6LL	268.3	8.5	---	---	0.90	398.82

REACTIONS (kips):

	Left	Right
Initial reaction	10.28	9.53
DL reaction	10.21	9.45
Max +LL reaction	12.24	11.35
Max +total reaction (factored)	31.84	29.50

DEFLECTIONS:									Ratio
Initial load (in)	at	8.79 ft	=	-0.198	L/D	=	1074	> 240	0.22
Live load (in)	at	8.79 ft	=	-0.127	L/D	=	1678	> 480	0.29
Post Comp load (in)	at	8.79 ft	=	-0.153	L/D	=	1393	> 240	0.17
Net Total load (in)	at	8.79 ft	=	-0.351	L/D	=	607	> 240	0.40

Floor Type: First Floor **Beam Number = 92**

SPAN INFORMATION (ft): I-End (305.75,89.33) J-End (342.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W24X68 Fy = 50.0 ksi
Total Beam Length (ft) = 37.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	111.00	Y bar(in)	=	21.52
Mnf (kip-ft)	=	1239.04	Mn (kip-ft)	=	1061.84
C (kips)	=	292.90	PNA (in)	=	18.91
Ieff (in4)	=	3852.65	Itr (in4)	=	4973.83
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 93 Partial = 37 Actual = 37
Number of Stud Rows = 1 Percent of Full Composite Action = 39.82

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.250	7.27	7.01	7.21	28.2	0.00	0.00	0.0	0.00	Snow	1.47	2.46
16.500	7.85	7.01	7.22	28.2	0.00	0.00	0.0	0.00	Snow	1.47	2.46
24.750	10.49	7.01	7.27	28.2	0.00	0.00	0.0	0.00	Snow	1.47	2.46
33.000	10.83	6.71	8.15	28.2	0.00	0.00	0.0	0.00	Snow	1.13	1.88

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.238	0.238	0.000	---	NonR	0.000	0.000
	37.000	0.238	0.238	0.000			0.000	0.000
2	0.000	0.088	0.078	0.390	28.2%	Red	0.059	0.098
	20.000	0.088	0.078	0.390			0.059	0.098
3	0.000	0.031	0.015	0.073	---	NonR	0.011	0.018
	20.000	0.030	0.014	0.072			0.011	0.018
4	20.000	0.381	0.078	0.390	28.2%	Red	0.059	0.098
	37.000	0.381	0.078	0.390			0.059	0.098
5	20.000	0.029	0.014	0.070	---	NonR	0.011	0.018
	37.000	0.029	0.014	0.070			0.011	0.018
6	0.000	0.068	0.068	0.000	---	NonR	0.000	0.000
	37.000	0.068	0.068	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 76.85 kips 1.00Vn = 295.07 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	368.6	16.5	0.0	1.00	0.90	663.75
	Init DL	1.4DL	299.4	16.5	---	---		
	Max +	1.2DL+1.6LL	665.2	17.2	---	---	0.90	955.65
Controlling		1.2DL+1.6LL	627.2	24.8	---	---	0.90	888.15

REACTIONS (kips):

	Left	Right
Initial reaction	26.18	29.84
DL reaction	23.64	33.48
Max +LL reaction	19.62	22.92
Max +total reaction (factored)	59.77	76.85

DEFLECTIONS: (Camber = 3/4)

					Ratio
Initial load (in)	at 18.69 ft	=	-0.982	L/D = 452 > 240	0.53
Live load (in)	at 18.69 ft	=	-0.462	L/D = 960 > 480	0.50
Post Comp load (in)	at 18.69 ft	=	-0.606	L/D = 733 > 240	0.33
Net Total load (in)	at 18.69 ft	=	-0.838	L/D = 530 > 240	0.45

Floor Type: First Floor **Beam Number = 93**

SPAN INFORMATION (ft): I-End (338.75,89.33) J-End (338.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
11.039	2.87	1.72	0.0	0.00	0.00	0.0	0.00	Snow	0.26

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	11.039	0.275	0.550	0.0%	Red	0.000
	23.833	0.275	0.550			0.000
2	0.000	0.314	0.000	---	NonR	0.000
	6.423	0.314	0.000			0.000
3	0.000	0.598	0.612	0.0%	Red	0.092
	6.423	0.598	0.612			0.092
4	6.429	0.212	0.000	---	NonR	0.000
	23.833	0.212	0.000			0.000
5	6.429	0.403	0.412	0.0%	Red	0.062
	6.666	0.403	0.412			0.062
6	6.667	0.093	0.206	0.0%	Red	0.062
	23.833	0.093	0.206			0.062
7	11.048	0.000	0.000	---	NonR	0.000
	23.833	0.000	0.000			0.000
8	6.424	0.103	0.000	---	NonR	0.000
	11.038	0.103	0.000			0.000
9	6.424	0.195	0.200	0.0%	Red	0.030
	11.038	0.195	0.200			0.030
10	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 27.85 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	176.2	11.0	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	176.2	11.0	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	10.83	9.00
Max +LL reaction	9.28	10.04
Max +total reaction (factored)	27.85	26.87

DEFLECTIONS:

Ratio

Dead load (in)	at	11.80 ft	=	-0.428	L/D = 669	> 300	0.45
Live load (in)	at	11.92 ft	=	-0.415	L/D = 689	> 480	0.70
Net Total load (in)	at	11.92 ft	=	-0.842	L/D = 339	> 240	0.71

Floor Type: First Floor **Beam Number = 98**

SPAN INFORMATION (ft): I-End (284.75,89.33) J-End (305.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	63.00	Y bar(in)	=	17.03
Mnf (kip-ft)	=	521.19	Mn (kip-ft)	=	434.60
C (kips)	=	172.30	PNA (in)	=	14.59
Ieff (in4)	=	1239.01	Itr (in4)	=	1623.02
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 48 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 42.90

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.500	9.25	8.92	9.18	0.0	0.00	0.00	0.0	0.00	Snow	1.88	3.13

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.258	0.258	0.000	---	NonR	0.000	0.000
	21.000	0.258	0.258	0.000			0.000	0.000
2	0.000	0.114	0.100	0.251	0.0%	Red	0.075	0.126
	9.000	0.114	0.100	0.251			0.075	0.126
3	9.000	0.114	0.100	0.628	---	NonR	0.075	0.126
	21.000	0.114	0.100	0.628			0.075	0.126
4	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 30.17 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	119.6	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	95.9	10.5	---	---		
	Max +	1.2DL+1.6LL	227.8	10.5	---	---	0.90	391.14
Controlling		1.2DL+1.6LL	227.8	10.5	---	---	0.90	391.14

REACTIONS (kips):

	Left	Right
Initial reaction	11.47	11.47
DL reaction	8.89	8.89
Max +LL reaction	10.25	12.19
Max +total reaction (factored)	27.07	30.17

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.50 ft = -0.318	L/D = 794 > 240		0.30
Live load (in)	at 10.50 ft = -0.170	L/D = 1478 > 480		0.32
Post Comp load (in)	at 10.50 ft = -0.175	L/D = 1439 > 240		0.17
Net Total load (in)	at 10.50 ft = -0.493	L/D = 512 > 240		0.47

Floor Type: First Floor **Beam Number = 99**

SPAN INFORMATION (ft): I-End (182.75,89.33) J-End (203.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	382.26
C (kips)	=	103.38	PNA (in)	=	12.30
Ieff (in4)	=	1090.79	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 58 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 37.28

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.500	3.07	2.96	4.05	0.0	0.00	0.00	0.0	0.00	Snow	0.61	1.01
9.875	1.58	1.53	0.95	0.0	0.00	0.00	0.0	0.00	Snow	0.29	0.48
15.000	7.78	7.31	9.72	0.0	0.00	0.00	0.0	0.00	Snow	1.20	2.00

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	9.875	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	9.875	0.023	0.020	0.050			0.015	0.025
3	9.875	0.128	0.128	0.000	---	NonR	0.000	0.000
	21.000	0.128	0.128	0.000			0.000	0.000
4	9.875	0.057	0.050	0.125	0.0%	Red	0.038	0.063
	21.000	0.057	0.050	0.125			0.038	0.063
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 29.78 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	84.1	12.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	382.7	12.7	---	---		

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Max +	1.2DL+1.6LL	169.3	15.0	---	---	0.90	344.03
Controlling		1.2DL+1.6LL	169.3	15.0	---	---	0.90	344.03

REACTIONS (kips):

	Left	Right
Initial reaction	8.08	11.58
DL reaction	6.50	9.45
Max +LL reaction	7.74	11.53
Max +total reaction (factored)	20.19	29.78

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.82 ft = -0.269	L/D = 938 > 240		0.26
Live load (in)	at 10.82 ft = -0.161	L/D = 1564 > 480		0.31
Post Comp load (in)	at 10.82 ft = -0.167	L/D = 1507 > 240		0.16
Net Total load (in)	at 10.82 ft = -0.436	L/D = 578 > 240		0.42

Floor Type: First Floor **Beam Number = 100**

SPAN INFORMATION (ft): I-End (182.75,89.33) J-End (182.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
6.523	1.36	1.62	0.0	0.00	0.00	0.0	0.00	Snow	0.24
10.833	1.98	2.40	0.0	0.00	0.00	0.0	0.00	Snow	0.36
16.976	1.42	1.70	0.0	0.00	0.00	0.0	0.00	Snow	0.26

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	10.834	0.375	0.750	0.0%	Red	0.000
	23.833	0.375	0.750			0.000
2	6.523	0.013	0.000	---	NonR	0.000
	16.976	0.013	0.000			0.000
3	6.523	0.006	0.025	0.0%	Red	0.004
	16.976	0.006	0.025			0.004
4	10.834	0.000	0.000	---	NonR	0.000
	23.833	0.000	0.000			0.000
5	0.017	0.192	0.000	---	NonR	0.000
	6.512	0.192	0.000			0.000
6	0.017	0.085	0.375	0.0%	Red	0.056
	6.512	0.085	0.375			0.056
7	6.523	0.192	0.000	---	NonR	0.000
	10.833	0.192	0.000			0.000
8	6.523	0.085	0.375	0.0%	Red	0.056
	10.833	0.085	0.375			0.056
9	0.000	0.035	0.000	---	NonR	0.000
	23.833	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.75 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	173.9	11.1	6.1	1.04	0.90	235.82
Controlling		1.2DL+1.6LL	173.9	11.1	6.1	1.04	0.90	235.82

REACTIONS (kips):

	Left	**Right**
DL reaction	6.63	7.02
Max +LL reaction	9.83	11.45
Max +total reaction (factored)	23.69	26.75

DEFLECTIONS:

Ratio

Dead load (in)	at	11.92 ft	=	-0.320	L/D = 894	> 300	0.34
Live load (in)	at	11.92 ft	=	-0.495	L/D = 578	> 480	0.83
Net Total load (in)	at	11.92 ft	=	-0.815	L/D = 351	> 240	0.68

Floor Type: First Floor **Beam Number = 220**

SPAN INFORMATION (ft): I-End (182.75,71.75) J-End (182.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	38.37	Y bar(in)	=	15.44
Mnf (kip-ft)	=	461.43	Mn (kip-ft)	=	427.36
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1252.56	Itr (in4)	=	1405.21
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 25 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 68.80

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.536	2.68	2.60	1.53	0.0	0.00	0.00	0.0	0.00	Snow	0.46	0.76
8.308	3.30	3.06	3.35	0.0	0.68	0.00	0.0	0.00	Snow	0.64	1.07

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	17.583	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	17.583	0.023	0.020	0.050			0.015	0.025
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.583	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 11.75 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	47.3	8.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	39.0	8.3	---	---		
	Max +	1.2DL+1.6LL	84.6	8.3	---	---	0.90	384.63
Controlling		1.2DL+1.6LL	84.6	8.3	---	---	0.90	384.63

REACTIONS (kips):

	Left	Right
Initial reaction	5.26	4.55
DL reaction	4.23	3.66
Max +LL reaction	4.17	3.63
Max +total reaction (factored)	11.75	10.21

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.62 ft	=	-0.089	L/D	=	2365	> 240	0.10
Live load (in)	at	8.62 ft	=	-0.039	L/D	=	5362	> 480	0.09
Post Comp load (in)	at	8.62 ft	=	-0.041	L/D	=	5120	> 240	0.05
Net Total load (in)	at	8.62 ft	=	-0.130	L/D	=	1618	> 240	0.15

Floor Type: First Floor **Beam Number = 221**

SPAN INFORMATION (ft): I-End (203.75,71.75) J-End (203.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	52.75	Y bar(in)	=	16.48
Mnf (kip-ft)	=	496.76	Mn (kip-ft)	=	430.65
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1243.32	Itr (in4)	=	1546.51
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 34 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 50.05

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.536	4.99	4.83	3.11	5.7	0.00	0.00	0.0	0.00	Snow	0.93	1.55
8.308	13.18	12.23	9.04	5.7	2.67	0.00	0.0	0.00	Snow	2.65	4.28
12.583	2.14	2.07	1.40	5.7	0.00	0.00	0.0	0.00	Snow	0.42	0.70

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.583	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 28.87 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	137.4	8.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	110.7	8.3	---	---		
	Max +	1.2DL+1.6LL	229.0	8.3	---	---	0.90	387.58
Controlling		1.2DL+1.6LL	229.0	8.3	---	---	0.90	387.58

REACTIONS (kips):

	Left	Right
Initial reaction	13.45	12.83
DL reaction	10.73	10.21
Max +LL reaction	10.00	9.44

	Left	Right
Max +total reaction (factored)	28.87	27.35

DEFLECTIONS:

					Ratio
Initial load (in)	at	8.70 ft =	-0.249	L/D = 847 > 240	0.28
Live load (in)	at	8.70 ft =	-0.102	L/D = 2062 > 480	0.23
Post Comp load (in)	at	8.70 ft =	-0.109	L/D = 1943 > 240	0.12
Net Total load (in)	at	8.70 ft =	-0.358	L/D = 590 > 240	0.41

Floor Type: First Floor **Beam Number = 224**

SPAN INFORMATION (ft): I-End (284.75,71.75) J-End (284.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	52.75	Y bar(in)	=	16.48
Mnf (kip-ft)	=	496.76	Mn (kip-ft)	=	430.65
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1243.32	Itr (in4)	=	1546.51
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 34 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 50.05

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.536	6.56	6.34	3.35	2.1	2.15	0.00	0.0	0.00	Snow	1.26	2.11
8.308	13.18	12.23	7.22	2.1	2.67	0.00	0.0	0.00	Snow	2.34	4.28

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.583	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 29.54 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	139.6	8.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	112.2	8.3	---	---		
	Max +	1.2DL+1.6LL	229.6	8.3	---	---	0.90	387.58
Controlling		1.2DL+1.6LL	229.6	8.3	---	---	0.90	387.58

REACTIONS (kips):

	Left	Right
Initial reaction	13.85	11.73
DL reaction	11.01	9.35
Max +LL reaction	10.20	8.58
Max +total reaction (factored)	29.54	24.95

DEFLECTIONS:									Ratio
Initial load (in)	at	8.53 ft	=	-0.248	L/D	=	851	> 180	0.21
Live load (in)	at	8.53 ft	=	-0.101	L/D	=	2095	> 360	0.17
Post Comp load (in)	at	8.53 ft	=	-0.107	L/D	=	1972	> 240	0.12
Net Total load (in)	at	8.53 ft	=	-0.355	L/D	=	594	> 240	0.40

Floor Type: First Floor **Beam Number = 225**

SPAN INFORMATION (ft): I-End (305.75,71.75) J-End (305.75,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 17.58

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	38.37	Y bar(in)	=	15.44
Mnf (kip-ft)	=	461.43	Mn (kip-ft)	=	427.36
C (kips)	=	168.32	PNA (in)	=	14.46
Ieff (in4)	=	1252.56	Itr (in4)	=	1405.21
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 25 Partial = 18 Actual = 18
Number of Stud Rows = 1 Percent of Full Composite Action = 68.80

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.536	5.45	5.27	1.32	0.0	5.38	0.00	0.0	0.00	Snow	1.04	1.74
8.308	15.80	12.24	3.12	0.0	14.01	0.00	0.0	0.00	Snow	2.57	4.28

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	7.535	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	7.535	0.023	0.020	0.050			0.015	0.025
3	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	17.583	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 38.97 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	134.1	8.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	107.8	8.3	---	---		
	Max +	1.2DL+1.6LL	301.1	8.3	---	---	0.90	384.63
Controlling		1.2DL+1.6LL	301.1	8.3	---	---	0.90	384.63

REACTIONS (kips):

	Left	Right
Initial reaction	13.60	11.27
DL reaction	12.20	10.23
Max +LL reaction	15.21	12.74
Max +total reaction (factored)	38.97	32.66

DEFLECTIONS:

									Ratio
Initial load (in)	at	8.53 ft	=	-0.238	L/D	=	886	> 180	0.20
Live load (in)	at	8.53 ft	=	-0.148	L/D	=	1427	> 360	0.25
Post Comp load (in)	at	8.53 ft	=	-0.168	L/D	=	1256	> 240	0.19
Net Total load (in)	at	8.53 ft	=	-0.406	L/D	=	519	> 240	0.46

Floor Type: First Floor **Beam Number = 271**

SPAN INFORMATION (ft): I-End (197.75,89.33) J-End (197.75,113.17)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 23.83

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		---			ASC 3W 2.5conc
Concrete thickness (in)		0.00			2.50
Unit weight concrete (pcf)		0.00			145.00
f'c (ksi)		0.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		Noncomposite			ASC 3W
beff (in)	= 35.75	Y bar(in)		=	15.21
Mnf (kip-ft)	= 454.15	Mn (kip-ft)		=	428.73
C (kips)	= 172.30	PNA (in)		=	14.59
Ieff (in4)	= 1260.83	Itr (in4)		=	1373.54
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 33 Partial = 23 Actual = 23
Number of Stud Rows = 1 Percent of Full Composite Action = 73.49

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
10.833	1.98	1.91	2.40	0.0	0.00	0.00	0.0	0.00	Snow	0.36	0.60

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	10.834	0.375	0.300	0.750	0.0%	Red	0.000	0.000
	23.833	0.375	0.300	0.750			0.000	0.000
2	10.834	0.000	0.000	0.000	---	NonR	0.000	0.000
	11.341	0.026	0.026	0.000			0.000	0.000
3	11.342	0.000	0.000	0.000	---	NonR	0.000	0.000
	23.833	0.000	0.000	0.000			0.000	0.000
4	0.015	0.346	0.346	0.000	---	NonR	0.000	0.000
	6.508	0.346	0.346	0.000			0.000	0.000
5	0.015	0.153	0.135	0.675	0.0%	Red	0.101	0.169
	6.508	0.153	0.135	0.675			0.101	0.169
6	6.523	0.192	0.192	0.000	---	NonR	0.000	0.000
	10.833	0.192	0.192	0.000			0.000	0.000
7	6.523	0.085	0.075	0.375	0.0%	Red	0.056	0.094
	10.833	0.085	0.075	0.375			0.056	0.094
8	6.509	0.154	0.154	0.000	---	NonR	0.000	0.000
	23.833	0.154	0.154	0.000			0.000	0.000
9	6.509	0.068	0.060	0.150	0.0%	Red	0.045	0.075
	23.833	0.068	0.060	0.150			0.045	0.075

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
10	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	23.833	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 28.81 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	77.7	10.8	0.0	1.00	0.90	249.38
	Init DL	1.4DL	68.6	10.8	---	---		
	Max +	1.2DL+1.6LL	182.7	11.2	---	---	0.90	385.86
Controlling		1.2DL+1.6LL	182.7	11.2	---	---	0.90	385.86

REACTIONS (kips):

	Left	**Right**
Initial reaction	9.31	8.73
DL reaction	7.78	8.19
Max +LL reaction	10.92	11.86
Max +total reaction (factored)	26.82	28.81

DEFLECTIONS:

				Ratio
Initial load (in)	at 11.92 ft =	-0.325	L/D = 879 > 240	0.27
Live load (in)	at 11.92 ft =	-0.202	L/D = 1417 > 480	0.34
Post Comp load (in)	at 11.92 ft =	-0.214	L/D = 1339 > 240	0.18
Net Total load (in)	at 11.92 ft =	-0.539	L/D = 531 > 240	0.45

Floor Type: First Floor **Beam Number = 273**

SPAN INFORMATION (ft): I-End (182.75,59.25) J-End (203.75,59.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	420.50
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1221.32	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 51.06

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.667	5.30	2.80	1.74	0.0	0.00	0.00	0.0	0.00	Snow	0.52	0.87
15.667	0.48	0.00									

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	8.666	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	8.666	0.023	0.020	0.050			0.015	0.025
3	8.667	0.510	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.510	0.000	0.000			0.000	0.000
4	8.667	0.321	0.321	0.000	---	NonR	0.000	0.000
	21.000	0.321	0.321	0.000			0.000	0.000
5	8.667	0.043	0.038	0.095	0.0%	Red	0.028	0.047
	21.000	0.043	0.038	0.095			0.028	0.047
6	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	8.666	0.237	0.237	0.000			0.000	0.000
7	0.000	0.105	0.093	0.463	0.0%	Red	0.069	0.116
	8.666	0.105	0.093	0.463			0.069	0.116
8	8.667	0.098	0.087	0.435	0.0%	Red	0.065	0.109
	21.000	0.098	0.087	0.435			0.065	0.109
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.45 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.6	8.7	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.5	8.7	---	---		
	Max +	1.2DL+1.6LL	154.7	9.3	---	---	0.90	378.45
Controlling		1.2DL+1.6LL	154.3	8.7	---	---	0.90	367.92

REACTIONS (kips):

	Left	**Right**
Initial reaction	8.43	8.09
DL reaction	9.99	12.13
Max +LL reaction	7.69	7.43
Max +total reaction (factored)	24.29	26.45

DEFLECTIONS:				**Ratio**
Initial load (in)	at 10.40 ft = -0.198	L/D = 1274 > 240		0.19
Live load (in)	at 10.40 ft = -0.096	L/D = 2619 > 480		0.18
Post Comp load (in)	at 10.40 ft = -0.164	L/D = 1536 > 240		0.16
Net Total load (in)	at 10.40 ft = -0.362	L/D = 696 > 240		0.34

Floor Type: First Floor **Beam Number = 279**

SPAN INFORMATION (ft): I-End (191.42,59.25) J-End (191.42,71.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 12.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.250	4.65	1.21	0.0	0.00	0.00	0.0	0.00	Snow	0.36
7.875	2.20	1.43	0.0	0.00	0.00	0.0	0.00	Snow	0.43
1.250	0.34								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.051	0.000	---	NonR	0.000
	12.500	0.051	0.000			0.000
2	0.000	0.023	0.050	0.0%	Red	0.015
	12.500	0.023	0.050			0.015
3	0.000	0.035	0.000	---	NonR	0.000
	12.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.90 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	31.0	5.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	31.0	5.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	5.24	3.31
Max +LL reaction	2.26	1.98
Max +total reaction (factored)	9.90	7.14

DEFLECTIONS: **Ratio**

Dead load (in)	at 6.00 ft = -0.030	L/D = 5043 > 300	0.06
Live load (in)	at 6.12 ft = -0.016	L/D = 9538 > 480	0.05
Net Total load (in)	at 6.12 ft = -0.045	L/D = 3300 > 240	0.07

Floor Type: First Floor **Beam Number = 282**

SPAN INFORMATION (ft): I-End (284.75,59.25) J-End (305.75,59.25)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	=	43.50	Y bar(in)	=	15.85
Mnf (kip-ft)	=	474.21	Mn (kip-ft)	=	420.50
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1221.32	Itr (in4)	=	1461.23
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 51.06

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
12.333	5.30	2.80	1.74	0.0	0.00	0.00	0.0	0.00	Snow	0.52	0.87
5.333	0.48	0.00									

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.510	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.510	0.000	0.000			0.000	0.000
2	0.000	0.321	0.321	0.000	---	NonR	0.000	0.000
	12.333	0.321	0.321	0.000			0.000	0.000
3	0.000	0.043	0.038	0.095	0.0%	Red	0.028	0.047
	12.333	0.043	0.038	0.095			0.028	0.047
4	12.334	0.051	0.051	0.000	---	NonR	0.000	0.000
	21.000	0.051	0.051	0.000			0.000	0.000
5	12.334	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	21.000	0.023	0.020	0.050			0.015	0.025
6	0.000	0.098	0.087	0.435	0.0%	Red	0.065	0.109
	12.333	0.098	0.087	0.435			0.065	0.109
7	12.334	0.237	0.237	0.000	---	NonR	0.000	0.000
	21.000	0.237	0.237	0.000			0.000	0.000
8	12.334	0.105	0.093	0.463	0.0%	Red	0.069	0.116
	21.000	0.105	0.093	0.463			0.069	0.116
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 26.45 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.6	12.3	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.5	12.3	---	---		
	Max +	1.2DL+1.6LL	154.7	11.7	---	---	0.90	378.45
Controlling		1.2DL+1.6LL	154.3	12.3	---	---	0.90	367.92

REACTIONS (kips):

	Left	**Right**
Initial reaction	8.09	8.43
DL reaction	12.13	9.99
Max +LL reaction	7.43	7.69
Max +total reaction (factored)	26.45	24.29

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.61 ft = -0.198	L/D = 1274 > 240		0.19
Live load (in)	at 10.61 ft = -0.096	L/D = 2619 > 480		0.18
Post Comp load (in)	at 10.61 ft = -0.164	L/D = 1536 > 240		0.16
Net Total load (in)	at 10.61 ft = -0.362	L/D = 696 > 240		0.34

Floor Type: First Floor **Beam Number = 321**

SPAN INFORMATION (ft): I-End (182.75,79.29) J-End (203.75,79.29)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
9.875	1.95	1.13	0.0	0.00	0.00	0.0	0.00	Snow	0.34

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	9.875	0.323	0.000	---	NonR	0.000
	21.000	0.323	0.000			0.000
2	9.875	0.142	0.315	0.0%	Red	0.094
	21.000	0.142	0.315			0.094
3	0.000	0.026	0.000	---	NonR	0.000
	21.000	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 12.45 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	62.3	11.0	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	62.3	11.0	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	2.68	4.99
Max +LL reaction	1.99	4.04
Max +total reaction (factored)	6.39	12.45

DEFLECTIONS:

				Ratio
Dead load (in)	at 10.82 ft = -0.215	L/D = 1172 > 300		0.26
Live load (in)	at 10.92 ft = -0.169	L/D = 1494 > 480		0.32
Net Total load (in)	at 10.92 ft = -0.384	L/D = 657 > 240		0.37

Floor Type: First Floor **Beam Number = 322**

SPAN INFORMATION (ft): I-End (192.63,79.29) J-End (192.63,89.33)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 10.05
Mp (kip-ft) = 184.17

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.048	2.14	1.40	0.0	0.00	0.00	0.0	0.00	Snow	0.42

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.051	0.000	---	NonR	0.000
	10.047	0.051	0.000			0.000
2	0.000	0.023	0.050	0.0%	Red	0.015
	10.047	0.023	0.050			0.015
3	0.000	0.026	0.000	---	NonR	0.000
	10.047	0.026	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 3.88 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	16.6	5.0	0.0	1.00	0.90	165.75
Controlling		1.2DL+1.6LL	16.6	5.0	0.0	1.00	0.90	165.75

REACTIONS (kips):

	Left	**Right**
DL reaction	1.57	1.58
Max +LL reaction	1.23	1.24
Max +total reaction (factored)	3.85	3.88

DEFLECTIONS: **Ratio**

Dead load (in)	at	5.02 ft	= -0.012	L/D =	1039 4	>	300	0.03
Live load (in)	at	5.02 ft	= -0.009	L/D =	1295 7	>	480	0.04
Net Total load (in)	at	5.02 ft	= -0.021	L/D =	5767	>	240	0.04

Floor Type: First Floor **Beam Number = 323**

SPAN INFORMATION (ft): I-End (297.08,59.25) J-End (297.08,71.75)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 12.50
Mp (kip-ft) = 277.08

POINT LOADS (kips):

Dist	DL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
3.250	4.65	1.21	0.0	0.00	0.00	0.0	0.00	Snow	0.36
7.875	2.20	1.43	0.0	0.00	0.00	0.0	0.00	Snow	0.43
1.250	0.34								

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.051	0.000	---	NonR	0.000
	12.500	0.051	0.000			0.000
2	0.000	0.023	0.050	0.0%	Red	0.015
	12.500	0.023	0.050			0.015
3	0.000	0.035	0.000	---	NonR	0.000
	12.500	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 9.90 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	31.0	5.9	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	31.0	5.9	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	5.24	3.31
Max +LL reaction	2.26	1.98
Max +total reaction (factored)	9.90	7.14

DEFLECTIONS: **Ratio**

Dead load (in)	at 6.00 ft = -0.030	L/D = 5043 > 300	0.06
Live load (in)	at 6.12 ft = -0.016	L/D = 9538 > 480	0.05
Net Total load (in)	at 6.12 ft = -0.045	L/D = 3300 > 240	0.07

Floor Type: First Floor **Beam Number = 349**

SPAN INFORMATION (ft): I-End (173.50,106.32) J-End (182.75,106.31)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25
Mp (kip-ft) = 277.08

LINE LOADS (k/ft):

Load	Dist	DL	LL	Red%	Type	PartL
1	0.000	0.176	0.000	---	NonR	0.000
	9.250	0.176	0.000			0.000
2	0.000	0.077	0.343	0.0%	Red	0.051
	9.250	0.077	0.343			0.051
3	0.001	0.013	0.000	---	NonR	0.000
	9.250	0.013	0.000			0.000
4	0.001	0.006	0.025	0.0%	Red	0.004
	9.250	0.006	0.025			0.004
5	0.000	0.035	0.000	---	NonR	0.000
	9.250	0.035	0.000			0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.83 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	Max +	1.2DL+1.6LL	11.2	4.6	0.0	1.00	0.90	249.38
Controlling		1.2DL+1.6LL	11.2	4.6	0.0	1.00	0.90	249.38

REACTIONS (kips):

	Left	**Right**
DL reaction	1.42	1.42
Max +LL reaction	1.96	1.96
Max +total reaction (factored)	4.83	4.83

DEFLECTIONS:

					Ratio
Dead load (in)	at 4.63 ft =	-0.003	L/D = 3247	> 300	0.01
Live load (in)	at 4.63 ft =	-0.005	L/D = 2356	> 360	0.02
Net Total load (in)	at 4.63 ft =	-0.008	L/D = 1365	> 240	0.02

Floor Type: First Floor **Beam Number = 350**

SPAN INFORMATION (ft): I-End (173.50,95.86) J-End (182.75,95.86)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	16.88	Y bar(in)	=	12.89
Mnf (kip-ft)	=	378.86	Mn (kip-ft)	=	348.71
C (kips)	=	68.92	PNA (in)	=	11.15
Ieff (in4)	=	948.10	Itr (in4)	=	1057.35
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 16 Partial = 9 Actual = 9
Number of Stud Rows = 1 Percent of Full Composite Action = 64.06

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.013	0.013	0.000	---	NonR	0.000	0.000
	9.250	0.013	0.013	0.000			0.000	0.000
2	0.000	0.006	0.005	0.025	0.0%	Red	0.004	0.006
	9.250	0.006	0.005	0.025			0.004	0.006
3	0.000	0.167	0.167	0.000	---	NonR	0.000	0.000
	9.250	0.167	0.167	0.000			0.000	0.000
4	0.000	0.073	0.065	0.325	0.0%	Red	0.049	0.081
	9.250	0.074	0.065	0.326			0.049	0.081
5	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	9.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 4.62 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	5.2	4.6	0.0	1.00	0.90	249.38
	Init DL	1.4DL	4.3	4.6	---	---		
	Max +	1.2DL+1.6LL	10.7	4.6	---	---	0.90	313.84
Controlling		1.2DL+1.6LL	10.7	4.6	---	---	0.90	313.84

REACTIONS (kips):

	Left	Right
Initial reaction	1.72	1.72
DL reaction	1.36	1.36
Max +LL reaction	1.86	1.86
Max +total reaction (factored)	4.61	4.62

DEFLECTIONS:

									Ratio
Initial load (in)	at	4.62 ft	=	-0.003	L/D	=	34953	> 180	0.01
Live load (in)	at	4.62 ft	=	-0.002	L/D	=	45985	> 360	0.01
Post Comp load (in)	at	4.62 ft	=	-0.002	L/D	=	44968	> 240	0.01
Net Total load (in)	at	4.62 ft	=	-0.006	L/D	=	19667	> 240	0.01

Floor Type: First Floor **Beam Number = 412**

SPAN INFORMATION (ft): I-End (182.75,50.00) J-End (203.75,50.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	63.00	Y bar(in)	=	17.03
Mnf (kip-ft)	=	521.19	Mn (kip-ft)	=	423.29
C (kips)	=	155.07	PNA (in)	=	14.02
Ieff (in4)	=	1201.60	Itr (in4)	=	1623.02
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 35.53

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
8.667	4.00	0.07								
15.667	1.26	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.475	0.475	0.000	---	NonR	0.000	0.000
	21.000	0.475	0.475	0.000			0.000	0.000
2	0.000	0.125	0.111	0.554	0.0%	Red	0.083	0.139
	8.666	0.125	0.111	0.554			0.083	0.139
3	8.667	0.575	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.575	0.000	0.000			0.000	0.000
4	8.667	0.149	0.132	0.330	0.0%	Red	0.099	0.165
	21.000	0.149	0.132	0.330			0.099	0.165
5	8.667	0.060	0.053	0.265	0.0%	Red	0.040	0.066
	21.000	0.060	0.053	0.265			0.040	0.066
6	0.000	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	8.666	0.624	0.000	0.000			0.000	0.000
7	0.000	0.084	0.074	0.185	0.0%	Red	0.056	0.093
	8.666	0.084	0.074	0.185			0.056	0.093
8	15.667	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.624	0.000	0.000			0.000	0.000
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 35.74 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.7	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.0	10.5	---	---		
	Max +	1.2DL+1.6LL	186.4	9.9	---	---	0.90	380.96
Controlling		1.2DL+1.6LL	184.3	8.7	---	---	0.90	369.91

REACTIONS (kips):

	Left	Right
Initial reaction	9.76	9.75
DL reaction	17.01	19.17
Max +LL reaction	8.70	7.96
Max +total reaction (factored)	34.34	35.74

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.50 ft = -0.207	L/D = 1217 > 240		0.20
Live load (in)	at 10.50 ft = -0.099	L/D = 2553 > 480		0.19
Post Comp load (in)	at 10.50 ft = -0.232	L/D = 1085 > 240		0.22
Net Total load (in)	at 10.50 ft = -0.439	L/D = 574 > 240		0.42

Floor Type: First Floor **Beam Number = 413**

SPAN INFORMATION (ft): I-End (284.75,50.00) J-End (305.75,50.00)

Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 63.00		Y bar(in)	=	17.03
Mnf (kip-ft)	= 521.19		Mn (kip-ft)	=	423.29
C (kips)	= 155.07		PNA (in)	=	14.02
Ieff (in4)	= 1201.60		Itr (in4)	=	1623.02
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 35.53

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
12.333	4.00	0.07								
5.333	1.26	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.575	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.575	0.000	0.000			0.000	0.000
2	0.000	0.475	0.475	0.000	---	NonR	0.000	0.000
	21.000	0.475	0.475	0.000			0.000	0.000
3	0.000	0.149	0.132	0.330	0.0%	Red	0.099	0.165
	12.333	0.149	0.132	0.330			0.099	0.165
4	0.000	0.060	0.053	0.265	0.0%	Red	0.040	0.066
	12.333	0.060	0.053	0.265			0.040	0.066
5	12.334	0.125	0.111	0.554	0.0%	Red	0.083	0.139
	21.000	0.125	0.111	0.554			0.083	0.139
6	0.000	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	5.333	0.624	0.000	0.000			0.000	0.000
7	12.334	0.624	0.000	0.000	0.0%	Red	0.000	0.000
	21.000	0.624	0.000	0.000			0.000	0.000
8	12.334	0.084	0.074	0.185	0.0%	Red	0.056	0.093
	21.000	0.084	0.074	0.185			0.056	0.093
9	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	21.000	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 35.74 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	66.7	10.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	54.0	10.5	---	---		
	Max +	1.2DL+1.6LL	186.4	11.1	---	---	0.90	380.96
Controlling		1.2DL+1.6LL	184.3	12.3	---	---	0.90	369.91

REACTIONS (kips):

	Left	Right
Initial reaction	9.75	9.76
DL reaction	19.17	17.01
Max +LL reaction	7.96	8.70
Max +total reaction (factored)	35.74	34.34

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.50 ft = -0.207	L/D = 1217 > 240		0.20
Live load (in)	at 10.50 ft = -0.099	L/D = 2553 > 480		0.19
Post Comp load (in)	at 10.50 ft = -0.232	L/D = 1085 > 240		0.22
Net Total load (in)	at 10.50 ft = -0.439	L/D = 574 > 240		0.42

Floor Type: First Floor **Beam Number = 449**

SPAN INFORMATION (ft): I-End (338.75,100.37) J-End (349.00,100.37)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 10.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	---	ASC 3W 2.5conc
Concrete thickness (in)	0.00	2.50
Unit weight concrete (pcf)	0.00	145.00
f'c (ksi)	0.00	3.00
Decking Orientation	parallel	parallel
Decking type	Noncomposite	ASC 3W

beff (in)	=	15.38	Y bar(in)	=	12.63
Mnf (kip-ft)	=	371.15	Mn (kip-ft)	=	360.77
C (kips)	=	84.16	PNA (in)	=	11.66
Ieff (in4)	=	985.08	Itr (in4)	=	1022.69
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 13 Partial = 11 Actual = 9
Number of Stud Rows = 1 Percent of Full Composite Action = 68.69

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
4.000	4.40	2.21	2.83	0.0	0.00	0.00	0.0	0.00	Snow	0.42	0.71

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.009	0.000	0.000	0.000	---	NonR	0.000	0.000
	10.250	0.000	0.000	0.000			0.000	0.000
2	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	10.250	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.61 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.8	4.0	0.0	1.00	0.90	249.38
	Init DL	1.4DL	8.2	4.0	---	---		
	Max +	1.2DL+1.6LL	26.1	4.0	---	---	0.90	324.69
Controlling		1.2DL+1.6LL	26.1	4.0	---	---	0.90	324.69

REACTIONS (kips):

	Left	Right
Initial reaction	1.96	1.32
DL reaction	2.87	1.90
Max +LL reaction	1.98	1.27

	Left	Right
Max +total reaction (factored)	6.61	4.31

DEFLECTIONS:

										Ratio
Initial load (in)	at	4.82 ft	=	-0.006	L/D	=	20420	>	240	0.01
Live load (in)	at	4.82 ft	=	-0.004	L/D	=	29720	>	480	0.02
Post Comp load (in)	at	4.82 ft	=	-0.007	L/D	=	17745	>	240	0.01
Net Total load (in)	at	4.82 ft	=	-0.013	L/D	=	9494	>	240	0.03

Floor Type: First Floor **Beam Number = 450**

SPAN INFORMATION (ft): I-End (342.75,89.33) J-End (342.75,100.37)

Minimum Depth specified = 9.80 in
Beam Size (User Selected) = W18X35 Fy = 50.0 ksi
Total Beam Length (ft) = 11.04

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	=	33.12	Y bar(in)	=	14.96
Mnf (kip-ft)	=	446.06	Mn (kip-ft)	=	366.54
C (kips)	=	86.15	PNA (in)	=	11.72
Ieff (in4)	=	1039.84	Itr (in4)	=	1339.42
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 22 Partial = 11 Actual = 11
Number of Stud Rows = 1 Percent of Full Composite Action = 40.79

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.103	0.103	0.000	---	NonR	0.000	0.000
	11.038	0.103	0.103	0.000			0.000	0.000
2	0.000	0.195	0.040	0.200	0.0%	Red	0.030	0.050
	11.038	0.195	0.040	0.200			0.030	0.050
3	0.000	0.160	0.160	0.000	---	NonR	0.000	0.000
	6.417	0.160	0.160	0.000			0.000	0.000
4	0.000	0.305	0.063	0.312	0.0%	Red	0.047	0.078
	6.417	0.305	0.063	0.312			0.047	0.078
5	6.421	0.160	0.160	0.000	---	NonR	0.000	0.000
	11.038	0.160	0.160	0.000			0.000	0.000
6	6.421	0.305	0.063	0.312	0.0%	Red	0.047	0.078
	11.038	0.305	0.063	0.312			0.047	0.078
7	0.000	0.035	0.035	0.000	---	NonR	0.000	0.000
	11.038	0.035	0.035	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.49 kips 1.00Vn = 159.30 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	10.4	5.5	0.0	1.00	0.90	249.38
	Init DL	1.4DL	8.5	5.5	---	---		
	Max +	1.2DL+1.6LL	28.9	5.5	---	---	0.90	329.89

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
Controlling		1.2DL+1.6LL	28.9	5.5	---	---	0.90	329.89

REACTIONS (kips):

	Left	Right
Initial reaction	2.92	2.92
DL reaction	4.40	4.40
Max +LL reaction	3.25	3.25
Max +total reaction (factored)	10.49	10.49

DEFLECTIONS:

									Ratio
Initial load (in)	at	5.52 ft	=	-0.009	L/D	=	1464	> 180	0.01
Live load (in)	at	5.52 ft	=	-0.007	L/D	=	2029	> 360	0.02
Post Comp load (in)	at	5.52 ft	=	-0.011	L/D	=	1211	> 240	0.02
Net Total load (in)	at	5.52 ft	=	-0.020	L/D	=	6631	> 240	0.04

Floor Type: First Floor **Beam Number = 451**

SPAN INFORMATION (ft): I-End (182.75,100.17) J-End (197.75,100.17)

Beam Size (User Selected) = W14X22 Fy = 50.0 ksi
Total Beam Length (ft) = 15.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	28.50	Y bar(in)	=	12.89
Mnf (kip-ft)	=	247.95	Mn (kip-ft)	=	229.85
C (kips)	=	126.24	PNA (in)	=	12.34
Ieff (in4)	=	565.21	Itr (in4)	=	638.33
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 18 Partial = 15 Actual = 13
Number of Stud Rows = 1 Percent of Full Composite Action = 69.48

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
7.500	3.08	2.97	4.06	0.0	0.00	0.00	0.0	0.00	Snow	0.61	1.01

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.000	0.000	0.000	---	NonR	0.000	0.000
	0.508	0.026	0.026	0.000			0.000	0.000
2	0.000	0.000	0.000	0.000	0.0%	Red	0.000	0.000
	0.508	0.011	0.010	0.051			0.008	0.013
3	0.509	0.026	0.026	0.000	---	NonR	0.000	0.000
	14.491	0.026	0.026	0.000			0.000	0.000
4	0.509	0.011	0.010	0.051	0.0%	Red	0.008	0.013
	14.491	0.011	0.010	0.051			0.008	0.013
5	14.492	0.026	0.026	0.000	---	NonR	0.000	0.000
	15.000	0.000	0.000	0.000			0.000	0.000
6	14.492	0.011	0.010	0.051	0.0%	Red	0.008	0.013
	15.000	0.000	0.000	0.000			0.000	0.000
7	0.000	0.022	0.022	0.000	---	NonR	0.000	0.000
	15.000	0.022	0.022	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.78 kips 1.00Vn = 94.53 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	112.5	7.7	0.0	1.00	0.90	124.50

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
	Init DL	1.4DL	17.9	7.5	---	---		
	Max +	1.2DL+1.6LL	46.5	7.5	---	---	0.90	206.87
Controlling		1.2DL+1.6LL	46.5	7.5	---	---	0.90	206.87

REACTIONS (kips):

	Left	Right
Initial reaction	2.51	2.51
DL reaction	1.98	1.98
Max +LL reaction	2.76	2.76
Max +total reaction (factored)	6.78	6.78

DEFLECTIONS:

						Ratio
Initial load (in)	at	7.50 ft	= -0.074	L/D = 2431	> 180	0.07
Live load (in)	at	7.50 ft	= -0.039	L/D = 4659	> 360	0.08
Post Comp load (in)	at	7.50 ft	= -0.040	L/D = 4556	> 240	0.05
Net Total load (in)	at	7.50 ft	= -0.114	L/D = 1585	> 240	0.15

Floor Type: First Floor **Beam Number = 452**

SPAN INFORMATION (ft): I-End (284.75,79.29) J-End (305.75,79.29)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 21.00

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	43.50	Y bar(in)	=	15.19
Mnf (kip-ft)	=	348.58	Mn (kip-ft)	=	315.36
C (kips)	=	172.30	PNA (in)	=	14.74
Ieff (in4)	=	843.36	Itr (in4)	=	989.07
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Full = 42 Partial = 21 Actual = 21
Number of Stud Rows = 1 Percent of Full Composite Action = 58.43

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL	CLL
8.500	0.38	0.37	0.19	0.0	0.00	0.00	0.0	0.00	Snow	0.06	0.09

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.258	0.258	0.000	---	NonR	0.000	0.000
	21.000	0.258	0.258	0.000			0.000	0.000
2	0.000	0.114	0.100	0.251	0.0%	Red	0.075	0.126
	9.000	0.114	0.100	0.251			0.075	0.126
3	9.000	0.114	0.100	0.628	---	NonR	0.075	0.126
	21.000	0.114	0.100	0.628			0.075	0.126
4	0.000	0.193	0.193	0.000	---	NonR	0.000	0.000
	8.500	0.193	0.193	0.000			0.000	0.000
5	0.000	0.085	0.075	0.188	0.0%	Red	0.057	0.094
	8.500	0.085	0.075	0.188			0.057	0.094
6	8.500	0.051	0.051	0.000	---	NonR	0.000	0.000
	21.000	0.051	0.051	0.000			0.000	0.000
7	8.500	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	21.000	0.023	0.020	0.050			0.015	0.025
8	0.000	0.026	0.026	0.000	---	NonR	0.000	0.000
	21.000	0.026	0.026	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 18.94 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	52.7	9.4	0.0	1.00	0.90	165.75
	Init DL	1.4DL	42.7	9.4	---	---		
	Max +	1.2DL+1.6LL	100.0	10.4	---	---	0.90	283.83
Controlling		1.2DL+1.6LL	96.6	8.5	---	---	0.90	268.97

REACTIONS (kips):

	Left	Right
Initial reaction	8.45	7.01
DL reaction	6.56	5.45
Max +LL reaction	6.77	7.75
Max +total reaction (factored)	18.70	18.94

DEFLECTIONS:

				Ratio
Initial load (in)	at 10.29 ft = -0.277	L/D = 911 > 180		0.20
Live load (in)	at 10.40 ft = -0.126	L/D = 2004 > 360		0.18
Post Comp load (in)	at 10.40 ft = -0.129	L/D = 1951 > 240		0.12
Net Total load (in)	at 10.40 ft = -0.406	L/D = 621 > 240		0.39

Floor Type: First Floor **Beam Number = 453**

SPAN INFORMATION (ft): I-End (284.75,67.12) J-End (297.08,67.12)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.00	Y bar(in)	=	13.17
Mnf (kip-ft)	=	179.36	Mn (kip-ft)	=	144.45
C (kips)	=	103.38	PNA (in)	=	11.12
Ieff (in4)	=	308.20	Itr (in4)	=	400.09
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 49.70

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	12.333	0.237	0.237	0.000			0.000	0.000
2	0.000	0.105	0.093	0.231	0.0%	Red	0.069	0.116
	12.333	0.105	0.093	0.231			0.069	0.116
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.60 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	9.2	6.2	---	---		
	Max +	1.2DL+1.6LL	17.3	6.2	---	---	0.90	130.01
Controlling		1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.83	2.83
DL reaction	2.20	2.20
Max +LL reaction	1.85	1.85
Max +total reaction (factored)	5.60	5.60

DEFLECTIONS:

Ratio

Initial load (in)	at	6.17 ft	=	-0.070	L/D	=	2123	>	180	0.08
Live load (in)	at	6.17 ft	=	-0.018	L/D	=	8452	>	360	0.04
Post Comp load (in)	at	6.17 ft	=	-0.018	L/D	=	8127	>	240	0.03
Net Total load (in)	at	6.17 ft	=	-0.088	L/D	=	1683	>	240	0.14

Floor Type: First Floor **Beam Number = 454**

SPAN INFORMATION (ft): I-End (191.42,67.12) J-End (203.75,67.12)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	37.00	Y bar(in)	=	13.17
Mnf (kip-ft)	=	179.36	Mn (kip-ft)	=	144.45
C (kips)	=	103.38	PNA (in)	=	11.12
Ieff (in4)	=	308.20	Itr (in4)	=	400.09
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 49.70

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.237	0.237	0.000	---	NonR	0.000	0.000
	12.333	0.237	0.237	0.000			0.000	0.000
2	0.000	0.105	0.093	0.231	0.0%	Red	0.069	0.116
	12.333	0.105	0.093	0.231			0.069	0.116
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.60 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	9.2	6.2	---	---		
	Max +	1.2DL+1.6LL	17.3	6.2	---	---	0.90	130.01
Controlling		1.2DL+1.6LL	11.4	6.2	0.0	1.00	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.83	2.83
DL reaction	2.20	2.20
Max +LL reaction	1.85	1.85
Max +total reaction (factored)	5.60	5.60

DEFLECTIONS:

Ratio

Initial load (in)	at	6.17 ft	=	-0.070	L/D	=	2123	>	180	0.08
Live load (in)	at	6.17 ft	=	-0.018	L/D	=	8452	>	360	0.04
Post Comp load (in)	at	6.17 ft	=	-0.018	L/D	=	8127	>	240	0.03
Net Total load (in)	at	6.17 ft	=	-0.088	L/D	=	1683	>	240	0.14

Floor Type: First Floor **Beam Number = 455**

SPAN INFORMATION (ft): I-End (192.63,84.33) J-End (203.75,84.33)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 11.12

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	perpendicular	perpendicular
Decking type	ASC 3W	ASC 3W

beff (in)	=	33.38	Y bar(in)	=	12.95
Mnf (kip-ft)	=	177.29	Mn (kip-ft)	=	135.90
C (kips)	=	86.15	PNA (in)	=	10.26
Ieff (in4)	=	282.67	Itr (in4)	=	390.15
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 11 Partial = 11 Actual = 11
Number of Stud Rows = 1 Percent of Full Composite Action = 41.41

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.258	0.258	0.000	---	NonR	0.000	0.000
	11.125	0.258	0.258	0.000			0.000	0.000
2	0.000	0.114	0.100	0.251	0.0%	Red	0.075	0.126
	11.125	0.114	0.100	0.251			0.075	0.126
3	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	11.125	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 5.48 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	10.0	5.6	0.0	1.00	0.90	65.25
	Init DL	1.4DL	8.1	5.6	---	---		
	Max +	1.2DL+1.6LL	15.2	5.6	---	---	0.90	122.31
Controlling		1.2DL+1.6LL	10.0	5.6	---	---	0.90	65.25

REACTIONS (kips):

	Left	Right
Initial reaction	2.77	2.77
DL reaction	2.14	2.14
Max +LL reaction	1.82	1.82
Max +total reaction (factored)	5.48	5.48

DEFLECTIONS:

Ratio

Initial load (in)	at	5.56 ft	=	-0.050	L/D	=	2672	>	180	0.07
Live load (in)	at	5.56 ft	=	-0.014	L/D	=	9724	>	360	0.04
Post Comp load (in)	at	5.56 ft	=	-0.014	L/D	=	9350	>	240	0.03
Net Total load (in)	at	5.56 ft	=	-0.064	L/D	=	2078	>	240	0.12

Floor Type: First Floor **Beam Number = 456**

SPAN INFORMATION (ft): I-End (190.25,89.33) J-End (190.25,100.17)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 10.83

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	=	32.50	Y bar(in)	=	12.89
Mnf (kip-ft)	=	176.51	Mn (kip-ft)	=	135.80
C (kips)	=	86.15	PNA (in)	=	10.26
Ieff (in4)	=	281.36	Itr (in4)	=	387.53
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 10 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 41.50

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.017	0.192	0.192	0.000	---	NonR	0.000	0.000
	6.512	0.192	0.192	0.000			0.000	0.000
2	0.017	0.085	0.075	0.375	0.0%	Red	0.056	0.094
	6.512	0.085	0.075	0.375			0.056	0.094
3	6.523	0.385	0.385	0.000	---	NonR	0.000	0.000
	10.833	0.385	0.385	0.000			0.000	0.000
4	6.523	0.169	0.150	0.750	0.0%	Red	0.113	0.188
	10.833	0.169	0.150	0.750			0.113	0.188
5	0.015	0.192	0.192	0.000	---	NonR	0.000	0.000
	6.508	0.192	0.192	0.000			0.000	0.000
6	0.015	0.085	0.075	0.375	0.0%	Red	0.056	0.094
	6.508	0.085	0.075	0.375			0.056	0.094
7	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	10.833	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 11.15 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu	@	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ft			kip-ft
Center	PreCmp+	1.2DL+1.6LL	14.0	5.4	0.0	1.00	0.90	65.25
	Init DL	1.4DL	11.3	5.4	---	---		
	Max +	1.2DL+1.6LL	30.2	5.4	---	---	0.90	122.22
Controlling		1.2DL+1.6LL	30.2	5.4	---	---	0.90	122.22

REACTIONS (kips):

	Left	Right
Initial reaction	3.98	3.98
DL reaction	3.07	3.08
Max +LL reaction	4.65	4.66
Max +total reaction (factored)	11.13	11.15

DEFLECTIONS:

									Ratio
Initial load (in)	at	5.42 ft	=	-0.066	L/D	=	1966	> 180	0.09
Live load (in)	at	5.42 ft	=	-0.033	L/D	=	3976	> 360	0.09
Post Comp load (in)	at	5.42 ft	=	-0.033	L/D	=	3888	> 240	0.06
Net Total load (in)	at	5.42 ft	=	-0.100	L/D	=	1306	> 240	0.18

Floor Type: First Floor **Beam Number = 457**

SPAN INFORMATION (ft): I-End (293.25,71.75) J-End (293.25,79.29)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 7.54

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		parallel			parallel
Decking type		ASC 3W			ASC 3W
beff (in)	= 22.61		Y bar(in)	=	13.23
Mnf (kip-ft)	= 295.01		Mn (kip-ft)	=	261.02
C (kips)	= 84.16		PNA (in)	=	11.22
Ieff (in4)	= 685.57		Itr (in4)	=	804.25
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 14 Partial = 8 Actual = 8
Number of Stud Rows = 1 Percent of Full Composite Action = 58.39

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	7.535	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	7.535	0.023	0.020	0.050			0.015	0.025
3	0.000	0.026	0.026	0.000	---	NonR	0.000	0.000
	7.535	0.026	0.026	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.84 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	1.1	3.8	0.0	1.00	0.90	165.75
	Init DL	1.4DL	1.0	3.8	---	---		
	Max +	1.2DL+1.6LL	1.6	3.8	---	---	0.90	234.91
Controlling		1.2DL+1.6LL	1.6	3.8	---	---	0.90	234.91

REACTIONS (kips):

	Left	Right
Initial reaction	0.46	0.46
DL reaction	0.38	0.38
Max +LL reaction	0.24	0.24
Max +total reaction (factored)	0.84	0.84

DEFLECTIONS:

Ratio

Initial load (in)	at	3.77 ft	=	-0.001	L/D	=	1116 18	>	180	0.00
Live load (in)	at	3.77 ft	=	-0.000	L/D	=	3812 08	>	360	0.00
Post Comp load (in)	at	3.77 ft	=	-0.000	L/D	=	3665 46	>	240	0.00
Net Total load (in)	at	3.77 ft	=	-0.001	L/D	=	8556 3	>	240	0.00

Floor Type: First Floor **Beam Number = 458**

SPAN INFORMATION (ft): I-End (192.63,71.75) J-End (192.63,79.29)

Beam Size (User Selected) = W16X26 Fy = 50.0 ksi
Total Beam Length (ft) = 7.54

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	22.61	Y bar(in)	=	13.23
Mnf (kip-ft)	=	295.01	Mn (kip-ft)	=	261.02
C (kips)	=	84.16	PNA (in)	=	11.22
Ieff (in4)	=	685.57	Itr (in4)	=	804.25
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 14 Partial = 8 Actual = 8
Number of Stud Rows = 1 Percent of Full Composite Action = 58.39

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.051	0.051	0.000	---	NonR	0.000	0.000
	7.535	0.051	0.051	0.000			0.000	0.000
2	0.000	0.023	0.020	0.050	0.0%	Red	0.015	0.025
	7.535	0.023	0.020	0.050			0.015	0.025
3	0.000	0.026	0.026	0.000	---	NonR	0.000	0.000
	7.535	0.026	0.026	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 0.84 kips 0.90Vn = 105.97 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	1.1	3.8	0.0	1.00	0.90	165.75
	Init DL	1.4DL	1.0	3.8	---	---		
	Max +	1.2DL+1.6LL	1.6	3.8	---	---	0.90	234.91
Controlling		1.2DL+1.6LL	1.6	3.8	---	---	0.90	234.91

REACTIONS (kips):

	Left	Right
Initial reaction	0.46	0.46
DL reaction	0.38	0.38
Max +LL reaction	0.24	0.24
Max +total reaction (factored)	0.84	0.84

DEFLECTIONS:

Ratio

Initial load (in)	at	3.77 ft	=	-0.001	L/D	=	1116 18	>	180	0.00
Live load (in)	at	3.77 ft	=	-0.000	L/D	=	3812 08	>	360	0.00
Post Comp load (in)	at	3.77 ft	=	-0.000	L/D	=	3665 46	>	240	0.00
Net Total load (in)	at	3.77 ft	=	-0.001	L/D	=	8556 3	>	240	0.00

Floor Type: First Floor **Beam Number = 459**

SPAN INFORMATION (ft): I-End (191.42,62.50) J-End (203.75,62.50)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 37.00		Y bar(in)	=	13.17
Mnf (kip-ft)	= 179.36		Mn (kip-ft)	=	136.26
C (kips)	= 86.15		PNA (in)	=	10.26
Ieff (in4)	= 289.06		Itr (in4)	=	400.09
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 37.86

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
7.000	0.93	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	7.001	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.672	0.000	0.000			0.000	0.000
2	0.000	0.202	0.202	0.000	---	NonR	0.000	0.000
	12.333	0.202	0.202	0.000			0.000	0.000
3	0.000	0.089	0.079	0.197	0.0%	Red	0.059	0.098
	12.333	0.089	0.079	0.197			0.059	0.098
4	0.000	0.258	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.258	0.000	0.000			0.000	0.000
5	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.70 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.7	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	7.9	6.2	---	---		
	Max +	1.2DL+1.6LL	30.2	7.0	---	---	0.90	122.63
Controlling		1.2DL+1.6LL	30.2	7.0	---	---	0.90	122.63

REACTIONS (kips):

	Left	Right
Initial reaction	2.43	2.43
DL reaction	4.65	6.81
Max +LL reaction	1.58	1.58
Max +total reaction (factored)	8.11	10.70

DEFLECTIONS:

									Ratio
Initial load (in)	at	6.29 ft	=	-0.060	L/D	=	2477	> 180	0.07
Live load (in)	at	6.29 ft	=	-0.016	L/D	=	9316	> 360	0.04
Post Comp load (in)	at	6.29 ft	=	-0.056	L/D	=	2627	> 240	0.09
Net Total load (in)	at	6.29 ft	=	-0.116	L/D	=	1275	> 240	0.19

Floor Type: First Floor **Beam Number = 460**

SPAN INFORMATION (ft): I-End (284.75,62.50) J-End (297.08,62.50)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 12.33

COMPOSITE PROPERTIES (Not Shored):

		Left			Right
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		perpendicular			perpendicular
Decking type		ASC 3W			ASC 3W
beff (in)	= 37.00		Y bar(in)	=	13.17
Mnf (kip-ft)	= 179.36		Mn (kip-ft)	=	136.26
C (kips)	= 86.15		PNA (in)	=	10.26
Ieff (in4)	= 289.06		Itr (in4)	=	400.09
Stud length (in)	= 4.50		Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 17.2 Rg = 1.00 Rp = 0.60
# of studs: Max = 12 Partial = 12 Actual = 12
Number of Stud Rows = 1 Percent of Full Composite Action = 37.86

POINT LOADS (kips):

Dist	DL	CDL	RedLL	Red%	NonRLL	StorLL	Red%	RoofLL	Red%	PartL
5.333	0.93	0.00								

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	5.333	0.672	0.000	0.000			0.000	0.000
2	0.000	0.202	0.202	0.000	---	NonR	0.000	0.000
	12.333	0.202	0.202	0.000			0.000	0.000
3	0.000	0.089	0.079	0.197	0.0%	Red	0.059	0.098
	12.333	0.089	0.079	0.197			0.059	0.098
4	0.000	0.258	0.000	0.000	0.0%	Red	0.000	0.000
	12.333	0.258	0.000	0.000			0.000	0.000
5	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	12.333	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 10.70 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.2DL+1.6LL	9.7	6.2	0.0	1.00	0.90	65.25
	Init DL	1.4DL	7.9	6.2	---	---		
	Max +	1.2DL+1.6LL	30.2	5.3	---	---	0.90	122.63
Controlling		1.2DL+1.6LL	30.2	5.3	---	---	0.90	122.63

REACTIONS (kips):

	Left	Right
Initial reaction	2.43	2.43
DL reaction	6.81	4.65
Max +LL reaction	1.58	1.58
Max +total reaction (factored)	10.70	8.11

DEFLECTIONS:

									Ratio
Initial load (in)	at	6.04 ft	=	-0.060	L/D	=	2477	> 180	0.07
Live load (in)	at	6.04 ft	=	-0.016	L/D	=	9316	> 360	0.04
Post Comp load (in)	at	6.04 ft	=	-0.056	L/D	=	2627	> 240	0.09
Net Total load (in)	at	6.04 ft	=	-0.116	L/D	=	1275	> 240	0.19

Floor Type: First Floor **Beam Number = 461**

SPAN INFORMATION (ft): I-End (191.42,40.75) J-End (191.42,50.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25

COMPOSITE PROPERTIES (Not Shored):

	Left	Right
Deck Label	ASC 3W 2.5conc	ASC 3W 2.5conc
Concrete thickness (in)	2.50	2.50
Unit weight concrete (pcf)	145.00	145.00
f'c (ksi)	3.00	3.00
Decking Orientation	parallel	parallel
Decking type	ASC 3W	ASC 3W

beff (in)	=	27.75	Y bar(in)	=	12.53
Mnf (kip-ft)	=	165.69	Mn (kip-ft)	=	143.60
C (kips)	=	105.20	PNA (in)	=	11.21
Ieff (in4)	=	306.82	Itr (in4)	=	371.58
Stud length (in)	=	4.50	Stud diam (in)	=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 18 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 59.46

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	9.250	0.672	0.000	0.000			0.000	0.000
2	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	9.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.4DL) = 4.44 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.4DL	0.2	4.6	0.0	1.00	0.90	65.25
	Init DL	1.4DL	0.2	4.6	---	---		
	Max +	1.4DL	10.3	4.6	---	---	0.90	129.24
Controlling		1.4DL	10.3	4.6	---	---	0.90	129.24

REACTIONS (kips):

	Left	Right
Initial reaction	0.07	0.07
DL reaction	3.17	3.17
Max +total reaction (factored)	4.44	4.44

DEFLECTIONS: **Ratio**

Initial load (in) at 4.62 ft = -0.001 L/D = 1223 > 180 0.00
15

Live load (in) at 4.62 ft = -0.001

Post Comp load (in)	at	4.62 ft	=	-0.012	L/D	=	8922 > 240	0.03
Net Total load (in)	at	4.62 ft	=	-0.013	L/D	=	8316 > 240	0.03

Floor Type: First Floor **Beam Number = 462**

SPAN INFORMATION (ft): I-End (297.08,40.75) J-End (297.08,50.00)

Beam Size (User Selected) = W12X14 Fy = 50.0 ksi
Total Beam Length (ft) = 9.25

COMPOSITE PROPERTIES (Not Shored):

		Left			**Right**
Deck Label		ASC 3W 2.5conc			ASC 3W 2.5conc
Concrete thickness (in)		2.50			2.50
Unit weight concrete (pcf)		145.00			145.00
f'c (ksi)		3.00			3.00
Decking Orientation		parallel			parallel
Decking type		ASC 3W			ASC 3W
beff (in)	= 27.75	Y bar(in)		=	12.53
Mnf (kip-ft)	= 165.69	Mn (kip-ft)		=	143.60
C (kips)	= 105.20	PNA (in)		=	11.21
Ieff (in4)	= 306.82	Itr (in4)		=	371.58
Stud length (in)	= 4.50	Stud diam (in)		=	0.75

Stud Capacity (kips) Qn = 21.0 Rg = 1.00 Rp = 0.75
# of studs: Full = 18 Partial = 10 Actual = 10
Number of Stud Rows = 1 Percent of Full Composite Action = 59.46

LINE LOADS (k/ft):

Load	Dist	DL	CDL	LL	Red%	Type	PartL	CLL
1	0.000	0.672	0.000	0.000	0.0%	Red	0.000	0.000
	9.250	0.672	0.000	0.000			0.000	0.000
2	0.000	0.014	0.014	0.000	---	NonR	0.000	0.000
	9.250	0.014	0.014	0.000			0.000	0.000

SHEAR (Ultimate): Max Vu (1.4DL) = 4.44 kips 0.90Vn = 64.26 kips

MOMENTS (Ultimate):

Span	Cond	LoadCombo	Mu kip-ft	@ ft	Lb ft	Cb	Phi	Phi*Mn kip-ft
Center	PreCmp+	1.4DL	0.2	4.6	0.0	1.00	0.90	65.25
	Init DL	1.4DL	0.2	4.6	---	---		
	Max +	1.4DL	10.3	4.6	---	---	0.90	129.24
Controlling		1.4DL	10.3	4.6	---	---	0.90	129.24

REACTIONS (kips):

	Left	**Right**
Initial reaction	0.07	0.07
DL reaction	3.17	3.17
Max +total reaction (factored)	4.44	4.44

DEFLECTIONS: **Ratio**

Initial load (in) at 4.62 ft = -0.001 L/D = 1223 > 180 0.00
15

Live load (in) at 4.62 ft = -0.001 L/D = 1223 > 180 0.00

Post Comp load (in)	at	4.62 ft	=	-0.012	L/D	=	8922 > 240	0.03
Net Total load (in)	at	4.62 ft	=	-0.013	L/D	=	8316 > 240	0.03

Beam Connection Check

RAM Steel 17.04.00.184
DataBase: TF Judicial 01092023 (area B only) 01/09/23 15:45:26
Building Code: IBC Steel Code: AISC 360-16 LRFD

Connection Table File Name: C:\ProgramData\Bentley\Engineering\RAM Structural System\Tables\\36ksi Single Plate BM to Col (E and F added).con

Shear tab connection capacities using typical connection detail with 1 Row of 7 /8 in A325 bolts with STD hole type and "N" (threads included) condition.
Shear Tabs: Fy = 36 ksi.
Beams: A992 Fy = 50 ksi.

User Defined Allowable Connection Values - Factored (kips):

Size	Capacity	Comments
W8	14.00	2 bolts
W10	14.00	2 bolts
W12	29.20	3 bolts
W14	29.20	3 bolts
W16	63.20	4 bolts
W18	63.30	4 bolts
W21	76.60	5 bolts
W24	105.00	6 bolts
W27	127.00	7 bolts
W30	147.00	8 bolts
W30	147.00	8 bolts
W30	147.00	8 bolts
	0.00	

Load Combinations:

1	1.4DL
2	1.2DL+1.6LL

Floor Type: Main Roof

Number of Warnings = 0

Floor Type: Second Floor

Beam #	Location X ft	Location Y ft	Beam Size	Factored Reaction kips	Capacity kips
214	106.000	52.250	W18X35	68.98	63.30
213	106.000	71.583	W18X35	76.62	63.30
116	145.750	52.250	W24X55	114.81	105.00
115	145.750	71.583	W24X55	131.02	105.00
220	182.750	71.750	W18X35	64.44	63.30
222	203.750	40.750	W12X14	34.97	29.20
221	203.750	71.750	W18X35	68.50	63.30

Beam #		Location	Beam Size	Factored	Capacity
72	240.750	71.583	W18X35	67.89	63.30
227	284.750	40.750	W12X14	34.97	29.20
224	284.750	71.750	W18X35	65.28	63.30
226	305.750	40.750	W12X14	34.97	29.20
225	305.750	71.750	W18X35	72.92	63.30
90	342.750	71.583	W18X35	67.82	63.30

Number of Warnings = 13

Floor Type: First Floor

Beam #	Location X ft	Location Y ft	Beam Size	Factored Reaction kips	Capacity kips
12	240.750	71.583	W18X35	76.57	63.30
14	247.750	71.583	W18X35	76.99	63.30
89	342.750	71.583	W18X35	76.38	63.30

Number of Warnings = 3

No matching capacity was found in the Connection table for the following sizes:
C4X5.4
MC10X6.5

Notes:
Beams with cantilevers are not checked at supports under cantilevers.
Frame beams are not checked.

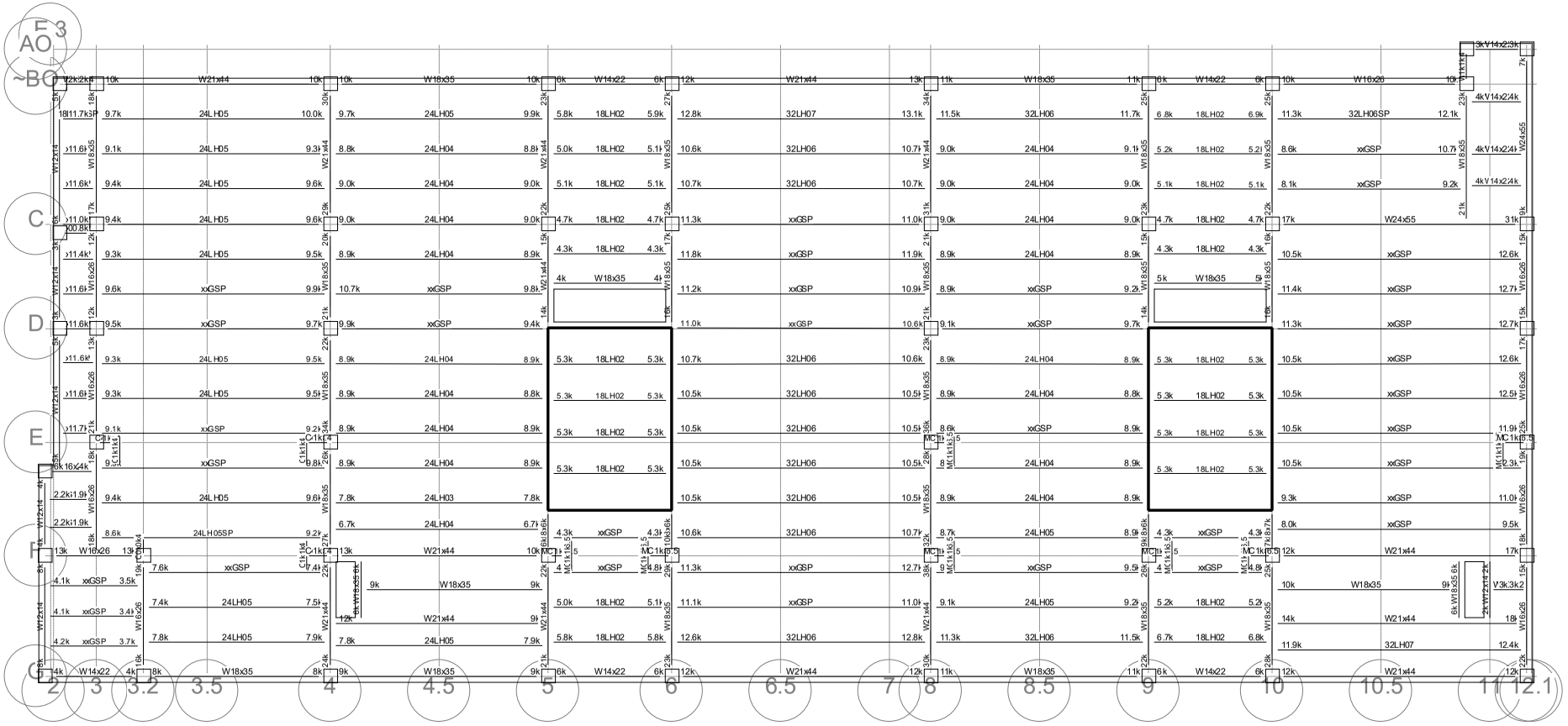
Floor Map

RAM Steel 17.04.00.184
DataBase: TF Judicial 01092023 (area B only)
Building Code: IBC

01/09/23 15:45:26
Steel Code: AISC 360-16 LRFD

Floor Type: Main Roof

Beam Designs



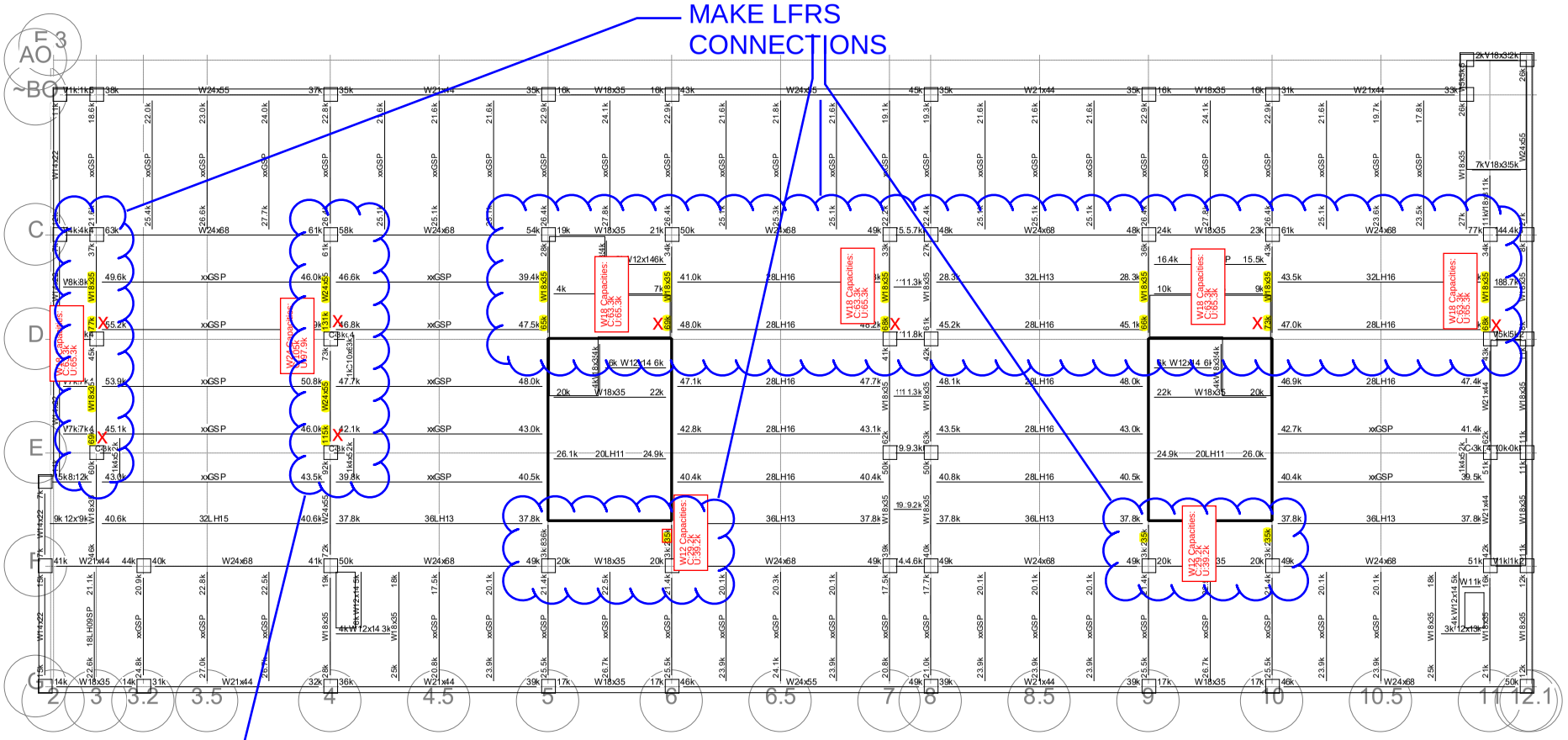
Floor Map

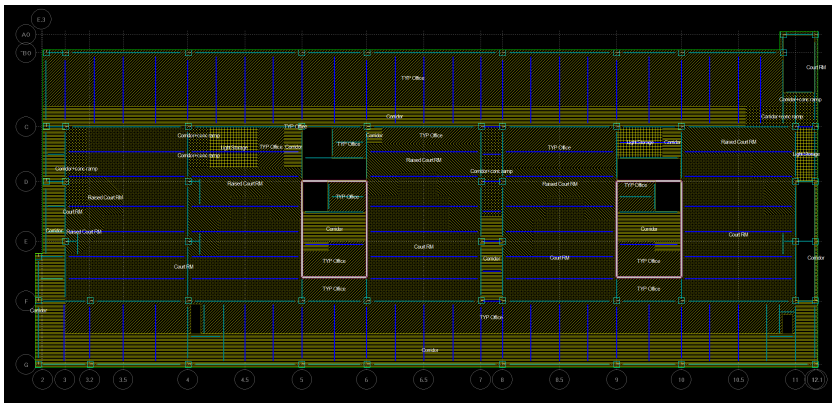
RAM Steel 17.04.01.07
DataBase: TF Judicial 11292022 (area B only)
Building Code: IBC

11/30/22 10:12:37
Steel Code: AISC 360-16 LRFD

Floor Type: Second Floor

Beam Designs





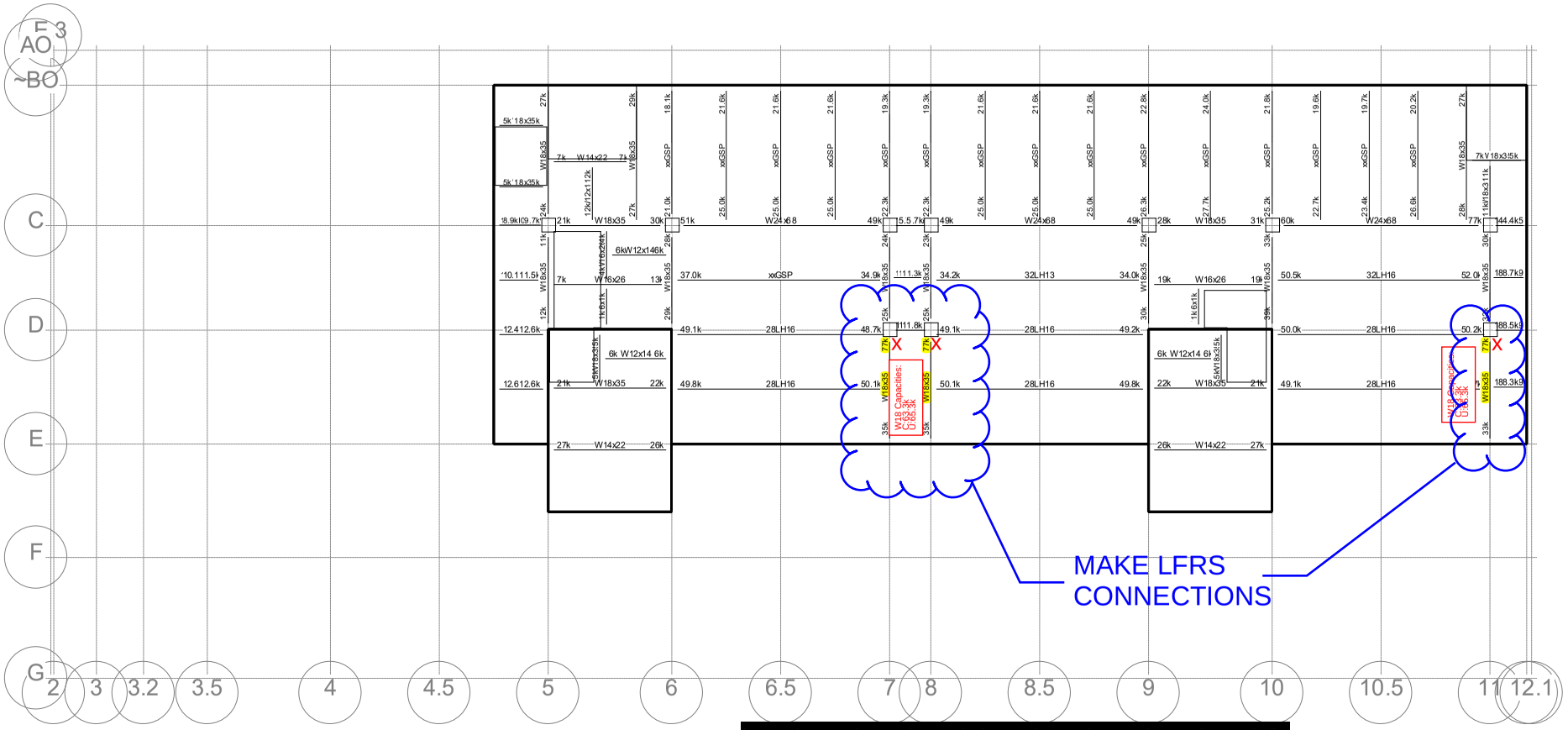
Floor Map

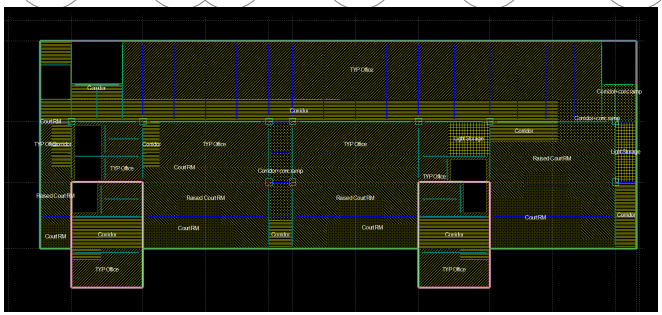
RAM Steel 17.04.01.07
DataBase: TF Judicial 11292022 (area B only)
Building Code: IBC

11/30/22 10:12:37
Steel Code: AISC 360-16 LRFD

Floor Type: First Floor

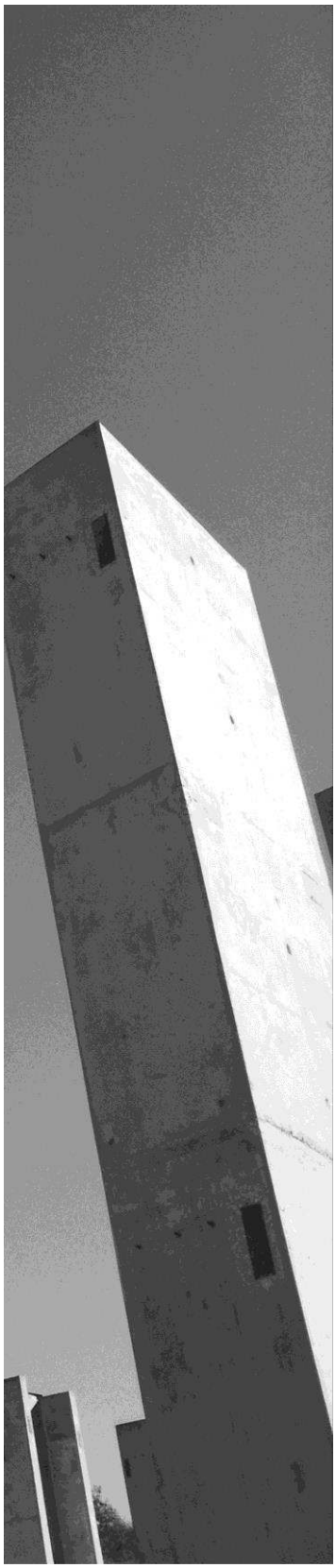
Beam Designs





420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

GRAVITY COLUMN & BASEPLATE DESIGN



KPFF JOB # 10212200038

Gravity Column Design

RAM Steel 17.04.00.184
DataBase: TF Judicial 01092023 (area B only) 01/12/23 08:44:14
Building Code: IBC Steel Code: AISC360-16 LRFD

Story level Main Roof, Column Line 97.25ft-12.50ft, Column # 121

Fy (ksi) = 46.00 Column Size = HSS8X4X5/8
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	4.75
	Bottom	6.75	4.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	4.70	0.00	3.96

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	11.98	0.90Pnx (kip)	=	263.32	Pu/0.90Pnx	=	0.045
			0.90Pny (kip)	=	94.63	Pu/0.90Pny	=	0.127
			0.90Pn (kip)	=	94.63	Pu/0.90Pn	=	0.127

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			4.70	0.00	3.96
Moments	Top	Mx (kip-ft)	1.50	0.00	1.51
		My (kip-ft)	0.47	0.00	0.50
	Bot	Mx (kip-ft)	1.17	1.72	0.00
		My (kip-ft)	0.81	1.12	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	11.98	0.90*Pn (kip)	=	94.63
Mux (kip-ft)	=	4.23	0.90*Mnx (kip-ft)	=	94.53
Muy (kip-ft)	=	1.53	0.90*Mny (kip-ft)	=	57.27
Rm	=	1.00			
Cbx	=	2.18	Cby	=	2.25
Cmx	=	0.39	Cmy	=	0.24
Pex (kip)	=	369.58	Pey (kip)	=	119.89
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.127 Eq H1-1b: 0.063 + 0.045 + 0.027 = 0.135

Story level Second, Column Line 97.25ft-12.50ft, Column # 122

Fy (ksi)	= 46.00	Column Size	= HSS8X4X5/8
Orientation (deg.)	= 90.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	4.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	13.79	11.75	3.96

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	37.33	0.90Pnx (kip)	=	263.32	Pu/0.90Pnx	= 0.142
			0.90Pny (kip)	=	94.63	Pu/0.90Pny	= 0.394
			0.90Pn (kip)	=	94.63	Pu/0.90Pn	= 0.394

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			13.79	11.75	3.96
Moments	Top	Mx (kip-ft)	1.17	1.72	0.00
		My (kip-ft)	0.81	1.12	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	37.33	0.90*Pn (kip)	=	94.63
Mux (kip-ft)	=	4.16	0.90*Mnx (kip-ft)	=	94.53
Muy (kip-ft)	=	2.76	0.90*Mny (kip-ft)	=	57.27
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	369.58	Pey (kip)	=	119.89
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.394 Eq H1-1a: 0.394 + 8/9(0.044 + 0.048) = 0.476

Story level Second, Column Line 97.25ft-33.00ft, Column # 121

Fy (ksi) = 46.00 Column Size = HSS8X4X5/8
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	4.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	28.85	24.20	7.76

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	77.23	0.90Pnx (kip)	=	294.10	Pu/0.90Pnx	= 0.263
			0.90Pny (kip)	=	115.60	Pu/0.90Pny	= 0.668
			0.90Pn (kip)	=	115.60	Pu/0.90Pn	= 0.668

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			28.85	24.20	7.76
Moments	Top	Mx (kip-ft)	-0.67	-0.98	0.00
		My (kip-ft)	2.55	3.31	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	77.23	0.90*Pn (kip)	=	115.60
Mux (kip-ft)	=	-2.38	0.90*Mnx (kip-ft)	=	94.53
Muy (kip-ft)	=	10.59	0.90*Mny (kip-ft)	=	57.27
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	451.48	Pey (kip)	=	146.46
B1x	=	1.00	B1y	=	1.27

INTERACTION EQUATION

Pu/0.90*Pn = 0.668 Eq H1-1a: 0.668 + 8/9(0.025 + 0.185) = 0.855

Story level Main Roof, Column Line 97.25ft-47.33ft, Column # 119

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	5.75	4.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	3.21	0.00	3.00

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	8.65	0.90Pnx (kip)	=	73.92	Pu/0.90Pnx	= 0.117
			0.90Pny (kip)	=	39.49	Pu/0.90Pny	= 0.219
			0.90Pn (kip)	=	39.49	Pu/0.90Pn	= 0.219

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			3.21	0.00	3.00
Moments	Top	Mx (kip-ft)	-0.50	0.00	-0.57
		My (kip-ft)	0.73	0.00	0.72
	Bot	Mx (kip-ft)	-0.43	-0.60	0.00
		My (kip-ft)	0.81	1.14	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	8.65	0.90*Pn (kip)	=	39.49
Mux (kip-ft)	=	-1.51	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	2.03	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	2.18	Cby	=	2.22
Cmx	=	0.39	Cmy	=	0.30
Pex (kip)	=	94.20	Pey (kip)	=	50.03
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.219 Eq H1-1a: 0.219 + 8/9(0.051 + 0.091) = 0.346

Story level Second, Column Line 97.25ft-47.33ft, Column # 120

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	9.64	8.69	3.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	26.98	0.90Pnx (kip)	=	86.70	Pu/0.90Pnx	=	0.311
			0.90Pny (kip)	=	48.24	Pu/0.90Pny	=	0.559
			0.90Pn (kip)	=	48.24	Pu/0.90Pn	=	0.559

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			9.64	8.69	3.00
Moments	Top	Mx (kip-ft)	-0.47	-0.66	0.00
		My (kip-ft)	0.89	1.26	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	26.98	0.90*Pn (kip)	=	48.24
Mux (kip-ft)	=	-1.62	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	3.32	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	115.07	Pey (kip)	=	61.12
B1x	=	1.00	B1y	=	1.07

INTERACTION EQUATION

Pu/0.90*Pn = 0.559 Eq H1-1a: 0.559 + 8/9(0.055 + 0.149) = 0.741

Story level Main Roof, Column Line 99.75ft-71.58ft, Column # 118

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	5.75	4.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	3.42	0.00	3.11

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	9.08	0.90Pnx (kip)	=	73.92	Pu/0.90Pnx	= 0.123
			0.90Pny (kip)	=	39.49	Pu/0.90Pny	= 0.230
			0.90Pn (kip)	=	39.49	Pu/0.90Pn	= 0.230

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			3.42	0.00	3.11
Moments	Top	Mx (kip-ft)	-0.30	0.00	-0.30
		My (kip-ft)	0.25	0.00	0.25
	Bot	Mx (kip-ft)	-0.33	-0.98	0.00
		My (kip-ft)	0.38	0.57	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	9.08	0.90*Pn (kip)	=	39.49
Mux (kip-ft)	=	-0.88	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	0.74	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	2.26	Cby	=	2.26
Cmx	=	0.22	Cmy	=	0.22
Pex (kip)	=	94.20	Pey (kip)	=	50.03
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.230 Eq H1-1a: 0.230 + 8/9(0.030 + 0.033) = 0.286

Story level Second, Column Line 99.75ft-71.58ft, Column # 117

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	10.44	9.62	3.11

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	29.48	0.90Pnx (kip)	=	86.70	Pu/0.90Pnx	= 0.340
			0.90Pny (kip)	=	48.24	Pu/0.90Pny	= 0.611
			0.90Pn (kip)	=	48.24	Pu/0.90Pn	= 0.611

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			10.44	9.62	3.11
Moments	Top	Mx (kip-ft)	-0.36	-0.52	0.00
		My (kip-ft)	0.42	0.63	0.00
	Bot	Mx (kip-ft)	0.00	-0.00	0.00
		My (kip-ft)	-0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	29.48	0.90*Pn (kip)	=	48.24
Mux (kip-ft)	=	-1.26	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	1.75	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	115.07	Pey (kip)	=	61.12
B1x	=	1.00	B1y	=	1.16

INTERACTION EQUATION

Pu/0.90*Pn = 0.611 Eq H1-1a: 0.611 + 8/9(0.043 + 0.079) = 0.719

Story level Main Roof, Column Line 99.75ft-87.83ft, Column # 117

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	5.75	4.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	3.51	0.00	3.19

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	9.32	0.90Pnx (kip)	=	73.92	Pu/0.90Pnx	= 0.126
			0.90Pny (kip)	=	39.49	Pu/0.90Pny	= 0.236
			0.90Pn (kip)	=	39.49	Pu/0.90Pn	= 0.236

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			3.51	0.00	3.19
Moments	Top	Mx (kip-ft)	0.41	0.00	0.41
		My (kip-ft)	0.12	0.00	0.13
	Bot	Mx (kip-ft)	0.50	0.46	0.00
		My (kip-ft)	0.20	0.30	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	9.32	0.90*Pn (kip)	=	39.49
Mux (kip-ft)	=	1.15	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	0.39	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	2.22	Cby	=	2.25
Cmx	=	0.31	Cmy	=	0.24
Pex (kip)	=	94.20	Pey (kip)	=	50.03
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.236 Eq H1-1a: 0.236 + 8/9(0.039 + 0.017) = 0.286

Story level Second, Column Line 99.75ft-87.83ft, Column # 115

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	10.69	8.68	3.19

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	28.32	0.90Pnx (kip)	=	86.70	Pu/0.90Pnx	=	0.327
			0.90Pny (kip)	=	48.24	Pu/0.90Pny	=	0.587
			0.90Pn (kip)	=	48.24	Pu/0.90Pn	=	0.587

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			10.69	8.68	3.19
Moments	Top	Mx (kip-ft)	0.55	0.51	0.00
		My (kip-ft)	0.22	0.33	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	28.32	0.90*Pn (kip)	=	48.24
Mux (kip-ft)	=	1.47	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	0.89	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	115.07	Pey (kip)	=	61.12
B1x	=	1.00	B1y	=	1.12

INTERACTION EQUATION

Pu/0.90*Pn = 0.587 Eq H1-1a: 0.587 + 8/9(0.050 + 0.040) = 0.667

Story level Main Roof, Column Line 99.75ft-113.17ft, Column # 116

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	5.75	4.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	2.41	0.00	2.13

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	6.29	0.90Pnx (kip)	=	73.92	Pu/0.90Pnx	= 0.085
			0.90Pny (kip)	=	39.49	Pu/0.90Pny	= 0.159
			0.90Pn (kip)	=	39.49	Pu/0.90Pn	= 0.159

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			2.41	0.00	2.13
Moments	Top	Mx (kip-ft)	-0.78	0.00	-0.78
		My (kip-ft)	0.18	0.00	0.20
	Bot	Mx (kip-ft)	-0.95	-0.84	0.00
		My (kip-ft)	0.07	0.04	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	6.29	0.90*Pn (kip)	=	39.49
Mux (kip-ft)	=	-2.19	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	0.54	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	2.21	Cby	=	1.90
Cmx	=	0.32	Cmy	=	0.53
Pex (kip)	=	94.20	Pey (kip)	=	50.03
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.159 Eq H1-1b: 0.080 + 0.074 + 0.024 = 0.178

Story level Second, Column Line 99.75ft-113.17ft, Column # 114

Fy (ksi) = 46.00 Column Size = HSS6X4X1/4
Orientation (deg.) = 90.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	4.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	7.19	3.91	2.13

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	15.94	0.90Pnx (kip)	=	86.70	Pu/0.90Pnx	= 0.184
			0.90Pny (kip)	=	48.24	Pu/0.90Pny	= 0.330
			0.90Pn (kip)	=	48.24	Pu/0.90Pn	= 0.330

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			7.19	3.91	2.13
Moments	Top	Mx (kip-ft)	-1.04	-0.92	0.00
		My (kip-ft)	0.07	0.05	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	-0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	15.94	0.90*Pn (kip)	=	48.24
Mux (kip-ft)	=	-2.73	0.90*Mnx (kip-ft)	=	29.43
Muy (kip-ft)	=	0.16	0.90*Mny (kip-ft)	=	22.25
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	115.07	Pey (kip)	=	61.12
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.330 Eq H1-1a: 0.330 + 8/9(0.093 + 0.007) = 0.419

Story level Main Roof, Column Line 3-E, Column # 66

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	17.49	0.00	11.37

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	39.18	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.111
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.111
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.111

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 5:

			Dead	Live	Roof
Axial (kip)			17.49	0.00	11.37
Moments	Top	Mx (kip-ft)	0.12	0.00	0.06
		My (kip-ft)	-0.54	0.00	-0.49
	Bot	Mx (kip-ft)	0.20	0.25	0.00
		My (kip-ft)	-1.07	-7.17	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	26.67	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	0.65	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-12.76	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.03	Cby	=	1.75
Cmx	=	0.49	Cmy	=	0.57
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.076 Eq H1-1b: 0.038 + 0.005 + 0.099 = 0.141

Story level Second, Column Line 3-E, Column # 66

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	58.49	51.76	11.37

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	158.69	0.90Pnx (kip)	=	383.11	Pu/0.90Pnx	= 0.414
			0.90Pny (kip)	=	383.11	Pu/0.90Pny	= 0.414
			0.90Pn (kip)	=	383.11	Pu/0.90Pn	= 0.414

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			58.49	51.76	11.37
Moments	Top	Mx (kip-ft)	0.23	0.28	0.00
		My (kip-ft)	-1.18	-0.85	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	158.69	0.90*Pn (kip)	=	383.11
Mux (kip-ft)	=	0.71	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-2.78	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	688.24	Pey (kip)	=	688.24
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.414 Eq H1-1a: 0.414 + 8/9(0.006 + 0.021) = 0.438

Story level Main Roof, Column Line 3-D, Column # 65

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	16.29	0.00	10.51

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	36.36	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.103
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.103
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.103

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 9:

			Dead	Live	Roof
Axial (kip)			16.29	0.00	10.01
Moments	Top	Mx (kip-ft)	1.96	0.00	1.59
		My (kip-ft)	0.33	0.00	0.30
	Bot	Mx (kip-ft)	-0.53	-0.81	0.00
		My (kip-ft)	-3.06	-7.59	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	24.55	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	3.15	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-15.81	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.18	Cby	=	1.63
Cmx	=	0.85	Cmy	=	0.61
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.070 — Eq H1-1b: 0.035 + 0.024 + 0.122 = 0.181

Story level Second, Column Line 3-D, Column # 65

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	59.68	46.06	10.51

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	150.56	0.90Pnx (kip)	=	383.11	Pu/0.90Pnx	= 0.393
			0.90Pny (kip)	=	383.11	Pu/0.90Pny	= 0.393
			0.90Pn (kip)	=	383.11	Pu/0.90Pn	= 0.393

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			59.68	46.06	10.51
Moments	Top	Mx (kip-ft)	-0.59	-0.78	0.00
		My (kip-ft)	-3.38	-3.17	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	-0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	150.56	0.90*Pn (kip)	=	383.11
Mux (kip-ft)	=	-1.96	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-9.13	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	688.24	Pey (kip)	=	688.24
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.393 Eq H1-1a: 0.393 + 8/9(0.015 + 0.071) = 0.469

Story level Main Roof, Column Line 3-C, Column # 112

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	17.86	0.00	11.69

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	40.13	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.114
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.114
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.114

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			17.86	0.00	11.69
Moments	Top	Mx (kip-ft)	2.04	0.00	1.42
		My (kip-ft)	-1.22	0.00	-0.84
	Bot	Mx (kip-ft)	6.11	6.76	0.00
		My (kip-ft)	1.67	3.97	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	27.28	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	18.15	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	8.36	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.89	Cby	=	1.45
Cmx	=	0.53	Cmy	=	0.69
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.077 Eq H1-1b: 0.039 + 0.140 + 0.065 = 0.244

Story level Second, Column Line 3-C, Column # 64

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	62.11	38.45	11.69

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	141.90	0.90Pnx (kip)	=	383.11	Pu/0.90Pnx	= 0.370
			0.90Pny (kip)	=	383.11	Pu/0.90Pny	= 0.370
			0.90Pn (kip)	=	383.11	Pu/0.90Pn	= 0.370

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			62.11	38.45	11.69
Moments	Top	Mx (kip-ft)	6.76	5.74	0.00
		My (kip-ft)	1.85	2.05	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	141.90	0.90*Pn (kip)	=	383.11
Mux (kip-ft)	=	17.29	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	5.49	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	688.24	Pey (kip)	=	688.24
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.370 Eq H1-1a: 0.370 + 8/9(0.134 + 0.042) = 0.527

Story level Main Roof, Column Line 3-~BO, Column # 63

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	12.08	0.00	8.89

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	28.72	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.169
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.169
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.169

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			12.08	0.00	8.89
Moments	Top	Mx (kip-ft)	1.48	0.00	1.31
		My (kip-ft)	3.54	0.00	2.48
	Bot	Mx (kip-ft)	3.56	3.17	0.00
		My (kip-ft)	1.57	1.46	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	28.72	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	5.85	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	8.21	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.20	Cby	=	2.12
Cmx	=	0.34	Cmy	=	0.47
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.169 Eq H1-1b: 0.084 + 0.086 + 0.120 = 0.290

Story level Second, Column Line 3-~BO, Column # 63

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	35.94	16.75	8.89

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	74.37	0.90Pnx (kip)	=	199.21	Pu/0.90Pnx	= 0.373
			0.90Pny (kip)	=	199.21	Pu/0.90Pny	= 0.373
			0.90Pn (kip)	=	199.21	Pu/0.90Pn	= 0.373

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			35.94	16.75	8.89
Moments	Top	Mx (kip-ft)	3.93	2.80	0.00
		My (kip-ft)	1.74	1.31	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	74.37	0.90*Pn (kip)	=	199.21
Mux (kip-ft)	=	9.20	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	4.18	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	265.93	Pey (kip)	=	265.93
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.373 Eq H1-1a: 0.373 + 8/9(0.135 + 0.061) = 0.547

Story level Main Roof, Column Line 3.2-G, Column # 68

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	11.05	0.00	8.53

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	26.91	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.158
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.158
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.158

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 5:

			Dead	Live	Roof
Axial (kip)			11.05	0.00	8.53
Moments	Top	Mx (kip-ft)	0.70	0.00	0.65
		My (kip-ft)	-3.12	0.00	-2.27
	Bot	Mx (kip-ft)	1.37	3.05	0.00
		My (kip-ft)	-1.74	-2.40	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	17.52	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	6.53	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.94	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.89	Cby	=	2.24
Cmx	=	0.53	Cmy	=	0.27
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.103

Eq H1-1b: 0.051 + 0.096 + 0.087 = 0.234

Story level Second, Column Line 3.2-G, Column # 68

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	32.92	22.93	8.53

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	80.45	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.472
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.472
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.472

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			32.92	22.93	8.53
Moments	Top	Mx (kip-ft)	1.37	1.38	0.00
		My (kip-ft)	-1.74	-1.94	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	80.45	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	3.85	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.20	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.472 Eq H1-1a: 0.472 + 8/9(0.056 + 0.076) = 0.590

Story level Main Roof, Column Line 3.2-F, Column # 122

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	14.19	0.00	9.34

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	31.96	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.163
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.163
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.163

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			14.19	0.00	9.34
Moments	Top	Mx (kip-ft)	-2.62	0.00	-1.79
		My (kip-ft)	3.77	0.00	2.68
	Bot	Mx (kip-ft)	0.18	-0.54	0.00
		My (kip-ft)	1.66	1.72	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	31.96	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	-6.01	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	8.82	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.68	Cby	=	2.12
Cmx	=	0.60	Cmy	=	0.47
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.163 Eq H1-1b: 0.082 + 0.075 + 0.110 = 0.267

Story level Second, Column Line 3.2-F, Column # 123

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	49.01	33.98	9.34

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	117.84	0.90Pnx (kip)	=	230.83	Pu/0.90Pnx	= 0.511
			0.90Pny (kip)	=	230.83	Pu/0.90Pny	= 0.511
			0.90Pn (kip)	=	230.83	Pu/0.90Pn	= 0.511

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			49.01	33.98	9.34
Moments	Top	Mx (kip-ft)	0.20	-0.65	0.00
		My (kip-ft)	1.83	1.45	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	117.84	0.90*Pn (kip)	=	230.83
Mux (kip-ft)	=	-0.80	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	4.52	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	303.93	Pey (kip)	=	303.93
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.511 Eq H1-1a: 0.511 + 8/9(0.010 + 0.056) = 0.570

Story level Main Roof, Column Line 4-G, Column # 70

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	16.39	0.00	12.59

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	39.82	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.234
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.234
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.234

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			16.39	0.00	12.59
Moments	Top	Mx (kip-ft)	0.13	0.00	0.21
		My (kip-ft)	-4.85	0.00	-3.29
	Bot	Mx (kip-ft)	0.49	3.67	0.00
		My (kip-ft)	-2.00	0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	39.82	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	2.43	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-11.10	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.93	Cby	=	1.95
Cmx	=	0.52	Cmy	=	0.51
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.234 Eq H1-1a: 0.234 + 8/9(0.036 + 0.162) = 0.410

Story level Second, Column Line 4-G, Column # 70

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	47.42	29.13	12.59

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	109.82	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.644
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.644
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.644

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			47.42	29.13	12.59
Moments	Top	Mx (kip-ft)	0.49	0.42	0.00
		My (kip-ft)	-2.00	-1.98	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	109.82	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	1.53	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-6.75	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.21	B1y	=	1.21

INTERACTION EQUATION

Pu/0.90*Pn = 0.644 Eq H1-1a: 0.644 + 8/9(0.022 + 0.099) = 0.752

Story level Main Roof, Column Line 4-F, Column # 71

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	28.31	0.00	17.66

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	62.22	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.177
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.177
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.177

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 5:

			Dead	Live	Roof
Axial (kip)			28.31	0.00	17.66
Moments	Top	Mx (kip-ft)	3.38	0.00	1.74
		My (kip-ft)	-1.09	0.00	-1.10
	Bot	Mx (kip-ft)	1.02	4.82	0.00
		My (kip-ft)	-3.88	-7.37	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	42.80	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	8.93	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-16.45	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.18	Cby	=	1.80
Cmx	=	0.38	Cmy	=	0.55
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.121 Eq H1-1b: 0.061 + 0.069 + 0.127 = 0.257

Story level Second, Column Line 4-F, Column # 71

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	88.65	62.74	17.66

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	= 215.59	0.90Pnx (kip)	=	398.23	Pu/0.90Pnx	=	0.541
		0.90Pny (kip)	=	398.23	Pu/0.90Pny	=	0.541
		0.90Pn (kip)	=	398.23	Pu/0.90Pn	=	0.541

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			88.65	62.74	17.66
Moments	Top	Mx (kip-ft)	1.19	0.93	0.00
		My (kip-ft)	-4.52	-7.05	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	= 215.59	0.90*Pn (kip)	=	398.23	
Mux (kip-ft)	= 2.91	0.90*Mnx (kip-ft)	=	129.38	
Muy (kip-ft)	= -16.71	0.90*Mny (kip-ft)	=	129.38	
Rm	= 1.00				
Cbx	= 1.67	Cby	=	1.67	
Cmx	= 0.60	Cmy	=	0.60	
Pex (kip)	= 766.83	Pey (kip)	=	766.83	
B1x	= 1.00	B1y	=	1.00	

INTERACTION EQUATION

Pu/0.90*Pn = 0.541 Eq H1-1a: 0.541 + 8/9(0.023 + 0.129) = 0.676

Story level Main Roof, Column Line 4-E, Column # 72

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	26.67	0.00	18.27

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	61.23	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.174
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.174
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.174

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 5:

			Dead	Live	Roof
Axial (kip)			26.67	0.00	18.27
Moments	Top	Mx (kip-ft)	-0.12	0.00	-0.08
		My (kip-ft)	-1.81	0.00	-1.44
	Bot	Mx (kip-ft)	0.20	0.24	0.00
		My (kip-ft)	-1.96	-11.80	0.00

Single curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	41.14	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	0.63	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-21.23	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.39	Cby	=	1.83
Cmx	=	0.72	Cmy	=	0.55
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.117 Eq H1-1b: 0.058 + 0.005 + 0.164 = 0.227

Story level Second, Column Line 4-E, Column # 72

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	90.89	83.09	18.27

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	251.14	0.90Pnx (kip)	=	398.23	Pu/0.90Pnx	= 0.631
			0.90Pny (kip)	=	398.23	Pu/0.90Pny	= 0.631
			0.90Pn (kip)	=	398.23	Pu/0.90Pn	= 0.631

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			90.89	83.09	18.27
Moments	Top	Mx (kip-ft)	0.23	0.28	0.00
		My (kip-ft)	-2.28	-2.65	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	251.14	0.90*Pn (kip)	=	398.23
Mux (kip-ft)	=	0.73	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-6.98	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	766.83	Pey (kip)	=	766.83
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.631 Eq H1-1a: 0.631 + 8/9(0.006 + 0.054) = 0.684

Story level Main Roof, Column Line 4-D, Column # 73

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	28.19	0.00	17.94

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	62.53	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.177
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.177
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.177

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 9:

			Dead	Live	Roof
Axial (kip)			28.19	0.00	15.00
Moments	Top	Mx (kip-ft)	0.23	0.00	1.54
		My (kip-ft)	0.00	0.00	0.51
	Bot	Mx (kip-ft)	0.24	0.00	0.00
		My (kip-ft)	-4.69	-13.36	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	41.33	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	1.05	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-27.00	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.03	Cby	=	1.66
Cmx	=	0.49	Cmy	=	0.60
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.117 — Eq H1-1b: 0.059 + 0.008 + 0.209 = 0.275

Story level Second, Column Line 4-D, Column # 73

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	93.04	81.16	17.94

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	250.48	0.90Pnx (kip)	=	398.23	Pu/0.90Pnx	= 0.629
			0.90Pny (kip)	=	398.23	Pu/0.90Pny	= 0.629
			0.90Pn (kip)	=	398.23	Pu/0.90Pn	= 0.629

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			93.04	81.16	17.94
Moments	Top	Mx (kip-ft)	0.28	0.34	0.00
		My (kip-ft)	-5.48	-6.92	0.00
	Bot	Mx (kip-ft)	-0.00	0.00	-0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	250.48	0.90*Pn (kip)	=	398.23
Mux (kip-ft)	=	0.87	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-17.64	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	766.83	Pey (kip)	=	766.83
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.629 Eq H1-1a: 0.629 + 8/9(0.007 + 0.136) = 0.756

Story level Main Roof, Column Line 4-C, Column # 110

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	29.39	0.00	20.04

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	67.34	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.191
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.191
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.191

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			29.39	0.00	20.04
Moments	Top	Mx (kip-ft)	-0.16	0.00	-0.11
		My (kip-ft)	-1.94	0.00	-1.66
	Bot	Mx (kip-ft)	-0.06	-6.42	0.00
		My (kip-ft)	2.64	6.10	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	45.29	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	-10.35	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	12.94	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.69	Cby	=	1.43
Cmx	=	0.59	Cmy	=	0.70
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.129 Eq H1-1b: 0.064 + 0.080 + 0.100 = 0.244

Story level Second, Column Line 4-C, Column # 74

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	99.80	64.97	20.04

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	233.74	0.90Pnx (kip)	=	398.23	Pu/0.90Pnx	= 0.587
			0.90Pny (kip)	=	398.23	Pu/0.90Pny	= 0.587
			0.90Pn (kip)	=	398.23	Pu/0.90Pn	= 0.587

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			99.80	64.97	20.04
Moments	Top	Mx (kip-ft)	-0.07	-0.59	0.00
		My (kip-ft)	3.08	4.60	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	233.74	0.90*Pn (kip)	=	398.23
Mux (kip-ft)	=	-1.02	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	11.06	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	766.83	Pey (kip)	=	766.83
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.587 Eq H1-1a: 0.587 + 8/9(0.008 + 0.085) = 0.670

Story level Main Roof, Column Line 4-~BO, Column # 75

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	19.52	0.00	15.77

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	48.65	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.285
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.285
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.285

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			19.52	0.00	15.77
Moments	Top	Mx (kip-ft)	-0.20	0.00	-0.01
		My (kip-ft)	5.82	0.00	4.36
	Bot	Mx (kip-ft)	-0.25	-3.24	0.00
		My (kip-ft)	2.08	1.94	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	48.65	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-1.92	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	13.96	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.83	Cby	=	2.00
Cmx	=	0.55	Cmy	=	0.50
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.285 Eq H1-1a: 0.285 + 8/9(0.028 + 0.204) = 0.492

Story level Second, Column Line 4-~BO, Column # 75

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	58.86	24.95	15.77

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	118.44	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.695
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.695
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.695

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			58.86	24.95	15.77
Moments	Top	Mx (kip-ft)	-0.25	-0.13	0.00
		My (kip-ft)	2.08	1.39	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	118.44	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-0.67	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	6.22	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.32	B1y	=	1.32

INTERACTION EQUATION

Pu/0.90*Pn = 0.695 Eq H1-1a: 0.695 + 8/9(0.010 + 0.091) = 0.785

Story level Main Roof, Column Line 5-G, Column # 81

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	13.96	0.00	11.47

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	35.11	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.206
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.206
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.206

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			13.96	0.00	11.47
Moments	Top	Mx (kip-ft)	-0.63	0.00	-0.57
		My (kip-ft)	-4.18	0.00	-3.03
	Bot	Mx (kip-ft)	-1.84	-3.97	0.00
		My (kip-ft)	-1.79	0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	35.11	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-4.19	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-9.87	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.15	Cby	=	1.95
Cmx	=	0.44	Cmy	=	0.51
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.206 Eq H1-1a: 0.206 + 8/9(0.061 + 0.145) = 0.389

Story level Second, Column Line 5-G, Column # 81

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	40.07	25.83	11.47

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	95.15	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.558
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.558
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.558

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			40.07	25.83	11.47
Moments	Top	Mx (kip-ft)	-1.84	-1.82	0.00
		My (kip-ft)	-1.79	-1.90	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	95.15	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-5.46	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.54	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.07	B1y	=	1.07

INTERACTION EQUATION

Pu/0.90*Pn = 0.558 Eq H1-1a: 0.558 + 8/9(0.080 + 0.081) = 0.702

Story level Main Roof, Column Line 5-F, Column # 80

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	17.39	0.00	10.44

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	37.58	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.192
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.192
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.192

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 6:

			Dead	Live	Roof
Axial (kip)			17.39	0.00	8.76
Moments	Top	Mx (kip-ft)	-2.02	0.00	-1.14
		My (kip-ft)	3.39	0.00	2.92
	Bot	Mx (kip-ft)	-2.22	-4.09	0.00
		My (kip-ft)	1.44	-0.25	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	34.89	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	-4.70	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	8.73	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	2.25	Cby	=	1.90
Cmx	=	0.24	Cmy	=	0.53
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.178 Eq H1-1b: 0.089 + 0.059 + 0.109 = 0.257

Story level Second, Column Line 5-F, Column # 80

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	51.31	27.24	10.44

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	110.37	0.90Pnx (kip)	=	249.05	Pu/0.90Pnx	= 0.443
			0.90Pny (kip)	=	249.05	Pu/0.90Pny	= 0.443
			0.90Pn (kip)	=	249.05	Pu/0.90Pn	= 0.443

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			51.31	27.24	10.44
Moments	Top	Mx (kip-ft)	-2.59	-2.72	0.00
		My (kip-ft)	1.68	1.16	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	110.37	0.90*Pn (kip)	=	249.05
Mux (kip-ft)	=	-7.46	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	3.87	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	338.63	Pey (kip)	=	338.63
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.443 Eq H1-1a: 0.443 + 8/9(0.093 + 0.048) = 0.569

Story level Main Roof, Column Line 5-C, Column # 79

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	21.97	0.00	15.02

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	50.39	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.296
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.296
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.296

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 11:

			Dead	Live	Roof
Axial (kip)			21.97	0.00	10.93
Moments	Top	Mx (kip-ft)	-0.85	0.00	-0.63
		My (kip-ft)	-1.40	0.00	-3.21
	Bot	Mx (kip-ft)	-2.74	-4.85	0.00
		My (kip-ft)	-0.00	2.33	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	43.85	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-5.72	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-6.81	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.15	Cby	=	1.50
Cmx	=	0.46	Cmy	=	0.67
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.257 Eq H1-1a: 0.257 + 8/9(0.084 + 0.100) = 0.420

Story level Second, Column Line 5-C, Column # 79

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	65.51	36.77	15.02

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	144.95	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.632
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.632
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.632

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 5:

			Dead	Live	Roof
Axial (kip)			65.51	36.77	15.02
Moments	Top	Mx (kip-ft)	-3.39	-3.11	0.00
		My (kip-ft)	-0.00	0.58	0.00
	Bot	Mx (kip-ft)	0.88	1.17	0.00
		My (kip-ft)	-0.69	-1.45	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	144.95	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-11.72	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-4.00	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.37	Cby	=	1.39
Cmx	=	0.73	Cmy	=	0.72
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.30	B1y	=	1.27

INTERACTION EQUATION

Pu/0.90*Pn = 0.632 Eq H1-1a: 0.632 + 8/9(0.172 + 0.059) = 0.837

Story level First, Column Line 5-C, Column # 79

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	85.54	49.95	15.02

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	190.08	0.90Pnx (kip)	=	244.56	Pu/0.90Pnx	= 0.777
			0.90Pny (kip)	=	244.56	Pu/0.90Pny	= 0.777
			0.90Pn (kip)	=	244.56	Pu/0.90Pn	= 0.777

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			85.54	49.95	15.02
Moments	Top	Mx (kip-ft)	0.94	0.55	0.00
		My (kip-ft)	-0.73	-0.82	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	190.08	0.90*Pn (kip)	=	244.56
Mux (kip-ft)	=	2.45	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-2.66	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	375.01	Pey (kip)	=	375.01
B1x	=	1.22	B1y	=	1.22

INTERACTION EQUATION

Pu/0.90*Pn = 0.777 Eq H1-1a: 0.777 + 8/9(0.036 + 0.039) = 0.844

Story level Main Roof, Column Line 5-~BO, Column # 77

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	14.77	0.00	12.79

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	38.18	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.224
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.224
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.224

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			14.77	0.00	12.79
Moments	Top	Mx (kip-ft)	-0.71	0.00	-0.67
		My (kip-ft)	4.46	0.00	3.51
	Bot	Mx (kip-ft)	-1.86	-2.74	0.00
		My (kip-ft)	1.86	1.74	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	38.18	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-3.60	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	10.97	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.18	Cby	=	2.05
Cmx	=	0.39	Cmy	=	0.49
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.224 Eq H1-1a: 0.224 + 8/9(0.053 + 0.161) = 0.414

Story level Second, Column Line 5-~BO, Column # 77

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	44.28	20.02	12.79

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	91.57	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.399
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.399
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.399

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			44.28	20.02	12.79
Moments	Top	Mx (kip-ft)	-2.29	-1.57	0.00
		My (kip-ft)	2.30	1.64	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	91.57	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-5.26	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	5.39	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.399 Eq H1-1a: 0.399 + 8/9(0.077 + 0.079) = 0.538

Story level Main Roof, Column Line 6-G, Column # 1

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	15.12	0.00	13.92

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	40.42	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.237
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.237
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.237

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			15.12	0.00	13.92
Moments	Top	Mx (kip-ft)	1.03	0.00	1.10
		My (kip-ft)	-4.10	0.00	-3.44
	Bot	Mx (kip-ft)	2.50	4.74	0.00
		My (kip-ft)	-1.71	0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	40.42	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	5.36	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-10.42	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.19	Cby	=	1.92
Cmx	=	0.38	Cmy	=	0.52
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.237 Eq H1-1a: 0.237 + 8/9(0.079 + 0.152) = 0.443

Story level Second, Column Line 6-G, Column # 1

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	44.44	28.11	13.92

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	105.27	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.618
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.618
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.618

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			44.44	28.11	13.92
Moments	Top	Mx (kip-ft)	2.50	2.39	0.00
		My (kip-ft)	-1.71	-1.76	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	105.27	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	7.92	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.67	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.16	B1y	=	1.16

INTERACTION EQUATION

Pu/0.90*Pn = 0.618 Eq H1-1a: 0.618 + 8/9(0.116 + 0.083) = 0.795

Story level Main Roof, Column Line 6-F, Column # 2

Fy (ksi)	= 46.00	Column Size	= HSS6X6X5/8
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	17.18	0.00	11.63

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	39.22	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.200
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.200
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.200

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			17.18	0.00	11.63
Moments	Top	Mx (kip-ft)	-0.10	0.00	-0.07
		My (kip-ft)	3.80	0.00	2.71
	Bot	Mx (kip-ft)	2.11	3.93	0.00
		My (kip-ft)	1.39	1.65	0.00

Single curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	39.22	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	4.50	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	8.89	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.61	Cby	=	2.05
Cmx	=	0.62	Cmy	=	0.49
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.200 Eq H1-1a: 0.200 + 8/9(0.056 + 0.111) = 0.349

Story level Second, Column Line 6-F, Column # 2

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	50.97	27.28	11.63

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	110.63	0.90Pnx (kip)	=	249.05	Pu/0.90Pnx	= 0.444
			0.90Pny (kip)	=	249.05	Pu/0.90Pny	= 0.444
			0.90Pn (kip)	=	249.05	Pu/0.90Pn	= 0.444

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			50.97	27.28	11.63
Moments	Top	Mx (kip-ft)	2.47	2.62	0.00
		My (kip-ft)	1.63	1.11	0.00
	Bot	Mx (kip-ft)	-0.00	-0.00	-0.00
		My (kip-ft)	-0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	110.63	0.90*Pn (kip)	=	249.05
Mux (kip-ft)	=	7.14	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	3.73	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	338.63	Pey (kip)	=	338.63
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.444 Eq H1-1a: 0.444 + 8/9(0.089 + 0.047) = 0.565

Story level Main Roof, Column Line 6-C, Column # 5

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	25.72	0.00	17.06

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	58.16	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.165
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.165
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.165

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			25.72	0.00	17.06
Moments	Top	Mx (kip-ft)	1.65	0.00	1.00
		My (kip-ft)	-1.40	0.00	-1.70
	Bot	Mx (kip-ft)	2.89	5.03	0.00
		My (kip-ft)	0.65	2.98	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	39.39	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	11.51	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	5.55	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.95	Cby	=	1.28
Cmx	=	0.51	Cmy	=	0.78
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.112 Eq. H1-1b: 0.056 + 0.089 + 0.043 = 0.188

Story level Second, Column Line 6-C, Column # 5

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	72.89	36.81	17.06

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	154.90	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.375
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.375
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.375

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			72.89	36.81	17.06
Moments	Top	Mx (kip-ft)	3.57	2.70	0.00
		My (kip-ft)	0.81	1.26	0.00
	Bot	Mx (kip-ft)	2.72	3.69	0.00
		My (kip-ft)	0.92	1.86	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	154.90	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	9.17	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	4.08	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.26	Cby	=	2.22
Cmx	=	0.22	Cmy	=	0.31
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.375 Eq H1-1a: 0.375 + 8/9(0.071 + 0.032) = 0.466

Story level First, Column Line 6-C, Column # 5

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	119.82	62.68	17.06

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	252.59	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	= 0.591
			0.90Pny (kip)	=	427.59	Pu/0.90Pny	= 0.591
			0.90Pn (kip)	=	427.59	Pu/0.90Pn	= 0.591

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			119.82	62.68	17.06
Moments	Top	Mx (kip-ft)	2.89	1.63	0.00
		My (kip-ft)	0.98	0.51	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	252.59	0.90*Pn (kip)	=	427.59
Mux (kip-ft)	=	6.08	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	1.98	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	970.52	Pey (kip)	=	970.52
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.591 Eq H1-1a: 0.591 + 8/9(0.047 + 0.015) = 0.646

Story level Main Roof, Column Line 6-~BO, Column # 6

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	16.52	0.00	15.34

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	44.37	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.260
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.260
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.260

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			16.52	0.00	15.34
Moments	Top	Mx (kip-ft)	1.05	0.00	1.13
		My (kip-ft)	4.70	0.00	4.01
	Bot	Mx (kip-ft)	2.54	3.26	0.00
		My (kip-ft)	1.78	1.66	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	44.37	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	4.68	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	12.05	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.20	Cby	=	1.99
Cmx	=	0.34	Cmy	=	0.50
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.260 Eq H1-1a: 0.260 + 8/9(0.069 + 0.176) = 0.478

Story level Second, Column Line 6-~BO, Column # 6

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	49.77	21.89	15.34

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	102.42	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.447
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.447
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.447

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			49.77	21.89	15.34
Moments	Top	Mx (kip-ft)	3.14	2.06	0.00
		My (kip-ft)	2.20	1.53	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	102.42	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	7.06	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	5.10	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.447 Eq H1-1a: 0.447 + 8/9(0.103 + 0.075) = 0.605

Story level Second, Column Line 7-F, Column # 20

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	37.07	37.64	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	104.71	0.90Pnx (kip)	=	249.05	Pu/0.90Pnx	= 0.420
			0.90Pny (kip)	=	249.05	Pu/0.90Pny	= 0.420
			0.90Pn (kip)	=	249.05	Pu/0.90Pn	= 0.420

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 16:

			Dead	Live	Roof
Axial (kip)			37.07	31.30	0.00
Moments	Top	Mx (kip-ft)	-7.41	-7.38	0.00
		My (kip-ft)	-2.53	-6.96	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	94.56	0.90*Pn (kip)	=	249.05
Mux (kip-ft)	=	-20.70	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	-14.17	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	338.63	Pey (kip)	=	338.63
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.380 Eq H1-1a: 0.380 + 8/9(0.259 + 0.177) = 0.767

Story level Second, Column Line 7-E, Column # 21

Fy (ksi) = 46.00 — Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	37.11	47.78	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	120.98	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.293
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.293
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.293

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 10:

			Dead	Live	Roof
Axial (kip)			37.11	28.03	0.00
Moments	Top	Mx (kip-ft)	1.37	2.10	0.00
		My (kip-ft)	-2.51	-13.08	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	89.39	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	5.01	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-23.95	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.216 — Eq H1-1a: 0.216 + 8/9(0.039 + 0.185) = 0.415

Story level Second, Column Line 7-D, Column # 22

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	40.79	45.43	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	= 121.64	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	=	0.294
		0.90Pny (kip)	=	413.08	Pu/0.90Pny	=	0.294
		0.90Pn (kip)	=	413.08	Pu/0.90Pn	=	0.294

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 10:

			Dead	Live	Roof
Axial (kip)			40.79	29.58	0.00
Moments	Top	Mx (kip-ft)	2.62	2.02	0.00
		My (kip-ft)	-4.90	-14.00	0.00
	Bot	Mx (kip-ft)	1.27	0.98	0.00
		My (kip-ft)	3.99	7.70	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	96.28	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	6.37	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-28.28	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.17	Cby	=	1.19
Cmx	=	0.41	Cmy	=	0.84
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.233 Eq H1-1a: 0.233 + 8/9(0.049 + 0.219) = 0.471

Story level First, Column Line 7-D, Column # 22

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	80.57	82.10	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	= 228.05	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	=	0.533
		0.90Pny (kip)	=	427.59	Pu/0.90Pny	=	0.533
		0.90Pn (kip)	=	427.59	Pu/0.90Pn	=	0.533

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

		Dead	Live	Roof
Axial (kip)		80.57	82.10	0.00
Moments	Top Mx (kip-ft)	1.35	0.80	0.00
	My (kip-ft)	4.23	6.03	0.00
	Bot Mx (kip-ft)	0.00	0.00	0.00
	My (kip-ft)	0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	= 228.05	0.90*Pn (kip)	=	427.59	
Mux (kip-ft)	= 2.90	0.90*Mnx (kip-ft)	=	129.38	
Muy (kip-ft)	= 14.74	0.90*Mny (kip-ft)	=	129.38	
Rm	= 1.00				
Cbx	= 1.67	Cby	=	1.67	
Cmx	= 0.60	Cmy	=	0.60	
Pex (kip)	= 970.52	Pey (kip)	=	970.52	
B1x	= 1.00	B1y	=	1.00	

INTERACTION EQUATION

Pu/0.90*Pn = 0.533 Eq H1-1a: 0.533 + 8/9(0.022 + 0.114) = 0.655

Story level Second, Column Line 7-C, Column # 17

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	40.46	32.39	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	100.37	0.90Pnx (kip)	=	267.61	Pu/0.90Pnx	= 0.375
			0.90Pny (kip)	=	267.61	Pu/0.90Pny	= 0.375
			0.90Pn (kip)	=	267.61	Pu/0.90Pn	= 0.375

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 15:

			Dead	Live	Roof
Axial (kip)			40.46	25.24	0.00
Moments	Top	Mx (kip-ft)	-7.74	-6.54	0.00
		My (kip-ft)	1.88	5.03	0.00
	Bot	Mx (kip-ft)	-3.89	0.27	0.00
		My (kip-ft)	0.39	-1.32	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	88.93	0.90*Pn (kip)	=	267.61
Mux (kip-ft)	=	-19.74	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	10.30	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.94	Cby	=	1.51
Cmx	=	0.51	Cmy	=	0.66
Pex (kip)	=	379.64	Pey (kip)	=	379.64
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.332 Eq H1-1a: 0.533 + 8/9(0.022 + 0.114) = 0.655

Story level First, Column Line 7-C, Column # 17

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	79.31	52.77	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	179.60	0.90Pnx (kip)	=	286.37	Pu/0.90Pnx	= 0.627
			0.90Pny (kip)	=	286.37	Pu/0.90Pny	= 0.627
			0.90Pn (kip)	=	286.37	Pu/0.90Pn	= 0.627

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			79.31	52.77	0.00
Moments	Top	Mx (kip-ft)	-4.13	-2.64	0.00
		My (kip-ft)	0.42	0.08	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	-0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	179.60	0.90*Pn (kip)	=	286.37
Mux (kip-ft)	=	-9.48	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	0.65	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	428.58	Pey (kip)	=	428.58
B1x	=	1.03	B1y	=	1.03

INTERACTION EQUATION

Pu/0.90*Pn = 0.627 Eq H1-1a: 0.627 + 8/9(0.118 + 0.008) = 0.740

Story level Main Roof, Column Line 8-G, Column # 25

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	18.95	0.00	18.51

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	52.36	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.307
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.307
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.307

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			18.95	0.00	18.51
Moments	Top	Mx (kip-ft)	-0.36	0.00	-0.24
		My (kip-ft)	-5.18	0.00	-4.56
	Bot	Mx (kip-ft)	-0.95	-5.01	0.00
		My (kip-ft)	-1.41	0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	52.36	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-3.65	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-13.51	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.96	Cby	=	1.82
Cmx	=	0.51	Cmy	=	0.55
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.307 Eq H1-1a: 0.307 + 8/9(0.053 + 0.198) = 0.531

Story level Second, Column Line 8-G, Column # 25

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	55.38	33.14	18.51

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	128.73	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.756
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.756
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.756

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			55.38	33.14	18.51
Moments	Top	Mx (kip-ft)	-0.95	-0.85	0.00
		My (kip-ft)	-1.41	-1.37	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	128.73	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-3.67	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.71	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.47	B1y	=	1.47

INTERACTION EQUATION

Pu/0.90*Pn = 0.756 Eq H1-1a: 0.756 + 8/9(0.054 + 0.084) = 0.878

Story level Main Roof, Column Line 8-F, Column # 26

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	30.81	0.00	20.84

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	70.31	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.359
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.359
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.359

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 5:

			Dead	Live	Roof
Axial (kip)			30.81	0.00	20.84
Moments	Top	Mx (kip-ft)	0.10	0.00	0.07
		My (kip-ft)	1.40	0.00	0.73
	Bot	Mx (kip-ft)	3.41	3.93	0.00
		My (kip-ft)	-1.17	-3.31	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	70.31	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	6.05	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	-4.15	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.71	Cby	=	1.03
Cmx	=	0.59	Cmy	=	0.97
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.36

INTERACTION EQUATION

Pu/0.90*Pn = 0.359 Eq H1-1a: 0.359 + 8/9(0.076 + 0.052) = 0.472

Story level Second, Column Line 8-F, Column # 26

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	67.96	37.65	20.84

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	152.20	0.90Pnx (kip)	=	249.05	Pu/0.90Pnx	= 0.611
			0.90Pny (kip)	=	249.05	Pu/0.90Pny	= 0.611
			0.90Pn (kip)	=	249.05	Pu/0.90Pn	= 0.611

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			67.96	37.65	20.84
Moments	Top	Mx (kip-ft)	3.97	3.60	0.00
		My (kip-ft)	-1.36	-2.53	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	152.20	0.90*Pn (kip)	=	249.05
Mux (kip-ft)	=	11.48	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	-6.20	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	338.63	Pey (kip)	=	338.63
B1x	=	1.09	B1y	=	1.09

INTERACTION EQUATION

Pu/0.90*Pn = 0.611 Eq H1-1a: 0.611 + 8/9(0.143 + 0.077) = 0.807

Story level Main Roof, Column Line 8-E, Column # 27

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	27.95	0.00	19.41

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	64.59	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.183
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.183
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.183

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 11:

			Dead	Live	Roof
Axial (kip)			27.95	0.00	11.08
Moments	Top	Mx (kip-ft)	0.12	0.00	0.08
		My (kip-ft)	-1.90	0.00	-5.92
	Bot	Mx (kip-ft)	-0.61	-0.94	0.00
		My (kip-ft)	-1.17	4.79	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	51.26	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	-1.21	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-11.75	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.45	Cby	=	1.58
Cmx	=	0.69	Cmy	=	0.63
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.145 Eq H1-1b: 0.073 + 0.009 + 0.091 = 0.173

Story level Second, Column Line 8-E, Column # 27

Fy (ksi) = 46.00 — Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	65.71	47.78	19.41

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	165.01	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.399
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.399
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.399

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			65.71	47.78	19.41
Moments	Top	Mx (kip-ft)	-0.76	-1.16	0.00
		My (kip-ft)	-1.45	-1.32	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	165.01	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	-2.77	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-3.84	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.399 — Eq H1-1a: 0.399 + 8/9(0.021 + 0.030) = 0.445

Story level Main Roof, Column Line 8-D, Column # 28

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	28.08	0.00	18.95

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	64.02	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.182
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.182
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.182

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			28.08	0.00	18.95
Moments	Top	Mx (kip-ft)	-0.33	0.00	-0.28
		My (kip-ft)	0.37	0.00	0.53
	Bot	Mx (kip-ft)	-1.17	-0.90	0.00
		My (kip-ft)	-1.85	-5.33	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	43.18	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	-2.85	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-10.75	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.91	Cby	=	1.60
Cmx	=	0.52	Cmy	=	0.63
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.123

Eq H1-1b: 0.061 + 0.022 + 0.083 = 0.166

Story level Second, Column Line 8-D, Column # 28

Fy (ksi) = 46.00 — Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	67.95	39.89	18.95

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	154.84	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.375
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.375
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.375

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			67.95	39.89	18.95
Moments	Top	Mx (kip-ft)	-1.45	-0.97	0.00
		My (kip-ft)	-2.28	-1.64	0.00
	Bot	Mx (kip-ft)	-1.27	0.00	0.00
		My (kip-ft)	3.99	7.67	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	154.84	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	-3.29	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	17.06	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.17	Cby	=	1.38
Cmx	=	0.41	Cmy	=	0.73
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.375 — Eq H1-1a: 0.375 + 8/9(0.025 + 0.132) = 0.515

Story level First, Column Line 8-D, Column # 28

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	107.73	75.93	18.95

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	260.24	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	= 0.609
			0.90Pny (kip)	=	427.59	Pu/0.90Pny	= 0.609
			0.90Pn (kip)	=	427.59	Pu/0.90Pn	= 0.609

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			107.73	75.93	18.95
Moments	Top	Mx (kip-ft)	-1.35	-0.75	0.00
		My (kip-ft)	4.23	6.22	0.00
	Bot	Mx (kip-ft)	0.00	-0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	260.24	0.90*Pn (kip)	=	427.59
Mux (kip-ft)	=	-2.81	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	15.03	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	970.52	Pey (kip)	=	970.52
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.609 Eq H1-1a: 0.609 + 8/9(0.022 + 0.116) = 0.731

Story level Main Roof, Column Line 8-C, Column # 111

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	31.32	0.00	21.93

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	72.67	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.371
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.371
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.371

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 10:

			Dead	Live	Roof
Axial (kip)			31.32	0.00	15.95
Moments	Top	Mx (kip-ft)	-0.49	0.00	-0.25
		My (kip-ft)	-1.63	0.00	-4.73
	Bot	Mx (kip-ft)	3.42	4.01	0.00
		My (kip-ft)	0.60	1.83	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	63.10	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	6.11	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	-9.53	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.50	Cby	=	1.50
Cmx	=	0.66	Cmy	=	0.67
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.322 Eq H1-1a: 0.322 + 8/9(0.076 + 0.119) = 0.496

Story level Second, Column Line 8-C, Column # 35

Fy (ksi) = 46.00 — Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	70.55	26.94	21.93

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	138.72	0.90Pnx (kip)	=	267.61	Pu/0.90Pnx	= 0.518
			0.90Pny (kip)	=	267.61	Pu/0.90Pny	= 0.518
			0.90Pn (kip)	=	267.61	Pu/0.90Pn	= 0.518

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			70.55	26.94	21.93
Moments	Top	Mx (kip-ft)	4.22	3.06	0.00
		My (kip-ft)	0.74	0.24	0.00
	Bot	Mx (kip-ft)	3.89	3.04	0.00
		My (kip-ft)	0.39	1.27	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	138.72	0.90*Pn (kip)	=	267.61
Mux (kip-ft)	=	9.96	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	2.50	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	2.26	Cby	=	2.18
Cmx	=	0.22	Cmy	=	0.40
Pex (kip)	=	379.64	Pey (kip)	=	379.64
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.518 — Eq H1-1a: 0.518 + 8/9(0.124 + 0.031) = 0.657

Story level First, Column Line 8-C, Column # 35

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	109.40	47.01	21.93

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	217.46	0.90Pnx (kip)	=	286.37	Pu/0.90Pnx	= 0.759
			0.90Pny (kip)	=	286.37	Pu/0.90Pny	= 0.759
			0.90Pn (kip)	=	286.37	Pu/0.90Pn	= 0.759

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			109.40	47.01	21.93
Moments	Top	Mx (kip-ft)	4.14	2.59	0.00
		My (kip-ft)	0.42	0.04	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	217.46	0.90*Pn (kip)	=	286.37
Mux (kip-ft)	=	11.10	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	0.69	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	428.58	Pey (kip)	=	428.58
B1x	=	1.22	B1y	=	1.22

INTERACTION EQUATION

Pu/0.90*Pn = 0.759 Eq H1-1a: 0.759 + 8/9(0.139 + 0.009) = 0.890

Story level Main Roof, Column Line 8-~BO, Column # 105

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	20.54	0.00	20.39

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	57.26	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.336
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.336
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.336

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			20.54	0.00	20.39
Moments	Top	Mx (kip-ft)	-0.38	0.00	-0.25
		My (kip-ft)	6.13	0.00	5.54
	Bot	Mx (kip-ft)	-1.02	-3.61	0.00
		My (kip-ft)	1.53	1.43	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	57.26	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-3.02	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	16.22	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.06	Cby	=	1.86
Cmx	=	0.49	Cmy	=	0.54
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.336 Eq H1-1a: 0.336 + 8/9(0.044 + 0.237) = 0.586

Story level Second, Column Line 8-~BO, Column # 105

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	61.90	26.05	20.39

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	126.15	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.550
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.550
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.550

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			61.90	26.05	20.39
Moments	Top	Mx (kip-ft)	-1.25	-0.77	0.00
		My (kip-ft)	1.90	1.26	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	-0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	126.15	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-2.74	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	4.29	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.550 Eq H1-1a: 0.550 + 8/9(0.040 + 0.063) = 0.642

Story level Main Roof, Column Line 9-G, Column # 43

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	13.27	0.00	14.08

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	38.46	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.226
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.226
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.226

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			13.27	0.00	14.08
Moments	Top	Mx (kip-ft)	-0.67	0.00	-0.78
		My (kip-ft)	-3.61	0.00	-3.46
	Bot	Mx (kip-ft)	-1.74	-3.81	0.00
		My (kip-ft)	-1.71	0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	38.46	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-3.99	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-9.87	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.18	Cby	=	1.94
Cmx	=	0.39	Cmy	=	0.52
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.226 Eq H1-1a: 0.226 + 8/9(0.058 + 0.144) = 0.406

Story level Second, Column Line 9-G, Column # 43

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	39.29	25.85	14.08

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	95.54	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.561
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.561
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.561

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			39.29	25.85	14.08
Moments	Top	Mx (kip-ft)	-1.74	-1.75	0.00
		My (kip-ft)	-1.71	-1.82	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	95.54	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-5.22	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.31	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.07	B1y	=	1.07

INTERACTION EQUATION

Pu/0.90*Pn = 0.561 Eq H1-1a: 0.561 + 8/9(0.076 + 0.078) = 0.698

Story level Main Roof, Column Line 9-F, Column # 44

Fy (ksi)	= 46.00	Column Size	= HSS6X6X5/8
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	15.21	0.00	10.78

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	35.51	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.181
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.181
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.181

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 6:

			Dead	Live	Roof
Axial (kip)			15.21	0.00	8.31
Moments	Top	Mx (kip-ft)	0.10	0.00	0.07
		My (kip-ft)	3.29	0.00	3.74
	Bot	Mx (kip-ft)	-2.11	-3.93	0.00
		My (kip-ft)	1.39	-0.24	0.00

Single curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	31.56	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	-4.50	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	9.94	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.61	Cby	=	1.86
Cmx	=	0.62	Cmy	=	0.54
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.161 Eq H1-1b: 0.081 + 0.056 + 0.124 = 0.261

Story level Second, Column Line 9-F, Column # 44

Fy (ksi)	= 46.00	Column Size	= HSS6X6X5/8
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	49.00	27.28	10.78

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	107.85	0.90Pnx (kip)	=	249.05	Pu/0.90Pnx	= 0.433
			0.90Pny (kip)	=	249.05	Pu/0.90Pny	= 0.433
			0.90Pn (kip)	=	249.05	Pu/0.90Pn	= 0.433

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			49.00	27.28	10.78
Moments	Top	Mx (kip-ft)	-2.47	-2.62	0.00
		My (kip-ft)	1.63	1.11	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	-0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	107.85	0.90*Pn (kip)	=	249.05
Mux (kip-ft)	=	-7.14	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	3.73	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	338.63	Pey (kip)	=	338.63
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.433 Eq H1-1a: 0.433 + 8/9(0.089 + 0.047) = 0.554

Story level Main Roof, Column Line 9-C, Column # 47

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	22.10	0.00	15.57

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	51.43	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.146
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.146
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.146

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			22.10	0.00	15.57
Moments	Top	Mx (kip-ft)	-0.97	0.00	-0.72
		My (kip-ft)	-1.53	0.00	-1.72
	Bot	Mx (kip-ft)	-2.92	-4.74	0.00
		My (kip-ft)	0.67	3.34	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	34.30	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	-11.09	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	6.14	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.83	Cby	=	1.29
Cmx	=	0.55	Cmy	=	0.78
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.097 Eq H1-1b: 0.049 + 0.086 + 0.047 = 0.182

Story level Second, Column Line 9-C, Column # 47

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	6.50	6.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	69.00	38.89	15.57

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	152.82	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	=	0.370
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	=	0.370
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	=	0.370

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 4:

			Dead	Live	Roof
Axial (kip)			69.00	38.89	15.57
Moments	Top	Mx (kip-ft)	-3.60	-1.71	0.00
		My (kip-ft)	0.83	1.52	0.00
	Bot	Mx (kip-ft)	-2.87	-3.51	0.00
		My (kip-ft)	0.17	-1.79	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	152.82	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	-9.06	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	3.79	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.23	Cby	=	1.10
Cmx	=	0.29	Cmy	=	0.91
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.11

INTERACTION EQUATION

Pu/0.90*Pn = 0.370 Eq H1-1a: 0.370 + 8/9(0.070 + 0.029) = 0.458

Story level First, Column Line 9-C, Column # 47

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.50	6.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	116.50	65.99	15.57

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	253.18	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	= 0.592
			0.90Pny (kip)	=	427.59	Pu/0.90Pny	= 0.592
			0.90Pn (kip)	=	427.59	Pu/0.90Pn	= 0.592

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			116.50	65.99	15.57
Moments	Top	Mx (kip-ft)	-3.05	-1.31	0.00
		My (kip-ft)	0.18	0.07	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	253.18	0.90*Pn (kip)	=	427.59
Mux (kip-ft)	=	-5.76	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	0.33	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	970.52	Pey (kip)	=	970.52
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.592 Eq H1-1a: 0.592 + 8/9(0.045 + 0.003) = 0.634

Story level Main Roof, Column Line 9-~BO, Column # 48

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	5.50	5.50

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	14.67	0.00	15.51

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	42.42	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.249
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.249
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.249

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 3:

			Dead	Live	Roof
Axial (kip)			14.67	0.00	15.51
Moments	Top	Mx (kip-ft)	-0.68	0.00	-0.80
		My (kip-ft)	4.22	0.00	4.01
	Bot	Mx (kip-ft)	-1.78	-2.62	0.00
		My (kip-ft)	1.78	1.66	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	42.42	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-3.44	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	11.48	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.19	Cby	=	2.01
Cmx	=	0.36	Cmy	=	0.50
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.249 Eq H1-1a: 0.249 + 8/9(0.050 + 0.168) = 0.443

Story level Second, Column Line 9-~BO, Column # 48

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.50	5.50
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	44.18	20.02	15.51

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	92.81	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.405
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.405
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.405

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			44.18	20.02	15.51
Moments	Top	Mx (kip-ft)	-2.19	-1.50	0.00
		My (kip-ft)	2.20	1.57	0.00
	Bot	Mx (kip-ft)	0.00	-0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	92.81	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-5.03	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	5.16	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.405 Eq H1-1a: 0.405 + 8/9(0.074 + 0.076) = 0.537

Story level Main Roof, Column Line 10-G, Column # 96

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	16.09	0.00	16.41

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	45.56	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.267
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.267
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.267

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			16.09	0.00	16.41
Moments	Top	Mx (kip-ft)	0.83	0.00	0.98
		My (kip-ft)	-5.00	0.00	-4.54
	Bot	Mx (kip-ft)	2.63	4.85	0.00
		My (kip-ft)	-1.79	0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	45.56	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	5.58	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-13.27	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.17	Cby	=	1.87
Cmx	=	0.42	Cmy	=	0.54
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.267 Eq H1-1a: 0.267 + 8/9(0.082 + 0.194) = 0.513

Story level Second, Column Line 10-G, Column # 96

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	45.49	27.89	16.41

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	107.41	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.630
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.630
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.630

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			45.49	27.89	16.41
Moments	Top	Mx (kip-ft)	2.63	2.43	0.00
		My (kip-ft)	-1.79	-1.85	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	107.41	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	8.34	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-6.06	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.18	B1y	=	1.18

INTERACTION EQUATION

Pu/0.90*Pn = 0.630 Eq H1-1a: 0.630 + 8/9(0.122 + 0.089) = 0.818

Story level Main Roof, Column Line 10-F, Column # 97

Fy (ksi)	= 46.00	Column Size	= HSS6X6X5/8
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	20.22	0.00	12.61

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	44.45	0.90Pnx (kip)	=	195.87	Pu/0.90Pnx	= 0.227
			0.90Pny (kip)	=	195.87	Pu/0.90Pny	= 0.227
			0.90Pn (kip)	=	195.87	Pu/0.90Pn	= 0.227

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 14:

			Dead	Live	Roof
Axial (kip)			20.22	0.00	10.61
Moments	Top	Mx (kip-ft)	2.64	0.00	1.55
		My (kip-ft)	3.94	0.00	3.54
	Bot	Mx (kip-ft)	2.22	-1.50	0.00
		My (kip-ft)	1.46	-0.25	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	41.24	0.90*Pn (kip)	=	195.87
Mux (kip-ft)	=	5.64	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	10.38	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	2.14	Cby	=	1.86
Cmx	=	0.46	Cmy	=	0.54
Pex (kip)	=	248.79	Pey (kip)	=	248.79
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.211 Eq H1-1a: 0.211 + 8/9(0.070 + 0.130) = 0.388

Story level Second, Column Line 10-F, Column # 97

Fy (ksi) = 46.00 Column Size = HSS6X6X5/8
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	54.08	27.26	12.61

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	114.82	0.90Pnx (kip)	=	249.05	Pu/0.90Pnx	= 0.461
			0.90Pny (kip)	=	249.05	Pu/0.90Pny	= 0.461
			0.90Pn (kip)	=	249.05	Pu/0.90Pn	= 0.461

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			54.08	27.26	12.61
Moments	Top	Mx (kip-ft)	2.59	2.73	0.00
		My (kip-ft)	1.70	1.16	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	114.82	0.90*Pn (kip)	=	249.05
Mux (kip-ft)	=	7.48	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	3.90	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	338.63	Pey (kip)	=	338.63
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.461 Eq H1-1a: 0.461 + 8/9(0.093 + 0.049) = 0.587

Story level Main Roof, Column Line 10-C, Column # 98

Fy (ksi) = 46.00 — Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	25.82	0.00	18.43

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	60.47	0.90Pnx (kip)	=	352.35	Pu/0.90Pnx	= 0.172
			0.90Pny (kip)	=	352.35	Pu/0.90Pny	= 0.172
			0.90Pn (kip)	=	352.35	Pu/0.90Pn	= 0.172

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			25.82	0.00	18.43
Moments	Top	Mx (kip-ft)	2.97	0.00	2.09
		My (kip-ft)	-0.83	0.00	-1.42
	Bot	Mx (kip-ft)	3.84	5.94	0.00
		My (kip-ft)	0.99	4.33	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	40.20	0.90*Pn (kip)	=	352.35
Mux (kip-ft)	=	14.10	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	8.13	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.13	Cby	=	1.46
Cmx	=	0.47	Cmy	=	0.68
Pex (kip)	=	563.39	Pey (kip)	=	563.39
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.114 — Eq H1-1b: 0.057 + 0.109 + 0.063 = 0.229

Story level Second, Column Line 10-C, Column # 98

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	77.11	49.36	18.43

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	180.71	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.437
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.437
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.437

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			77.11	49.36	18.43
Moments	Top	Mx (kip-ft)	4.74	3.79	0.00
		My (kip-ft)	1.23	2.81	0.00
	Bot	Mx (kip-ft)	4.02	4.89	0.00
		My (kip-ft)	0.54	3.26	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	180.71	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	12.64	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	5.97	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.26	Cby	=	2.27
Cmx	=	0.23	Cmy	=	0.21
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.437 Eq H1-1a: 0.437 + 8/9(0.098 + 0.046) = 0.565

Story level First, Column Line 10-C, Column # 98

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	128.86	88.34	18.43

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	305.20	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	= 0.714
			0.90Pny (kip)	=	427.59	Pu/0.90Pny	= 0.714
			0.90Pn (kip)	=	427.59	Pu/0.90Pn	= 0.714

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			128.86	88.34	18.43
Moments	Top	Mx (kip-ft)	4.27	1.66	0.00
		My (kip-ft)	0.57	1.70	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	305.20	0.90*Pn (kip)	=	427.59
Mux (kip-ft)	=	7.79	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	3.40	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	970.52	Pey (kip)	=	970.52
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.714 Eq H1-1a: 0.714 + 8/9(0.060 + 0.026) = 0.791

Story level Main Roof, Column Line 10-~BO, Column # 82

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	13.56	0.00	15.39

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	40.90	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.240
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.240
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.240

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 2:

			Dead	Live	Roof
Axial (kip)			13.56	0.00	15.39
Moments	Top	Mx (kip-ft)	0.48	0.00	0.76
		My (kip-ft)	4.11	0.00	4.18
	Bot	Mx (kip-ft)	1.46	2.35	0.00
		My (kip-ft)	1.86	1.74	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	40.90	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	2.93	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	11.61	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.20	Cby	=	2.03
Cmx	=	0.35	Cmy	=	0.49
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.240 Eq H1-1a: 0.240 + 8/9(0.043 + 0.170) = 0.429

Story level Second, Column Line 10-~BO, Column # 82

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	41.23	18.95	15.39

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	87.48	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.382
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.382
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.382

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			41.23	18.95	15.39
Moments	Top	Mx (kip-ft)	1.80	1.22	0.00
		My (kip-ft)	2.30	1.67	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	87.48	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	4.12	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	5.44	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.382 Eq H1-1a: 0.382 + 8/9(0.060 + 0.080) = 0.506

Story level Main Roof, Column Line 338.75ft-113.17ft, Column # 84

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	11.30	0.00	12.66

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	33.82	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.198
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.198
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.198

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 6:

			Dead	Live	Roof
Axial (kip)			11.30	0.00	12.60
Moments	Top	Mx (kip-ft)	-1.26	0.00	-1.96
		My (kip-ft)	3.70	0.00	4.07
	Bot	Mx (kip-ft)	-2.94	-2.52	0.00
		My (kip-ft)	1.60	-0.42	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	33.72	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-4.79	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	10.95	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.27	Cby	=	1.86
Cmx	=	0.21	Cmy	=	0.54
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.198 Eq H1-1b: 0.099 + 0.070 + 0.160 = 0.329

Story level Second, Column Line 338.75ft-113.17ft, Column # 84

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	35.35	20.15	12.66

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	81.00	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.353
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.353
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.353

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			35.35	20.15	12.66
Moments	Top	Mx (kip-ft)	-3.63	-2.71	0.00
		My (kip-ft)	1.98	1.74	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	81.00	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-8.70	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	5.16	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.353 Eq H1-1a: 0.353 + 8/9(0.127 + 0.076) = 0.534

Story level Main Roof, Column Line 338.75ft-119.08ft, Column # 85

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	1.90	0.00	0.77

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	3.52	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.021
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.021
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.021

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			1.90	0.00	0.77
Moments	Top	Mx (kip-ft)	0.51	0.00	0.34
		My (kip-ft)	0.07	0.00	0.04
	Bot	Mx (kip-ft)	0.14	0.14	0.00
		My (kip-ft)	0.26	0.44	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	3.52	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	1.15	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	0.54	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.94	Cby	=	2.01
Cmx	=	0.52	Cmy	=	0.50
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.021 Eq H1-1b: 0.010 + 0.017 + 0.008 = 0.035

Story level Second, Column Line 338.75ft-119.08ft, Column # 85

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	4.33	2.64	0.77

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	9.80	0.90Pnx (kip)	=	214.14	Pu/0.90Pnx	= 0.046
			0.90Pny (kip)	=	214.14	Pu/0.90Pny	= 0.046
			0.90Pn (kip)	=	214.14	Pu/0.90Pn	= 0.046

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			4.33	2.64	0.77
Moments	Top	Mx (kip-ft)	0.17	0.17	0.00
		My (kip-ft)	0.31	0.51	0.00
	Bot	Mx (kip-ft)	-0.00	-0.00	-0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	9.80	0.90*Pn (kip)	=	214.14
Mux (kip-ft)	=	0.47	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	1.19	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	296.30	Pey (kip)	=	296.30
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.046 0.023 + 0.007 + 0.017 = 0.047

Story level Second, Column Line 11-F, Column # 91

Fy (ksi)	= 46.00	Column Size	= HSS6X6X5/8
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	36.24	39.42	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	= 106.56	0.90Pnx (kip)	=	230.83	Pu/0.90Pnx	=	0.462
		0.90Pny (kip)	=	230.83	Pu/0.90Pny	=	0.462
		0.90Pn (kip)	=	230.83	Pu/0.90Pn	=	0.462

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 16:

			Dead	Live	Roof
Axial (kip)			36.24	33.97	0.00
Moments	Top	Mx (kip-ft)	-8.74	-8.45	0.00
		My (kip-ft)	-3.35	-7.83	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	97.84	0.90*Pn (kip)	=	230.83
Mux (kip-ft)	=	-24.01	0.90*Mnx (kip-ft)	=	80.04
Muy (kip-ft)	=	-16.54	0.90*Mny (kip-ft)	=	80.04
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	303.93	Pey (kip)	=	303.93
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.424 Eq H1-1a: 0.424 + 8/9(0.300 + 0.207) = 0.874

Story level Second, Column Line 11-E, Column # 100

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	34.55	46.61	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	116.04	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.281
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.281
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.281

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 10:

			Dead	Live	Roof
Axial (kip)			34.55	25.88	0.00
Moments	Top	Mx (kip-ft)	-0.38	-0.53	0.00
		My (kip-ft)	-1.88	-14.03	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	82.87	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	-1.30	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-24.70	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.201 Eq H1-1a: 0.201 + 8/9(0.010 + 0.191) = 0.379

Story level Second, Column Line 11-D, Column # 90

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	35.13	45.85	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	= 115.51	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	=	0.280
		0.90Pny (kip)	=	413.08	Pu/0.90Pny	=	0.280
		0.90Pn (kip)	=	413.08	Pu/0.90Pn	=	0.280

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 10:

			Dead	Live	Roof
Axial (kip)			35.13	28.82	0.00
Moments	Top	Mx (kip-ft)	0.64	1.13	0.00
		My (kip-ft)	-4.66	-15.09	0.00
	Bot	Mx (kip-ft)	0.58	1.00	0.00
		My (kip-ft)	3.63	8.21	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	88.28	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	2.57	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	-29.73	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	2.25	Cby	=	1.20
Cmx	=	0.24	Cmy	=	0.84
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.214 Eq H1-1a: 0.214 + 8/9(0.020 + 0.230) = 0.436

Story level First, Column Line 11-D, Column # 90

Fy (ksi)	= 46.00	Column Size	= HSS8X8X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	71.76	91.85	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	= 233.07	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	=	0.545
		0.90Pny (kip)	=	427.59	Pu/0.90Pny	=	0.545
		0.90Pn (kip)	=	427.59	Pu/0.90Pn	=	0.545

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			71.76	91.85	0.00
Moments	Top	Mx (kip-ft)	0.62	1.06	0.00
		My (kip-ft)	3.86	5.17	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	-0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	233.07	0.90*Pn (kip)	=	427.59
Mux (kip-ft)	=	2.45	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	12.91	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	970.52	Pey (kip)	=	970.52
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.545 Eq H1-1a: 0.545 + 8/9(0.019 + 0.100) = 0.651

Story level Second, Column Line 11-C, Column # 89

Fy (ksi) = 46.00 — Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	6.75	6.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	46.16	41.85	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	122.36	0.90Pnx (kip)	=	413.08	Pu/0.90Pnx	= 0.296
			0.90Pny (kip)	=	413.08	Pu/0.90Pny	= 0.296
			0.90Pn (kip)	=	413.08	Pu/0.90Pn	= 0.296

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 15:

			Dead	Live	Roof
Axial (kip)			46.16	37.37	0.00
Moments	Top	Mx (kip-ft)	-16.18	-13.68	0.00
		My (kip-ft)	3.23	7.35	0.00
	Bot	Mx (kip-ft)	-8.85	0.53	0.00
		My (kip-ft)	1.38	-0.69	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	115.19	0.90*Pn (kip)	=	413.08
Mux (kip-ft)	=	-41.30	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	15.64	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.98	Cby	=	1.71
Cmx	=	0.51	Cmy	=	0.59
Pex (kip)	=	859.70	Pey (kip)	=	859.70
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.279 — Eq H1-1a: 0.279 + 8/9(0.319 + 0.121) = 0.670

Story level First, Column Line 11-C, Column # 89

Fy (ksi) = 46.00 Column Size = HSS8X8X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		16.00	16.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	6.75	6.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	95.25	72.46	0.00

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL)

Pu (kip)	=	230.23	0.90Pnx (kip)	=	427.59	Pu/0.90Pnx	= 0.538
			0.90Pny (kip)	=	427.59	Pu/0.90Pny	= 0.538
			0.90Pn (kip)	=	427.59	Pu/0.90Pn	= 0.538

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			95.25	72.46	0.00
Moments	Top	Mx (kip-ft)	-9.41	-5.07	0.00
		My (kip-ft)	1.46	2.51	0.00
	Bot	Mx (kip-ft)	0.00	-0.00	0.00
		My (kip-ft)	0.00	-0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL)

Pu (kip)	=	230.23	0.90*Pn (kip)	=	427.59
Mux (kip-ft)	=	-19.39	0.90*Mnx (kip-ft)	=	129.38
Muy (kip-ft)	=	5.77	0.90*Mny (kip-ft)	=	129.38
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	970.52	Pey (kip)	=	970.52
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.538 Eq H1-1a: 0.538 + 8/9(0.150 + 0.045) = 0.711

Story level Main Roof, Column Line 12-G, Column # 93

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	11.25	0.00	12.93

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	34.18	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.201
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.201
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.201

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			11.25	0.00	12.93
Moments	Top	Mx (kip-ft)	-1.60	0.00	-2.21
		My (kip-ft)	-3.46	0.00	-3.99
	Bot	Mx (kip-ft)	-4.17	-5.25	0.00
		My (kip-ft)	-0.84	-1.16	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	34.18	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-7.63	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-10.53	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.22	Cby	=	1.85
Cmx	=	0.31	Cmy	=	0.54
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.201 Eq H1-1a: 0.201 + 8/9(0.112 + 0.154) = 0.437

Story level Second, Column Line 12-G, Column # 93

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	32.85	22.20	12.93

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	81.41	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.478
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.478
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.478

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			32.85	22.20	12.93
Moments	Top	Mx (kip-ft)	-4.17	-4.35	0.00
		My (kip-ft)	-0.84	-0.97	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	-0.00	-0.00	-0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	81.41	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-11.97	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-2.55	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.478 Eq H1-1a: 0.478 + 8/9(0.175 + 0.037) = 0.667

Story level Main Roof, Column Line 12-F, Column # 92

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	18.68	0.00	16.90

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	49.46	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.290
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.290
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.290

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 10:

			Dead	Live	Roof
Axial (kip)			18.68	0.00	11.72
Moments	Top	Mx (kip-ft)	-3.39	0.00	-2.50
		My (kip-ft)	-0.62	0.00	-3.11
	Bot	Mx (kip-ft)	-0.02	0.00	0.00
		My (kip-ft)	0.19	1.11	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	41.17	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-8.07	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-5.72	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.53
Cmx	=	0.60	Cmy	=	0.65
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.242 Eq H1-1a: 0.242 + 8/9(0.118 + 0.084) = 0.421

Story level Second, Column Line 12-F, Column # 92

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		19.00	19.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	25.62	9.23	16.90

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	62.40	0.90Pnx (kip)	=	199.21	Pu/0.90Pnx	= 0.313
			0.90Pny (kip)	=	199.21	Pu/0.90Pny	= 0.313
			0.90Pn (kip)	=	199.21	Pu/0.90Pn	= 0.313

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			25.62	9.23	16.90
Moments	Top	Mx (kip-ft)	-0.03	-0.02	0.00
		My (kip-ft)	0.21	0.14	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	62.40	0.90*Pn (kip)	=	199.21
Mux (kip-ft)	=	-0.04	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	0.31	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	265.93	Pey (kip)	=	265.93
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.313 Eq H1-1a: 0.313 + 8/9(0.001 + 0.005) = 0.318

Story level Main Roof, Column Line 12-E, Column # 99

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	15.77	0.00	16.03

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	44.58	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.262
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.262
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.262

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			15.77	0.00	16.03
Moments	Top	Mx (kip-ft)	-0.10	0.00	-0.18
		My (kip-ft)	-0.96	0.00	-0.97
	Bot	Mx (kip-ft)	-0.00	0.00	0.00
		My (kip-ft)	-0.00	-0.00	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	44.58	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-0.42	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-2.69	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.68	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.262 Eq H1-1a: 0.262 + 8/9(0.006 + 0.039) = 0.302

Story level Second, Column Line 12-E, Column # 99

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	21.75	8.64	16.03

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	56.07	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.245
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.245
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.245

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			21.75	8.64	16.03
Moments	Top	Mx (kip-ft)	-0.00	0.00	0.00
		My (kip-ft)	-0.00	-0.00	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	56.07	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-0.01	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-0.01	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.00
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.245 — Eq H1-1a: 0.245 + 8/9(0.000 + 0.000) = 0.245

Story level Main Roof, Column Line 12-D, Column # 87

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	15.73	0.00	15.75

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	44.08	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.259
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.259
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.259

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 6:

			Dead	Live	Roof
Axial (kip)			15.73	0.00	10.54
Moments	Top	Mx (kip-ft)	-2.14	0.00	-2.19
		My (kip-ft)	0.30	0.00	2.86
	Bot	Mx (kip-ft)	-0.24	-0.43	0.00
		My (kip-ft)	0.15	-0.68	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	35.74	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-6.08	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	4.94	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.76	Cby	=	1.63
Cmx	=	0.57	Cmy	=	0.61
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.210 — Eq H1-1a: 0.210 + 8/9(0.089 + 0.072) = 0.353

Story level Second, Column Line 12-D, Column # 87

Fy (ksi) = 46.00 — Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	22.14	9.49	15.75

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	56.52	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.246
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.246
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.246

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			22.14	9.49	15.75
Moments	Top	Mx (kip-ft)	-0.30	-0.53	0.00
		My (kip-ft)	0.18	0.31	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	56.52	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-0.62	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	0.38	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.246 — Eq H1-1a: 0.246 + 8/9(0.009 + 0.005) = 0.259

Story level Main Roof, Column Line 12-C, Column # 88

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	20.19	0.00	18.60

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	53.99	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.317
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.317
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.317

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 4:

			Dead	Live	Roof
Axial (kip)			20.19	0.00	18.60
Moments	Top	Mx (kip-ft)	-5.30	0.00	-5.12
		My (kip-ft)	0.66	0.00	1.21
	Bot	Mx (kip-ft)	-0.22	-0.42	0.00
		My (kip-ft)	-1.63	-1.95	0.00

Reverse curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	53.99	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-14.56	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-3.79	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.70	Cby	=	1.03
Cmx	=	0.59	Cmy	=	0.97
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.29

INTERACTION EQUATION

Pu/0.90*Pn = 0.317 Eq H1-1a: 0.317 + 8/9(0.213 + 0.055) = 0.556

Story level Second, Column Line 12-C, Column # 88

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		17.00	17.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	33.42	14.17	18.60

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	76.95	0.90Pnx (kip)	=	229.29	Pu/0.90Pnx	= 0.336
			0.90Pny (kip)	=	229.29	Pu/0.90Pny	= 0.336
			0.90Pn (kip)	=	229.29	Pu/0.90Pn	= 0.336

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			33.42	14.17	18.60
Moments	Top	Mx (kip-ft)	-0.27	-0.51	0.00
		My (kip-ft)	-2.02	-1.57	0.00
	Bot	Mx (kip-ft)	0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	72.08	0.90*Pn (kip)	=	229.29
Mux (kip-ft)	=	-1.15	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	-4.93	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	332.19	Pey (kip)	=	332.19
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.314 — Eq H1-1a: 0.314 + 8/9(0.017 + 0.072) = 0.393

Story level Main Roof, Column Line 12-AO, Column # 86

Fy (ksi)	= 46.00	Column Size	= HSS6X6X1/2
Orientation (deg.)	= 0.0		

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		21.00	21.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	5.75	5.75

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	5.04	0.00	2.60

DEMAND CAPACITY RATIO: (1.2DL + 0.5LL + 1.6RF)

Pu (kip)	=	10.21	0.90Pnx (kip)	=	170.39	Pu/0.90Pnx	= 0.060
			0.90Pny (kip)	=	170.39	Pu/0.90Pny	= 0.060
			0.90Pn (kip)	=	170.39	Pu/0.90Pn	= 0.060

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			5.04	0.00	2.60
Moments	Top	Mx (kip-ft)	-0.51	0.00	-0.34
		My (kip-ft)	1.57	0.00	0.91
	Bot	Mx (kip-ft)	-0.14	-0.14	0.00
		My (kip-ft)	1.65	2.24	0.00

Reverse curvature about X-Axis
Reverse curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	7.34	0.90*Pn (kip)	=	170.39
Mux (kip-ft)	=	-0.78	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	5.57	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	2.18	Cby	=	2.16
Cmx	=	0.39	Cmy	=	0.43
Pex (kip)	=	217.69	Pey (kip)	=	217.69
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.043 — Eq H1-1b: 0.022 + 0.011 + 0.082 = 0.114

Story level Second, Column Line 12-AO, Column # 86

Fy (ksi) = 46.00 Column Size = HSS6X6X1/2
Orientation (deg.) = 0.0

INPUT DESIGN PARAMETERS:

		X-Axis	Y-Axis
Lu (ft)		18.00	18.00
K		1	1
Braced Against Joint Translation		Yes	Yes
Column Eccentricity (in)	Top	5.75	5.75
	Bottom	0.00	0.00

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	13.76	10.77	2.60

DEMAND CAPACITY RATIO: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	35.05	0.90Pnx (kip)	=	214.14	Pu/0.90Pnx	= 0.164
			0.90Pny (kip)	=	214.14	Pu/0.90Pny	= 0.164
			0.90Pn (kip)	=	214.14	Pu/0.90Pn	= 0.164

DEMAND/CAPACITY LIMIT FOR STRENGTH : 0.900

CONTROLLING COMBINED COLUMN LOADS - Skip-Load Case 1:

			Dead	Live	Roof
Axial (kip)			13.76	10.77	2.60
Moments	Top	Mx (kip-ft)	-0.17	-0.17	0.00
		My (kip-ft)	1.93	2.61	0.00
	Bot	Mx (kip-ft)	-0.00	0.00	0.00
		My (kip-ft)	0.00	0.00	0.00

Single curvature about X-Axis
Single curvature about Y-Axis

CALCULATED PARAMETERS: (1.2DL + 1.6LL + 0.5RF)

Pu (kip)	=	35.05	0.90*Pn (kip)	=	214.14
Mux (kip-ft)	=	-0.47	0.90*Mnx (kip-ft)	=	68.31
Muy (kip-ft)	=	6.50	0.90*Mny (kip-ft)	=	68.31
Rm	=	1.00			
Cbx	=	1.67	Cby	=	1.67
Cmx	=	0.60	Cmy	=	0.60
Pex (kip)	=	296.30	Pey (kip)	=	296.30
B1x	=	1.00	B1y	=	1.00

INTERACTION EQUATION

Pu/0.90*Pn = 0.164 Eq H1-1b: 0.082 + 0.007 + 0.095 = 0.184

Base Plate Design Summary

RAM Steel 17.04.02.12
DataBase: TF Judicial 12082022 (area B only) 12/08/22 10:04:03
Building Code: IBC Steel Code: AISC360-16 LRFD

BASE PLATES:

SUMMARY:
MAX of 7/8" thick POL--> 1" BASE PL will work for all TYP condition column on spread footings in AREA B

Design Code: AISC360-16 LRFD
Plate Fy (ksi) 36.000
Minimum Dimension From Face of Column to Edge of Plate (in) 2.000
Minimum Dimension From Side of Column to Edge of Plate (in) 2.000
Increment of Plate Dimensions (in) 0.250
Increment of Plate Thickness (in) 0.125
Minimum Footing Dimension Parallel to Web (ft) 4.00
Minimum Footing Dimension Perpendicular to Web (ft) 4.00
Keep Base Plate Square: N

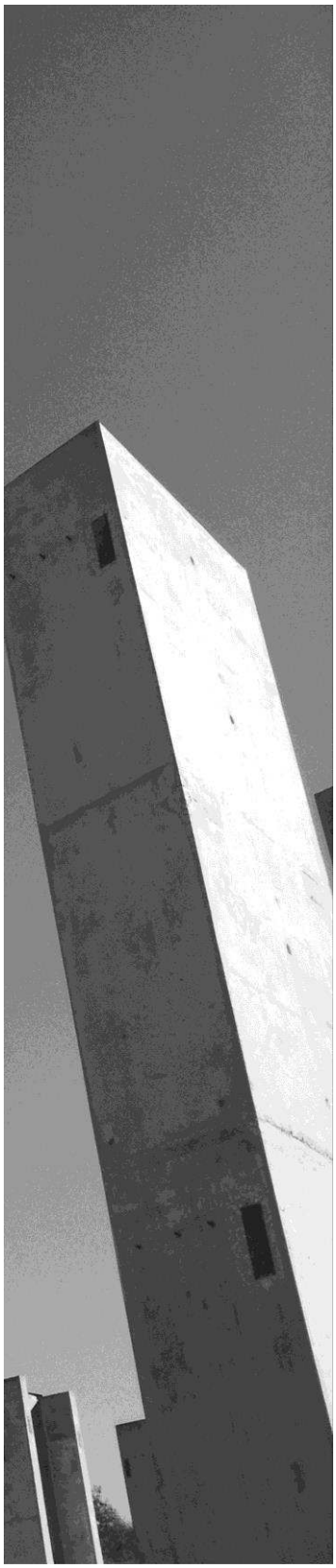
Column Line	Column Size	Fy (ksi)	N (in)	B (in)	tp (in)	
97.25ft-12.50ft	HSS8X4X5/8	36	12.00	8.00	0.375	
97.25ft-33.00ft	HSS8X4X5/8	36	12.00	8.00	0.500	
97.25ft-47.33ft	HSS6X4X1/4	36	10.00	8.00	0.375	
99.75ft-71.58ft	HSS6X4X1/4	36	10.00	8.00	0.375	
99.75ft-87.83ft	HSS6X4X1/4	36	10.00	8.00	0.375	
99.75ft-113.17ft	HSS6X4X1/4	36	10.00	8.00	0.250	
3-E	HSS8X8X1/2	36	12.00	12.00	0.625	
3-D	HSS8X8X1/2	36	12.00	12.00	0.625	
3-C	HSS8X8X1/2	36	12.00	12.00	0.625	
3-~BO	HSS6X6X1/2	36	10.00	10.00	0.500	
3.2-G	HSS6X6X1/2	36	10.00	10.00	0.500	
3.2-F	HSS6X6X5/8	36	10.00	10.00	0.625	
4-G	HSS6X6X1/2	36	10.00	10.00	0.625	
4-F	HSS8X8X1/2	36	12.00	12.00	0.750	
4-E	HSS8X8X1/2	36	12.00	12.00	0.750	
4-D	HSS8X8X1/2	36	12.00	12.00	0.750	
4-C	HSS8X8X1/2	36	12.00	12.00	0.750	
4-~BO	HSS6X6X1/2	36	10.00	10.00	0.625	
5-G	HSS6X6X1/2	36	10.00	10.00	0.625	
5-F	HSS6X6X5/8	36	10.00	10.00	0.625	
5-C	HSS6X6X1/2	36	10.00	10.00	0.750	
5-~BO	HSS6X6X1/2	36	10.00	10.00	0.625	Fail
6-G	HSS6X6X1/2	36	10.00	10.00	0.625	
6-F	HSS6X6X5/8	36	10.00	10.00	0.625	
6-C	HSS8X8X1/2	36	12.00	12.00	0.750	
6-~BO	HSS6X6X1/2	36	10.00	10.00	0.625	Fail
7-F	HSS6X6X5/8	36	10.00	10.00	0.625	
7-E	HSS8X8X1/2	36	0.30	182.50	32.375	Fail
7-D	HSS8X8X1/2	36	12.00	12.00	0.750	
7-C	HSS6X6X5/8	36	10.00	10.00	0.750	
8-G	HSS6X6X1/2	36	10.00	10.00	0.625	
8-F	HSS6X6X5/8	36	10.00	10.00	0.750	
8-E	HSS8X8X1/2	36	0.30	232.00	43.000	Fail

clouded columns are on basement walls--> ignored for TYP condition BPL design

8-D	HSS8X8X1/2	36	12.00	12.00	0.750	
8-C	HSS6X6X5/8	36	10.00	10.00	0.875	
8-~BO	HSS6X6X1/2	36	10.00	10.00	0.625	Fail
9-G	HSS6X6X1/2	36	10.00	10.00	0.625	
9-F	HSS6X6X5/8	36	10.00	10.00	0.625	
9-C	HSS8X8X1/2	36	12.00	12.00	0.750	
9-~BO	HSS6X6X1/2	36	10.00	10.00	0.625	Fail
10-G	HSS6X6X1/2	36	10.00	10.00	0.625	
10-F	HSS6X6X5/8	36	10.00	10.00	0.625	
10-C	HSS8X8X1/2	36	12.00	12.00	0.875	
10-~BO	HSS6X6X1/2	36	10.00	10.00	0.500	Fail
338.75ft-113.17ft	HSS6X6X1/2	36	10.00	10.00	0.500	Fail
338.75ft-119.08ft	HSS6X6X1/2	36	10.00	10.00	0.250	
11-F	HSS6X6X5/8	36	10.00	10.00	0.625	
11-E	HSS8X8X1/2	36	0.30	175.25	31.000	Fail
11-D	HSS8X8X1/2	36	12.00	12.00	0.750	
11-C	HSS8X8X1/2	36	12.00	12.00	0.750	
12-G	HSS6X6X1/2	36	10.00	10.00	0.500	
12-F	HSS6X6X1/2	36	10.00	10.00	0.500	
12-E	HSS6X6X1/2	36	10.00	10.00	0.500	Fail
12-D	HSS6X6X1/2	36	10.00	10.00	0.500	Fail
12-C	HSS6X6X1/2	36	10.00	10.00	0.500	Fail
12-AO	HSS6X6X1/2	36	10.00	10.00	0.375	

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

CONCRETE PILASTER DESIGN



KPFF JOB # 10212200038

Project Title:
Engineer:
Project ID:
Project Descr:

Concrete Column

Project File: TFJB Gravity Calcs.ec6

LIC# : KW-06013369, Build:20.22.10.25 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: Area B Concrete Pilaster in Wall

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

f'c : Concrete 28 day streng	=	4.50 ksi
E =	=	3,823.68 ksi
Density	=	150 pcf
β	=	0.8250
fy - Main Rebar	=	60 ksi
E - Main Rebar	=	29000 ksi
Allow. Reinforcing Limits		*ASTM A615 Bars Used*
Min. Reinf.	=	1 %
Max. Reinf.	=	8 %

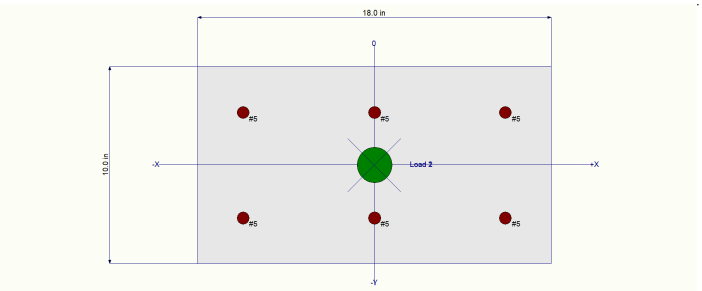
Overall Column Height = 16.0 ft
End Fixity Top & Bottom Pinned

Brace condition for deflection (buckling) along colum
X-X (width) axis :
Fully braced against buckling ABOUT Y-Y Axis
Y-Y (depth) axis :
Unbraced Length for buckling ABOUT X-X Axis = 16.0 ft, K = 1.0

Column Cross Section

Column Dimensions : 10.0in high x 18.0in Wide, Column Edge to Rebar Edge Cover = 2.0in

Column Reinforcing : 4 - #5 bars @ corners,, 1 - #5 bars top & bottom between corner bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included : 3,000.0 lbs * Dead Load Factor
AXIAL LOADS . . .
Column: Axial Load at 16.0 ft above base, D = 37.20, L = 47.80 k
Beam: Axial Load at 16.0 ft above base, D = 11.30, L = 13.0 k
BENDING LOADS . . .
Beam Eccentricity: Moment acting about X-X axisat 13.50 ft, D = 7.530, L = 8.670 k-ft

DESIGN SUMMARY

Load Combination	+1.20D+1.60L
Location of max.above base	15.893 ft

Maximum Stress Ratio **0.440 : 1**
Ratio = (Pu^2+Mu^2)^.5 / (PhiPn^2+PhiMn^2)^.5

Pu =	159.080 k	φ * Pn =	363.40 k
Mu-x =	19.218 k-ft	φ * Mn-x =	43.361 k-ft
Mu-y =	0.0 k-ft	φ * Mn-y =	0.0 k-ft
Mu Angle =	180.0 deg		
Mu at Angle =	19.218 k-ft	φMn at Angle =	43.611 k-ft

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Column Capacities . .

Pnmax : Nominal Max. Compressive Axial Capaci	792.99 k
Pnmin : Nominal Min. Tension Axial Capacity	k
φ Pn, max : Usable Compressive Axial Capacity	412.352 k
φ Pn, min : Usable Tension Axial Capacity	k

Maximum SERVICE Load Reactions .

Top along Y-Y	0.0 k	Bottom along Y-Y	0.0 k
Top along X-X	1.013 k	Bottom along X-X	1.013 k

Maximum SERVICE Load Deflections . .

Along Y-Y 0.07216 in at 8.913 ft above base
for load combination : +D+L

Along X-X 0.0 in at 0.0 ft above base
for load combination :

General Section Informatio φ = 0.650 β = 0.8250 θ = 0.80

ρ : % Reinforcing	1.033 %	Rebar % Ok
Reinforcing Area	1.860 in^2	
Concrete Area	180.0 in^2	

Project Title:
Engineer:
Project ID:
Project Descr:

Concrete Column

Project File: TFJB Gravity Calcs.ec6

DESCRIPTION: Area B Concrete Pilaster in Wall

Governing Load Combination Results

Governing Factored Load Combination	Moment X-X	Moment Y-Y	Dist. from base ft	Axial Load k Pu	φ * Pn	Bending Analysis k-ft δx	δx * Mux	δy	δy * Muy	Alpha (deg)	δ Mu	φ Mn	Utilization Ratio
+1.40D	Actual		15.89	72.10	360.76	1.000	8.84			180.000	8.84	44.11	**0.200**
+1.20D+1.60L	Actual		15.89	159.08	363.40	1.000	19.22			180.000	19.22	43.61	**0.440**
+1.20D+0.50L	Actual		15.89	92.20	360.76	1.000	11.22			180.000	11.22	44.11	**0.255**
+1.20D	Actual		15.89	61.80	360.76	1.000	7.58			180.000	7.58	44.11	**0.172**
+0.90D	Actual		15.89	46.35	360.76	1.000	5.69			180.000	5.69	44.11	**0.129**

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction k @ Base	@ Top	Y-Y Axis Reaction @ Base	@ Top	Axial Reaction @ Base	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
D Only			0.471	0.471	51.500				
+D+L			1.013	1.013	112.300				
+D+0.750L			0.877	0.877	97.100				
+0.60D			0.282	0.282	30.900				
L Only			0.542	0.542	60.800				

Maximum Moment Reactions

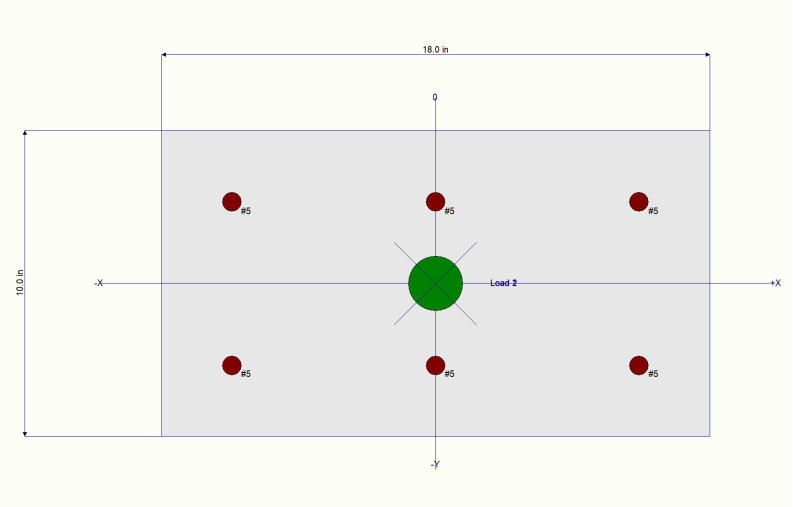
Note: Only non-zero reactions are listed.

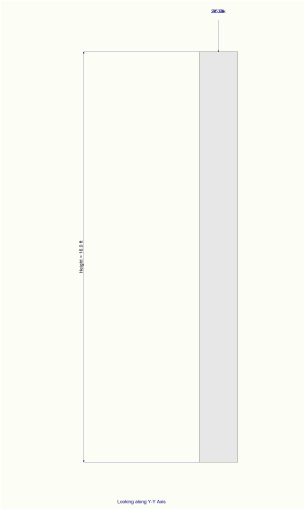
Load Combination	Moment About X-X Axis @ Base	@ Top	Moment About Y-Y Axis @ Base	@ Top
D Only	k-ft		k-ft	
+D+L	k-ft		k-ft	
+D+0.750L	k-ft		k-ft	
+0.60D	k-ft		k-ft	
L Only	k-ft		k-ft	

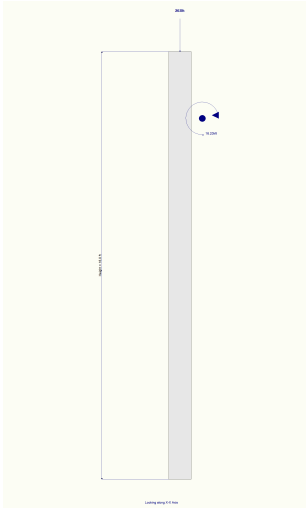
Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000 ft	0.034 in	8.913 ft
+D+L	0.0000 in	0.000 ft	0.072 in	8.913 ft
+D+0.750L	0.0000 in	0.000 ft	0.063 in	8.913 ft
+0.60D	0.0000 in	0.000 ft	0.020 in	8.913 ft
L Only	0.0000 in	0.000 ft	0.039 in	8.913 ft

Sketches



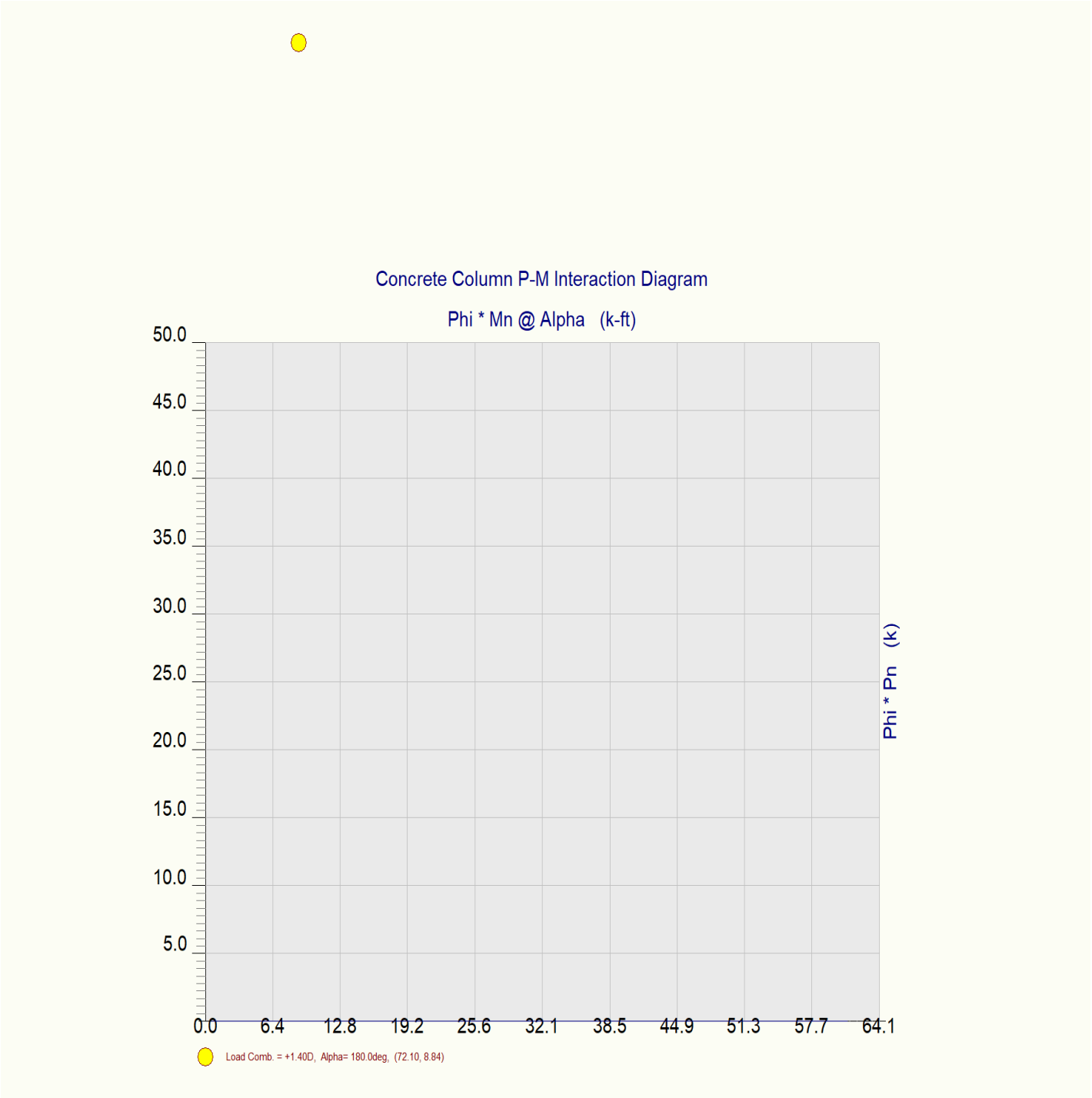




Interaction Diagrams

Concrete Column

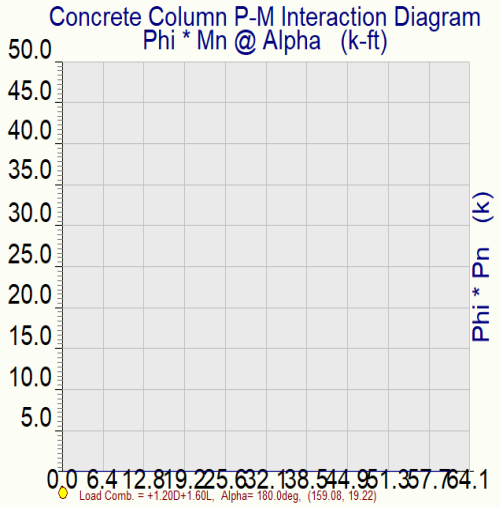
DESCRIPTION: Area B Concrete Pilaster in Wall



Concrete Column

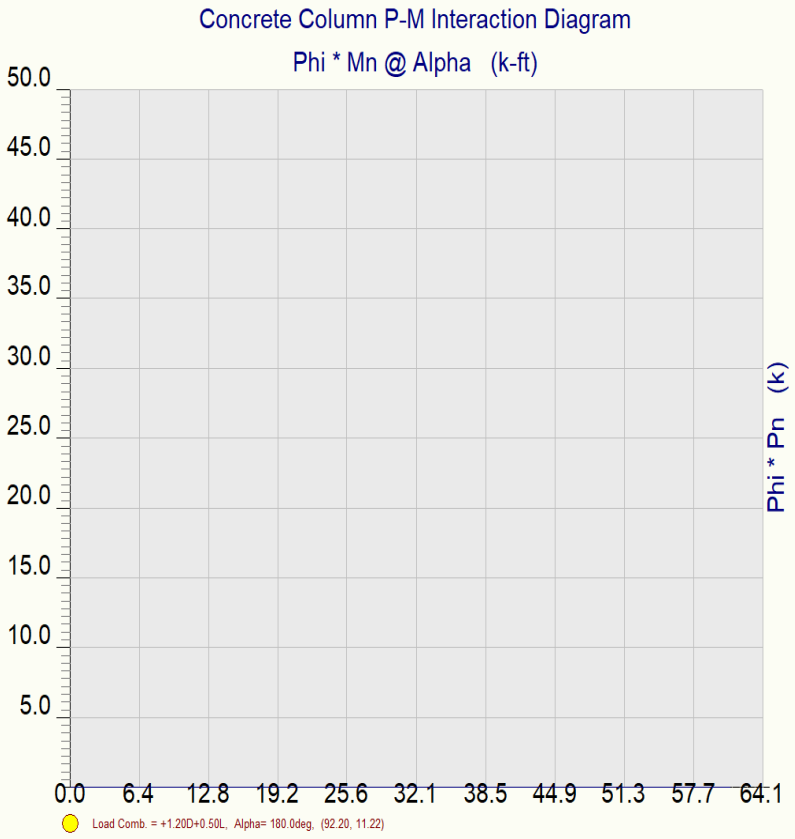
LIC# : KW-06013369, Build:20.22.10.25 KPFF Mountain West

DESCRIPTION: Area B Concrete Pilaster in Wall



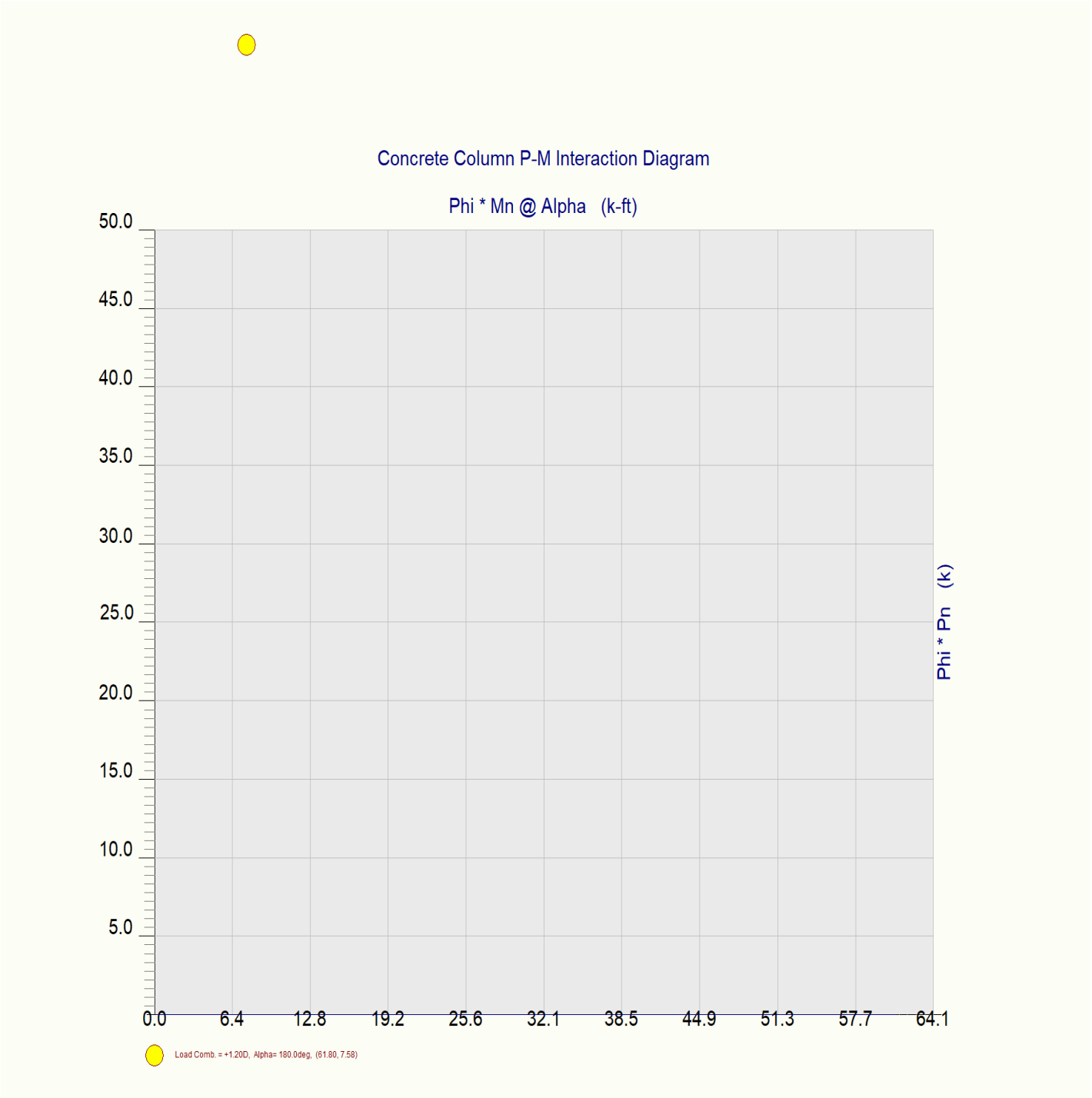
Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



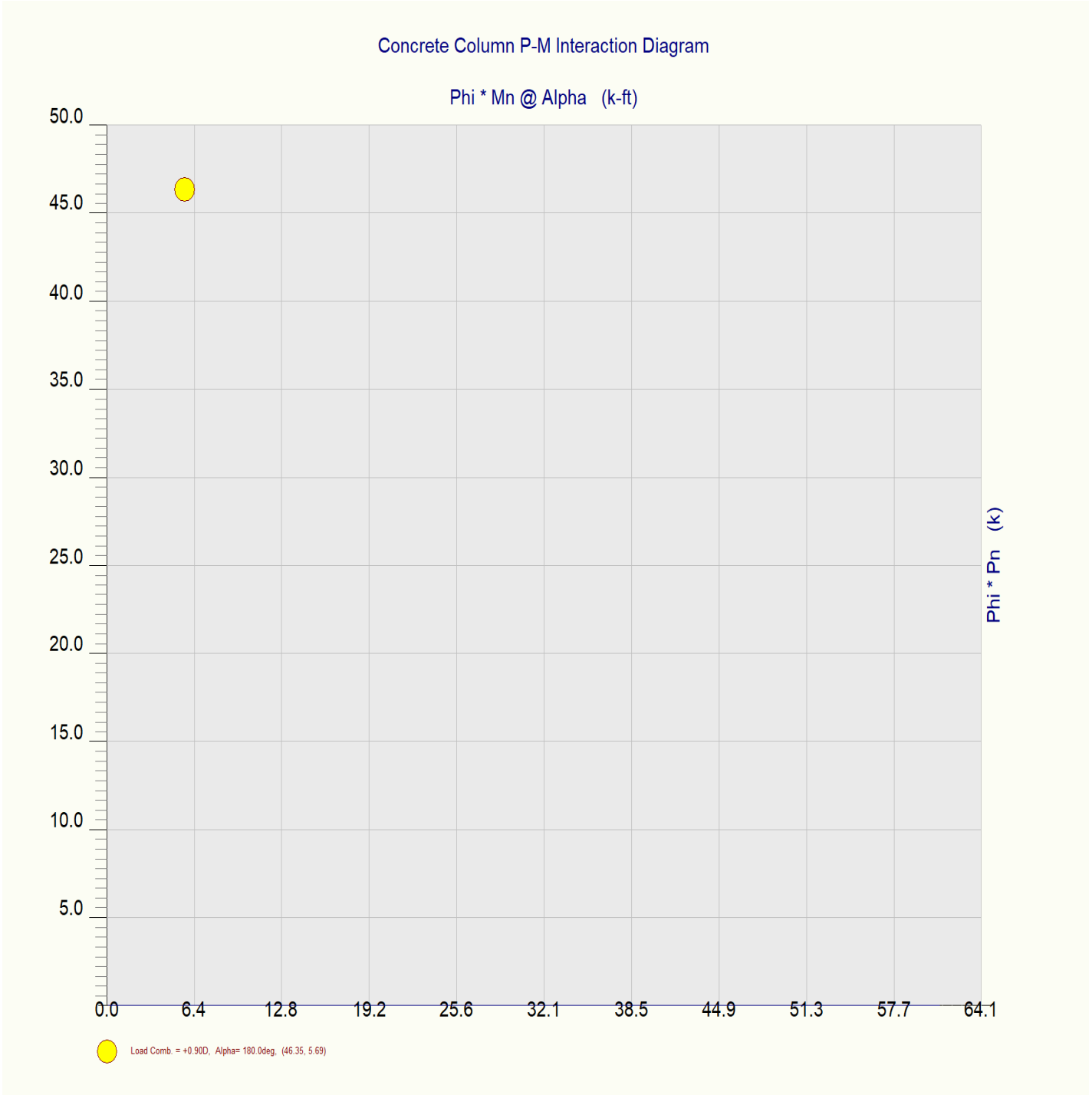
Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



412 E Parkcenter Blvd, Suite 200
Boise, ID 83706
(208) 336-6985

project	TFJB	by DN	sheet no.
location	TWIN FALLS, ID	date 12-22-2022	
client	CSHQA	job no. 10212200038	
CONCRETE PILASTER CHECK			

BEAM LOADING

REACTIONS (kips):

	Left	Right
Initial reaction	11.26	25.71
DL reaction	11.08	24.69
Max +LL reaction	13.00	29.34

COLUMN LOADING

CONTROLLING AXIAL COLUMN LOADS - Skip-Load Case 1:

	Dead	Live	Roof
Axial (kip)	37.11	47.78	0.00

Project Title:
Engineer:
Project ID:
Project Descr:

Concrete Column

Project File: TFJB Gravity Calcs.ec6

LIC# : KW-06013369, Build:20.22.10.25 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: Area B Concrete Pilaster in Wall

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

f'c : Concrete 28 day streng	=	4.50 ksi
E =	=	3,823.68 ksi
Density	=	150 pcf
β	=	0.8250
fy - Main Rebar	=	60 ksi
E - Main Rebar	=	29000 ksi
Allow. Reinforcing Limits		*ASTM A615 Bars Used*
Min. Reinf.	=	1 %
Max. Reinf.	=	8 %

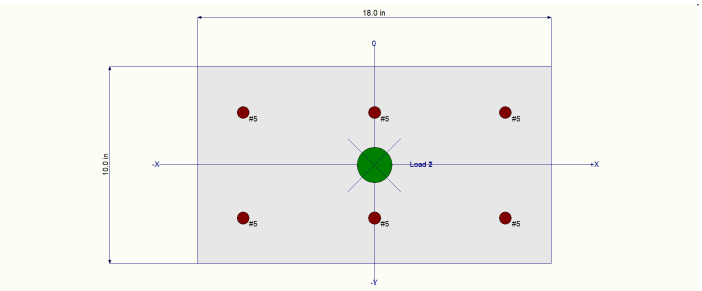
Overall Column Height = 16.0 ft
End Fixity Top & Bottom Pinned

Brace condition for deflection (buckling) along colum
X-X (width) axis :
Fully braced against buckling ABOUT Y-Y Axis
Y-Y (depth) axis :
Unbraced Length for buckling ABOUT X-X Axis = 16.0 ft, K = 1.0

Column Cross Section

Column Dimensions : 10.0in high x 18.0in Wide, Column Edge to Rebar Edge Cover = 2.0in

Column Reinforcing : 4 - #5 bars @ corners,, 1 - #5 bars top & bottom between corner bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included : 3,000.0 lbs * Dead Load Factor
AXIAL LOADS . . .
Column: Axial Load at 16.0 ft above base, D = 37.20, L = 47.80 k
Beam: Axial Load at 16.0 ft above base, D = 11.30, L = 13.0 k
BENDING LOADS . . .
Beam Eccentricity: Moment acting about X-X axisat 13.50 ft, D = 7.530, L = 8.670 k-ft

DESIGN SUMMARY

Load Combination	+1.20D+1.60L
Location of max.above base	15.893 ft

Maximum Stress Ratio **0.440 : 1**

Ratio = (Pu^2+Mu^2)^.5 / (PhiPn^2+PhiMn^2)^.5

Pu =	159.080 k	φ * Pn =	363.40 k
Mu-x =	19.218 k-ft	φ * Mn-x =	43.361 k-ft
Mu-y =	0.0 k-ft	φ * Mn-y =	0.0 k-ft
Mu Angle =	180.0 deg		
Mu at Angle =	19.218 k-ft	φMn at Angle =	43.611 k-ft

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Column Capacities . .

Pnmax : Nominal Max. Compressive Axial Capaci	792.99 k
Pnmin : Nominal Min. Tension Axial Capacity	k
φ Pn, max : Usable Compressive Axial Capacity	412.352 k
φ Pn, min : Usable Tension Axial Capacity	k

Maximum SERVICE Load Reactions .

Top along Y-Y	0.0 k	Bottom along Y-Y	0.0 k
Top along X-X	1.013 k	Bottom along X-X	1.013 k

Maximum SERVICE Load Deflections . .

Along Y-Y 0.07216 in at 8.913 ft above base
for load combination : +D+L

Along X-X 0.0 in at 0.0 ft above base
for load combination :

General Section Informatio φ = 0.650 β = 0.8250 θ = 0.80

ρ : % Reinforcing	1.033 %	Rebar % Ok
Reinforcing Area	1.860 in^2	
Concrete Area	180.0 in^2	

Project Title:
Engineer:
Project ID:
Project Descr:

Concrete Column

Project File: TFJB Gravity Calcs.ec6

DESCRIPTION: Area B Concrete Pilaster in Wall

Governing Load Combination Results

Governing Factored Load Combination	Moment X-X	Moment Y-Y	Dist. from base ft	Axial Load k Pu	φ * Pn	Bending Analysis k-ft δx	δx * Mux	δy	δy * Muy	Alpha (deg)	δ Mu	φ Mn	Utilization Ratio
+1.40D	Actual		15.89	72.10	360.76	1.000	8.84			180.000	8.84	44.11	**0.200**
+1.20D+1.60L	Actual		15.89	159.08	363.40	1.000	19.22			180.000	19.22	43.61	**0.440**
+1.20D+0.50L	Actual		15.89	92.20	360.76	1.000	11.22			180.000	11.22	44.11	**0.255**
+1.20D	Actual		15.89	61.80	360.76	1.000	7.58			180.000	7.58	44.11	**0.172**
+0.90D	Actual		15.89	46.35	360.76	1.000	5.69			180.000	5.69	44.11	**0.129**

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction k @ Base	@ Top	Y-Y Axis Reaction k @ Base	@ Top	Axial Reaction @ Base	Mx - End Moments k-ft @ Base	@ Top	My - End Moments k-ft @ Base	@ Top
D Only			0.471	0.471	51.500				
+D+L			1.013	1.013	112.300				
+D+0.750L			0.877	0.877	97.100				
+0.60D			0.282	0.282	30.900				
L Only			0.542	0.542	60.800				

Maximum Moment Reactions

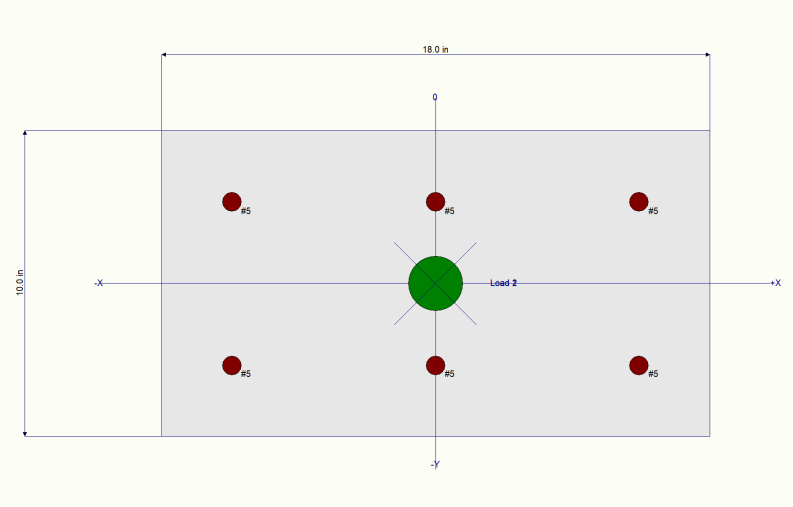
Note: Only non-zero reactions are listed.

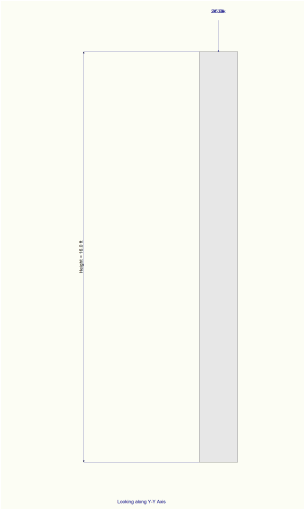
Load Combination	Moment About X-X Axis @ Base	@ Top	Moment About Y-Y Axis @ Base	@ Top
D Only	k-ft		k-ft	
+D+L	k-ft		k-ft	
+D+0.750L	k-ft		k-ft	
+0.60D	k-ft		k-ft	
L Only	k-ft		k-ft	

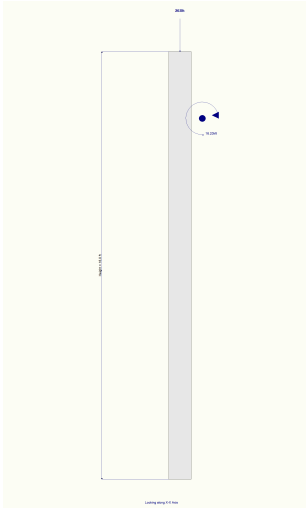
Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000 ft	0.034 in	8.913 ft
+D+L	0.0000 in	0.000 ft	0.072 in	8.913 ft
+D+0.750L	0.0000 in	0.000 ft	0.063 in	8.913 ft
+0.60D	0.0000 in	0.000 ft	0.020 in	8.913 ft
L Only	0.0000 in	0.000 ft	0.039 in	8.913 ft

Sketches



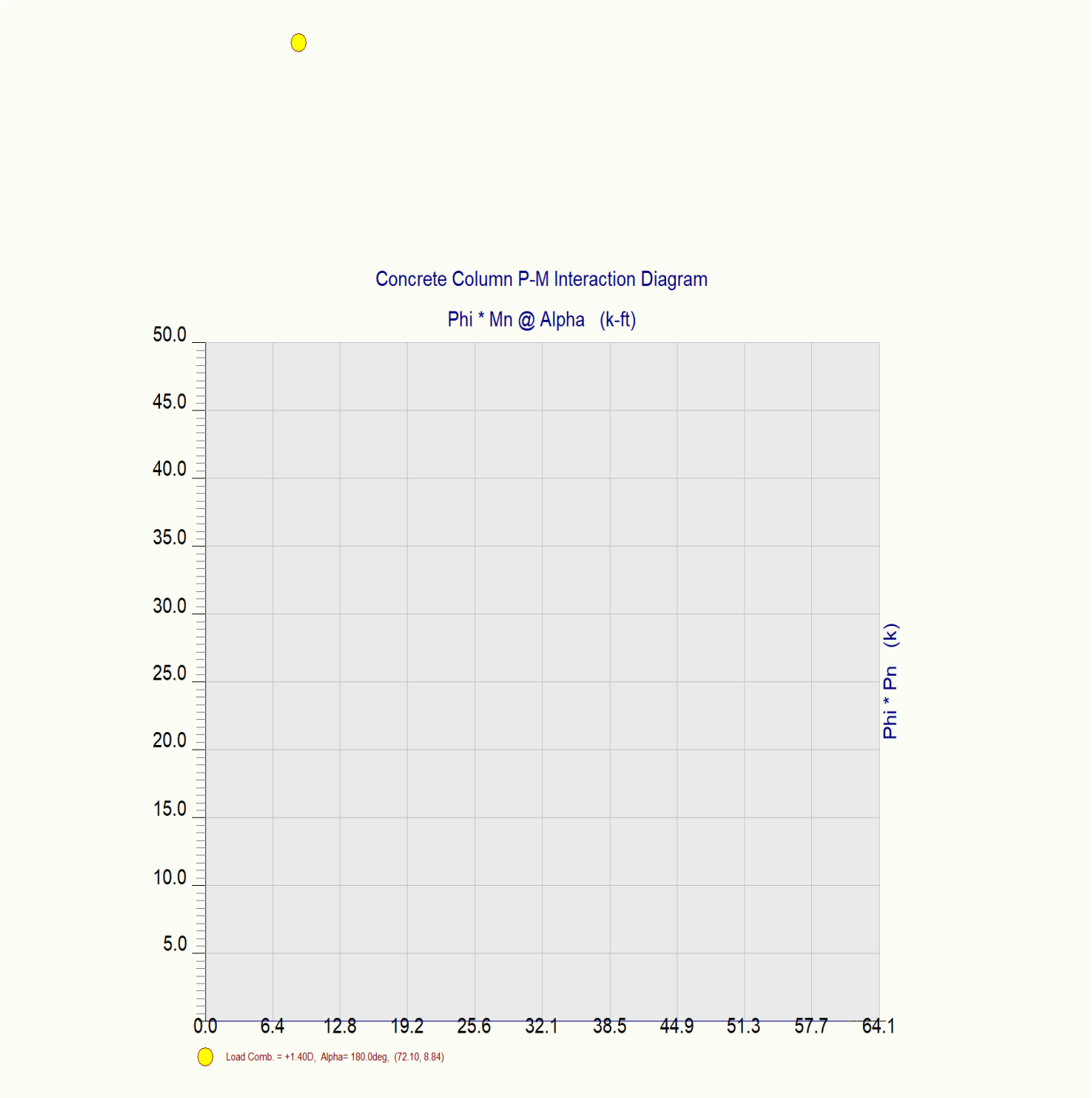




Interaction Diagrams

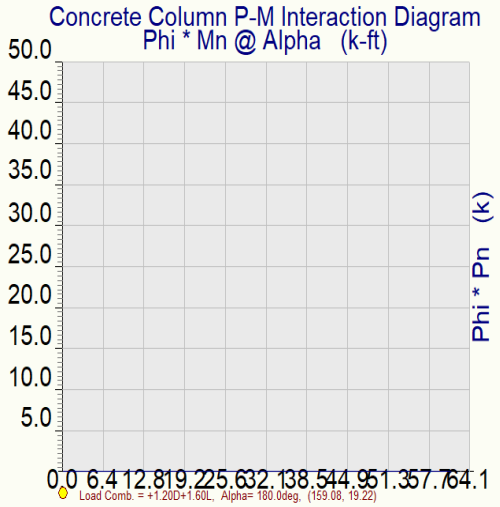
Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



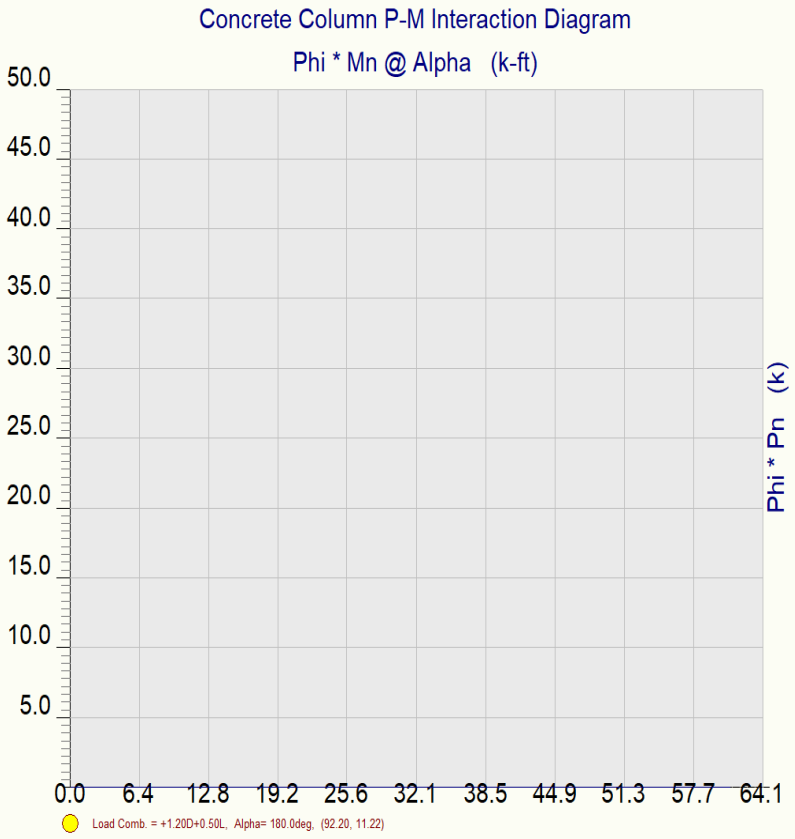
Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



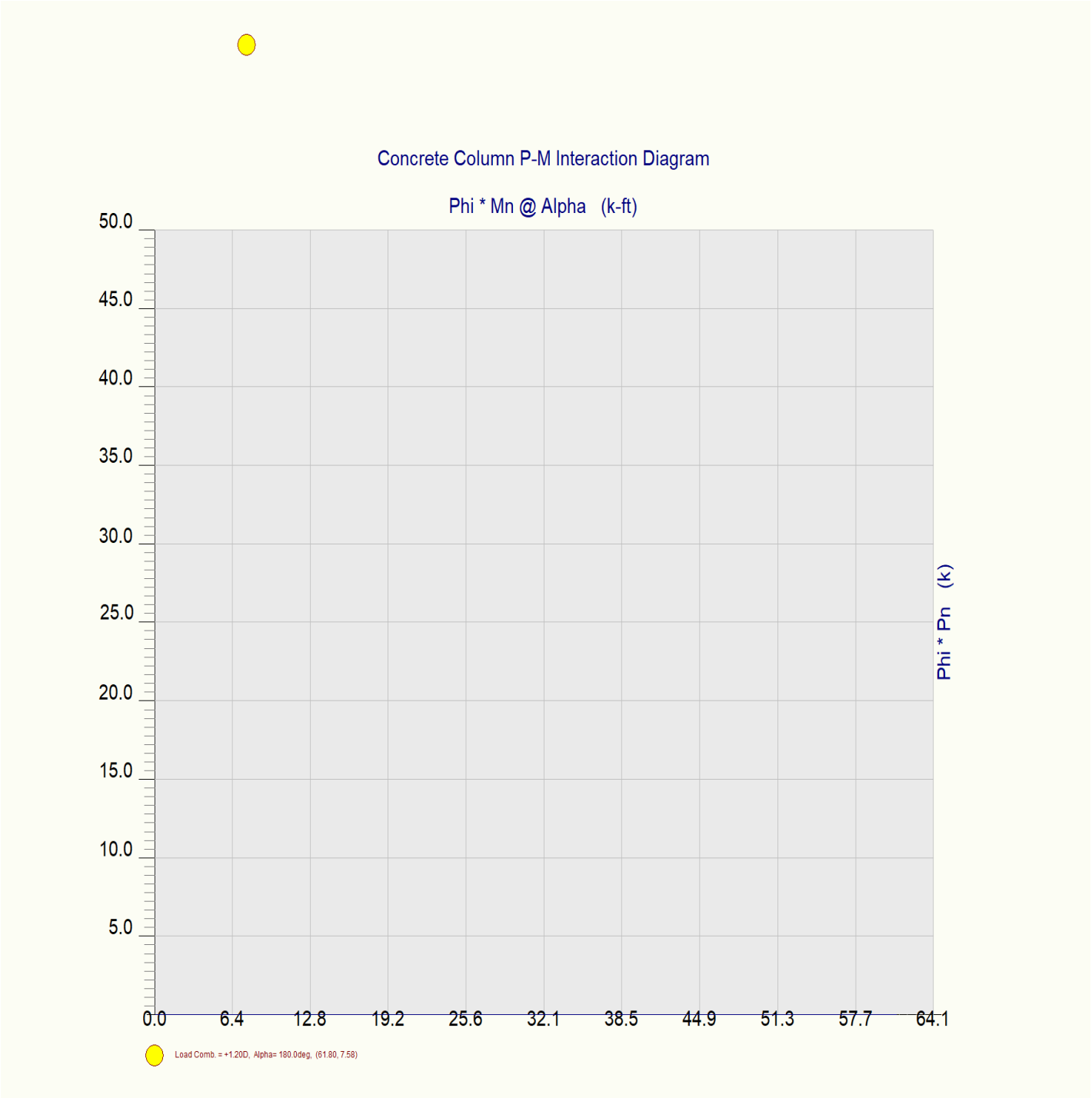
Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



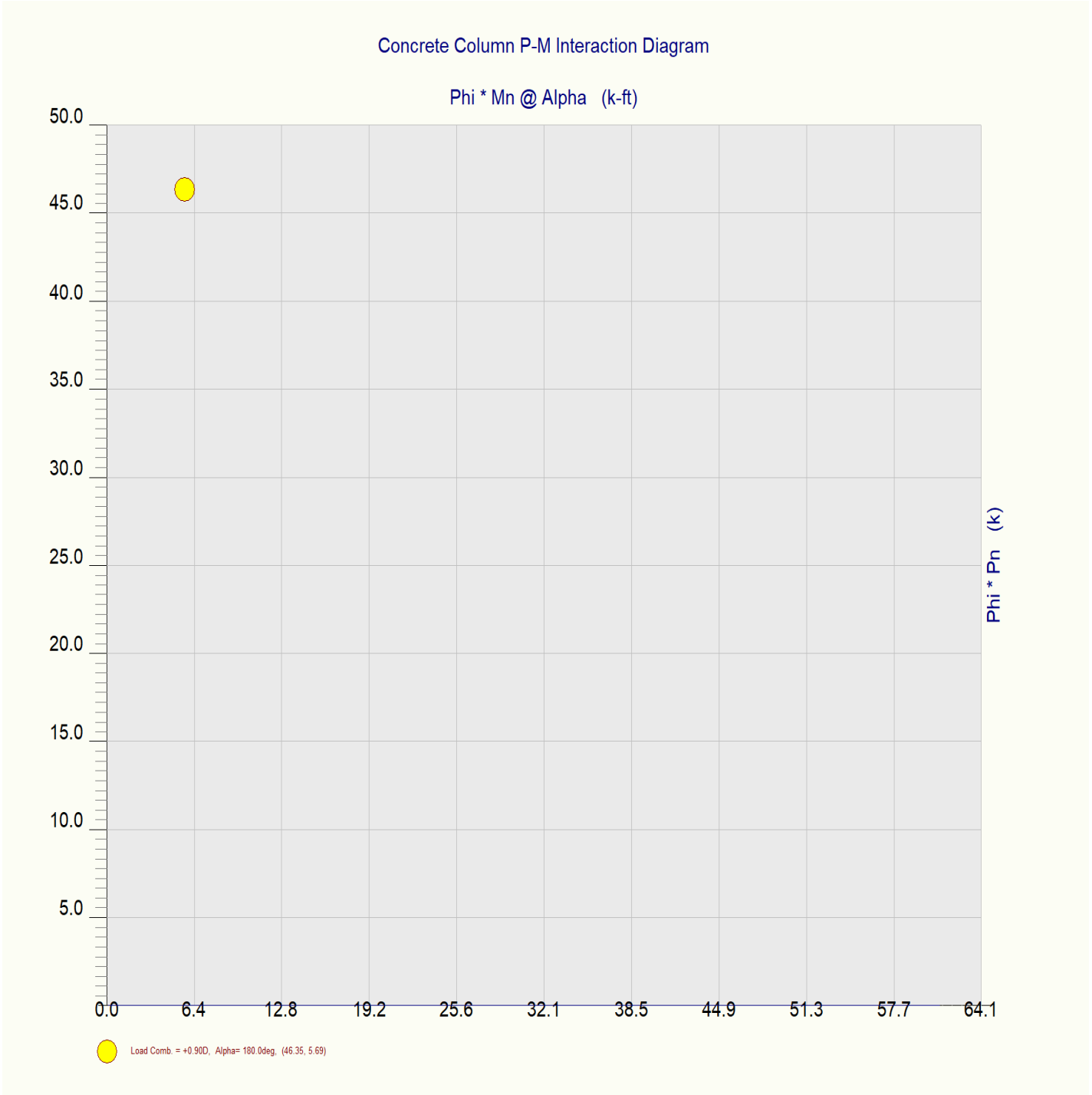
Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



Concrete Column

DESCRIPTION: Area B Concrete Pilaster in Wall



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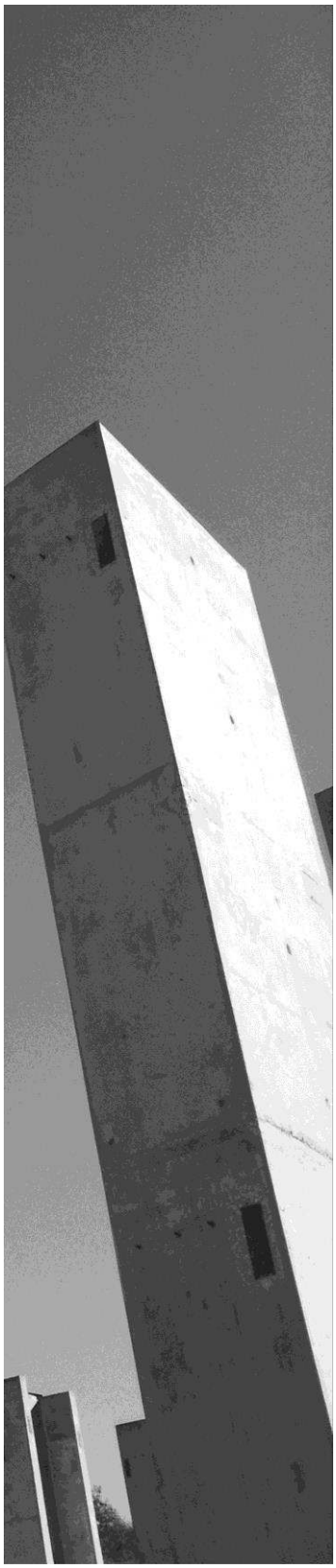
CONCRETE FOUNDATION DESIGN



KPFF JOB # 10212200038

Project Title:
Engineer:
Project ID:
Project Descr:

AREA B BASEMENT RETAINING WALL

Restrained Retaining Wall

Project File: ce foundation design - basement.ec6

DESCRIPTION: Basement Retaining Walls (w/o Column Loads, w/ Typical Uniform Wall Loads)

Code Reference

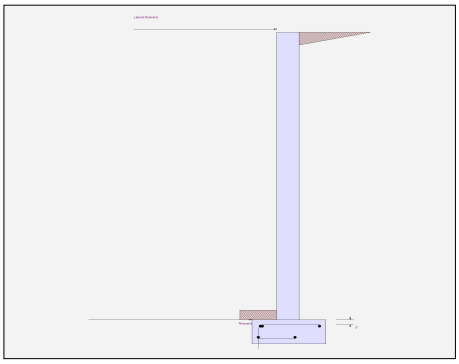
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	15.0 ft
Wall height above soil	=	ft
Total Wall Height	=	15.0 ft
Top Support Height	=	15 ft
Slope Behind Wal	=	0
Height of Soil over Toe	=	6 in

Soil Data

Allow Soil Bearing	=	6,000.0 psf
Equivalent Fluid Pressure Method		
At-Rest Heel Pressure	=	40.0 psf/ft
	=	0.0 psf/ft
Passive Pressure	=	250.0 psf/ft
Soil Density	=	110 pcf
Footing||Soil Frictior	=	0.70 psf
Soil height to ignore for passive pressure	=	12 in



Surcharge Loads

Surcharge Over Heel = psf
>>>Used To Resist Sliding & Overturning
Surcharge Over Toe = psf
Used for Sliding & Overturning

Axial Load Applied to Stem

Axial Dead Load	=	3,500.0 lbs
Axial Live Load	=	500.0 lbs
Axial Load Eccentricity	=	in

Earth Pressure Seismic Load

Uniform Lateral Load Applied to Stem

Lateral Load	=	#/ft
...Height to Top	=	ft
...Height to Bottom	=	ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem	=	0.00 psf (Strength Level)

Wind acts left-to-right toward retention side.

Adjacent Footing Load

Adjacent Footing Load	=	lbs
Footing Width	=	ft
Eccentricity	=	in
Wall to Ftg CL Dist	=	ft
Footing Type		Line Load
Base Above/Below Soil at Back of Wall	=	ft
Poisson's Ratio	=	0.3

K_h Soil Density Multiplier = 0.2 g Added seismic per unit area = 0.0 psf

Design Summary

Total Bearing Load	=	8,284.58 lbs	
...resultant ecc.	=	-2.399 in	
Soil Pressure @ Toe	=	1,657.58 psf	OK
Soil Pressure @ Heel	=	3,865.48 psf	OK
Allowable	=	psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	2,029.11 psf	
ACI Factored @ Heel	=	4,731.89 psf	
Footing Shear @ Toe	=	1.625 psi	OK
Footing Shear @ Heel	=	16.006 psi	OK
Allowable	=	94.868 psi	
Reaction at Top	=	1,498.93 lbs	
Reaction at Bottom	=	3,781.25 lbs	

Sliding Calcs
Lateral Sliding Force = 3,781.25 lbs

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code	
Dead Load	0.000
Live Load	0.000
Earth, H	0.000
Wind, W	0.000
Seismic, E	0.000

Concrete Stem Construction

Thickness = 10.00 in
Wall Weight = 125.0 psf
Stem is FREE to rotate at top of footing

		@ Top Support	Mmax Between Top & Base	@ Base of Wall
		Stem OK	Stem OK	Stem OK
Design Height Above Ftg	=	15 ft	6.386 ft	0.00 ft
Rebar Size	=	# 5	# 5	# 5
Rebar Spacing	=	9.00 in	9.00 in	9.00 in
Rebar Placed at	=	Edge	Edge	Edge
Rebar Depth 'd'	=	7.50 in	8.0 in	7.50 in
Design Data				
fb/FB + fa/Fa	=			
Moment....Actual	=	0.0 ft-#	13,856.5 ft-#	0.0 ft-#
Moment.....Allowable	=	13,383.0 ft-#	14,313.0 ft-#	13,383.0 ft-#
Shear Force @ this height	=	2,400.0 lbs		4,800.0 lbs
Shear.....Actual	=	26.667 psi		53.333 psi
Shear.....Allowable	=	94.868 psi		94.868 psi

Project Title:
Engineer:
Project ID:
Project Descr:

AREA B BASEMENT RETAINING WALL

Restrained Retaining Wall

Project File: ce foundation design - basement.ec6

DESCRIPTION: Basement Retaining Walls (w/o Column Loads, w/ Typical Uniform Wall Loads)

Footing Strengths & Dimensions

Toe Width	=	.08333333 ft
Heel Width	=	.91666666
Total Footing Width	=	3.0
Footing Thickness	=	15.0 in
Key Width	=	in
Key Depth	=	in
Key Distance from Toe	=	ft

f'c = 4,000.0 psi Fy = 60000 psi
Footing Concrete Density = 150 pcf
Min. As % = 0.0018
Cover @ Top = 3.0 in @ Btm.= 3 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	2,029.11	4,731.89	psf
Mu' : Upward	=	1,381.60		ft-#
Mu' : Downward	=	170.760		ft-#
Mu: Design	=	1,211	-1,292	ft-#
Actual 1-Way Shear	=	1.625		psi
Allow 1-Way Shear	=	94.868	94.868	psi

Other Acceptable Sizes & Spacings:

Toe: # 5 @ 12.00 in	-or-	#4@ 7.40 in, #5@ 11.48 in, #6@ 16.29 in, #7@ 22.:
Heel: # 5 @ 12.00 in	-or-	#4@ 7.40 in, #5@ 11.48 in, #6@ 16.29 in, #7@ 22.:
Key: # 0 @ 0.00 in	-or-	No key defined

Min footing T&S reinf Area 0.97 in2
Min footing T&S reinf Area per foot 0.32 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 7.41 in	#4@ 14.81 in
#5@ 11.48 in	#5@ 22.96 in
#6@ 16.30 in	#6@ 32.59 in

Summary of Forces on Footing : Slab RESISTS sliding, stem is PINNED at footing

Forces acting on footing soil pressure

(taking moments about front of footing to find eccentricity)

Surcharge Over Heel	=	0.0 lbs	0.0 ft	0.0 ft-#
Axial Dead Load on Stem	=	4,000.0 lbs	1.50 ft	6,000.0 ft-#
Soil Over Toe	=	59.583 lbs	0.5417 ft	32.274 ft-#
Adjacent Footing Load	=	0.0 lbs	0.0 ft	0.0 ft-#
Surcharge Over Toe	=	0.0 lbs	0.0 ft	0.0 ft-#
Stem Weight	=	1,875.0 lbs	1.50 ft	2,812.50 ft-#
Soil Over Heel	=	1,787.50 lbs	2.458 ft	4,394.27 ft-#
Footing Weight	=	562.50 lbs	1.50 ft	843.75 ft-#
Total Vertical Force	=	8,284.58 lbs	Moment =	14,082.8 ft-#

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

AREA B BASEMENT RETAINING WALL

Restrained Retaining Wall

DESCRIPTION: Basement Retaining Walls (w/o Column Loads, w/ Typical Uniform Wall Loads)

Rebar Lap & Embedment Lengths Information

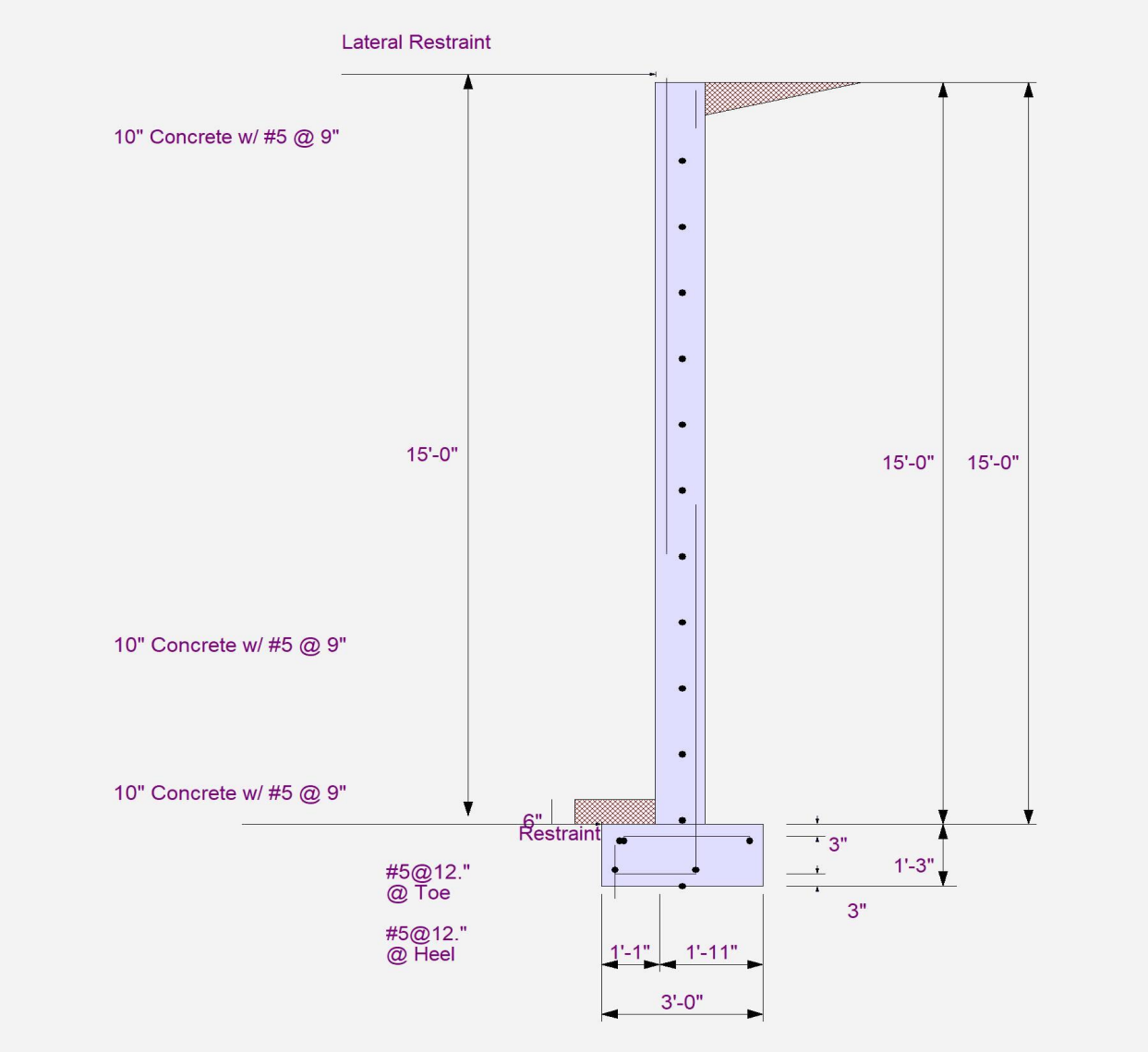
Project Title:
Engineer:
Project ID:
Project Descr:

AREA B BASEMENT RETAINING WALL

Restrained Retaining Wall

Project File: ce foundation design - basement.ec6

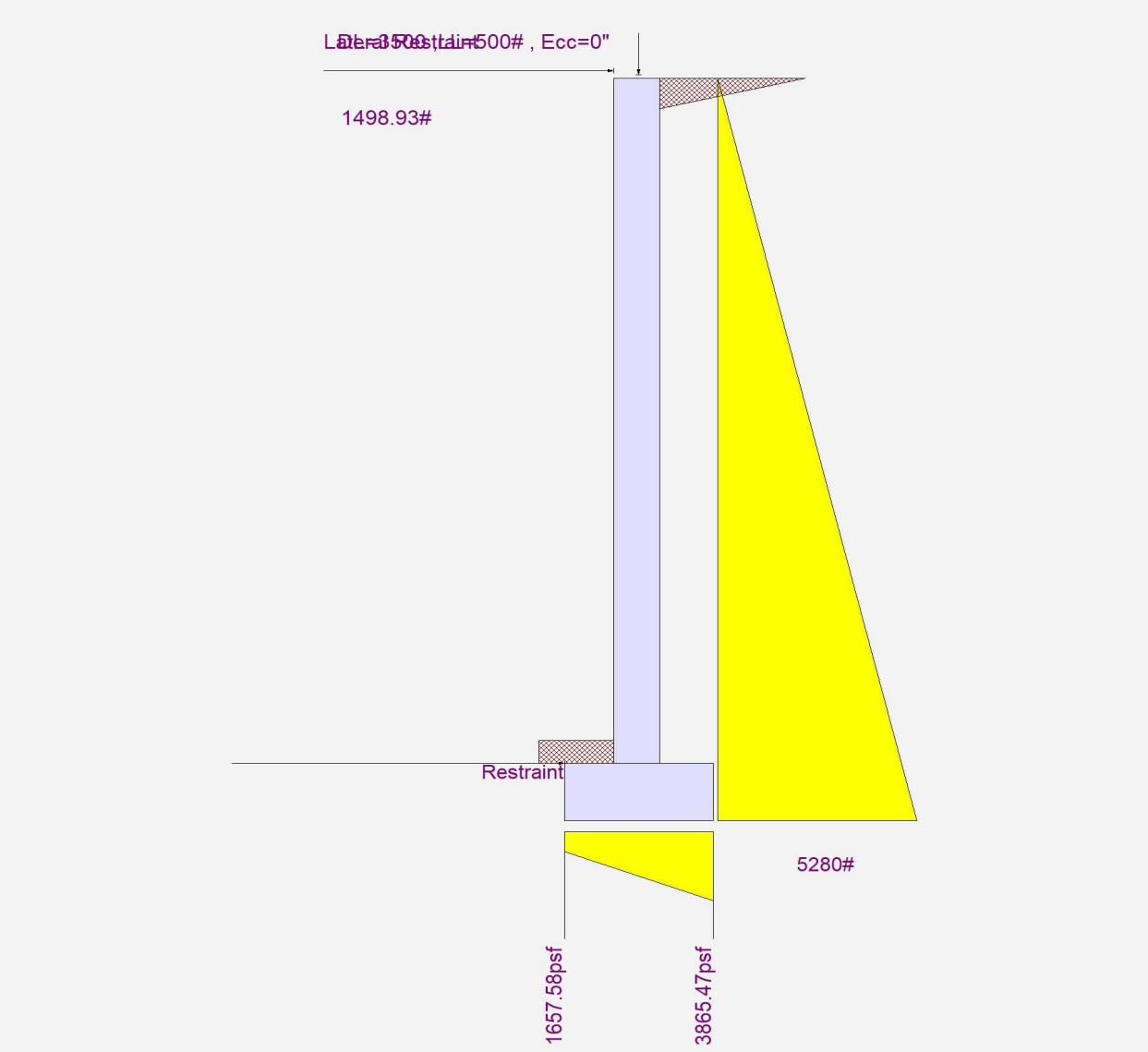
DESCRIPTION: Basement Retaining Walls (w/o Column Loads, w/ Typical Uniform Wall Loads)



AREA B BASEMENT RETAINING WALL

Restrained Retaining Wall

DESCRIPTION: Basement Retaining Walls (w/o Column Loads, w/ Typical Uniform Wall Loads)



Project Title:
Engineer:
Project ID:
Project Descr:

AREA B - MAX COLUMN LOAD ON RETAINING LOAD

General Footing

Project File: ce foundation design - basement.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: MAX Perimeter Column on Retaining Wall (add Retaining Pressures to values)

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Material Properties

f'c : Concrete 28 day strength	=	4.0	ksi
fy : Rebar Yield	=	60.0	ksi
Ec : Concrete Elastic Modulus	=	3,122.0	ksi
Concrete Density	=	145.0	pcf
φ Values Flexure	=	0.90	
Shear	=	0.750	

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.0 : 1
Min. Sliding Safety Factor	=	1.0 : 1
Add Ftg Wt for Soil Pressure	:	Yes
Use ftg wt for stability, moments & shears	:	Yes
Add Pedestal Wt for Soil Pressure	:	Yes
Use Pedestal wt for stability, mom & shear	:	Yes

Soil Design Values

Allowable Soil Bearing	=	6.0	ksf
Soil Density	=	110.0	pcf
Increase Bearing By Footing Weight	=	Yes	
Soil Passive Resistance (for Sliding)	=	250.0	pcf
Soil/Concrete Friction Coeff.	=	0.70	

Increases based on footing Depth

Footing base depth below soil surface	=	7.50	ft
Allow press. increase per foot of depth	=		ksf
when footing base is below	=		ft

Increases based on footing plan dimension

Allowable pressure increase per foot of depth	=	ksf
when max. length or width is greater than	=	ft

Dimensions

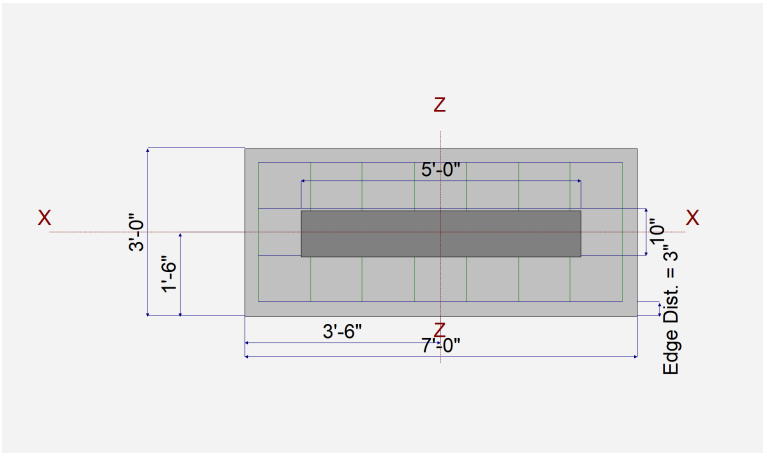
Width parallel to X-X Axis	=	7.0 ft
Length parallel to Z-Z Axis	=	3.0 ft
Footing Thickness	=	15.0 in

Pedestal dimensions...

px : parallel to X-X Axis	=	60.0 in
pz : parallel to Z-Z Axis	=	10.0 in
Height	=	180.0 in

Rebar Centerline to Edge of Concrete...

at Bottom of footing	=	3.0 in



Reinforcing

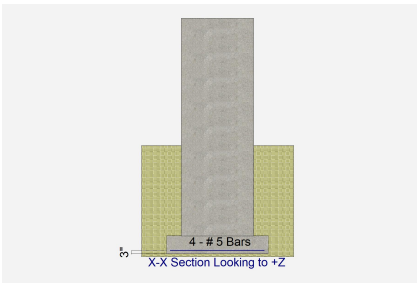
Bars parallel to X-X Axis			
Number of Bars	=		4.0
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis			
Number of Bars	=		8.0
Reinforcing Bar Size	=	#	5

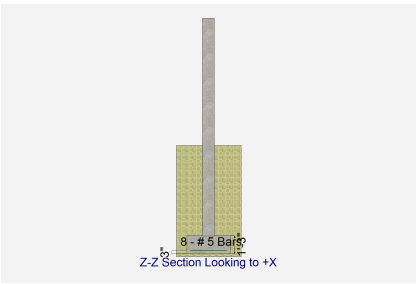
Bandwidth Distribution Check (ACI 15.4.4.2)

Direction Requiring Closer Separation

Bars along Z-Z Axis

# Bars required within zone	60.0 %
# Bars required on each side of zone	40.0 %





Applied Loads

		D	Lr	L	S	W	E	H	
P : Column Load	=	61.90	20.390	26.050					k
OB : Overburden	=								ksf
M-xx	=								k-ft
M-zz	=								k-ft
V-x	=								k
V-z	=								k

Project Title:
Engineer:
Project ID:
Project Descr:

AREA B - MAX COLUMN LOAD ON RETAINING LOAD

General Footing

Project File: ce foundation design - basement.ec6

DESCRIPTION: MAX Perimeter Column on Retaining Wall (add Retaining Pressures to values)

DESIGN SUMMARY

Design OK

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.9335	Soil Bearing	5.770 ksf	6.181 ksf	+D+0.750Lr+0.750L about Z-Z axis
PASS	n/a	Overturning - X-X	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Overturning - Z-Z	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Sliding - X-X	0.0 k	0.0 k	No Sliding
PASS	n/a	Sliding - Z-Z	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift
PASS	0.1462	Z Flexure (+X)	3.180 k-ft/ft	21.755 k-ft/ft	+1.20D+0.50Lr+1.60L
PASS	0.1462	Z Flexure (-X)	3.180 k-ft/ft	21.755 k-ft/ft	+1.20D+0.50Lr+1.60L
PASS	0.1995	X Flexure (+Z)	3.733 k-ft/ft	18.716 k-ft/ft	+1.20D+0.50Lr+1.60L
PASS	0.1995	X Flexure (-Z)	3.733 k-ft/ft	18.716 k-ft/ft	+1.20D+0.50Lr+1.60L
PASS	n/a	1-way Shear (+X)	0.0 psi	94.868 psi	n/a
PASS	0.0	1-way Shear (-X)	0.0 psi	0.0 psi	n/a
PASS	0.04191	1-way Shear (+Z)	3.976 psi	94.868 psi	+1.20D+0.50Lr+1.60L
PASS	0.04191	1-way Shear (-Z)	3.976 psi	94.868 psi	+1.20D+0.50Lr+1.60L
PASS	n/a	2-way Punching	27.642 psi	94.868 psi	+1.20D+0.50Lr+1.60L

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xecc (in)	Zecc (in)	Actual Soil Bearing Stress @ Location Bottom, -Z	Top, +Z	Left, -X	Right, +X	Actual / Allow Ratio
X-X, D Only	6.181	n/a	0.0	4.112	4.112	n/a	n/a	0.665
X-X, +D+L	6.181	n/a	0.0	5.352	5.352	n/a	n/a	0.866
X-X, +D+Lr	6.181	n/a	0.0	5.082	5.082	n/a	n/a	0.822
X-X, +D+0.750Lr+0.750L	6.181	n/a	0.0	5.770	5.770	n/a	n/a	0.934
X-X, +D+0.750L	6.181	n/a	0.0	5.042	5.042	n/a	n/a	0.816
X-X, +0.60D	6.181	n/a	0.0	2.467	2.467	n/a	n/a	0.399
Z-Z, D Only	6.181	0.0	n/a	n/a	n/a	4.112	4.112	0.665
Z-Z, +D+L	6.181	0.0	n/a	n/a	n/a	5.352	5.352	0.866
Z-Z, +D+Lr	6.181	0.0	n/a	n/a	n/a	5.082	5.082	0.822
Z-Z, +D+0.750Lr+0.750L	6.181	0.0	n/a	n/a	n/a	5.770	5.770	0.934
Z-Z, +D+0.750L	6.181	0.0	n/a	n/a	n/a	5.042	5.042	0.816
Z-Z, +0.60D	6.181	0.0	n/a	n/a	n/a	2.467	2.467	0.399

Overturning Stability

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
Footing Has NO Overturning				

All units k

Sliding Stability

Force Application Axis Load Combination...	Sliding Force	Resisting Force	Stability Ratio	Status
Footing Has NO Sliding				

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
X-X, +1.40D	2.664	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.40D	2.664	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+0.50Lr+1.60L	3.733	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+0.50Lr+1.60L	3.733	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+1.60L	3.448	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+1.60L	3.448	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+1.60Lr+0.50L	3.559	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+1.60Lr+0.50L	3.559	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+1.60Lr	3.195	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+1.60Lr	3.195	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+0.50L	2.647	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+0.50L	2.647	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D	2.283	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK

Project Title:
Engineer:
Project ID:
Project Descr:

AREA B - MAX COLUMN LOAD ON RETAINING LOAD

General Footing

Project File: ce foundation design - basement.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: MAX Perimeter Column on Retaining Wall (add Retaining Pressures to values)

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
X-X, +1.20D	2.283	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+0.50Lr+0.50L	2.932	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +1.20D+0.50Lr+0.50L	2.932	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +0.90D	1.713	+Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
X-X, +0.90D	1.713	-Z	Bottom	0.3240	AsMin	0.3543	18.716	OK
Z-Z, +1.40D	2.269	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.40D	2.269	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+0.50Lr+1.60L	3.180	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+0.50Lr+1.60L	3.180	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+1.60L	2.937	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+1.60L	2.937	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+1.60Lr+0.50L	3.031	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+1.60Lr+0.50L	3.031	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+1.60Lr	2.721	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+1.60Lr	2.721	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+0.50L	2.255	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+0.50L	2.255	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D	1.945	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D	1.945	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+0.50Lr+0.50L	2.498	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +1.20D+0.50Lr+0.50L	2.498	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +0.90D	1.459	-X	Bottom	0.3240	AsMin	0.4133	21.755	OK
Z-Z, +0.90D	1.459	+X	Bottom	0.3240	AsMin	0.4133	21.755	OK

One Way Shear

Load Combination...	Vu @ -X	Vu @ +X	Vu @ -Z	Vu @ +Z	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D	0.00 psi	0.00 psi	2.84 psi	2.84 psi	2.84 psi	94.87 psi	0.03	OK
+1.20D+0.50Lr+1.60L	0.00 psi	0.00 psi	3.98 psi	3.98 psi	3.98 psi	94.87 psi	0.04	OK
+1.20D+1.60L	0.00 psi	0.00 psi	3.67 psi	3.67 psi	3.67 psi	94.87 psi	0.04	OK
+1.20D+1.60Lr+0.50L	0.00 psi	0.00 psi	3.79 psi	3.79 psi	3.79 psi	94.87 psi	0.04	OK
+1.20D+1.60Lr	0.00 psi	0.00 psi	3.40 psi	3.40 psi	3.40 psi	94.87 psi	0.04	OK
+1.20D+0.50L	0.00 psi	0.00 psi	2.82 psi	2.82 psi	2.82 psi	94.87 psi	0.03	OK
+1.20D	0.00 psi	0.00 psi	2.43 psi	2.43 psi	2.43 psi	94.87 psi	0.03	OK
+1.20D+0.50Lr+0.50L	0.00 psi	0.00 psi	3.12 psi	3.12 psi	3.12 psi	94.87 psi	0.03	OK
+0.90D	0.00 psi	0.00 psi	1.82 psi	1.82 psi	1.82 psi	94.87 psi	0.02	OK

Two-Way "Punching" Shear

All units k

Load Combination...	Vu	Phi*Vn	Vu / Phi*Vn	Status
+1.40D	19.73 psi	126.49psi	0.156	OK
+1.20D+0.50Lr+1.60L	27.64 psi	126.49psi	0.2185	OK
+1.20D+1.60L	25.53 psi	126.49psi	0.2019	OK
+1.20D+1.60Lr+0.50L	26.35 psi	126.49psi	0.2083	OK
+1.20D+1.60Lr	23.66 psi	126.49psi	0.187	OK
+1.20D+0.50L	19.60 psi	126.49psi	0.155	OK
+1.20D	16.91 psi	126.49psi	0.1337	OK
+1.20D+0.50Lr+0.50L	21.71 psi	126.49psi	0.1717	OK
+0.90D	12.68 psi	126.49psi	0.1003	OK

Project Title:
Engineer:
Project ID:
Project Descr:

AREA B - NORTH EAST FOUNDATION CONC BEAM @ OPENING FOR RETAINING WALL

Concrete Beam

Project File: ce foundation design - basement.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

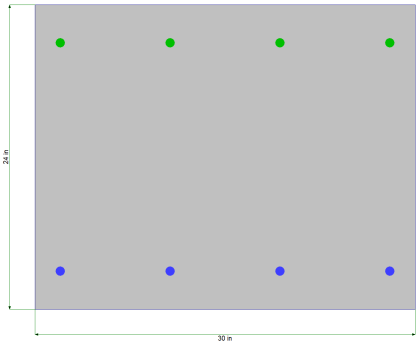
DESCRIPTION: NE Foundation Conc Beam @ Opening for Retaining Wall

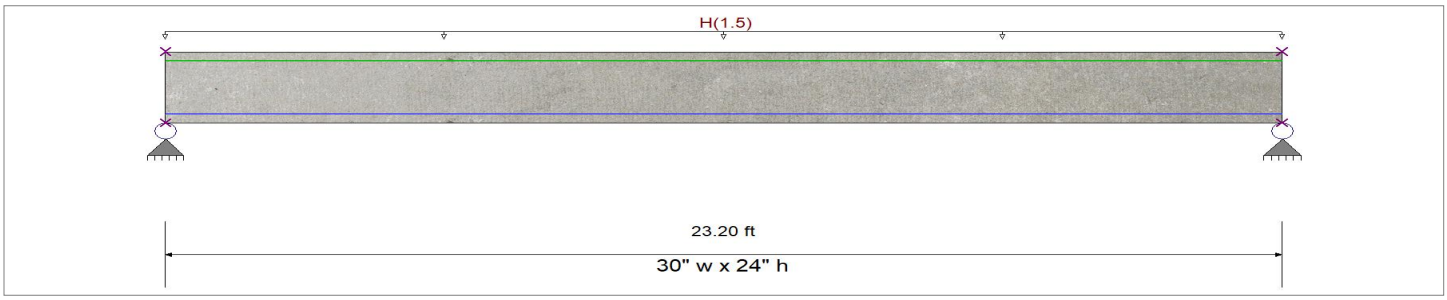
CODE REFERENCES

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

f'c	= 4.0 ksi	ϕ Phi Values	Flexure :	0.90
fr = f'c$^{1/2}$ * 7.50	= 474.342 psi		Shear :	0.750
ψ Density	= 145.0 pcf	β_1	=	0.850
λ LtWt Factor	= 1.0			
Elastic Modulus	= 3,605.0 ksi	Fy - Stirrups		40.0 ksi
fy - Main Rebar	= 60.0 ksi	E - Stirrups	=	29,000.0 ksi
E - Main Rebar	= 29,000.0 ksi	Stirrup Bar Size #		3
		Number of Resisting Legs Per Stirrup	=	2





Cross Section & Reinforcing Details

Rectangular Section, Width = 30.0 in, Height = 24.0 in
Span #1 Reinforcing....
4-#6 at 3.0 in from Bottom, from 0.0 to 23.20 ft in this span
4-#6 at 3.0 in from Top, from 0.0 to 23.20 ft in this span

Load for Span Number 1
Uniform Load : H = 1.50 k/ft, Tributary Width = 1.0 ft, (Lateral Loads)

DESIGN SUMMARY

Check As Min Limits!

BEAM IS DETAILED TO HAVE (4) MORE #6 BAR. THIS MEETS As LIMITS.

Maximum Bending Stress Ratio =	**0.945** : 1	
Section used for this span	**Typical Section**	
Mu : Applied	161.471 k-ft	
Mn * Phi : Allowable	170.887 k-ft	
Location of maximum on span	11.579 ft	
Span # where maximum occurs	Span # 1	

Maximum Deflection

Max Downward Transient Deflection	0.000 in	Ratio =	0	<360.0
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360.0
Max Downward Total Deflection	0.078 in	Ratio =	3548	>=180.0 Span: 1 : H Only
Max Upward Total Deflection	0.000 in	Ratio =	0	<180.0 Span: 1 : H Only

Vertical Reactions

Support notation : Far left is #1

Load Combination	Support 1	Support 2
Overall MAXimum	17.400	17.400
Overall MINimum	10.440	10.440
H Only	17.400	17.400
+0.60H	10.440	10.440

AREA B - NORTH EAST FOUNDATION CONC BEAM @ OPENING FOR RETAINING WALL

Concrete Beam

DESCRIPTION: NE Foundation Conc Beam @ Opening for Retaining Wall

Detailed Shear Information

Load Combination	Span Number	Distance (ft)	'd' (in)	Vu Actual	(k) Design	Mu (k-ft)	d*Vu/Mu	Phi*Vc (k)	Comment	Phi*Vs (k)	Phi*Vn (k)	Spacing (in) Req'd	Suggest
+1.60H	1	0.00	21.00	27.84	27.84	0.00	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	0.25	21.00	27.23	27.23	6.98	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	0.51	21.00	26.62	26.62	13.81	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	0.76	21.00	26.01	26.01	20.48	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	1.01	21.00	25.41	25.41	27.00	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	1.27	21.00	24.80	24.80	33.37	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	1.52	21.00	24.19	24.19	39.58	1.00	60.08	Vu < PhiVc/2	ɔt Reqd 9.6	60.1	0.0	0.0
+1.60H	1	1.77	21.00	23.58	23.58	45.63	0.90	59.76	Vu < PhiVc/2	ɔt Reqd 9.6	59.8	0.0	0.0
+1.60H	1	2.03	21.00	22.97	22.97	51.53	0.78	59.35	Vu < PhiVc/2	ɔt Reqd 9.6	59.4	0.0	0.0
+1.60H	1	2.28	21.00	22.36	22.36	57.28	0.68	59.03	Vu < PhiVc/2	ɔt Reqd 9.6	59.0	0.0	0.0
+1.60H	1	2.54	21.00	21.75	21.75	62.87	0.61	58.78	Vu < PhiVc/2	ɔt Reqd 9.6	58.8	0.0	0.0
+1.60H	1	2.79	21.00	21.15	21.15	68.31	0.54	58.57	Vu < PhiVc/2	ɔt Reqd 9.6	58.6	0.0	0.0
+1.60H	1	3.04	21.00	20.54	20.54	73.60	0.49	58.39	Vu < PhiVc/2	ɔt Reqd 9.6	58.4	0.0	0.0
+1.60H	1	3.30	21.00	19.93	19.93	78.73	0.44	58.24	Vu < PhiVc/2	ɔt Reqd 9.6	58.2	0.0	0.0
+1.60H	1	3.55	21.00	19.32	19.32	83.70	0.40	58.11	Vu < PhiVc/2	ɔt Reqd 9.6	58.1	0.0	0.0
+1.60H	1	3.80	21.00	18.71	18.71	88.53	0.37	58.00	Vu < PhiVc/2	ɔt Reqd 9.6	58.0	0.0	0.0
+1.60H	1	4.06	21.00	18.10	18.10	93.19	0.34	57.90	Vu < PhiVc/2	ɔt Reqd 9.6	57.9	0.0	0.0
+1.60H	1	4.31	21.00	17.50	17.50	97.71	0.31	57.81	Vu < PhiVc/2	ɔt Reqd 9.6	57.8	0.0	0.0
+1.60H	1	4.56	21.00	16.89	16.89	102.06	0.29	57.73	Vu < PhiVc/2	ɔt Reqd 9.6	57.7	0.0	0.0
+1.60H	1	4.82	21.00	16.28	16.28	106.27	0.27	57.66	Vu < PhiVc/2	ɔt Reqd 9.6	57.7	0.0	0.0
+1.60H	1	5.07	21.00	15.67	15.67	110.32	0.25	57.60	Vu < PhiVc/2	ɔt Reqd 9.6	57.6	0.0	0.0
+1.60H	1	5.32	21.00	15.06	15.06	114.22	0.23	57.54	Vu < PhiVc/2	ɔt Reqd 9.6	57.5	0.0	0.0
+1.60H	1	5.58	21.00	14.45	14.45	117.96	0.21	57.49	Vu < PhiVc/2	ɔt Reqd 9.6	57.5	0.0	0.0
+1.60H	1	5.83	21.00	13.84	13.84	121.54	0.20	57.44	Vu < PhiVc/2	ɔt Reqd 9.6	57.4	0.0	0.0
+1.60H	1	6.09	21.00	13.24	13.24	124.98	0.19	57.39	Vu < PhiVc/2	ɔt Reqd 9.6	57.4	0.0	0.0
+1.60H	1	6.34	21.00	12.63	12.63	128.26	0.17	57.35	Vu < PhiVc/2	ɔt Reqd 9.6	57.3	0.0	0.0
+1.60H	1	6.59	21.00	12.02	12.02	131.38	0.16	57.31	Vu < PhiVc/2	ɔt Reqd 9.6	57.3	0.0	0.0
+1.60H	1	6.85	21.00	11.41	11.41	134.35	0.15	57.27	Vu < PhiVc/2	ɔt Reqd 9.6	57.3	0.0	0.0
+1.60H	1	7.10	21.00	10.80	10.80	137.17	0.14	57.23	Vu < PhiVc/2	ɔt Reqd 9.6	57.2	0.0	0.0
+1.60H	1	7.35	21.00	10.19	10.19	139.83	0.13	57.20	Vu < PhiVc/2	ɔt Reqd 9.6	57.2	0.0	0.0
+1.60H	1	7.61	21.00	9.58	9.58	142.33	0.12	57.17	Vu < PhiVc/2	ɔt Reqd 9.6	57.2	0.0	0.0
+1.60H	1	7.86	21.00	8.98	8.98	144.69	0.11	57.14	Vu < PhiVc/2	ɔt Reqd 9.6	57.1	0.0	0.0
+1.60H	1	8.11	21.00	8.37	8.37	146.89	0.10	57.11	Vu < PhiVc/2	ɔt Reqd 9.6	57.1	0.0	0.0
+1.60H	1	8.37	21.00	7.76	7.76	148.93	0.09	57.08	Vu < PhiVc/2	ɔt Reqd 9.6	57.1	0.0	0.0
+1.60H	1	8.62	21.00	7.15	7.15	150.82	0.08	57.05	Vu < PhiVc/2	ɔt Reqd 9.6	57.1	0.0	0.0
+1.60H	1	8.87	21.00	6.54	6.54	152.56	0.08	57.03	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0
+1.60H	1	9.13	21.00	5.93	5.93	154.14	0.07	57.00	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0
+1.60H	1	9.38	21.00	5.32	5.32	155.57	0.06	56.98	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0
+1.60H	1	9.63	21.00	4.72	4.72	156.84	0.05	56.95	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0
+1.60H	1	9.89	21.00	4.11	4.11	157.96	0.05	56.93	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	10.14	21.00	3.50	3.50	158.92	0.04	56.91	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	10.40	21.00	2.89	2.89	159.73	0.03	56.88	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	10.65	21.00	2.28	2.28	160.39	0.02	56.86	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	10.90	21.00	1.67	1.67	160.89	0.02	56.84	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	11.16	21.00	1.06	1.06	161.24	0.01	56.82	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	11.41	21.00	0.46	0.46	161.43	0.00	56.80	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	11.66	21.00	-0.15	0.15	161.47	0.00	56.78	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	11.92	21.00	-0.76	0.76	161.35	0.01	56.81	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	12.17	21.00	-1.37	1.37	161.08	0.01	56.83	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	12.42	21.00	-1.98	1.98	160.66	0.02	56.85	Vu < PhiVc/2	ɔt Reqd 9.6	56.8	0.0	0.0
+1.60H	1	12.68	21.00	-2.59	2.59	160.08	0.03	56.87	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	12.93	21.00	-3.19	3.19	159.35	0.04	56.89	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	13.18	21.00	-3.80	3.80	158.46	0.04	56.92	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	13.44	21.00	-4.41	4.41	157.42	0.05	56.94	Vu < PhiVc/2	ɔt Reqd 9.6	56.9	0.0	0.0
+1.60H	1	13.69	21.00	-5.02	5.02	156.22	0.06	56.96	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0
+1.60H	1	13.95	21.00	-5.63	5.63	154.87	0.06	56.99	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0
+1.60H	1	14.20	21.00	-6.24	6.24	153.37	0.07	57.01	Vu < PhiVc/2	ɔt Reqd 9.6	57.0	0.0	0.0

Project Title:
Engineer:
Project ID:
Project Descr:

AREA B - NORTH EAST FOUNDATION CONC BEAM @ OPENING FOR RETAINING WALL

Concrete Beam

Project File: ce foundation design - basement.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: NE Foundation Conc Beam @ Opening for Retaining Wall

Detailed Shear Information

Load Combination	Span Number	Distance (ft)	'd' (in)	Vu Actual	(k) Design	Mu (k-ft)	d*Vu/Mu	Phi*Vc (k)	Comment	Phi*Vs (k)	Phi*Vn (k)	Spacing (in) Req'd	Suggest
+1.60H	1	14.45	21.00	-6.85	6.85	151.71	0.08	57.04	Vu < PhiVc/2	ot Reqd 9.6	57.0	0.0	0.0
+1.60H	1	14.71	21.00	-7.45	7.45	149.90	0.09	57.07	Vu < PhiVc/2	ot Reqd 9.6	57.1	0.0	0.0
+1.60H	1	14.96	21.00	-8.06	8.06	147.93	0.10	57.09	Vu < PhiVc/2	ot Reqd 9.6	57.1	0.0	0.0
+1.60H	1	15.21	21.00	-8.67	8.67	145.81	0.10	57.12	Vu < PhiVc/2	ot Reqd 9.6	57.1	0.0	0.0
+1.60H	1	15.47	21.00	-9.28	9.28	143.53	0.11	57.15	Vu < PhiVc/2	ot Reqd 9.6	57.2	0.0	0.0
+1.60H	1	15.72	21.00	-9.89	9.89	141.10	0.12	57.18	Vu < PhiVc/2	ot Reqd 9.6	57.2	0.0	0.0
+1.60H	1	15.97	21.00	-10.50	10.50	138.52	0.13	57.22	Vu < PhiVc/2	ot Reqd 9.6	57.2	0.0	0.0
+1.60H	1	16.23	21.00	-11.11	11.11	135.78	0.14	57.25	Vu < PhiVc/2	ot Reqd 9.6	57.3	0.0	0.0
+1.60H	1	16.48	21.00	-11.71	11.71	132.88	0.15	57.29	Vu < PhiVc/2	ot Reqd 9.6	57.3	0.0	0.0
+1.60H	1	16.73	21.00	-12.32	12.32	129.84	0.17	57.33	Vu < PhiVc/2	ot Reqd 9.6	57.3	0.0	0.0
+1.60H	1	16.99	21.00	-12.93	12.93	126.64	0.18	57.37	Vu < PhiVc/2	ot Reqd 9.6	57.4	0.0	0.0
+1.60H	1	17.24	21.00	-13.54	13.54	123.28	0.19	57.41	Vu < PhiVc/2	ot Reqd 9.6	57.4	0.0	0.0
+1.60H	1	17.50	21.00	-14.15	14.15	119.77	0.21	57.46	Vu < PhiVc/2	ot Reqd 9.6	57.5	0.0	0.0
+1.60H	1	17.75	21.00	-14.76	14.76	116.11	0.22	57.51	Vu < PhiVc/2	ot Reqd 9.6	57.5	0.0	0.0
+1.60H	1	18.00	21.00	-15.37	15.37	112.29	0.24	57.57	Vu < PhiVc/2	ot Reqd 9.6	57.6	0.0	0.0
+1.60H	1	18.26	21.00	-15.97	15.97	108.31	0.26	57.63	Vu < PhiVc/2	ot Reqd 9.6	57.6	0.0	0.0
+1.60H	1	18.51	21.00	-16.58	16.58	104.19	0.28	57.70	Vu < PhiVc/2	ot Reqd 9.6	57.7	0.0	0.0
+1.60H	1	18.76	21.00	-17.19	17.19	99.90	0.30	57.77	Vu < PhiVc/2	ot Reqd 9.6	57.8	0.0	0.0
+1.60H	1	19.02	21.00	-17.80	17.80	95.47	0.33	57.86	Vu < PhiVc/2	ot Reqd 9.6	57.9	0.0	0.0
+1.60H	1	19.27	21.00	-18.41	18.41	90.88	0.35	57.95	Vu < PhiVc/2	ot Reqd 9.6	57.9	0.0	0.0
+1.60H	1	19.52	21.00	-19.02	19.02	86.13	0.39	58.05	Vu < PhiVc/2	ot Reqd 9.6	58.1	0.0	0.0
+1.60H	1	19.78	21.00	-19.62	19.62	81.24	0.42	58.17	Vu < PhiVc/2	ot Reqd 9.6	58.2	0.0	0.0
+1.60H	1	20.03	21.00	-20.23	20.23	76.18	0.46	58.31	Vu < PhiVc/2	ot Reqd 9.6	58.3	0.0	0.0
+1.60H	1	20.28	21.00	-20.84	20.84	70.97	0.51	58.47	Vu < PhiVc/2	ot Reqd 9.6	58.5	0.0	0.0
+1.60H	1	20.54	21.00	-21.45	21.45	65.61	0.57	58.67	Vu < PhiVc/2	ot Reqd 9.6	58.7	0.0	0.0
+1.60H	1	20.79	21.00	-22.06	22.06	60.10	0.64	58.90	Vu < PhiVc/2	ot Reqd 9.6	58.9	0.0	0.0
+1.60H	1	21.04	21.00	-22.67	22.67	54.43	0.73	59.18	Vu < PhiVc/2	ot Reqd 9.6	59.2	0.0	0.0
+1.60H	1	21.30	21.00	-23.28	23.28	48.60	0.84	59.54	Vu < PhiVc/2	ot Reqd 9.6	59.5	0.0	0.0
+1.60H	1	21.55	21.00	-23.88	23.88	42.62	0.98	60.01	Vu < PhiVc/2	ot Reqd 9.6	60.0	0.0	0.0
+1.60H	1	21.81	21.00	-24.49	24.49	36.49	1.00	60.08	Vu < PhiVc/2	ot Reqd 9.6	60.1	0.0	0.0
+1.60H	1	22.06	21.00	-25.10	25.10	30.20	1.00	60.08	Vu < PhiVc/2	ot Reqd 9.6	60.1	0.0	0.0
+1.60H	1	22.31	21.00	-25.71	25.71	23.76	1.00	60.08	Vu < PhiVc/2	ot Reqd 9.6	60.1	0.0	0.0
+1.60H	1	22.57	21.00	-26.32	26.32	17.17	1.00	60.08	Vu < PhiVc/2	ot Reqd 9.6	60.1	0.0	0.0
+1.60H	1	22.82	21.00	-26.93	26.93	10.41	1.00	60.08	Vu < PhiVc/2	ot Reqd 9.6	60.1	0.0	0.0
+1.60H	1	23.07	21.00	-27.54	27.54	3.51	1.00	60.08	Vu < PhiVc/2	ot Reqd 9.6	60.1	0.0	0.0

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment	Span #	Location (ft) along Beam	Bending Stress Results (k-ft) Mu : Max	Phi*Mnx	Stress Ratio	
MAXimum BENDING Envelope						
Span # 1	1	23.200	161.47	170.89	0.94	OK
+1.60H						
Span # 1	1	23.200	161.47	170.89	0.94	OK
+0.90H						
Span # 1	1	23.200	90.83	170.89	0.53	OK

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl (in)	Location in Span (ft	Load Combination	Max. "+" Defl (in)	Location in Span (ft
H Only	1	0.0785	11.600		0.0000	0.000

Project Title:
Engineer:
Project ID:
Project Descr:

TYPICAL CONCRETE WALL FOOTING

Wall Footing

Project File: ce foundation design - basement.ec6

DESCRIPTION: Typical Wall Footing (supporting 8" stud + 4" brick, 42'-0" tall)

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Material Properties

f'c : Concrete 28 day strength	=	4.0 ksi
fy : Rebar Yield	=	60.0 ksi
Ec : Concrete Elastic Modulus	=	3,122.0 ksi
Concrete Density	=	145.0 pcf
φ Values Flexure	=	0.90
Shear	=	0.750

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.0 : 1
Min. Sliding Safety Factor	=	1.0 : 1
AutoCalc Footing Weight as DL :		Yes

Soil Design Values

Allowable Soil Bearing	=	3.0 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	250.0 pcf
Soil/Concrete Friction Coeff.	=	0.550

Increases based on footing Depth

Reference Depth below Surface	=	ft
Allow. Pressure Increase per foot of depth	=	ksf
when base footing is below	=	ft

Increases based on footing Width

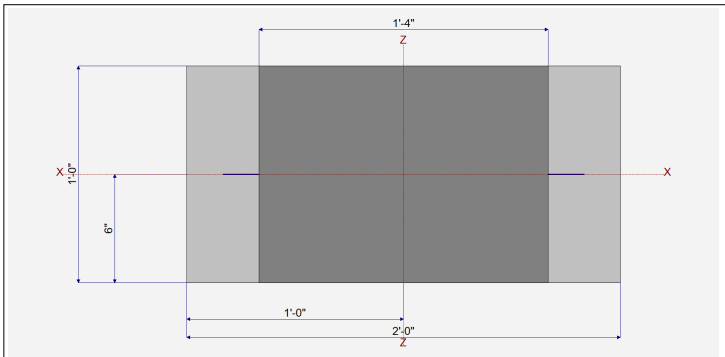
Allow. Pressure Increase per foot of width	=	ksf
when footing is wider than	=	ft

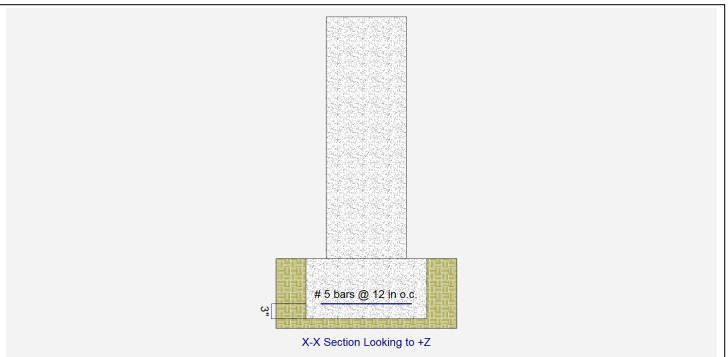
Adjusted Allowable Bearing Pressure = 3.0 ksf

Dimensions

Footing Width	=	2.0 ft	Footing Thickness	=	12.0 in	Bars along X-X Axis	
Wall Thickness	=	16.0 in	Rebar Centerline to Edge of Concrete...			Bar spacing	= 12.00
Wall center offset from center of footing	=	0 in	at Bottom of footing	=	3.0 in	Reinforcing Bar Size	= # 5

Reinforcing





Applied Loads

		D	Lr	L	S	W	E	H	
P : Column Load	=	2.50							k
OB : Overburden	=								ksf
V-x	=					0.3450			k
M-zz	=								k-ft
Vx applied	=	48.0 in above top of footing							

Project Title:
Engineer:
Project ID:
Project Descr:

TYPICAL CONCRETE WALL FOOTING

Wall Footing

Project File: ce foundation design - basement.ec6

DESCRIPTION: Typical Wall Footing (supporting 8" stud + 4" brick, 42'-0" tall)

DESIGN SUMMARY

Design OK

	Factor of Safety	Item	Applied	Capacity	Governing Load Combination
PASS	1.617	Overturning - Z-Z	1.035 k-ft	1.674 k-ft	+0.60D+0.60W
PASS	4.448	Sliding - X-X	0.2070 k	0.9207 k	+0.60D+0.60W
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift

	Utilization Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.9787	Soil Bearing	2.936 ksf	3.0 ksf	+D+0.60W
PASS	0.02137	Z Flexure (+X)	0.2615 k-ft	12.237 k-ft	+0.90D+W
PASS	0.005691	Z Flexure (-X)	0.06964 k-ft	12.237 k-ft	+0.90D
PASS	n/a	1-way Shear (+X)	0.0 psi	94.868 psi	n/a
PASS	0.0	1-way Shear (-X)	0.0 psi	0.0 psi	n/a

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xecc	Actual Soil Bearing Stress -X	Actual Soil Bearing Stress +X	Actual / Allowable Ratio
, D Only	3.0 ksf	0.0 in	1.395 ksf	1.395 ksf	0.465
, +D+0.60W	3.0 ksf	4.452 in	0.0 ksf	2.936 ksf	0.979
, +D+0.450W	3.0 ksf	3.339 in	0.2462 ksf	2.544 ksf	0.848
, +0.60D+0.60W	3.0 ksf	7.419 in	0.0 ksf	2.890 ksf	0.963
, +0.60D	3.0 ksf	0.0 in	0.8370 ksf	0.8370 ksf	0.279

Overturning Stability

Units : k-ft

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
, D Only	None	0.0 k-ft	Infinity	OK
, +D+0.60W	1.035 k-ft	2.790 k-ft	2.696	OK
, +D+0.450W	0.7763 k-ft	2.790 k-ft	3.594	OK
, +0.60D+0.60W	1.035 k-ft	1.674 k-ft	1.617	OK
, +0.60D	None	0.0 k-ft	Infinity	OK

Sliding Stability

Force Application Axis Load Combination...	Sliding Force	Resisting Force	Sliding SafetyRatio	Status
, D Only	0.0 k	1.535 k	No Sliding	OK
, +D+0.60W	0.2070 k	1.535 k	7.413	OK
, +D+0.450W	0.1553 k	1.535 k	9.884	OK
, +0.60D+0.60W	0.2070 k	0.9207 k	4.448	OK
, +0.60D	0.0 k	0.9207 k	No Sliding	OK

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
, +1.40D	0.1083	-X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.40D	0.1083	+X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.20D	0.09285	-X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.20D	0.09285	+X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.20D+0.50W	0.02907	-X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.20D+0.50W	0.1566	+X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.20D+W	0	-X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +1.20D+W	0.2359	+X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +0.90D+W	0	-X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +0.90D+W	0.2615	+X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +0.90D	0.06964	-X	Bottom	0.2592	Min Temp %	0.31	12.237	OK
, +0.90D	0.06964	+X	Bottom	0.2592	Min Temp %	0.31	12.237	OK

One Way Shear

Units : k

Load Combination...	Vu @ -X	Vu @ +X	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D	0 psi	0 psi	0 psi	94.868 psi	0	OK
+1.20D	0 psi	0 psi	0 psi	94.868 psi	0	OK
+1.20D+0.50W	0 psi	0 psi	0 psi	94.868 psi	0	OK
+1.20D+W	0 psi	0 psi	0 psi	94.868 psi	0	OK

TYPICAL CONCRETE WALL FOOTING

Wall Footing

DESCRIPTION: Typical Wall Footing (supporting 8" stud + 4" brick, 42'-0" tall)

One Way Shear Units : k

Load Combination...	Vu @ -X	Vu @ +X	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+0.90D+W	0 psi	0 psi	0 psi	94.868 psi	0	OK
+0.90D	0 psi	0 psi	0 psi	94.868 psi	0	OK

Twin Falls Judicial – Twin Falls, ID

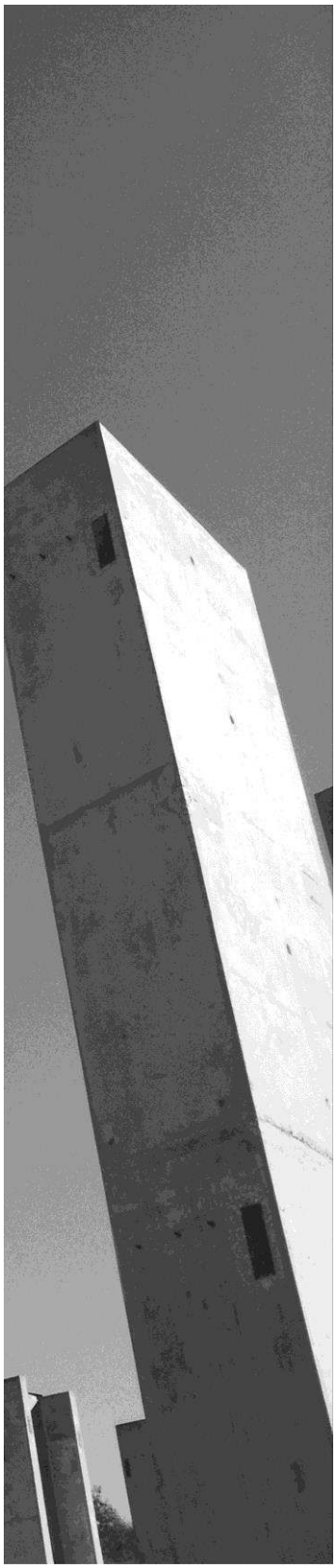
Permit Submittal Structural Calculations

KPFF JOB # 10212200038

LATERAL DESIGN

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

VERCO DECK DIAPHRAGM DESIGN



KPFF JOB # 10212200038

Deck-Slab Diaphragm Shear Strength

20 ga W3-36 FormLok® Grade 50 Composite Deck

5.5 in. total slab depth, f'c = 4000 psi, 150 pcf NWC

Single Mat of Rebar #3 x #3 - 12 x 12 in o.c.

3/4" Steel Headed Stud Anchor at Chords & Collectors for Shear Transfer

Perpendicular Connection Pattern[1]			1 per rib	
Parallel Connection Attachment (maximum)	1	row at	15	in. o.c.

Minimum Connections to Supporting Members[2]

Minimum connections to all supports may be any of the following: arc spot welds, fillet welds, PAF's, screws, Shearflex® anchors, welded studs or other mechanical connections[3].

Perpendicular Connection Pattern[1]		1 per rib	
Parallel Perimeter Connections for deck spans greater than 5 ft		36	in. o.c.

Governing Deck-Slab Strength and Stiffness

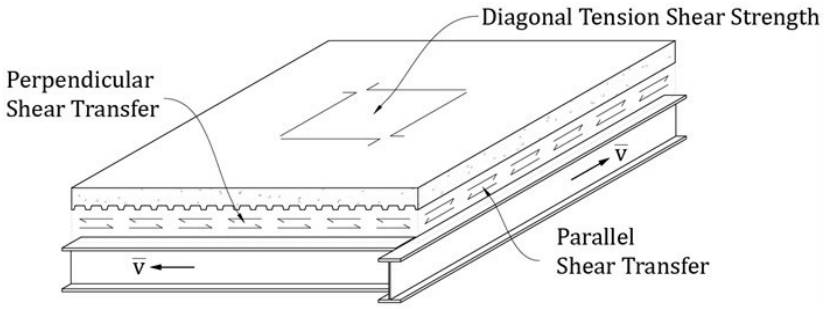
Available Diaphragm Design Strength	**Va = Vu =**	**7796**	**plf**
Controlled by Deck-Slab Diagonal Shear			
Deck-Slab Diaphragm Design Shear Stiffness	G' =	1278	kip/in

Deck-Slab Shear Strength

Reinforced Concrete Slab Design Shear Strength	Vu =	7796	plf

Chords & Collector Shear Transfer Strength

Chord & Collectors Design Shear Transfer Strength	ΦQN =	9481	plf



Notes:

1. For UL Fire rated assemblies, refer to UL Design Number for support and sidelap connection requirements.
2. Minimum connections to supporting members do not contribute to the diaphragm shear strength.
3. Support welds at interlocking sidelaps may be 3/8" x 1 1/4" arc seam welds in lieu of arc spot welds.

5. Sidelap connections between steel deck panels may be VSC2, button punch, screw, 1-1/2 in. arc seam weld or 1-1/2 in. top arc seam weld. The maximum sidelap connection spacing shall not exceed 36 in. o.c.

Calculations generated Per 2018 IBC & IAPMO ER-2018 using calculator V1.1 Date: 10/6/2022

18 ga PLB™-36 Grade 50 Roof Deck

Seismic Diaphragm Shear

For Both Ends Lapped Deck

AREA A - ROOF

3/4" Visible Dia. Arc Spot Weld Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections

A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.)
2 in. Minimum Deck End Bearing Length

Note: Support welds at interlocking sidelaps may be 3/8" x 1 1/4" arc seam welds in lieu of arc spot welds.

LRFD Design Seismic Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	2640	2640	2640	2640	2640	2264	1834	1515	1273
6	2640	2640	2640	2640	2640	2264	1834	1515	1273
8	2640	2640	2640	2640	2640	2264	1834	1515	1273
12	2459	2388	2338	2300	2271	2248	1834	1515	1273
18	2196	2167	1920	1938	1952	1794	1820	1515	1273
24	1855	1895	1654	1715	1544	1607	1476	1515	1273
36	1855	1565	1345	1461	1305	1177	1281	1178	1089

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	4	4	4	4	4	4	4	4	4
6	6	6	6	6	6	6	6	6	6
8	8	8	8	8	8	8	8	8	8
12	12	12	12	12	12	12	12	12	12
18	16	15	18	17	16	18	17	18	18
24	16	20	18	21	24	22	24	22	24
36	16	20	24	21	24	27	24	26	29

Seismic or Wind Diaphragm Shear Stiffness, G' (kip/in.) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	321	320	320	320	319	319	319	319	319
6	298	296	295	295	294	294	293	293	293
8	278	281	275	277	273	275	272	274	271
12	249	246	244	242	241	240	239	238	237
18	228	228	211	214	216	205	208	210	202
24	199	206	189	196	183	190	179	185	177
36	199	177	160	174	161	150	162	153	145

18 ga PLB™-36 Grade 50 Roof Deck

Wind Diaphragm Shear

For Both Ends Lapped Deck

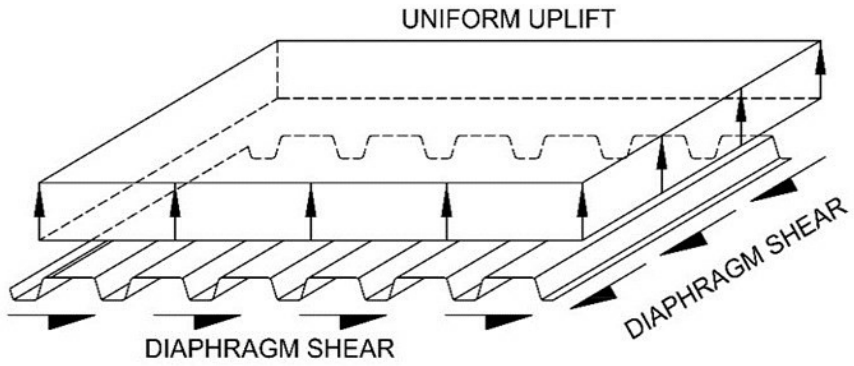
3/4" Visible Dia. Arc Spot Weld Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections
A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.)
2 in. Minimum Deck End Bearing Length
Note: Support welds at interlocking sidelaps may be 3/8" x 1 1/4" arc seam welds in lieu of arc spot welds.

LRFD Design Wind Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	3600	3600	3600	3600	2865	2264	1834	1515	1273
6	3600	3600	3600	3600	2865	2264	1834	1515	1273
8	3600	3600	3600	3600	2865	2264	1834	1515	1273
12	3353	3257	3188	3137	2865	2264	1834	1515	1273
18	2995	2955	2619	2643	2662	2264	1834	1515	1273
24	2530	2584	2255	2339	2106	2191	1834	1515	1273
36	2530	2134	1834	1992	1779	1605	1746	1515	1273

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	4	4	4	4	4	4	4	4	4
6	6	6	6	6	6	6	6	6	6
8	8	8	8	8	8	8	8	8	8
12	12	12	12	12	12	12	12	12	12
18	16	15	18	17	16	18	18	18	18
24	16	20	18	21	24	22	24	24	24
36	16	20	24	21	24	27	24	26	29



Tables generated using V1.0.3 of calculator based on AISI S310-16. Date: 10/16/2022

20 ga PLB™-36 Grade 50 Roof Deck

Seismic Diaphragm Shear

For Both Ends Lapped Deck

AREA B - ROOF

Hilti X-HSN24 PAF Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections

A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.) ≤ 0.375
2 in. Minimum Deck End Bearing Length

LRFD Design Seismic Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	1260	1260	1260	1260	1260	1260	1198	990	832
6	1260	1260	1260	1260	1260	1260	1198	990	832
8	1260	1260	1260	1260	1260	1260	1198	990	832
12	1260	1260	1260	1260	1260	1260	1198	990	832
18	1260	1260	1181	1200	1214	1144	1162	990	832
24	1105	1152	1037	1086	1000	1045	977	990	832
36	1105	962	845	938	852	779	857	797	744

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	6	6	6	6	6	6	6	6	6
6	8	8	8	8	8	8	8	8	8
8	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	13	17	17
18	12	12	14	14	14	14	13	17	18
24	16	15	14	14	16	15	15	17	18
36	16	15	18	17	19	22	17	19	21

Seismic or Wind Diaphragm Shear Stiffness, G' (kip/in.) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	230	229	228	228	227	227	227	227	227
6	210	209	207	207	206	206	205	205	205
8	195	196	191	193	189	191	188	189	187
12	173	169	167	165	164	163	162	161	161
18	158	157	143	145	146	137	139	141	134
24	138	141	128	132	123	127	119	123	117
36	138	122	109	117	108	100	107	101	95

20 ga PLB™-36 Grade 50 Roof Deck

Wind Diaphragm Shear

For Both Ends Lapped Deck

Hilti X-HSN24 PAF Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections

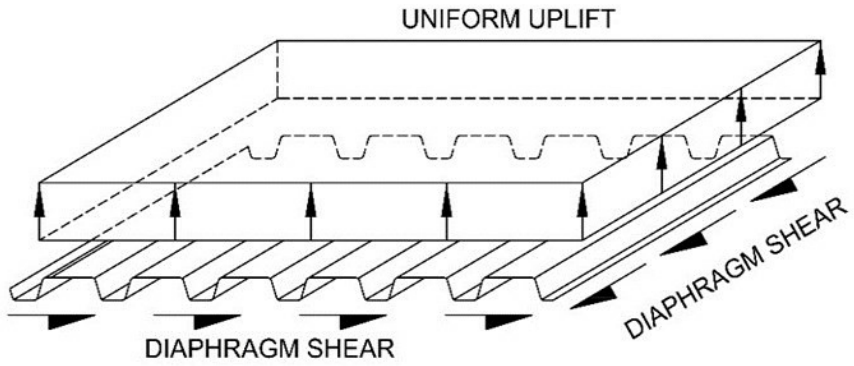
A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.) ≤ 0.375
2 in. Minimum Deck End Bearing Length

LRFD Design Wind Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	1440	1440	1440	1440	1440	1440	1198	990	832
6	1440	1440	1440	1440	1440	1440	1198	990	832
8	1440	1440	1440	1440	1440	1440	1198	990	832
12	1440	1440	1440	1440	1440	1440	1198	990	832
18	1440	1440	1349	1372	1387	1307	1198	990	832
24	1263	1317	1186	1241	1143	1194	1116	990	832
36	1263	1099	966	1072	974	890	979	911	832

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

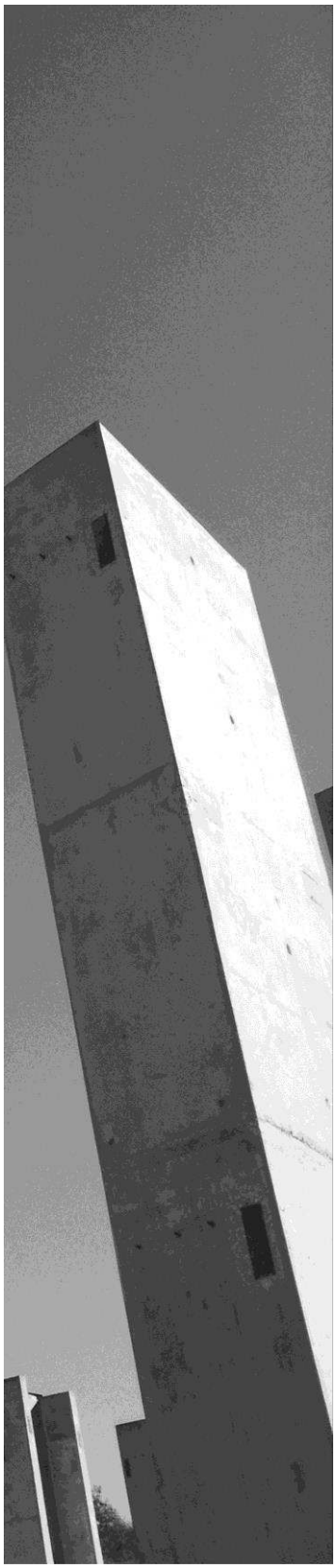
Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	6	6	6	6	6	6	6	6	6
6	8	8	8	8	8	8	8	8	8
8	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	15	17	17
18	12	12	14	14	14	14	15	19	21
24	16	15	14	14	16	15	15	19	21
36	16	15	18	17	19	22	17	19	21



Tables generated using V1.0.3 of calculator based on AISI S310-16. Date: 10/16/2022

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

CHORD AND COLLECTOR DESIGN



KPFF JOB # 10212200038

LEVEL 2 - COLLECTOR DESIGN
EQ = 150KIPS x 2.5 x 1.43 (Fpx) = 536 KIP

Shear is higher than final value, Design ok

RAM SCALE FACTOR = 2.5(1.43) = 3.575x

1+3+5+7 = 540K > 536K OKAY

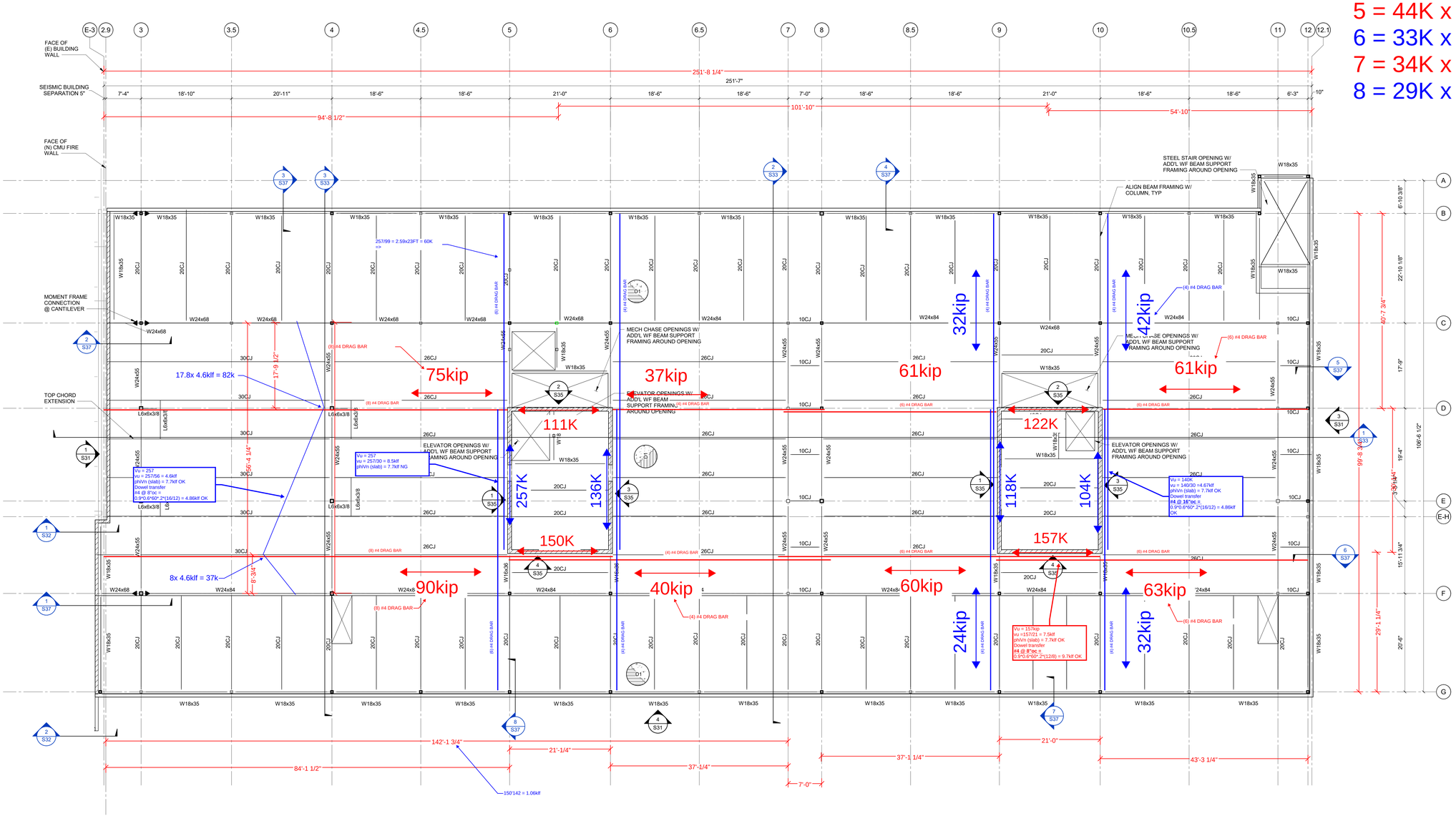
2+4+6+8 = 615K > 536K OKAY

NOTE:
TOTAL REACTIONS ARE HIGHER DUE TO ECCENTRIC DIAPHRAGM

LVL2 LOADS (RAM SS)
SCALE = 3.575

WEST CORE:
1 = 42K x 3.6 = 150K
2 = 72K x 3.6 = 257K
3 = 31K x 3.6 = 111K
4 = 38K x 3.6 = 136K

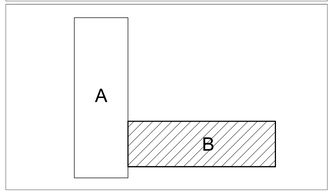
EAST CORE:
5 = 44K x 3.6 = 157K
6 = 33K x 3.6 = 118K
7 = 34K x 3.6 = 122K
8 = 29K x 3.6 = 104K



1 SECOND FLOOR PLAN - AREA B
1/8" = 1'-0"

PLAN NORTH

KEY PLAN



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THERON J. WARD JUDICIAL BUILDING
REMODEL & EXPANSION
427 Shoshone St N Twin Falls, ID

CSHQA
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PROJECT	DATE
10212200038	10/21/2022
DRAWN	CHECKED
CW	NLP

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SHEET TITLE
SECOND FLOOR PLAN - AREA B

SHEET
S22B

ORIGINAL SHEET SIZE
36" x 48"

10/21/2022 2:56:19 PM

Deck-Slab Diaphragm Shear Strength

20 ga W3-36 FormLok® Grade 50 Composite Deck

5.5 in. total slab depth, f'c = 4000 psi, 150 pcf NWC

Single Mat of Rebar #3 x #3 - 12 x 12 in o.c.

3/4" Steel Headed Stud Anchor at Chords & Collectors for Shear Transfer

Perpendicular Connection Pattern[1]			1 per rib	
Parallel Connection Attachment (maximum)	1	row at	15	in. o.c.

Minimum Connections to Supporting Members[2]

Minimum connections to all supports may be any of the following: arc spot welds, fillet welds, PAF's, screws, Shearflex® anchors, welded studs or other mechanical connections[3].

Perpendicular Connection Pattern[1]		1 per rib	
Parallel Perimeter Connections for deck spans greater than 5 ft		36	in. o.c.

Governing Deck-Slab Strength and Stiffness

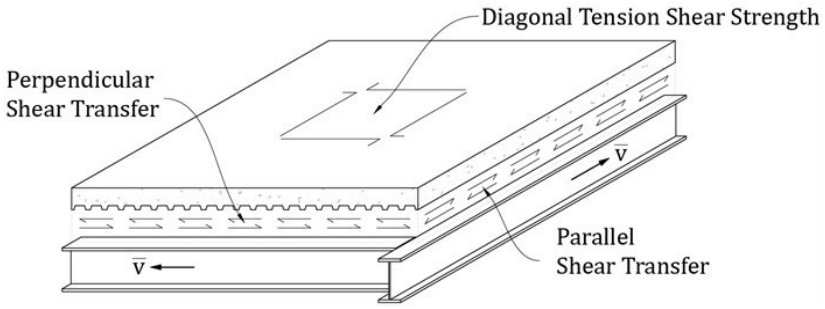
Available Diaphragm Design Strength	**Va = Vu =**	**7796**	**plf**
Controlled by Deck-Slab Diagonal Shear			
Deck-Slab Diaphragm Design Shear Stiffness	G' =	1278	kip/in

Deck-Slab Shear Strength

Reinforced Concrete Slab Design Shear Strength	Vu =	7796	plf

Chords & Collector Shear Transfer Strength

Chord & Collectors Design Shear Transfer Strength	ΦQN =	9481	plf



Notes:

1. For UL Fire rated assemblies, refer to UL Design Number for support and sidelap connection requirements.
2. Minimum connections to supporting members do not contribute to the diaphragm shear strength.
3. Support welds at interlocking sidelaps may be 3/8" x 1 1/4" arc seam welds in lieu of arc spot welds.

5. Sidelap connections between steel deck panels may be VSC2, button punch, screw, 1-1/2 in. arc seam weld or 1-1/2 in. top arc seam weld. The maximum sidelap connection spacing shall not exceed 36 in. o.c.

Calculations generated Per 2018 IBC & IAPMO ER-2018 using calculator V1.1 Date: 10/6/2022

LEVEL 3 - COLLECTOR DESIGN
EQ = 175 KIPS x 2.0 = 350KIPS

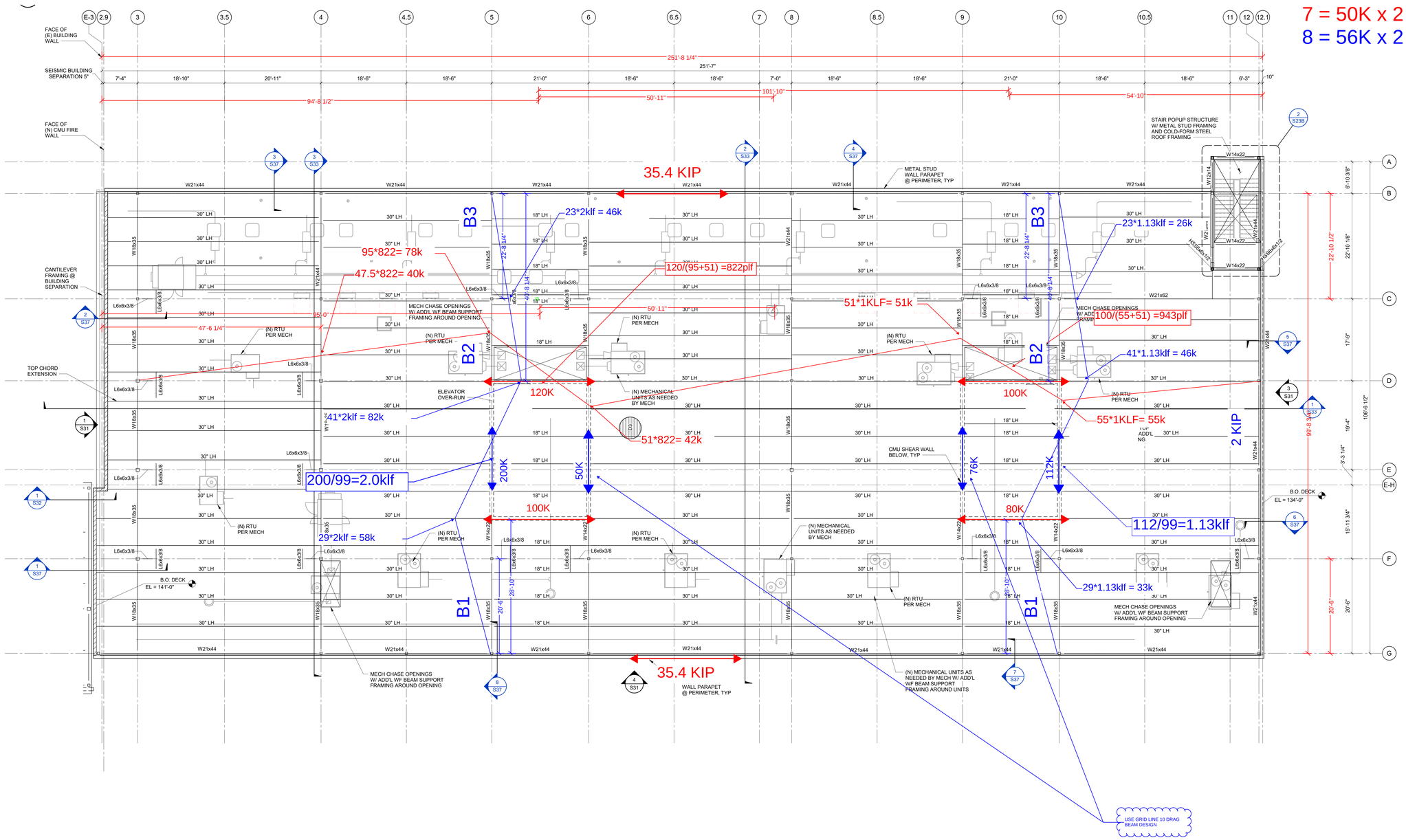
1+3+5+7 = 400K > 350K OKAY

2+4+6+8 = 438K > 350K OKAY

NOTE:
TOTAL REACTIONS ARE HIGHER
DUE TO ECCENTRIC DIAPHRAGM

ROOF LOADS (RAM SS)
Omega = 2.0
West Core:
1 = 50K x 2 = 100K
2 = 100K x 2 = 200K
3 = 60K x 2 = 120K
4 = 25K x 2 = 50K

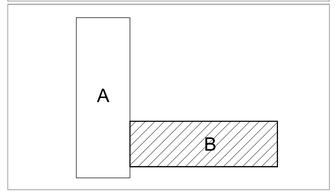
East Core:
5 = 40K x 2 = 80K
6 = 28K x 2 = 76K
7 = 50K x 2 = 100K
8 = 56K x 2 = 112K



1 S23B ROOF PLAN - AREA B
1/8" = 1'-0"

PLAN NORTH

KEY PLAN



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CW	NLP

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SHEET TITLE
ROOF PLAN - AREA B

SHEET
S23B

ORIGINAL SHEET SIZE
36" x 48"

10/21/2022 2:56:19 PM

20 ga PLB™-36 Grade 50 Roof Deck

Seismic Diaphragm Shear

For Both Ends Lapped Deck

AREA B - ROOF

VERCO DECKING, INC. a NUCOR company

Hilti X-HSN24 PAF Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections

A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.) ≤ 0.375
2 in. Minimum Deck End Bearing Length

LRFD Design Seismic Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	1260	1260	1260	1260	1260	1260	1198	990	832
6	1260	1260	1260	1260	1260	1260	1198	990	832
8	1260	1260	1260	1260	1260	1260	1198	990	832
12	1260	1260	1260	1260	1260	1260	1198	990	832
18	1260	1260	1181	1200	1214	1144	1162	990	832
24	1105	1152	1037	1086	1000	1045	977	990	832
36	1105	962	845	938	852	779	857	797	744

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	6	6	6	6	6	6	6	6	6
6	8	8	8	8	8	8	8	8	8
8	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	13	17	17
18	12	12	14	14	14	14	13	17	18
24	16	15	14	14	16	15	15	17	18
36	16	15	18	17	19	22	17	19	21

Seismic or Wind Diaphragm Shear Stiffness, G' (kip/in.) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
4	230	229	228	228	227	227	227	227	227
6	210	209	207	207	206	206	205	205	205
8	195	196	191	193	189	191	188	189	187
12	173	169	167	165	164	163	162	161	161
18	158	157	143	145	146	137	139	141	134
24	138	141	128	132	123	127	119	123	117
36	138	122	109	117	108	100	107	101	95

kpff Consulting Engineers 412 E. Parkcenter Blvd, Suite 200 Boise, ID 83706	project: TFJB location: Twin Falls client: CSHQSA Roof Drag Beam Design	by: NLP date: 10/29/2022 job no.: 10212200038	sheet no.

Fu = 65
Fy = 50
E = 29000

Cb = 1.00
Φ_c = 0.75
Φ_B = 0.90

No Brace
Mid Point Brace
3Point Brace

		For i-End	For j-End				BEAM PROPERTIES				AXIAL CAPACITY			MOMENT CAPACITY					D/C CHECKS							Connection Checks For i-End		Connection Checks For j-End	
		Axial P_U i-End (kip)	Axial P_U j-End (kip)	Gravity V_U (kip)	M_U (kip-ft)	BEAM SIZE	Beam Length, L (FT)	$L_{Axial\ Brace}$ (FT)	$L_{Lateral\ Brace}$ (FT)	L_B (FT)	Z_X (IN^3)	$F_{CR,X}$ (KSI)	$F_{CR,Y}$ (KSI)	L_R (FT)	$M_{P,X}$ (kip-ft)	$M_{N,X}$ (K*IN)	$\Phi M_{N,X}$ (K*FT)	$\Phi M_{N,X}$	$P_U/\Phi P_{N,X}$	$P_U/\Phi P_{N,Y}$	$M_U/\Phi M_{N,X}$	H1-1a	H1-1b	H2	Beam OK?	Typ Conn w/ Slip Bolts OK?	Typ Drag Conn OK?	Typ Conn w/ Slip Bolts OK?	Typ Drag Conn OK?
LVL 3: GL 5	BM 1	0.0	58.0	25.0	130.0	W18x35	21.0	10.5	10.5	7.0	66.5	45.5	22.9	12.4	3325	2889	217	250.0	0.16	0.33	0.52		0.60	0.71	OK	OK	NA	NG	OK
	BM 2	82.0	46.0	15.0	83.0	W21x44	18.0	9.0	9.0	7.0	95.4	47.4	29.2	13.0	4770	4200	315	357.0	0.18	0.29	0.23		0.32	0.44	OK	NG	OK	OK	NA
	BM 3	46.0	0.0	23.0	170.0	W21x44	24.0	12.0	12.0	7.0	95.4	45.5	19.2	13.0	4770	4200	315	357.0	0.10	0.25	0.48		0.53	0.56	OK	OK	NA	OK	NA
LVL 3: GL 10	BM 1	0.0	33.0	25.0	130.0	W18x35	21.0	10.5	10.5	7.0	66.5	45.5	22.9	12.4	3325	2889	217	250.0	0.09	0.19	0.52		0.57	0.53	OK	OK	NA	OK	NA
	BM 2	46.0	26.0	15.0	83.0	W18x35	18.0	18.0	18.0	7.0	66.5	46.7	8.0	12.4	3325	2889	217	250.0	0.13	0.74	0.33		0.40	0.95	OK	OK	NA	OK	NA
	BM 3	26.0	0.0	23.0	170.0	W18x35	24.0	12.0	12.0	7.0	66.5	44.2	18.0	12.4	3325	2889	177	250.0	0.08	0.19	0.68		0.72	0.73	OK	OK	NA	OK	NA
LVL 3: GL B	BM 1	36.0	36.0	12.0	130.0	W21x44	44.0	22.0	22.0	7.0	95.4	36.5	5.7	13.0	4770	4200	315	357.0	0.10	0.65	0.36		0.41	0.89	OK	OK	NA	OK	NA
	BM 1	36.0	36.0	6.0	30.0	W18x35	21.0	21.0	21.0	7.0	66.5	45.5	5.9	12.4	3325	2889	217	250.0	0.10	0.79	0.12		0.17	0.89	OK	OK	NA	OK	NA
LVL 2: GL 5	BM 1	0.0	37.0	6.0	2.0	W18x35	8.0	8.0	8.0	8.0	66.5	49.3	31.8	12.4	3325	2727	205	250.0	0.10	0.15	0.01		0.06	0.21	OK	OK	NA	OK	NA
	BM 2	82.0	0.0	25.0	194.0	W21x44	18.0	9.0	9.0	8.0	95.4	47.4	29.2	13.0	4770	3977	298	357.0	0.18	0.29	0.54		0.63	0.69	OK	NG	OK	OK	NA

AREA A - DRAG DESIGN

CONNECTION CAPACITY KEY:

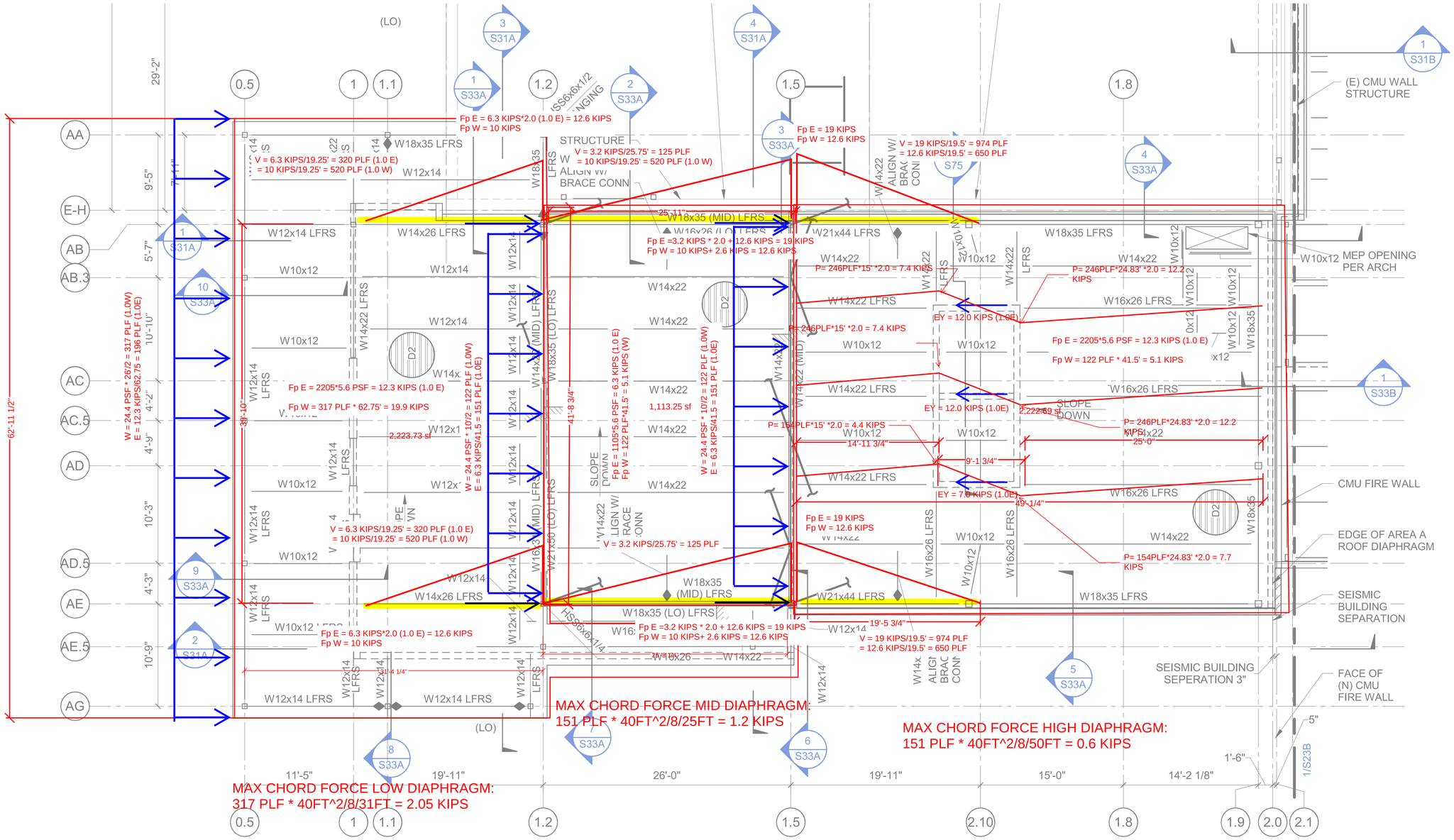
MP-L1: 56 KIPS (Drag Load)

ASSUMES 5 KIPS DL + LL/SL

UNIQUE DESIGNS PROVIDED FOR BEAMS THAT EXCEED THIS VERTICAL LOAD

NOTE: ALL DRAG LOADS << 56 KIPS. ALL ROOF DRAG CONNECTIONS SHALL BE MP-L1

DRAG LOADING E-W

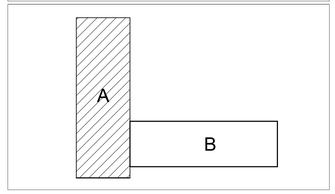


MAX DIAPHRAGM CAPACITY = 2 KLF (LRFD) > 974 PLF + 274 PLF = 1248 PLF OKAY

1 S23A ROOF PLAN - AREA A
1/8" = 1'-0"

PLAN NORTH

KEY PLAN



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PROJECT	DATE
10212200038	10/21/2022
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CW	NLP

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SHEET TITLE
ROOF PLAN - AREA A

SHEET
S23A

ORIGINAL SHEET SIZE
36" x 48"

08/Nov/22 8:50:00 PM

AREA A - DRAG DESIGN

CONNECTION CAPACITY KEY:

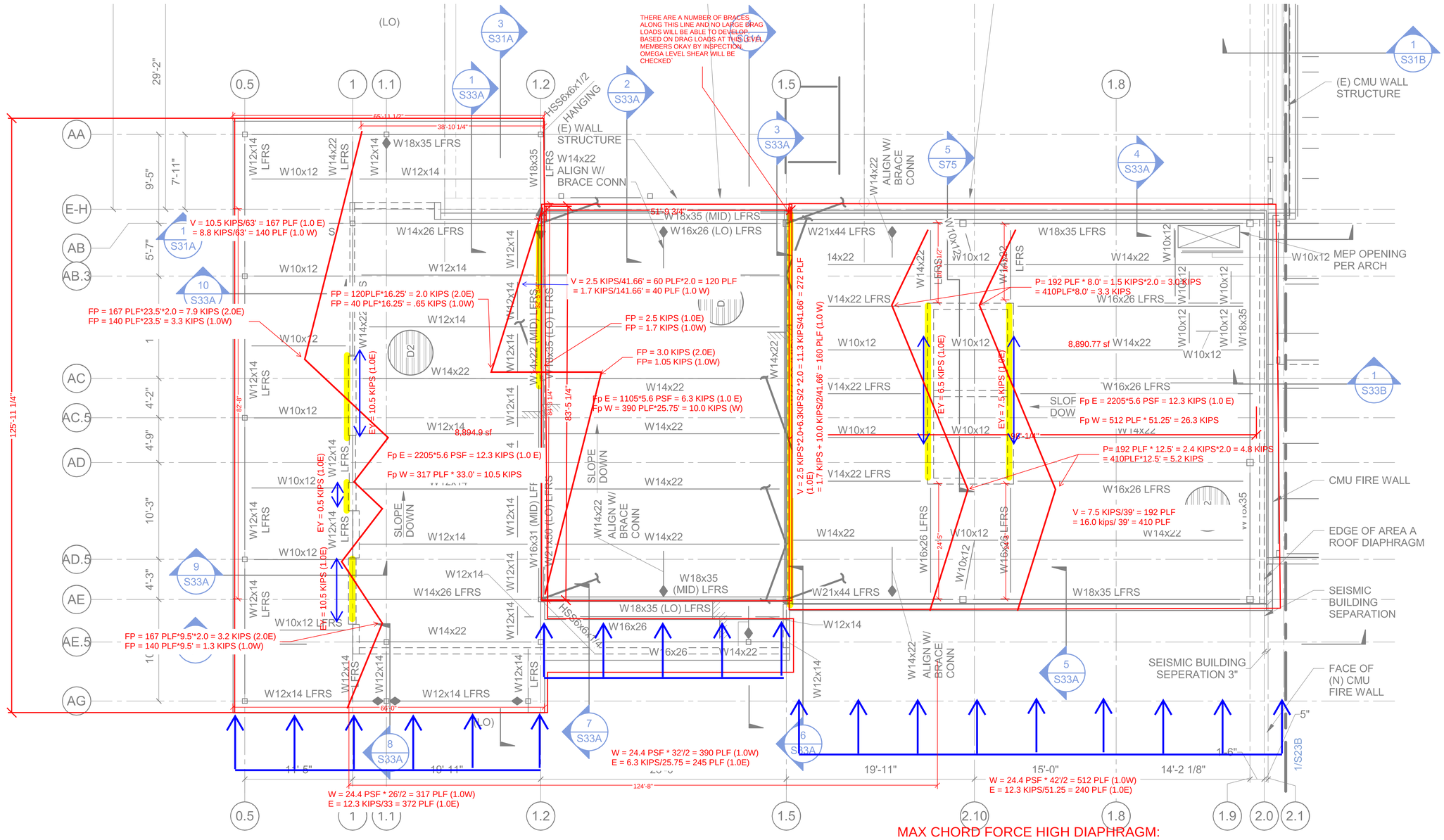
MP-L1: 56 KIPS (Drag Load)

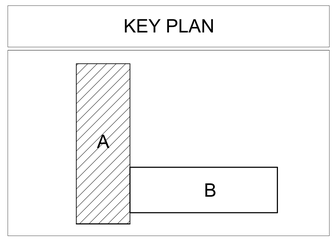
ASSUMES 5 KIPS DL + LL/SL

UNIQUE DESIGNS PROVIDED FOR BEAMS THAT EXCEED THIS VERTICAL LOAD

NOTE: ALL DRAG LOADS << 56 KIPS. ALL ROOF DRAG CONNECTIONS SHALL BE MP-L1

DRAG LOADING N-S





1 S23A ROOF PLAN - AREA A
1/8" = 1'-0"

PLAN NORTH

08/Nov/22 6:50:00 PM

PRELIMINARY NOT FOR CONSTRUCTION

200 BROAD STREET
BOISE, ID 83702
PHONE: 208-343-4635 • FAX: 208-343-1858

THERON J. WARD JUDICIAL BUILDING
REMODEL & EXPANSION
427 Shoshone St N Twin Falls, ID

CSHQA

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50% DD SET

PROJECT	DATE
10212200038	10/21/2022
DRAWN	CHECKED
CW	NLP

REVISED

kpff
412 E. Park Center Blvd.
Suite 200
Boise, ID 83706
O: 208.336.6985
www.kpff.com

SHEET TITLE
ROOF PLAN - AREA A

SHEET
S23A

ORIGINAL SHEET SIZE
36" x 48"

AREA A - DRAG DESIGN

CONNECTION CAPACITY KEY:

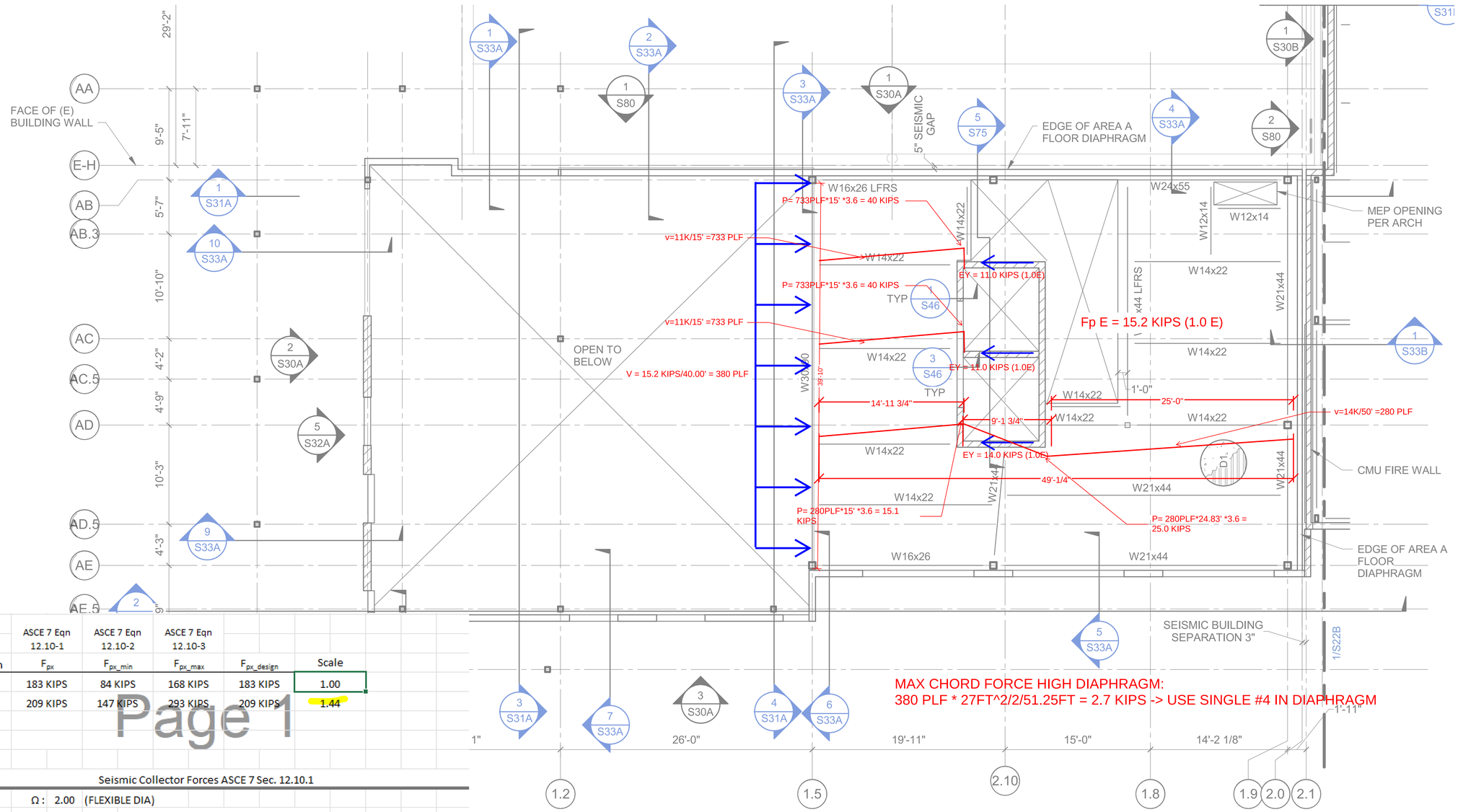
MP-L1: 56 KIPS (Drag Load)

ASSUMES 5 KIPS DL + LL/SL

UNIQUE DESIGNS PROVIDED FOR BEAMS THAT EXCEED THIS VERTICAL LOAD

NOTE: ALL DRAG LOADS << 56 KIPS.
ALL ROOF DRAG CONNECTIONS SHALL BE MP-L1

DRAG LOADING E-W



MAX CHORD FORCE HIGH DIAPHRAGM:
380 PLF * 27FT^2/2/51.25FT = 2.7 KIPS -> USE SINGLE #4 IN DIAPHRAGM

Diaphragm	ASCE 7 Eqn 12.10-1 F_{px}	ASCE 7 Eqn 12.10-2 F_{px_min}	ASCE 7 Eqn 12.10-3 F_{px_max}	F_{px_design}	Scale
Roof	183 KIPS	84 KIPS	168 KIPS	183 KIPS	1.00
Level 2	209 KIPS	147 KIPS	293 KIPS	209 KIPS	1.44

Page 1

Seismic Collector Forces ASCE 7 Sec. 12.10.1

Ω : 2.00 (FLEXIBLE DIA)

Ω : 2.50 * Multiply Model ELF Forces by Scale value

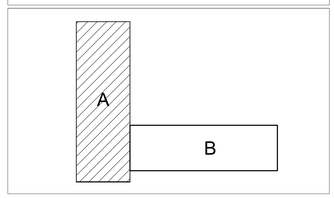
p : 1

Maximum of:

Diaphragm	$F_{px\_diaphragm}$	ELF F_i	ΩF_{px} ELF	ΩF_{px} 12.10-1	pF_{px_min}	F_{px_design}	Scale*
Roof	183 KIPS	183 KIPS	367 KIPS	367 KIPS	84 KIPS	367 KIPS	2.00
Level 2	329 KIPS	146 KIPS	364 KIPS	524 KIPS	147 KIPS	524 KIPS	3.60

MAX DIAPHRAGM CAPACITY = 7.4 KLF (LRFD) > 1.44*733PLF = 1055 PLF OKAY

KEY PLAN



1 S22A SECOND FLOOR PLAN - AREA A
1/8" = 1'-0"

NORTH

08/Nov/22 6:55:00 PM

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PROJECT	DATE
10212200038	10/21/2022
DRAWN	CHECKED
CW	NLP

REVISED

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Suite 200
Boise, ID 83706
O: 208.336.6985
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SHEET TITLE
ROOF PLAN - AREA A

SHEET
S23A

ORIGINAL SHEET SIZE
36" x 48"

AREA A - DRAG DESIGN

CONNECTION CAPACITY KEY:

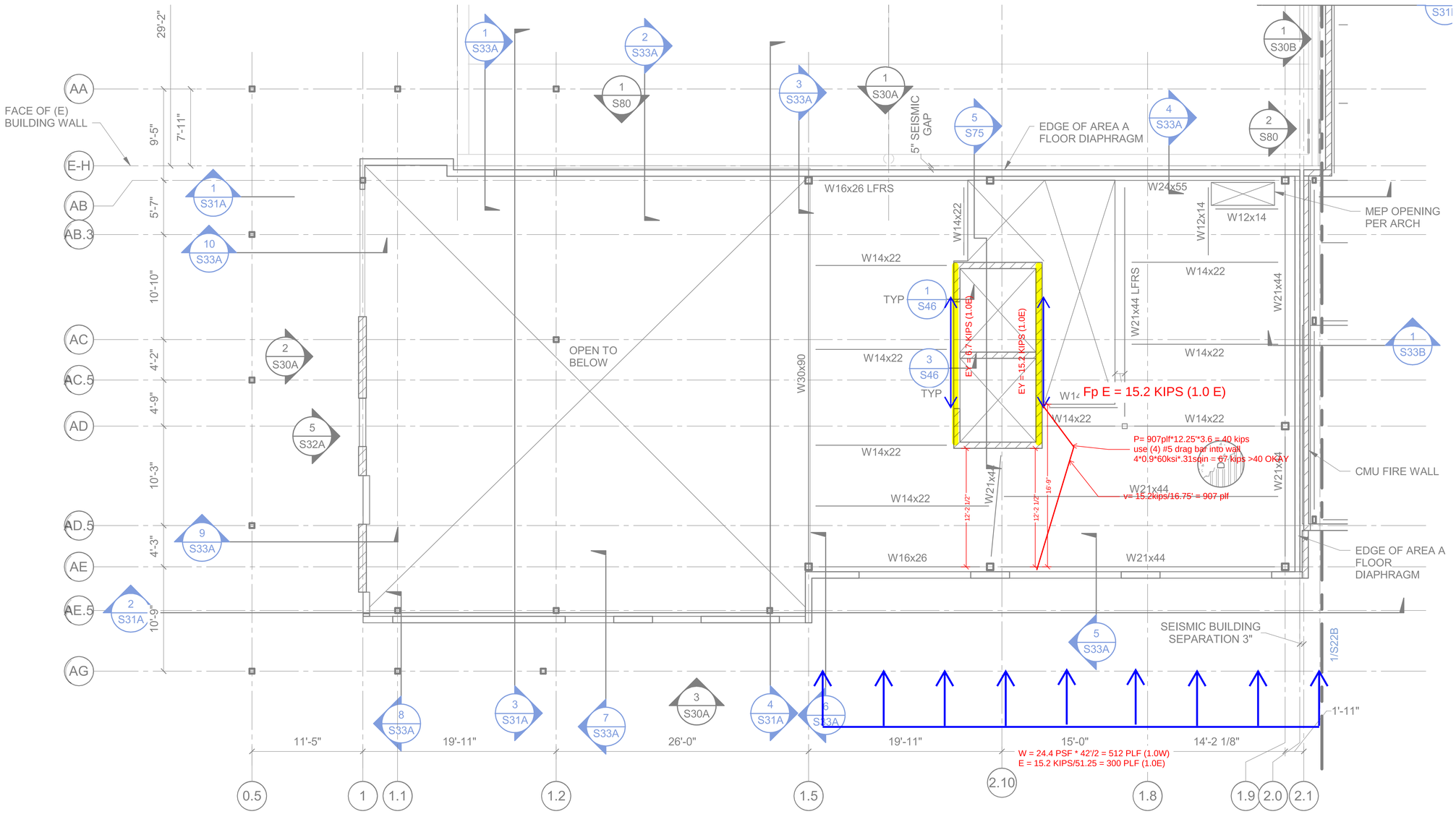
MP-L1: 56 KIPS (Drag Load)

ASSUMES 5 KIPS DL + LL/SL

UNIQUE DESIGNS PROVIDED FOR BEAMS THAT EXCEED THIS VERTICAL LOAD

NOTE: ALL DRAG LOADS << 56 KIPS.
ALL ROOF DRAG CONNECTIONS SHALL BE MP-L1

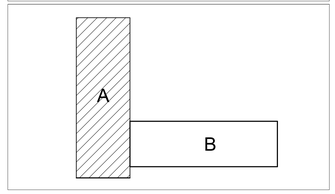
DRAG LOADING E-W



MAX CHORD FORCE HIGH DIAPHRAGM:
512 PLF * 27FT^2/2/40FT = 4.7 KIPS -> USE SINGLE #4 IN DIAPHRAGM

MAX DIAPHRAGM CAPACITY = 7.4 KLF (LRFD) > 1.44*907PLF = 1306 PLF OKAY

KEY PLAN



1 S22A SECOND FLOOR PLAN - AREA A
1/8" = 1'-0"

NORTH

08/Nov/22 6:50:07 PM

PRELIMINARY NOT FOR CONSTRUCTION

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50% DD SET

PROJECT	DATE
10212200038	10/21/2022
DRAWN	CHECKED
CW	NLP

REVISED

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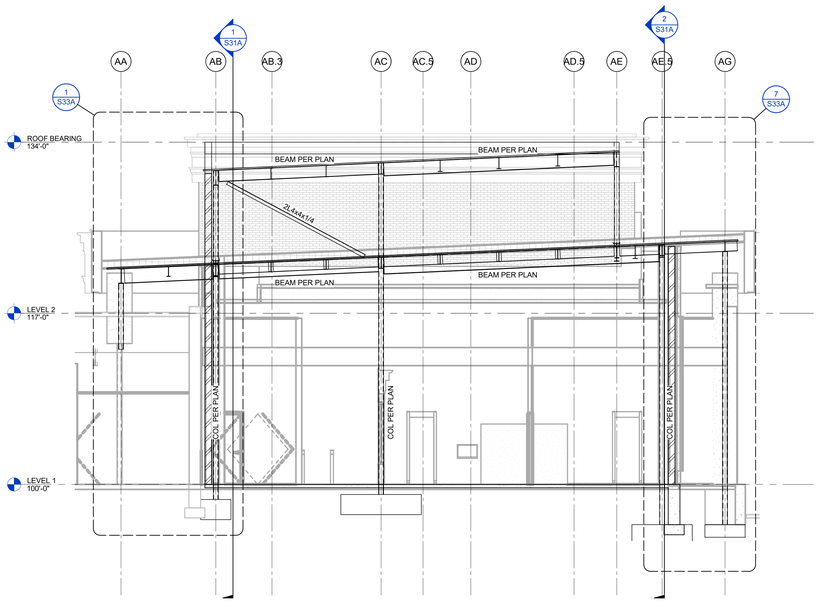
SHEET TITLE
ROOF PLAN - AREA A

SHEET
S23A

ORIGINAL SHEET SIZE
36" x 48"

AREA A - DRAG DESIGN



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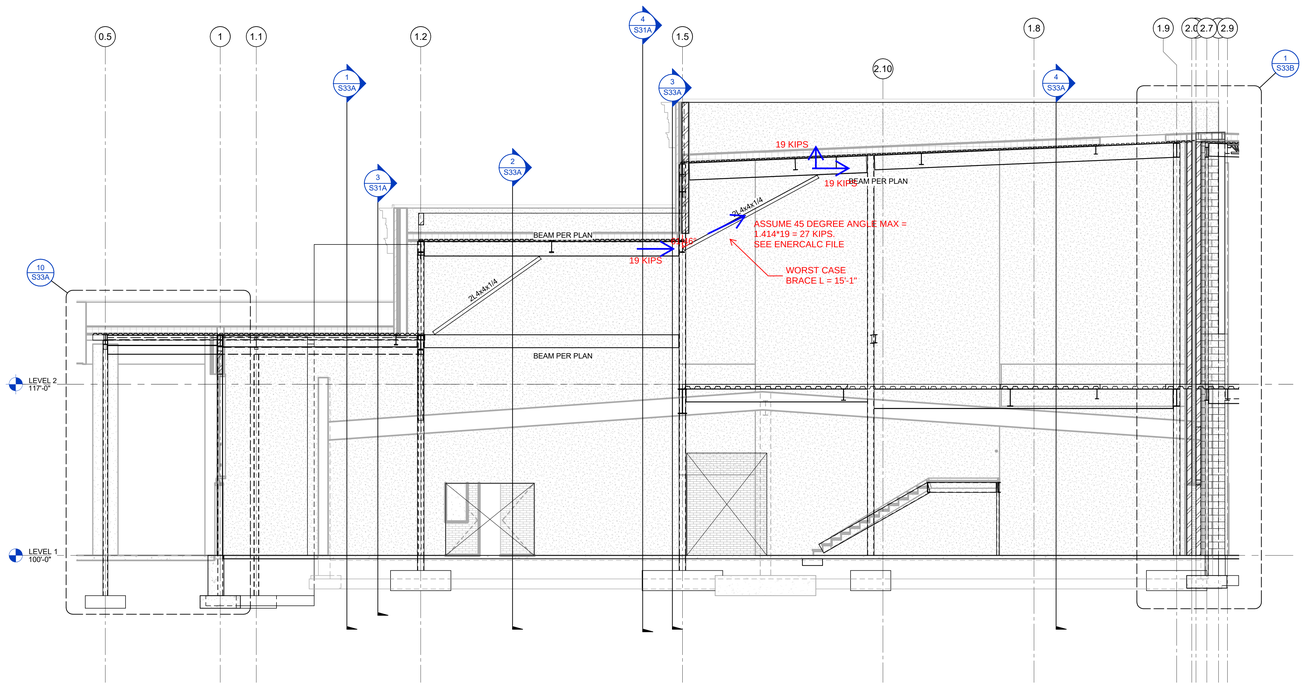
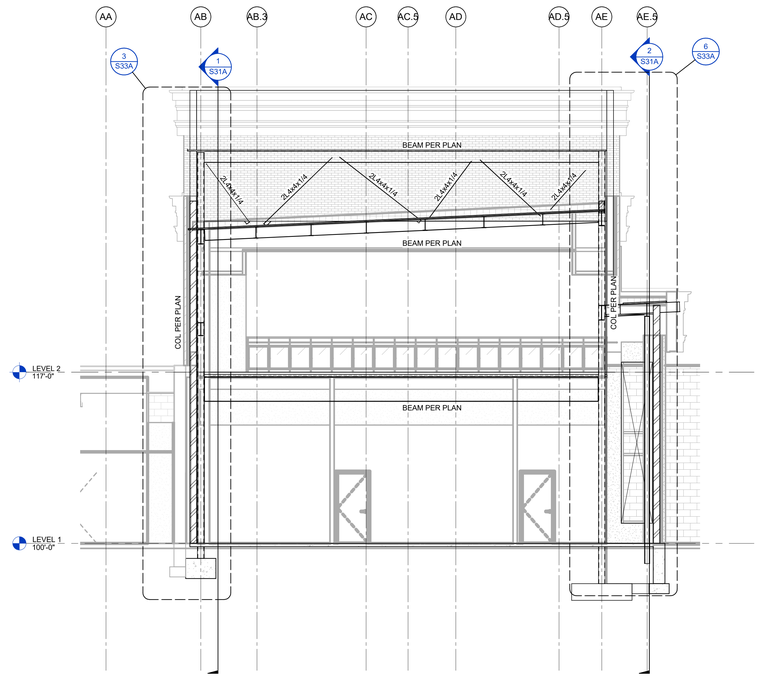
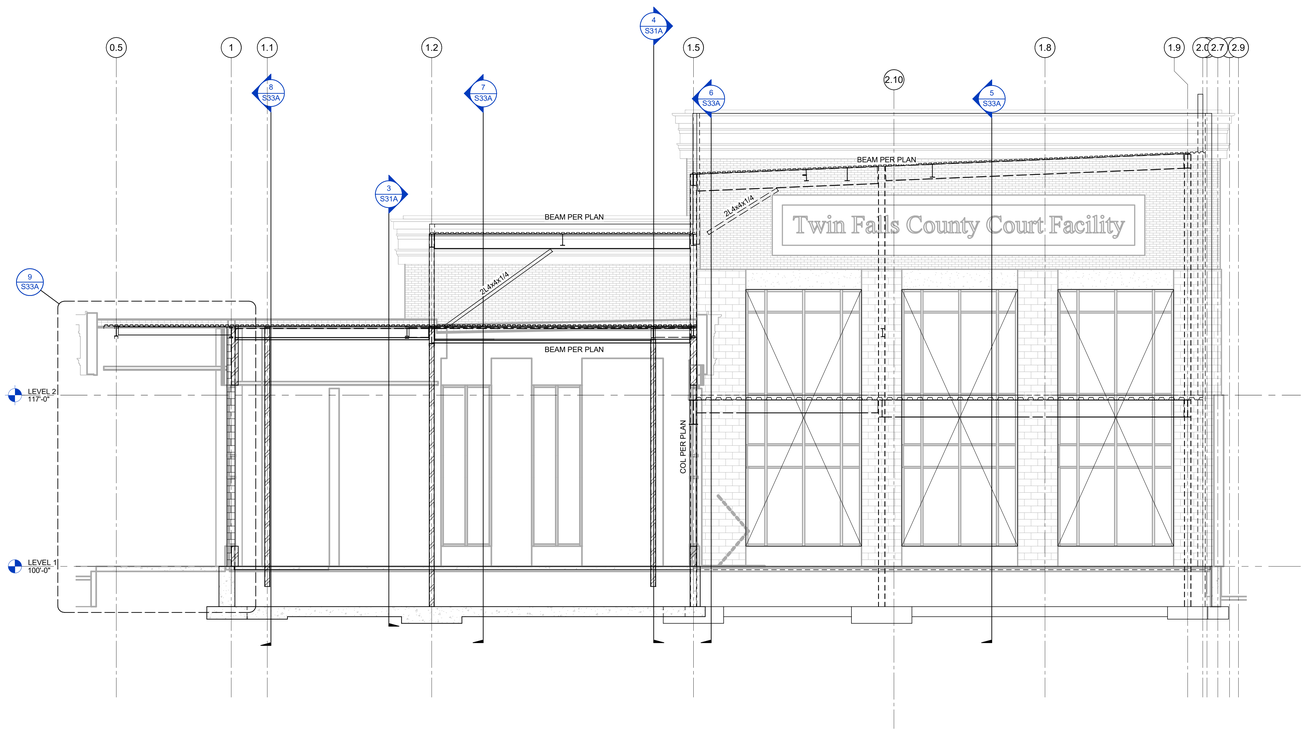
3/16" = 1'-0"



1 S31A SECTION
3/16" = 1'-0"



4 S31A SECTION
3/16" = 1'-0"



2 S31A SECTION
3/16" = 1'-0"

12/5/2022 9:04:26 AM

PRELIMINARY
NOT FOR
CONSTRUCTION

200 BROAD STREET
BOISE, ID 83702
PHONE: 208-343-4635 • FAX: 208-343-1858

200 BROAD STREET
BOISE, ID 83702
PHONE: 208-343-4635 • FAX: 208-336-5911
http://www.cshqa.com

THERON J. WARD JUDICIAL BUILDING
REMODEL & EXPANSION
427 Shoshone St N Twin Falls, ID

CSHQA

100% DD SET

PROJECT	DATE
10212200038	11/11/2022
DRAWN	CHECKED
Author	Checker

REVISED

kpff
412 E. Park Center Blvd.
Suite 200
Boise, ID 83706
O: 208.336.6985
www.kpff.com

SHEET TITLE
BUILDING SECTION - AREA A

SHEET
S31A

ORIGINAL SHEET SIZE
36" x 48"

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Column

Project File: Preliminary Drag Calcs.ec6

DESCRIPTION: W18x35 Drag

Code References

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Steel Section Name : **W18x35**

Analysis Method :	Load Resistance Factor
Steel Stress Grade	A-992, High Strength, Low Alloy, Fy = 50 ksi
Fy : Steel Yield	50.0 ksi
E : Elastic Bending Modulus	29,000.0 ksi

Overall Column Height	19.5 ft
Top & Bottom Fixity	Top & Bottom Pinned

Brace condition for deflection (buckling) along columns :
X-X (width) axis :
Unbraced Length for buckling ABOUT Y-Y Axis = 15 ft, K = 1.0
Y-Y (depth) axis :
Unbraced Length for buckling ABOUT X-X Axis = 19.5 ft, K = 1.0

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included : 682.50 lbs * Dead Load Factor
AXIAL LOADS . . .
Axial Load at 12.0 ft, E = 19.0 k
BENDING LOADS . . .
Roof load: Lat. Uniform Load creating Mx-x, D = 0.10, LR = 0.060, S = 0.10 k/ft
Lat. Point Load at 12.0 ft creating Mx-x, E = 19.0 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = **0.7350** : 1

Load Combination	+1.20D+0.70S+E
Location of max.above base	11.909 ft
At maximum location values are . . .	
Pu	19.819 k
0.9 * Pn	106.894 k
Mu-x	95.618 k-ft
0.9 * Mn-x :	148.875 k-ft
Mu-y	0.0 k-ft
0.9 * Mn-y :	30.225 k-ft

PASS Maximum Shear Stress Rati **0.0** : 1

Load Combination	0.0
Location of max.above base	0.0 ft
At maximum location values are . . .	
Vu : Applied	0.0 k
Vn * Phi : Allowable	0.0 k

Maximum Load Reactions . .

Top along X-X	0.0 k
Bottom along X-X	0.0 k
Top along Y-Y	11.692 k
Bottom along Y-Y	7.308 k

Maximum Load Deflections . . .

Along Y-Y 0.3224 in at 10.470 ft above base
for load combination : E Only

Along X-X 0.0 in at 0.0 ft above base
for load combination :

Load Combination Results

Load Combination	Maximum Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Cbx	Cby	KxLx/Ry	KyLy/Rx	Maximum Shear Ratios: Stress Ratio	Status	Location
+1.40D	0.049	PASS	9.68 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+1.20D+0.50Lr	0.052	PASS	9.68 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+1.20D+0.50S	0.058	PASS	9.68 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+1.20D+1.60Lr	0.073	PASS	9.68 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+1.20D+1.60S	0.093	PASS	9.68 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+1.20D+0.70S+E	0.735	PASS	11.91 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+0.90D	0.032	PASS	9.82 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft
+0.90D+E	0.704	PASS	11.91 ft	1.36	1.00	147.54	33.24	0.000	PASS	0.00 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments @ Base	@ Top	k-ft	My - End Moments @ Base	@ Top
D Only	0.683				0.975	0.975					
+D+Lr	0.683				1.560	1.560					
+D+S	0.683				1.950	1.950					

Steel Column

Project File: Preliminary Drag Calcs.ec6

DESCRIPTION: W18x35 Drag

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
+D+0.750Lr	0.683				1.414	1.414				
+D+0.750S	0.683				1.706	1.706				
+D+0.70E	13.983				6.090	9.160				
+D+0.750S+0.5250E	10.658				5.543	7.845				
+0.60D	0.410				0.585	0.585				
+0.60D+0.70E	13.710				5.700	8.770				
Lr Only					0.585	0.585				
S Only					0.975	0.975				
E Only	19.000				7.308	11.692				

Extreme Reactions

Item	Extreme Value	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
Axial @ Base	Maximum	19.000				7.308	11.692				
"	Minimum					0.585	0.585				
Reaction, X-X Axis Base	Maximum	0.683				0.975	0.975				
"	Minimum	0.683				0.975	0.975				
Reaction, Y-Y Axis Base	Maximum	19.000				7.308	11.692				
"	Minimum	0.410				0.585	0.585				
Reaction, X-X Axis Top	Maximum	0.683				0.975	0.975				
"	Minimum	0.683				0.975	0.975				
Reaction, Y-Y Axis Top	Maximum	0.683				0.975	0.975				
"	Minimum	19.000				7.308	11.692				
Moment, X-X Axis Base	Maximum	0.683				0.975	0.975				
"	Minimum	0.683				0.975	0.975				
Moment, Y-Y Axis Base	Maximum	0.683				0.975	0.975				
"	Minimum	0.683				0.975	0.975				
Moment, X-X Axis Top	Maximum	0.683				0.975	0.975				
"	Minimum	0.683				0.975	0.975				
Moment, Y-Y Axis Top	Maximum	0.683				0.975	0.975				
"	Minimum	0.683				0.975	0.975				

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000 ft	0.022 in	9.815 ft
+D+Lr	0.0000 in	0.000 ft	0.036 in	9.815 ft
+D+S	0.0000 in	0.000 ft	0.044 in	9.815 ft
+D+0.750Lr	0.0000 in	0.000 ft	0.032 in	9.815 ft
+D+0.750S	0.0000 in	0.000 ft	0.039 in	9.815 ft
+D+0.70E	0.0000 in	0.000 ft	0.248 in	10.470 ft
+D+0.750S+0.5250E	0.0000 in	0.000 ft	0.208 in	10.339 ft
+0.60D	0.0000 in	0.000 ft	0.013 in	9.815 ft
+0.60D+0.70E	0.0000 in	0.000 ft	0.239 in	10.470 ft
Lr Only	0.0000 in	0.000 ft	0.013 in	9.815 ft
S Only	0.0000 in	0.000 ft	0.022 in	9.815 ft
E Only	0.0000 in	0.000 ft	0.322 in	10.470 ft

Steel Section Properties : W18x35

Steel Section Properties : W18x35

Project Title:
Engineer:
Project ID:
Project Descr:

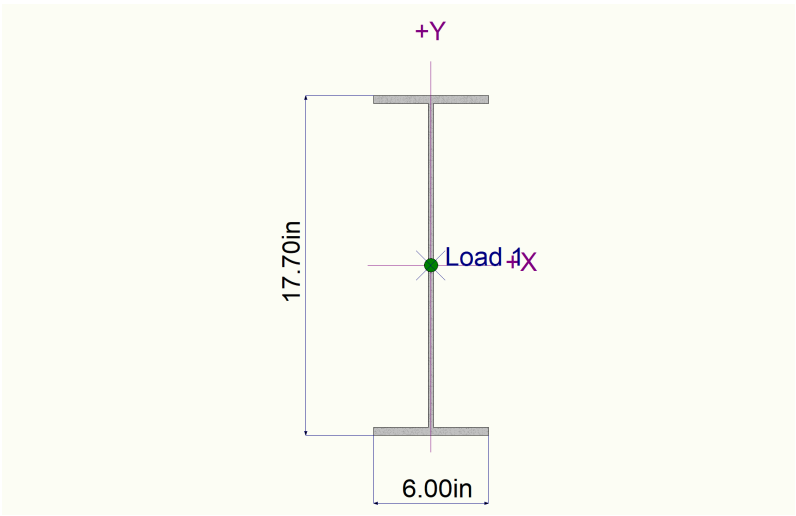
Steel Column

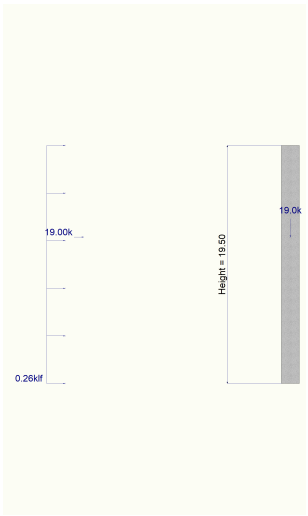
Project File: Preliminary Drag Calcs.ec6

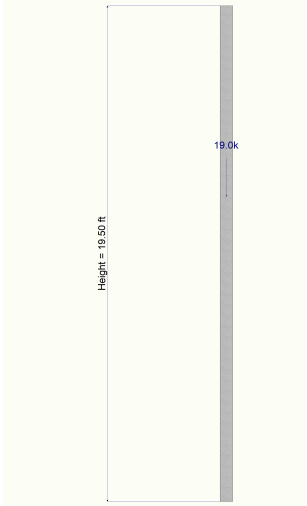
DESCRIPTION: W18x35 Drag

Depth	=	17.700	in	I xx	=	510.00	in^4	J	=	0.506	in^4
Web Thick	=	0.300	in	S xx	=	57.60	in^3	Cw	=	1,140.00	in^6
Flange Width	=	6.000	in	R xx	=	7.040	in				
Flange Thick	=	0.425	in	Zx	=	66.500	in^3				
Area	=	10.300	in^2	I yy	=	15.300	in^4				
Weight	=	35.000	plf	S yy	=	5.120	in^3	Wno	=	25.900	in^2
Kdesign	=	0.827	in	R yy	=	1.220	in	Sw	=	16.500	in^4
K1	=	0.750	in	Zy	=	8.060	in^3	Qf	=	10.500	in^3
rts	=	1.510	in					Qw	=	32.700	in^3
Ycg	=	0.000	in								

Sketches







Global Parameters - Description:

Project Title	Single Row Drag connection
Company	KPFF
Designer	Dylan Nisbet
Job Number	
Notes	Single row of slip critical 1" A490 bolts

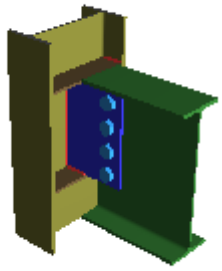
Global Parameters - Solution:

Design Method	AISC 15th (360-16): LRFD
Bolt Group Analysis Method	Center of Rotation
Weld Analysis Method	Center of Rotation
Consider Bolt Hole Deformation?	Yes
Check Rotational Ductility?	Yes
Check Weld Filler Metal Matching?	Yes
Full Shear Eccentricity Considered?	No
Panel-Zone Shear Deformation Considered?	No
Check Weld Base Material Thickness?	Yes
Reduce Available Bolt Strength by Prying Effects Factor Q?	No

LRFD

W18x35 - Col Web/Beam: LRFD Results Report

Column/Beam Shear Tab Shear Connection



Material Properties:				
Column	W12X35	A992	F_y = 50.00 ksi	F_u = 65.00 ksi
Beam	W18X35	A992	F_y = 50.00 ksi	F_u = 65.00 ksi
Plate	P0.38x8.31x12.00	A36	F_y = 36.00 ksi	F_u = 58.00 ksi

Input Data:		
Shear Load	31.00 kips	*User Input Shear Load*
Axial Load	19.00 kips	*User Input Axial Force (compression)*

Note: Unless specified, all code references are from AISC 360-16

Limit State	Required	Available	Unity Check	Result
Geometry Restrictions at Beam				**PASS**
Column Weld Limitations				**PASS**
Rotational Ductility, Erection Stability				**PASS**
Beam Shear Yield	31.00 kips	159.30 kips	**0.19**	**PASS**
Plate Shear Yield	31.00 kips	97.20 kips	**0.32**	**PASS**
Beam Shear Rupture	31.00 kips	113.64 kips	**0.27**	**PASS**
Plate Shear Rupture at Beam	31.00 kips	70.96 kips	**0.44**	**PASS**
Beam Axial Yield	19.00 kips	463.50 kips	**0.04**	**PASS**
Plate Axial Yield	19.00 kips	145.80 kips	**0.13**	**PASS**
Beam Block Shear	31.00 kips	129.25 kips	**0.24**	**PASS**
Plate Block Shear	31.00 kips	80.95 kips	**0.38**	**PASS**
Compression Buckling of the Plate	19.00 kips	138.31 kips	**0.14**	**PASS**
Lateral Stability / Stabilizer Plates	36.36 kips	62.37 kips	**0.58**	**PASS**
Plate Flexural Yield			**0.29**	**PASS**
Plate Flexural Rupture			**0.33**	**PASS**
Plate Flexural Buckling			**0.50**	**PASS**
Bolt Bearing on Beam	36.36 kips	140.40 kips	**0.26**	**PASS**
Bolt Bearing on Plate at Beam	36.36 kips	140.88 kips	**0.26**	**PASS**
Bolt Shear at Beam	36.36 kips	119.00 kips	**0.31**	**PASS**
Bolt Group Eccentricity		***0.74***		
Weld at Column	8.37 kips/in	11.14 kips/in	**0.75**	**PASS**

W18x35 - Col Web/Beam: Connection Properties Report

Column/Beam Shear Tab Shear Connection

Connection	
Connection Title	W18x35 - Col Web/Beam
Connection Type	Column/Beam Shear Tab Shear Connection
Connection Category	
Beam Connection	Bolted
Column Connection Type	Web
Beam Skew from Horizontal	None
Beam Skew Angle	0.000
Loading (LRFD)	
Shear Load	31.000 kips
Axial Load	19.000 kips
Eccentric Moment Calculation	Include All Eccentricities
Components	
Column Section	W12X35
Material	A992
Beam Section	W18X35
Material	A992
Hole Type	STD
Plate Section	P0.38x8.31x12.00
Material	A36
Thickness	0.375 in
Width	8.310 in
Depth	12.000 in
Stabilizer Plate?	Yes
Hole Type	STD
Column Weld	E70
Type	Double Fillet
Fillet Size	4.000 Sixteenths
Beam Bolts	1" Group B-N
Beam Bolts	Group B-N
Diameter, in.	1"
Rows	1
Bolts per Row	4
Longitudinal Spacing	3.000 in
Transverse Spacing	3.000 in
Slip Critical	No
Assembly	
Column/Beam Clearance	4.810 in
Cope Dimensions	
Flange Cope Width	0.000 in
Flange Cope Length	0.000 in
Flange Cope Radius	0.500 in
Plate Vertical Position	1.500 in
Beam Bolts Edge Distance Dimensions	
Beam Bolts/Beam Edge Dist	1.750 in
Beam Bolts Horz Edge Dist	1.750 in
Beam Bolts Vert Edge Dist	1.500 in

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Column

Project File: Drag Calcs.ec6

DESCRIPTION: Angle Kicker

Code References

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Steel Section Name : **LL 4x4x1/4x3/8**

Analysis Method :	Load Resistance Factor
Steel Stress Grade	A-36, Carbon Steel, Fy = 36 ksi
Fy : Steel Yield	36.0 ksi
E : Elastic Bending Modulus	29,000.0 ksi

Overall Column Height	15.0 ft
Top & Bottom Fixity	Top & Bottom Pinned

Brace condition for deflection (buckling) along columns :
X-X (width) axis :
Unbraced Length for buckling ABOUT Y-Y Axis = 15.0 ft, K = 1.0
Y-Y (depth) axis :
Unbraced Length for buckling ABOUT X-X Axis = 15.0 ft, K = 1.0

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included : 198.0 lbs * Dead Load Factor
AXIAL LOADS . . .
Omega EQ (assumes max 45 deg angle 1.414*horiz): Axial Load at 15.0 ft, E = 27.0 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = **0.7147** : 1

Load Combination	+1.20D+E
Location of max.above base	0.0 ft
At maximum location values are . . .	
Pu	27.238 k
0.9 * Pn	38.108 k
Mu-x	0.0 k-ft
0.9 * Mn-x :	8.343 k-ft
Mu-y	0.0 k-ft
0.9 * Mn-y :	0.0 k-ft

PASS Maximum Shear Stress Rati **0.0** : 1

Load Combination	0.0
Location of max.above base	0.0 ft
At maximum location values are . . .	
Vu : Applied	0.0 k
Vn * Phi : Allowable	0.0 k

Maximum Load Reactions . .

Top along X-X	0.0 k
Bottom along X-X	0.0 k
Top along Y-Y	0.0 k
Bottom along Y-Y	0.0 k

Maximum Load Deflections . . .

Along Y-Y 0.0 in at 0.0 ft above base
for load combination :

Along X-X 0.0 in at 0.0 ft above base
for load combination :

Load Combination Results

Load Combination	Max. Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Cbx	Cby	KxLx/Ry	KyLy/Rx	Max. Shear Ratios: Stress Ratio	Status	Location
+1.40D	0.007	PASS	0.00 ft	1.00	1.00	101.25	144.09	0.000	PASS	0.00 ft
+1.20D	0.006	PASS	0.00 ft	1.00	1.00	101.25	144.09	0.000	PASS	0.00 ft
+1.20D+E	0.715	PASS	0.00 ft	1.00	1.00	101.25	144.09	0.000	PASS	0.00 ft
+0.90D	0.005	PASS	0.00 ft	1.00	1.00	101.25	144.09	0.000	PASS	0.00 ft
+0.90D+E	0.713	PASS	0.00 ft	1.00	1.00	101.25	144.09	0.000	PASS	0.00 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base (k)	X-X Axis Reaction @ Base (k)	X-X Axis Reaction @ Top (k)	Y-Y Axis Reaction @ Base (k)	Y-Y Axis Reaction @ Top (k)	Mx - End Moments @ Base (k-ft)	Mx - End Moments @ Top (k-ft)	My - End Moments @ Base (k-ft)	My - End Moments @ Top (k-ft)
D Only	0.198								
+D+0.70E	19.098								
+D+0.5250E	14.373								
+0.60D	0.119								
+0.60D+0.70E	19.019								
E Only	27.000								

Steel Column

Project File: Drag Calcs.ec6

DESCRIPTION: Angle Kicker

Extreme Reactions

Item	Extreme Value	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
Axial @ Base	Maximum	27.000									
"	Minimum	0.119									
Reaction, X-X Axis Base	Maximum	0.198									
"	Minimum	0.198									
Reaction, Y-Y Axis Base	Maximum	0.198									
"	Minimum	0.198									
Reaction, X-X Axis Top	Maximum	0.198									
"	Minimum	0.198									
Reaction, Y-Y Axis Top	Maximum	0.198									
"	Minimum	0.198									
Moment, X-X Axis Base	Maximum	0.198									
"	Minimum	0.198									
Moment, Y-Y Axis Base	Maximum	0.198									
"	Minimum	0.198									
Moment, X-X Axis Top	Maximum	0.198									
"	Minimum	0.198									
Moment, Y-Y Axis Top	Maximum	0.198									
"	Minimum	0.198									

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.70E	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.5250E	0.0000 in	0.000 ft	0.000 in	0.000 ft
+0.60D	0.0000 in	0.000 ft	0.000 in	0.000 ft
+0.60D+0.70E	0.0000 in	0.000 ft	0.000 in	0.000 ft
E Only	0.0000 in	0.000 ft	0.000 in	0.000 ft

Steel Section Properties : LL 4x4x1/4x3/8

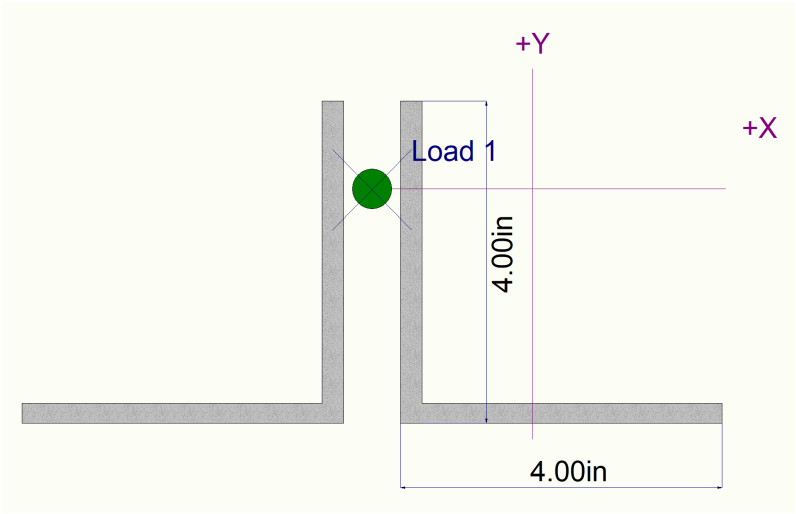
Depth	=	4.000 in	I xx	=	6.00 in^4	J	=	0.063 in^4
			S xx	=	2.06 in^3			
Leg Width	=	4.000 in	R xx	=	1.250 in			
Thickness	=	0.250 in	Zx	=	3.640 in^3	H	=	0.838 in
Area	=	3.860 in^2	I yy	=	12.200 in^4			
Weight	=	13.200 plf	S yy	=	2.910 in^3			
			R yy	=	1.780 in			
Ycg	=	1.080 in	Qs	=	0.000			
Xcg	=	0.000 in						
Leg Spacing	=	0.375 in						

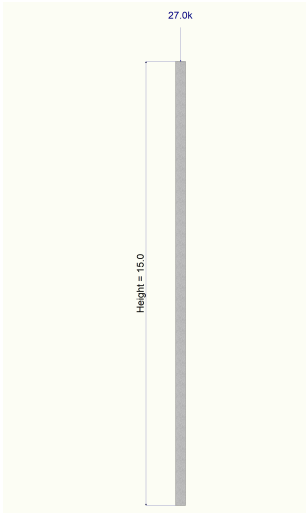
Steel Column

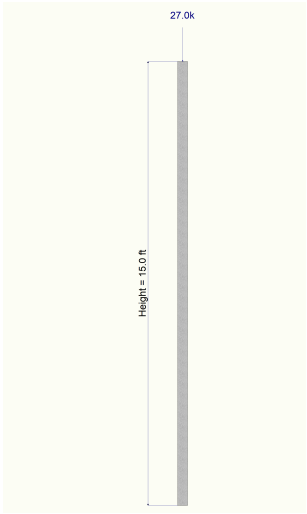
Project File: Drag Calcs.ec6

DESCRIPTION: Angle Kicker

Sketches







Global Parameters - Description:

Project Title	Single Row Drag connection
Company	KPFF
Designer	Dylan Nisbet
Job Number	
Notes	

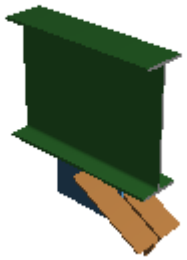
Global Parameters - Solution:

Design Method	AISC 15th (360-16): LRFD
Bolt Group Analysis Method	Center of Rotation
Weld Analysis Method	Center of Rotation
Consider Bolt Hole Deformation?	Yes
Check Rotational Ductility?	Yes
Check Weld Filler Metal Matching?	Yes
Full Shear Eccentricity Considered?	No
Panel-Zone Shear Deformation Considered?	No
Check Weld Base Material Thickness?	Yes
Reduce Available Bolt Strength by Prying Effects Factor Q?	No

LRFD

Angle Kicker Connection: LRFD Results Report

Knee Brace Connection



Material Properties:				
Beam	W18X35	A992	F_y = 50.00 ksi	F_u = 65.00 ksi
Brace	LL4x4x4x3	A36	F_y = 36.00 ksi	F_u = 58.00 ksi
Gusset	P0.38x8.00x12.00	A36	F_y = 36.00 ksi	F_u = 58.00 ksi

Input Data:		
Brace Axial	27.00 kips	*Brace Axial (compression)*
Shear Load	-23.61 kips	*Calculated Shear Load*
Axial Load	13.09 kips	*Calculated Axial Load (compression)*
Moment Load	2.18 kips-ft	*Calculated Moment*

Note: Unless specified, all code references are from AISC 360-16

Limit State	Required	Available	Unity Check	Result
Geometry Restrictions at Brace to Gusset				**PASS**
Check Min Bolt Spacing	**Pass**	*Condition: S_{min} >= (2+2/3) * d_{bolt}*		*(J3.3)*
S_{min}	3.00 in	*Min bolt spacing*		
d_{bolt}	0.88 in	*Bolt diameter*		
Check Max Bolt Spacing	**Pass**	*Condition: S_{max}<= min(12.00 in, 24*t)*		*(J3.5a)*
S_{max}	3.00 in	*Max bolt spacing*		
t	0.25 in	*Thickness of governing element (Brace)*		
Check Min Edge Distance	**Pass**	*Condition: ED_{min} >= ED_{allow}*		*(J3.4)*
Check Max Edge Distance	**Pass**	*Condition: ED_{max} <= min (6.00 in, 12*t)*		*(J3.5)*
Beam Weld Limitations				**PASS**
Weld Min Size, Length			(J2.2b)	
Check Weld Min Size	**Pass**			
D	0.25 in	*Weld size*		
D_{min}	0.19 in	*Min size allowed per Table J2.4*		
t_{min}	0.38 in	*Controlling member thickness*		
Check Weld Min Length	**Pass**	*Condition: L_{min} ≥ 4*D per J2.2b*		
D	0.25 in	*Weld size*		
L_{min}	12.00 in	*Min weld segment length*		
Plate Shear Yield	23.61 kips	97.20 kips	**0.24**	**PASS**
R_n = 0.6 *F_y*A_{gv}		**ϕ = 1.00**	(J4-3)	
F_y	36.00 ksi	*Minimum yield stress of material*		
A_{gv}	4.50 in^2	*Gross area subject to shear*		
ϕR_n	97.20 kips	*Shear yield strength*		
Plate Shear Rupture	23.61 kips	117.45 kips	**0.20**	**PASS**
R_n = 0.6 *F_u*A_{nv}		**ϕ = 0.75**	(J4-4)	
F_u	58.00 ksi	*Minimum tensile stress of material*		
A_{nv}	4.50 in^2	*Net area subject to shear*		
ϕR_n	117.45 kips	*Shear rupture strength*		

continued on next page...

Angle Kicker Connection: LRFD Results Report (continued):

Limit State	Required	Available	Unity Check	Result
Plate Axial Yield	13.09 kips	145.80 kips	**0.09**	**PASS**
$R_n = F_y * A_g$		**$\phi = 0.90$**	(J4-1)	
F_y	36.00 ksi	*Minimum yield stress of material*		
A_g	4.50 in^2	*Gross area subject to compression*		
ϕR_n	145.80 kips	*Tensile yield strength*		
Plate Flexural Yield			**0.08**	**PASS**
$(V_r/V_c)^2 + (\|P_r\|/P_c + \|M_r\|/M_c)^2 <= 1$			(AISC 15^{th} Eq.10-5)	
P_r	13.09 kips	*Calculated axial load*		
V_r	23.61 kips	*Calculated shear load*		
F_y	36.00 ksi	*Minimum yield stress of material*		
A_g	4.50 in^2	*Gross area of the plate*		
Z_{pl}	13.50 in^3	*Plastic modulus of the shear plate*		
P_c	145.80 kips	*Available tensile strength (see check 'Axial Yield')*		
V_c	97.20 kips	*Available shear strength (see check 'Shear Yield')*		
M_r	2.18 kips-ft	*Calculated moment*		
M_c	36.45 kips-ft	*Available moment $M_c = \varphi * (F_y * Z)$, $\varphi = 0.90$*		
UC	0.08	*Unity check per interaction equation, $(V_r/V_c)^2 + (\|P_r\|/P_c + \|M_r\|/M_c)^2 <= 1$*		
Plate Flexural Rupture			**0.04**	**PASS**
$(V_r/V_c)^2 + (M_r/M_c)^2 <= 1$			(Eq.10-5)	
V_r	23.61 kips	*Calculated shear load*		
F_u	58.00 ksi	*Minimum tensile stress of material*		
A_n	4.50 in^2	*Net area of the plate*		
Z_{net}	13.50 in^3	*Plastic modulus of net section*		
V_c	117.45 kips	*Available shear strength (see check 'Shear Rupture')*		
M_r	2.18 kips-ft	*Calculated moment*		
M_c	48.94 kips-ft	*Available moment $M_c = \varphi * (F_u * Znet)$, $\varphi = 0.75$*		
UC	0.04	*Unity check per interaction equation, $(V_r/V_c)^2 + (M_r/M_c)^2 <= 1$*		
Beam Weld Strength	23.61 kips	107.92 kips	**0.22**	**PASS**
$R_n = C_1 * \alpha * \beta * C * D_{16} * L$		**$\phi = 0.75$**		
Double Fillet				
V	23.61 kips	*Shear Load*		
P	13.09 kips	*Axial Load*		
M	2.18 kips-ft	*Moment*		
e_{eff}	1.11 in	*Effective eccentricity*		
C_1	1.00	*Electrode strength coefficient (AISC 15^{th} table 8-3)*		
t	0.42 in	*Base material thickness (beam)*		
α	1.00	*Base material proration factor (re-arrangement of AISC 15^{th} Eqn 9-2)*		
β	0.80	*Force redistribution adjustment factor*		
C	3.75	*Eccentricity modification factor (AISC 15^{th} Eqn 8-21)*		
D_{16}	4.00	*Weld fillet size in sixteenths of an inch*		
L	12.00 in	*Weld length per side*		
ϕRn	107.92 kips	*Weld strength*		

continued on next page...

Angle Kicker Connection: LRFD Results Report (continued):

Limit State	Required	Available	Unity Check	Result
Beam Web Yielding	13.09 kips	211.01 kips	**0.06**	**PASS**
$R_n = (2.5 * k + l_b) * F_y * t_w$		**ϕ = 1.00**	(J10-3)	
F_y	50.00 ksi	*Minimum yield stress of beam*		
t_w	0.30 in	*Beam web thickness*		
k	0.83 in	*Distance from outer face of the flange to the web toe of the fillet*		
l_b	12.00 in	*Length of bearing*		
ϕR_n	211.01 kips	*Beam web local yielding*		
Beam Web Crippling	13.09 kips	170.75 kips	**0.08**	**PASS**
$R_n = 0.8*t_w^2*(1+3*(l_b/d_{col})*(t_w/t_f)^{1.5})*(E*F_y*t_f/t_w)^{0.5}*Q_f$		**ϕ = 0.75**	(J10-4)	
d_{col}	17.70 in	*Beam depth*		
t_w	0.30 in	*Beam web thickness*		
t_f	0.42 in	*Beam flange thickness*		
l_b	12.00 in	*Length of bearing*		
F_y	50.00 ksi	*Minimum yield stress of beam*		
E	29000.00 ksi	*Modulus of elasticity of beam*		
Q_f	1.00	*Chord stress interaction parameter*		
ϕR_n	170.75 kips	*Beam web crippling capacity*		
Gusset Plate Compression (Whitmore)	27.00 kips	30.54 kips	**0.88**	**PASS**
$P_n = F_{cr}*A_g$		**ϕ = 0.9**	(E3-1)	
K	1.20	*Effective length factor*		
L	7.04 in	*Unbraced length*		
r	0.11 in	*Radius of gyration*		
L_c	8.45 in	*Effective length, L_c=K*L*		
L_c/r	78.06	*Plate slenderness check from J4-6*		
F_{cr}	26.12 ksi	*Flexural buckling stress (E3-2)*		
A_g	1.30 in^2	*Gross area of plate (Whitmore section)*		
ϕP_n	30.54 kips	*Gusset plate compressive strength*		
Bolt Bearing on Brace	27.00 kips	91.35 kips	**0.30**	**PASS**
$R_n = 2 * 2*R_{n\text{-}spacing}$		**ϕ = 0.75**	(section J3.10)	
d	0.88 in	*Bolt diameter*		
F_u	58.00 ksi	*Minimum tensile stress of material*		
t	0.25 in	*Thickness of material*		
$L_{c\text{-}spacing}$	2.06 in	*Distance between adjacent hole edges*		
$R_{n\text{-}spacing}$	30.45 kips	*Strength at spaces = min($R_{n\text{-}spacing\text{-}tearout}$, $R_{n\text{-}bearing}$, $R_{n\text{-}bolt}$)*		
$R_{n\text{-}bearing}$	30.45 kips	*Bearing = 2.4*d*t*F_u*		
$R_{n\text{-}spacing\text{-}tearout}$	35.89 kips	*Tear out at spaces = 1.2*$L_{c\text{-}spacing}$*t*F_u*		
$R_{n\text{-}bolt}$	32.47 kips	*Bolt shear strength $R_{n\text{-}bolt}$=F_{nv}*A_{bolt}*		
F_{nv}	54.00 ksi	*Nominal shear stress of bolt*		
ϕR_n	91.35 kips	*Bolt bearing strength*		
Bolt Bearing on Gusset at Brace	27.00 kips	68.51 kips	**0.39**	**PASS**
$R_n = 2*R_{n\text{-}spacing}$		**ϕ = 0.75**	(section J3.10)	
d	0.88 in	*Bolt diameter*		
F_u	58.00 ksi	*Minimum tensile stress of material*		
t	0.38 in	*Thickness of material*		

continued on next page...

Angle Kicker Connection: LRFD Results Report (continued):

Limit State	Required	Available	Unity Check	Result
$L_{c\text{-}spacing}$	2.06 in	*Distance between adjacent hole edges*		
$R_{n\text{-}spacing}$	45.68 kips	*Strength at spaces = min($R_{n\text{-}spacing\text{-}tearout}$, $R_{n\text{-}bearing}$, $R_{n\text{-}bolt}$)*		
$R_{n\text{-}bearing}$	45.68 kips	*Bearing = 2.4*d*t*F_u*		
$R_{n\text{-}spacing\text{-}tearout}$	53.83 kips	*Tear out at spaces = 1.2*$L_{c\text{-}spacing}$*t*F_u*		
$R_{n\text{-}bolt}$	64.94 kips	*Bolt shear strength $R_{n\text{-}bolt}$=2*F_{nv}*A_{bolt}*		
F_{nv}	54.00 ksi	*Nominal shear stress of bolt*		
ϕR_n	68.51 kips	*Bolt bearing strength*		
Bolt Shear on Gusset at Brace	27.00 kips	97.41 kips	**0.28**	**PASS**
$R_n = 2 * F_{nv} * A_b * N_{bolt} * C$		**$\phi = 0.75$**	(J3-1)	
F_{nv}	54.00 ksi	*Shear stress N type*		
A_b	0.60 in^2	*Area of bolt*		
N_{bolt}	2	*Number of bolts*		
C	1.00	*Eccentricity coefficient*		
ϕR_n	97.41 kips	*Bolt shear rupture strength*		

Angle Kicker Connection: Connection Properties Report

Connection	
Connection Title	Angle Kicker Connection
Connection Type	Knee Brace Connection
Connection Category	
Braces	Below
Brace Connection Type	Beam
Workpoint Location	Eccentric
Loading (LRFD)	
Brace Axial	27.000 kips
Components	
Brace Double Angle Section	LL4x4x4x3
Material	A36
Member Orientation	Angle Leg Down
Hole Type	STD
Beam Section	W18X35
Material	A992
Gusset	P0.38x8.00x12.00
Material	A36
Tapered ?	No
Thickness	0.375 in
Width	8.000 in
Length	12.000 in
Hole Type	STD
Brace-Gusset Connection	
Connection	Bolted
Brace Gusset Bolts	7/8" Group A-N
Brace Gusset Bolts	Group A-N
Diameter, in.	7/8"
Rows	1
Bolts per Row	2
Longitudinal Spacing	3.000 in
Transverse Spacing	3.000 in
Slip Critical	No
Gusset-Beam Connection	
Type	Direct Weld
Beam Weld	E70
Type	Double Fillet
Fillet Size	4.000 Sixteenths
Assembly	
Auto-Update Connection	Yes
Gusset/Beam Gap	0.000 in
WorkPoint Horiz. Direction	Left
WorkPoint Horiz. Offset	2.000 in
Brace Clearance	0.500 in
Brace WorkPoint Distance	3.003 in
Brace/Gusset Overlap	5.538 in
Brace Bolts Edge Distances	
Brace Bolts Horz Edge Dist	1.500 in
Brace Bolts Long. Edge Dist	1.500 in
Brace Bolts/Gusset Edge Dist	1.038 in
Gusset Clip	
Vertical Clip	0.000 in
Horizontal Clip	0.000 in

continued on next page...

Angle Kicker Connection: Connection Properties Report (continued):

Brace/Clip Edge Dist	0.211 in
Brace Angle from Horizontal	29.000

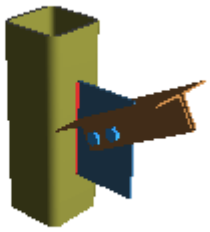
Global Parameters - Description:

Project Title	Single Row Drag connection
Company	KPFF
Designer	Dylan Nisbet
Job Number	
Notes	Single row of slip critical 1" A490 bolts

Global Parameters - Solution:

Design Method	AISC 15th (360-16): LRFD
Bolt Group Analysis Method	Center of Rotation
Weld Analysis Method	Center of Rotation
Consider Bolt Hole Deformation?	Yes
Check Rotational Ductility?	Yes
Check Weld Filler Metal Matching?	Yes
Full Shear Eccentricity Considered?	No
Panel-Zone Shear Deformation Considered?	No
Check Weld Base Material Thickness?	Yes
Reduce Available Bolt Strength by Prying Effects Factor Q?	No

Angle Kicker Connection - Column: LRFD Results Report



Material Properties:				
Column	HSS8X8X8	A500 Gr.B Rect	F_y = 46.00 ksi	F_u = 58.00 ksi
Brace	LL4x4x4x3	A36	F_y = 36.00 ksi	F_u = 58.00 ksi
Gusset	P0.38x8.00x12.00	A36	F_y = 36.00 ksi	F_u = 58.00 ksi

Input Data:		
Brace Axial	27.00 kips	*Brace Axial (compression)*
Shear Load	13.09 kips	*Calculated Shear Load*
Axial Load	23.61 kips	*Calculated Axial Load (compression)*
Moment Load	0.00 kips-ft	*Calculated Moment*

Note: Unless specified, all code references are from AISC 360-16

Limit State	Required	Available	Unity Check	Result
HSS Limitations				**PASS**
Geometry Restrictions at Brace to Gusset				**PASS**
Column Weld Limitations				**PASS**
Plate Shear Yield	13.09 kips	97.20 kips	**0.13**	**PASS**
Plate Shear Rupture	13.09 kips	117.45 kips	**0.11**	**PASS**
Plate Axial Yield	23.61 kips	145.80 kips	**0.16**	**PASS**
Plate Flexural Yield			**0.04**	**PASS**
Plate Flexural Rupture			**0.01**	**PASS**
Column Weld Strength	13.09 kips	106.91 kips	**0.12**	**PASS**
Gusset Plate Compression (Whitmore)	27.00 kips	38.96 kips	**0.69**	**PASS**
Bolt Bearing on Brace	27.00 kips	91.35 kips	**0.30**	**PASS**
Bolt Bearing on Gusset at Brace	27.00 kips	68.51 kips	**0.39**	**PASS**
Bolt Shear on Gusset at Brace	27.00 kips	97.41 kips	**0.28**	**PASS**
HSS Column Transverse Plastification	23.61 kips	79.28 kips	**0.30**	**PASS**

Angle Kicker Connection - Column: Connection Properties Report

Connection	
Connection Title	Angle Kicker Connection - Column
Connection Type	Knee Brace Connection
Connection Category	
Braces	Above
Brace Connection Type	Column
Column Connection Type	Narrow
Workpoint Location	Eccentric
Loading (LRFD)	
Brace Axial	27.000 kips
Qf	1.000 Coeff
Components	
Brace Double Angle Section	LL4x4x4x3
Material	A36
Member Orientation	Angle Leg Down
Hole Type	STD
Column Section	HSS8X8X8
Material	A500 Gr.B Rect
Gusset	P0.38x8.00x12.00
Material	A36
Tapered ?	No
Thickness	0.375 in
Width	8.000 in
Length	12.000 in
Hole Type	STD
Brace-Gusset Connection	
Connection	Bolted
Brace Gusset Bolts	7/8" Group A-N
Brace Gusset Bolts	Group A-N
Diameter, in.	7/8"
Rows	1
Bolts per Row	2
Longitudinal Spacing	3.000 in
Transverse Spacing	3.000 in
Slip Critical	No
Gusset-Column Connection	
Type	Direct Weld
Column Weld	E70
Type	Double Fillet
Fillet Size	4.000 Sixteenths
Assembly	
Auto-Update Connection	Yes
Gusset/Column Gap	0.000 in
WorkPoint Vert. Direction	Down
WorkPoint Vert. Offset	0.000 in
Brace Clearance	0.500 in
Brace WorkPoint Distance	1.177 in
Brace/Gusset Overlap	6.358 in
Brace Bolts Edge Distances	
Brace Bolts Horz Edge Dist	1.500 in
Brace Bolts Long. Edge Dist	1.500 in
Brace Bolts/Gusset Edge Dist	1.858 in
Gusset Clip	

continued on next page...

Angle Kicker Connection - Column: Connection Properties Report (continued):

Horizontal Clip	0.000 in
Vertical Clip	0.000 in
Brace/Clip Edge Dist	0.276 in
Brace Angle from Vertical	61.000

18 ga PLB™-36 Grade 50 Roof Deck AREA A - DRAG DESIGN

Seismic Diaphragm Shear

For Both Ends Lapped Deck

5/8" Visible Dia. Arc Spot Weld Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections

A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.)
3 in. Minimum Deck End Bearing Length

Note: Support welds at interlocking sidelaps may be 3/8" x 1 1/4" arc seam welds in lieu of arc spot welds.

LRFD Design Seismic Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
4	2170	2170	2170	2170	2170	2170	2170	2170	2170
6	2170	2170	2170	2170	2170	2170	2170	2170	2170
8	2170	2170	2170	2170	2170	2170	2170	2170	2170
12	2167	2170	2121	2170	2088	2137	2063	2109	2044
18	1952	1824	1941	1838	1742	1847	1765	1688	1782
24	1655	1824	1708	1602	1506	1652	1570	1494	1424
36	1655	1524	1410	1309	1220	1418	1339	1268	1203

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

Sidelap Connection Spacing (in.)	Span 4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
4	4	4	4	4	4	4	4	4	4
6	6	6	6	6	6	6	6	6	6
8	8	8	8	8	8	8	8	8	8
12	12	12	12	12	12	12	12	12	12
18	16	14	15	17	14	16	17	15	16
24	16	14	15	17	18	16	17	18	19
36	16	18	20	22	24	20	21	23	24

Seismic or Wind Diaphragm Shear Stiffness, G' (kip/in.) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
4	321	323	320	322	320	321	320	321	319
6	298	297	296	296	295	295	295	294	294
8	278	280	281	282	275	276	277	278	273
12	249	255	246	251	244	249	242	246	241
18	228	217	228	219	211	221	214	207	216
24	199	217	206	197	189	203	196	189	183
36	199	188	177	168	160	181	174	167	161

18 ga PLB™-36 Grade 50 Roof Deck

AREA A - DRAG DESIGN

Wind Diaphragm Shear

For Both Ends Lapped Deck

5/8" Visible Dia. Arc Spot Weld Connections to Supports
36 / 4 Perpendicular Connection Pattern to Supports
PunchLok II Connection (VSC2) Sidelap Connections

A572 GR50 Support Member or Equivalent
0.188 ≤ Support Thickness (in.)
3 in. Minimum Deck End Bearing Length

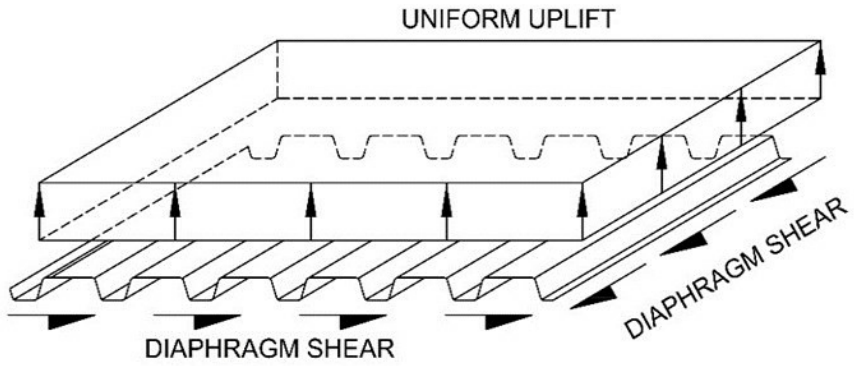
Note: Support welds at interlocking sidelaps may be 3/8" x 1 1/4" arc seam welds in lieu of arc spot welds.

LRFD Design Wind Diaphragm Shear Strength ΦSn (plf) Generic 3 Span Condition

Sidelap Connection Spacing (in.)	Span 4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
4	2959	2959	2959	2959	2959	2959	2959	2959	2865
6	2959	2959	2959	2959	2959	2959	2959	2959	2865
8	2959	2959	2959	2959	2959	2959	2959	2959	2865
12	2955	2959	2892	2959	2847	2914	2814	2876	2788
18	2662	2488	2647	2506	2375	2518	2407	2302	2430
24	2257	2488	2329	2184	2053	2253	2141	2037	1942
36	2257	2079	1922	1785	1663	1934	1827	1729	1640

Average Connection Spacing to Supports at Parallel Chords & Collectors (in.)

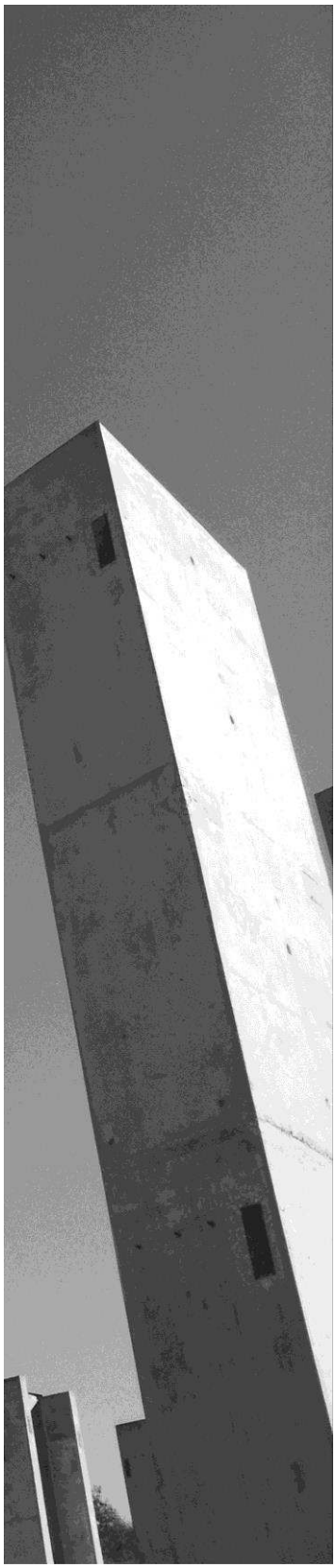
Sidelap Connection Spacing (in.)	Span 4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
4	4	4	4	4	4	4	4	4	4
6	6	6	6	6	6	6	6	6	6
8	8	8	8	8	8	8	8	8	8
12	12	12	12	12	12	12	12	12	12
18	16	14	15	17	14	16	17	15	16
24	16	14	15	17	18	16	17	18	19
36	16	18	20	22	24	20	21	23	24



Tables generated using V1.0.3 of calculator based on AISI S310-16. Date: 10/3/2022

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

CMU AND CONCRETE SHEAR WALLS



KPFF JOB # 10212200038

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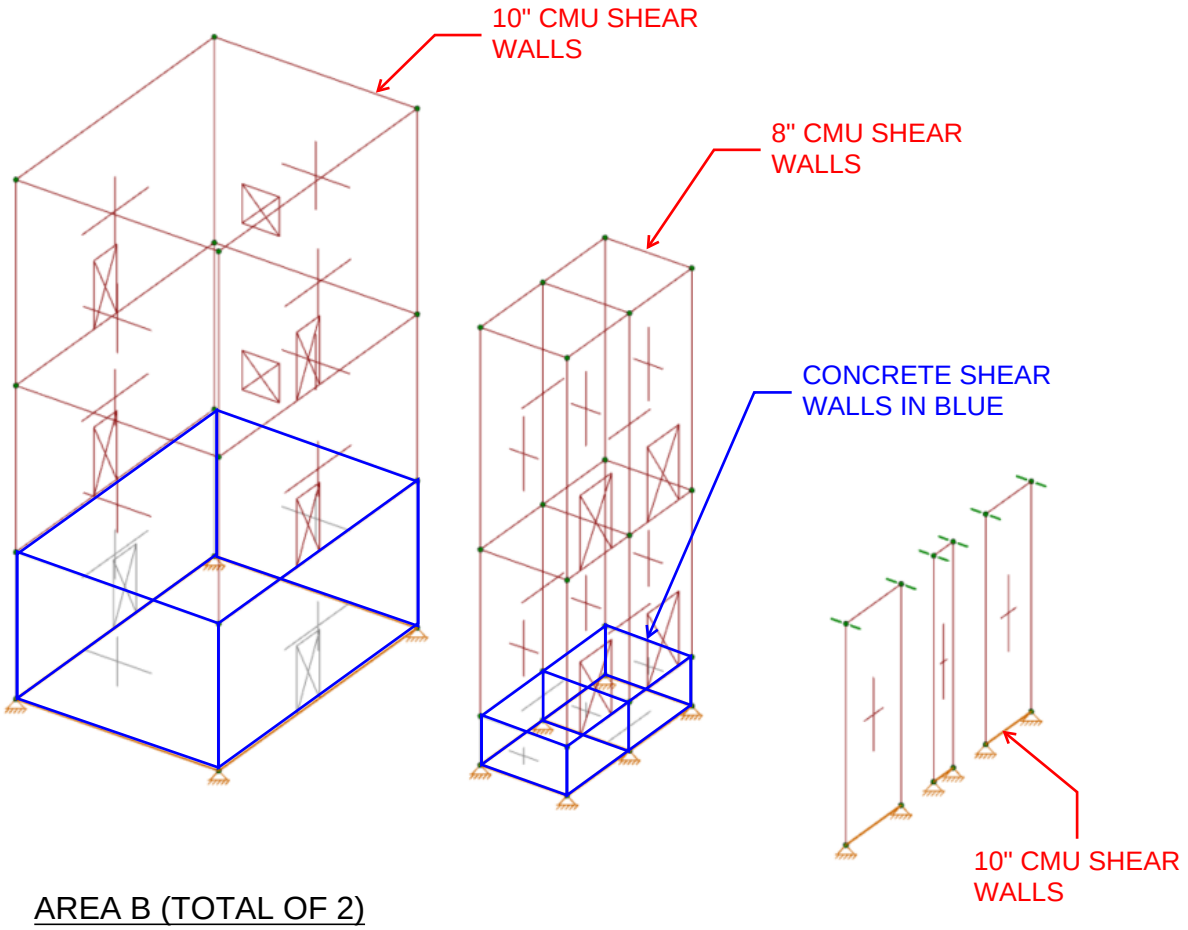
project	TFJB	by CW	sheet no. -
location	Twin Falls, ID	date 01-23-23	
client	CSHQA	job no. 10212200038	
RISA-3D Shear Wall Model			

RISA-3D Shear Wall Model:



AREA B (TOTAL OF 2)

AREA A

AREA A - EXT. WALLS

Design Size and Code Check Parameters

	Label	Max Axial/Bending Chk	Max Shear Chk
1	Typical	1	1

Concrete Rebar Parameters

	Label	Optimize Rebar ?	Min Flex Bar	Max Flex Bar	Shear Bar	Legs per Stirrup	Top (Column) Cover [in]	Bottom Cover [in]	Side Cover [in]	Top/Bottom Bars	Add'l Side Bars	Shear Bar Spacing [in]
1	Typical	Optimize	#6	#10	#4	2	1.5	1.5	1.5	2	1	12

Deflection Design

	Label	LC	Ratio	LC	Ratio	LC	Ratio
1	Typical	1	240	2	360	3	240

Frame / HR Seismic Design Rule DOES NOT APPLY

	Label	Frame Type	Column Ductility	Column Overstrength	Beam Ductility	Connection	Beam Overstrength	Z Factor	Hinge Location [in]	Brace Ductility	Brace Overstrength	KL/r
1	OCBF	OCBF	Minimal	Yes	Minimal	Other/None		N/A	N/A	Minimal		
2	SCBF	SCBF	High	Yes	High	Other/None	Yes	N/A	N/A	High		Yes
3	OMF	OMF	Minimal	Yes	Minimal	BUEEP			12	N/A		
4	IMF	IMF	Moderate	Yes	Moderate	BFP			12	N/A		
5	SMF-RBS	SMF	High	Yes	High	RBS		0.685	14.625	N/A		
6	SMF-KaiserB	SMF	High	Yes	High	KBB-B			12	N/A		
7	SMF-KaiserW	SMF	High	Yes	High	KBB-W			12	N/A		
8	SMF-BSEEP	SMF	High	Yes	High	BSEEP			12	N/A		
9	SMF-WUF-W	SMF	High	Yes	High	WUF-W				N/A		

Concrete Wall Seismic Design Rule

	Label	Wall Type	Diagonal Bar Size
1	Intermed Precast Conc	Intermediate Precast	N/A

Masonry Wall Seismic Design Rule

	Label	Wall Types	Special Boundary Elements	1.5x Shear ASD
1	Intermediate	Intermediate		

Connection Design Rules DOES NOT APPLY

	Label	Conn Type	Type	Beam Conn	Col/Girder Conn	Eccentricity
1	Col/Bm Single Angle Shear	Shear	Column/Beam Clip Single Angle Shear	Bolted	Bolted	1.5
2	Col/Bm Double Angle Shear	Shear	Column/Beam Clip Double Angle Shear	Bolted	Bolted	0
3	Col/Bm Two Side Clip Angle Shear	Shear	Column/Beam Clip Double Angle (Both Side) Shear	Bolted	Bolted	N/A
4	Col/Bm End Plate Shear	Shear	Column/Beam End-Plate Shear	N/A	Bolted	N/A
5	Col/Bm Shear Tab Shear	Shear	Column/Beam Shear Tab Shear	Bolted	N/A	0
6	Girder/Bm Single Angle Shear	Shear	Girder/Beam Clip Single Angle Shear	Bolted	Bolted	N/A
7	Girder/Bm Double Angle Shear	Shear	Girder/Beam Clip Double Angle Shear	Bolted	Bolted	N/A
8	Grd/Bm Two Side Clip Angle Shear	Shear	Girder/Beam Clip Double Angle (Both Side) Shear	Bolted	Bolted	N/A
9	Girder/Bm End Plate Shear	Shear	Girder/Beam End-Plate Shear	N/A	Bolted	N/A
10	Girder/Bm Shear Tab Shear	Shear	Girder/Beam Shear Tab Shear	Bolted	N/A	N/A
11	Beam Shear Splice	Shear	Beam Shear Tab Splice	Bolted	N/A	N/A
12	Column Shear Splice	Shear	Column Shear Tab Splice	N/A	Bolted	N/A
13	Col/Bm Ext. End Plate Moment	Moment	Column/Beam Extended End-Plate Moment	N/A	N/A	N/A
14	Col/Bm PartExt. End Plate Moment	Moment	Column/Beam Partially Extended End-Plate Moment (Tension side)	N/A	N/A	N/A

Connection Design Rules (Continued)

	Label	Conn Type	Type	Beam Conn	Col/Girder Conn	Eccentricity
15	Col/Bm Flush End Plate Moment	Moment	Column/Beam Flush End-Plate Moment	N/A	N/A	N/A
16	Col/Bm Flange Plate Moment	Moment	Column/Beam Flange Plate Moment	Bolted	N/A	N/A
17	Col/Bm Direct Weld Moment	Moment	Column/Beam Direct Weld Moment	Bolted	N/A	N/A
18	Col/Bm Seismic Moment	Moment	Column/Beam Seismic Moment	N/A	N/A	N/A
19	Beam Moment Plate Splice	Moment	Beam Moment Plate Splice	Bolted	N/A	N/A
20	Column Moment Plate Splice	Moment	Column Moment Plate Splice	N/A	N/A	N/A
21	Beam Direct Weld Moment Splice	Moment	Beam Direct Weld Splice	Bolted	N/A	N/A
22	Col Direct Weld Moment Splice	Moment	Column Direct Weld Splice	N/A	Bolted	N/A
23	Bm Ext. End Plate Moment Splice	Moment	Beam Extended End Plate Splice	Bolted	N/A	N/A
24	Col Ext. End Plate Moment Splice	Moment	Column Extended End Plate Splice	N/A	Bolted	N/A
25	Diagonal Vertical Brace	Brace	Diagonal Vertical Brace	N/A	N/A	N/A
26	Chevron Vertical Brace	Brace	Chevron Vertical Brace	N/A	N/A	N/A
27	Seismic Diagonal Brace	Brace	Diagonal Brace Seismic	N/A	N/A	N/A
28	Seismic Chevron Brace	Brace	Chevron Brace Seismic	N/A	N/A	N/A
29	Knee Brace	Brace	Knee Brace	N/A	N/A	N/A
30	Single Column Base Plate	Baseplate	Single Column Baseplate	N/A	N/A	N/A
31	Base Plate with Vertical Brace	Baseplate	Brace to Column Base Plate	N/A	N/A	N/A
32	HSS Truss Connection	Truss	HSS T-Connection	N/A	N/A	N/A

Drift Definitions

No Data to Print...

Wall Panel Distributed Loads (BLC 1 : DEAD LOAD)

	Wall Label	Direction	Start Magnitude [k/ft, F]	End Magnitude [k/ft, F]	Start Location [(in, %)]	End Location [(in, %)]
1	WP11(0in)	Y	-0.586	-0.586	0	230
2	WP12(0in)	Y	-0.586	-0.586	0	230
3	WP11(272in)	Y	-0.5	-0.5	0	230
4	WP12(272in)	Y	-0.5	-0.5	0	230
5	WP16(272in)	Y	-0.182	-0.182	0	112
6	WP14(272in)	Y	-0.182	-0.182	0	112
7	WP17(272in)	Y	-0.182	-0.182	0	112
8	WP8(252in)	Y	-0.364	-0.364	0	262
9	Masonry SW4(252in)	Y	-0.364	-0.364	0	262
10	Masonry SW3(204in)	Y	-0.782	-0.782	0	262
11	WP8(0in)	Y	-0.782	-0.782	0	262
12	WP6(252in)	Y	-1.1	-1.1	0	366
13	Masonry SW2(252in)	Y	-1.1	-1.1	0	366
14	WP5(204in)	Y	-2.27	-2.27	0	366
15	Masonry SW2(0in)	Y	-2.27	-2.27	0	366

Wall Panel Distributed Loads (BLC 2 : LIVE LOAD)

	Wall Label	Direction	Start Magnitude [k/ft, F]	End Magnitude [k/ft, F]	Start Location [(in, %)]	End Location [(in, %)]
1	WP9(204in)	Y	-0.45	-0.45	0	230
2	Masonry SW3(204in)	Y	-0.8	-0.8	0	262
3	WP8(0in)	Y	-0.8	-0.8	0	262
4	WP6(0in)	Y	-2.32	-2.32	0	366
5	Masonry SW1(204in)	Y	-2.32	-2.32	0	366

Wall Panel Distributed Loads (BLC 3 : SNOW LOAD)

	Wall Label	Direction	Start Magnitude [k/ft, F]	End Magnitude [k/ft, F]	Start Location [(in, %)]	End Location [(in, %)]
1	WP11(272in)	Y	-0.35	-0.35	0	230
2	WP12(272in)	Y	-0.35	-0.35	0	230
3	WP16(272in)	Y	-0.125	-0.125	0	112
4	WP14(272in)	Y	-0.125	-0.125	0	112
5	WP17(272in)	Y	-0.125	-0.125	0	112
6	Masonry SW2(252in)	Y	-0.725	-0.725	0	366
7	WP6(252in)	Y	-0.725	-0.725	0	366
8	WP8(252in)	Y	-0.25	-0.25	0	262
9	Masonry SW4(252in)	Y	-0.25	-0.25	0	262

Wall Panel Distributed Loads (BLC 6 : SEISMIC X)

	Wall Label	Direction	Start Magnitude [k/ft, F]	End Magnitude [k/ft, F]	Start Location [(in, %)]	End Location [(in, %)]
1	WP17(0in)	X	1.77	1.77	0	112
2	WP15(204in)	X	1.77	1.77	0	112
3	WP14(0in)	X	1.07	1.07	0	112
4	WP17(272in)	X	1.29	1.29	0	112
5	WP16(272in)	X	1.29	1.29	0	112
6	WP14(272in)	X	0.75	0.75	0	112
7	Masonry SW4(0in)	X	1.92	1.92	0	262
8	WP8(252in)	X	2.75	2.75	0	262
9	WP7(204in)	X	1.57	1.57	0	262
10	Masonry SW4(252in)	X	2.3	2.3	0	262

Wall Panel Distributed Loads (BLC 7 : SEISMIC Z)

	Wall Label	Direction	Start Magnitude [k/ft, F]	End Magnitude [k/ft, F]	Start Location [(in, %)]	End Location [(in, %)]
1	WP21(282in)	Z	-1.5	-1.5	0	84
2	WP20(277in)	Z	-0.167	-0.167	0	36
3	WP19(271in)	Z	-0.833	-0.833	0	102
4	WP12(272in)	Z	-0.388	-0.388	0	230
5	WP11(0in)	Z	-0.336	-0.336	0	230
6	WP12(0in)	Z	-0.81	-0.81	0	230
7	WP11(272in)	Z	-0.336	-0.336	0	230
8	WP6(0in)	Z	-2.35	-2.35	0	366
9	Masonry SW2(252in)	Z	-1.83	-1.83	0	366
10	WP6(252in)	Z	-3.27	-3.27	0	366
11	Masonry SW1(204in)	Z	-1.22	-1.22	0	366

Wall Panel Surface Loads (BLC 4 : WIND X)

	Wall Panel Label	Direction	Top Magnitude [psf, F]	Bottom Magnitude [psf, F]	Start Location [in]	Height [in]
1	WP19	X	-61	-61	0	0
2	WP20	X	-76.8	-76.8	0	0
3	WP21	X	-49.37	-49.37	0	0

Basic Load Cases

	BLC Description	Category	Y Gravity	Distributed	Surface(Plate/Wall)
1	DEAD LOAD	DL	-1	15	
2	LIVE LOAD	LL		5	
3	SNOW LOAD	SL		9	
4	WIND X	WLX			3

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Distributed	Surface(Plate/Wall)
5	WIND Z	WLZ			
6	SEISMIC X	ELX		10	
7	SEISMIC Z	ELZ		11	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Deflection 1		Y	DL	1										
2	Deflection 2		Y	LL	1										
3	Deflection 3		Y	DL	1	LL	1								
4	LRFD		Y												
5	IBC 16-1	Yes	Y	DL	1.4										
6	IBC 16-2 (a)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6	RLL	0.5				
7	IBC 16-2 (b)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6	SL	0.5	SLN	0.5		
8	IBC 16-2 (c)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6						
9	IBC 16-3 (a)	Yes	Y	DL	1.2	RLL	1.6	LL	0.5	LLS	1				
10	IBC 16-3 (c)	Yes	Y	DL	1.2	SL	1.6	SLN	1.6	LL	0.5	LLS	1		
11	LRFD SEIS														
12	IBC 16-5 (a)	Yes	Y	DL	1.2	Rho*ELX	1	LL	0.5	LLS	1	SL	0.2	SLN	0.7
13	IBC 16-5 (b)	Yes	Y	DL	1.2	Rho*ELZ	1	LL	0.5	LLS	1	SL	0.2	SLN	0.7
14	IBC 16-5 (c)	Yes	Y	DL	1.2	Rho*ELX	-1	LL	0.5	LLS	1	SL	0.2	SLN	0.7
15	IBC 16-5 (d)	Yes	Y	DL	1.2	Rho*ELZ	-1	LL	0.5	LLS	1	SL	0.2	SLN	0.7
16	IBC 16-7 (a)	Yes	Y	DL	0.9	Rho*ELX	1								
17	IBC 16-7 (b)	Yes	Y	DL	0.9	Rho*ELZ	1								
18	IBC 16-7 (c)	Yes	Y	DL	0.9	Rho*ELX	-1								
19	IBC 16-7 (d)	Yes	Y	DL	0.9	Rho*ELZ	-1								
20	LRFD WIND														
21	IBC 16-3 (b) (a)	Yes	Y	DL	1.2	WLX	0.5								
22	IBC 16-3 (b) (b)	Yes	Y	DL	1.2	WLZ	0.5								
23	IBC 16-3 (b) (c)	Yes	Y	DL	1.2	WLX	-0.5								
24	IBC 16-3 (b) (d)	Yes	Y	DL	1.2	WLZ	-0.5								
25	IBC 16-4 (a) (a)	Yes	Y	DL	1.2	WLX	1	LL	0.5	LLS	1				
26	IBC 16-4 (a) (b)	Yes	Y	DL	1.2	WLZ	1	LL	0.5	LLS	1				
27	IBC 16-4 (a) (c)	Yes	Y	DL	1.2	WLX	-1	LL	0.5	LLS	1				
28	IBC 16-4 (a) (d)	Yes	Y	DL	1.2	WLZ	-1	LL	0.5	LLS	1				
29	IBC 16-6 (a)	Yes	Y	DL	0.9	WLX	1								
30	IBC 16-6 (b)	Yes	Y	DL	0.9	WLZ	1								
31	IBC 16-6 (c)	Yes	Y	DL	0.9	WLX	-1								
32	UNFACTORED														
33	DL		Y	DL	1										
34	LL		Y	LL	1										
35	SL		Y	SL	1										
36	ELX		Y	ELX	1										
37	ELZ		Y	ELZ	1										
38	ELX-		Y	ELX	-1										
39	ELZ-		Y	ELZ	-1										

UNF LOAD COMBOS USED TO EXPORT LOAD VALUES

Load Combination Design

	Description	CD	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	LRFD	1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	IBC 16-1			Yes	Yes		Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	CD	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
6	IBC 16-2 (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
7	IBC 16-2 (b)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
8	IBC 16-2 (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
9	IBC 16-3 (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
10	IBC 16-3 (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
11	LRFD SEIS			Yes	Yes		Yes	Yes	Yes	Yes	Yes
12	IBC 16-5 (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
13	IBC 16-5 (b)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
14	IBC 16-5 (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
15	IBC 16-5 (d)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
16	IBC 16-7 (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
17	IBC 16-7 (b)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
18	IBC 16-7 (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
19	IBC 16-7 (d)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
20	LRFD WIND			Yes	Yes		Yes	Yes	Yes	Yes	Yes
21	IBC 16-3 (b) (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
22	IBC 16-3 (b) (b)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
23	IBC 16-3 (b) (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
24	IBC 16-3 (b) (d)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
25	IBC 16-4 (a) (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
26	IBC 16-4 (a) (b)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
27	IBC 16-4 (a) (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
28	IBC 16-4 (a) (d)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
29	IBC 16-6 (a)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
30	IBC 16-6 (b)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
31	IBC 16-6 (c)			Yes	Yes		Yes	Yes	Yes	Yes	Yes
32	UNFACTORED			Yes	Yes		Yes	Yes	Yes	Yes	Yes
33	DL			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
34	LL			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
35	SL			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
36	ELX			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
37	ELZ			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
38	ELX-			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
39	ELZ-			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Masonry Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Self Weight [k/ft³]	f'm [ksi]	Flex Steel [ksi]	Shear Steel [ksi]
1	Concrete Matl	1350	540	0.25	0.6	Custom	1.5	60	60
2	Clay Matl	1050	420	0.25	0.6	Custom	1.5	60	60
3	LW Masonry	1800	720	0.25	0.6	Custom	2	60	60
4	NW Masonry	1800	720	0.25	0.6	Custom	2	60	60

Concrete Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	f'c [ksi]	Lambda	Flex Steel [ksi]	Shear Steel [ksi]
1	Conc3000NW	3156	1372	0.15	0.6	0.145	3	1	60	60
2	Conc3500NW	3409	1482	0.15	0.6	0.145	3.5	1	60	60
3	Conc4000NW	3644	1584	0.15	0.6	0.145	4	1	60	60
4	Conc3000LW	2085	907	0.15	0.6	0.11	3	0.75	60	60
5	Conc3500LW	2252	979	0.15	0.6	0.11	3.5	0.75	60	60
6	Conc4000LW	2408	1047	0.15	0.6	0.11	4	0.75	60	60

Wall Panel Data

	Label	A Node	B Node	C Node	D Node	Material Type	Material Set	Thickness [in]	Design Rule	Panel/Spacing
1	Masonry SW1	N1	N2	N3	N4	Masonry	NW Masonry	10	10" Wall	48
2	Masonry SW2	N2	N5	N6	N3	Masonry	NW Masonry	10	10" Wall	48
3	Masonry SW3	N4	N3	N8	N9	Masonry	NW Masonry	10	10" Wall	48
4	Masonry SW4	N3	N6	N11	N8	Masonry	NW Masonry	10	10" Wall	48
5	WP5	N13	N14	N8	N9	Masonry	NW Masonry	10	10" Wall	48
6	WP6	N14	N15	N11	N8	Masonry	NW Masonry	10	10" Wall	48
7	WP7	N1	N2	N14	N13	Masonry	NW Masonry	10	10" Wall	48
8	WP8	N2	N5	N15	N14	Masonry	NW Masonry	10	10" Wall	48
9	WP9	N17	N24	N22	N21	Masonry	NW Masonry	8	Typical 8"	8
10	WP10	N16	N23	N27	N20	Masonry	NW Masonry	8	Typical 8"	48
11	WP11	N24	N32	N29	N22	Masonry	NW Masonry	8	Typical 8"	48
12	WP12	N23	N31	N28	N27	Masonry	NW Masonry	8	Typical 8"	48
13	WP13	N21	N22	N27	N20	Masonry	NW Masonry	8	Typical 8"	48
14	WP14	N22	N29	N28	N27	Masonry	NW Masonry	8	Typical 8"	48
15	WP15	N16	N23	N24	N17	Masonry	NW Masonry	8	Typical 8"	48
16	WP16	N23	N31	N32	N24	Masonry	NW Masonry	8	Typical 8"	48
17	WP17	N26	N30	N33	N25	Masonry	NW Masonry	8	Typical 8"	48
18	WP18	N19	N26	N25	N18	Masonry	NW Masonry	8	Typical 8"	48
19	WP19	N34	N41	N40	N35	Masonry	NW Masonry	10	10" Wall	32
20	WP20	N36	N42	N43	N37	Masonry	NW Masonry	10	10" Wall	24
21	WP21	N38	N44	N45	N39	Masonry	NW Masonry	10	10" Wall	32
22	WP22	N46	N9	N4	N48	Concrete	Conc4000NW	10	10" Wall	N/A
23	WP23	N49	N13	N9	N46	Concrete	Conc4000NW	10	10" Wall	N/A
24	WP24	N48	N4	N1	N47	Concrete	Conc4000NW	10	10" Wall	N/A
25	WP25	N47	N1	N13	N49	Concrete	Conc4000NW	10	10" Wall	N/A
26	WP26	N50	N17	N21	N54	Concrete	Conc4000NW	10	Typical 8"	N/A
27	WP27	N54	N21	N20	N55	Concrete	Conc4000NW	10	Typical 8"	N/A
28	WP28	N52	N19	N18	N53	Concrete	Conc4000NW	8	Typical 8"	N/A
29	WP29	N55	N20	N16	N51	Concrete	Conc4000NW	10	Typical 8"	N/A
30	WP30	N51	N16	N17	N50	Concrete	Conc4000NW	10	Typical 8"	N/A

Wall Panel Advanced Data

	Label	Seismic Rule	Design Method	SSAF	Cm In-Plane	Cm Out-Plane	Stud Bracing	Sheathing Connect Dist [in]
1	Masonry SW1	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
2	Masonry SW2	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
3	Masonry SW3	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
4	Masonry SW4	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
5	WP5	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
6	WP6	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
7	WP7	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
8	WP8	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
9	WP9	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
10	WP10	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
11	WP11	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
12	WP12	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
13	WP13	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
14	WP14	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
15	WP15	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
16	WP16	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
17	WP17	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
18	WP18	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
19	WP19	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
20	WP20	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A
21	WP21	Intermediate	N/A	N/A	N/A	N/A	N/A	N/A

Wall Panel Advanced Data (Continued)

	Label	Seismic Rule	Design Method	SSAF	Cm In-Plane	Cm Out-Plane	Stud Bracing	Sheathing Connect Dist [in]
22	WP22	None	N/A	N/A			N/A	N/A
23	WP23	None	N/A	N/A			N/A	N/A
24	WP24	None	N/A	N/A			N/A	N/A
25	WP25	None	N/A	N/A			N/A	N/A
26	WP26	None	N/A	N/A			N/A	N/A
27	WP27	None	N/A	N/A			N/A	N/A
28	WP28	None	N/A	N/A			N/A	N/A
29	WP29	None	N/A	N/A			N/A	N/A
30	WP30	None	N/A	N/A			N/A	N/A

Member Section Forces

No Data to Print...

Maximum Member Section Forces

No Data to Print...

Member End Reactions

No Data to Print...

Member 2nd/1st Moment Ratios

No Data to Print...

Member Torsion Stresses

No Data to Print...

Member Section Stresses

No Data to Print...

Member Section Deflections - Service

No Data to Print...

Member Section Deflections - Strength

No Data to Print...

Beam Deflections

No Data to Print...

Beam Deflection Checks

No Data to Print...

AISC 15TH (360-16): ASD Member Steel Code Checks

No Data to Print...

AISI S100-16: ASD Member Cold Formed Steel Code Checks

No Data to Print...

DOES NOT APPLY

AWC NDS-18: ASD Member Wood Code Checks

No Data to Print...

AA ADM1-15: ASD - BUILDING Member Aluminum Code Checks

No Data to Print...

AISC 14TH (360-10): ASD Member Stainless Steel Code Checks

No Data to Print...

Concrete Beam Bending Reinforcement

No Data to Print...

Concrete Beam Shear Reinforcement

No Data to Print...

Concrete Column Bending Reinforcement

No Data to Print...

Concrete Column Shear Reinforcement

No Data to Print...

Member Suggested Designs

No Data to Print...

Plate Principal Stresses

No Data to Print...

Plate Forces (per in)

No Data to Print...

Plate Corner Forces

No Data to Print...

Solid Stresses

No Data to Print...

Solid Principal Stresses

No Data to Print...

Solid Corner Forces

No Data to Print...

Wall Panel Forces

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
1	5	Masonry SW1	0	212.769	0.058	0.314	0.42	112.917
2	5	Masonry SW2	204	91.051	-0.003	0.006	0.004	41.16
3	5	Masonry SW3	0	142.842	-0.023	0.435	0.574	92
4	5	Masonry SW4	204	71.358	-0.009	-0.013	-0.009	42.671
5	5	WP5	0	215.397	-0.021	-0.3	-0.418	21.624
6	5	WP6	204	86.952	-0.007	-0.001	0	10.861

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
7	5	WP7	0	152.764	0.009	-0.397	-0.571	19.393
8	5	WP8	204	75.865	0.004	0.004	0.009	11.425
9	5	WP9	0	72.93	0.001	-0.727	-0.608	-0.095
10	5	WP10	0	79.297	-0.001	0.257	0.33	-0.049
11	5	WP11	204	33.441	0	0.007	0.004	-0.019
12	5	WP12	204	40.97	0	0.014	0.011	-0.033
13	5	WP13	0	36.08	-0.114	-0.199	-0.206	4.224
14	5	WP14	204	22.947	-0.008	-0.019	-0.01	-2.404
15	5	WP15	0	36.064	0.116	-0.201	-0.206	-4.224
16	5	WP16	204	22.941	0.009	-0.019	-0.01	2.418
17	5	WP17	204	23.736	0.036	0	0	-3.631
18	5	WP18	0	34.525	-0.244	-0.002	-0.001	4.988
19	5	WP19	0	19.887	0	0	0	0
20	5	WP20	0	7.562	0	0	0	0
21	5	WP21	0	17.042	0	0	0	0
22	5	WP22	-180	211.527	0.004	-0.116	0	-28.948
23	5	WP23	-180	280.466	-0.005	-0.096	0	38.22
24	5	WP24	-180	272.719	-0.013	-0.097	0	-18.726
25	5	WP25	-180	216.363	0.002	-0.108	0	26.583
26	5	WP26	-60	84.772	-0.009	0.109	0	-1.307
27	5	WP27	-60	47.095	0.011	0.061	0	-0.342
28	5	WP28	-60	39.07	0.035	0.001	0	-7.177
29	5	WP29	-60	95.505	0.001	0.048	0	-0.243
30	5	WP30	-60	46.981	-0.015	0.053	0	-0.403
31	6	Masonry SW1	0	272.961	0.066	0.383	0.517	136.676
32	6	Masonry SW2	204	67.259	-0.007	0.002	0	42.641
33	6	Masonry SW3	0	172.241	-0.033	0.56	0.74	99.015
34	6	Masonry SW4	204	71.544	-0.01	-0.032	-0.014	37.42
35	6	WP5	0	261.245	-0.023	-0.351	-0.486	36.546
36	6	WP6	204	64.203	-0.008	0.004	0.002	7.346
37	6	WP7	0	183.263	0.005	-0.514	-0.742	7.079
38	6	WP8	204	75.76	0.005	0.019	0.01	3.922
39	6	WP9	0	72.324	0.001	-0.693	-0.618	-0.103
40	6	WP10	0	66.642	-0.001	0.219	0.272	-0.043
41	6	WP11	204	27.902	0	0.001	-0.003	-0.006
42	6	WP12	204	34.716	0	0.011	0.008	-0.028
43	6	WP13	0	32.681	-0.117	-0.187	-0.192	-0.642
44	6	WP14	204	20.088	-0.005	-0.015	-0.009	-2.721
45	6	WP15	0	32.665	0.119	-0.189	-0.192	0.634
46	6	WP16	204	20.084	0.005	-0.015	-0.009	2.74
47	6	WP17	204	20.669	0.022	0	0	-3.497
48	6	WP18	0	31.4	-0.238	-0.001	-0.001	0.397
49	6	WP19	0	17.046	0	0	0	0
50	6	WP20	0	6.482	0	0	0	0
51	6	WP21	0	14.608	0	0	0	0
52	6	WP22	-180	238.356	0.002	-0.129	0	-15.835
53	6	WP23	-180	312.253	-0.004	-0.104	0	53.68
54	6	WP24	-180	316.342	-0.016	-0.102	0	-26.882
55	6	WP25	-180	243.304	0.005	-0.118	0	6.971
56	6	WP26	-60	81.694	-0.009	0.122	0	-1.286
57	6	WP27	-60	42.431	0.018	0.06	0	-5.976
58	6	WP28	-60	35.499	0.051	0.002	0	-10.899
59	6	WP29	-60	80.512	0.001	0.031	0	-0.193
60	6	WP30	-60	42.314	-0.021	0.051	0	5.268
61	7	Masonry SW1	0	281.237	0.068	0.395	0.534	141.611

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
62	7	Masonry SW2	204	76.197	-0.007	0.002	0.001	45.851
63	7	Masonry SW3	0	177.723	-0.034	0.577	0.765	102.249
64	7	Masonry SW4	204	76.377	-0.01	-0.032	-0.015	39.56
65	7	WP5	0	269.185	-0.023	-0.363	-0.502	37.574
66	7	WP6	204	72.918	-0.008	0.004	0.002	7.975
67	7	WP7	0	189.136	0.005	-0.53	-0.766	7.505
68	7	WP8	204	80.845	0.005	0.018	0.011	4.211
69	7	WP9	0	74.839	0.001	-0.717	-0.64	-0.106
70	7	WP10	0	69.115	-0.001	0.227	0.283	-0.045
71	7	WP11	204	30.055	0	0.001	-0.003	-0.011
72	7	WP12	204	37.102	0	0.011	0.008	-0.028
73	7	WP13	0	33.866	-0.121	-0.194	-0.199	-0.584
74	7	WP14	204	21.369	-0.005	-0.016	-0.009	-3.059
75	7	WP15	0	33.849	0.123	-0.195	-0.199	0.576
76	7	WP16	204	21.364	0.006	-0.016	-0.01	3.074
77	7	WP17	204	22.027	0.024	0	0	-3.911
78	7	WP18	0	32.502	-0.246	-0.001	0	0.485
79	7	WP19	0	17.046	0	0	0	0
80	7	WP20	0	6.482	0	0	0	0
81	7	WP21	0	14.608	0	0	0	0
82	7	WP22	-180	244.357	0.002	-0.132	0	-16.37
83	7	WP23	-180	319.909	-0.005	-0.107	0	54.896
84	7	WP24	-180	324.084	-0.016	-0.104	0	-28.263
85	7	WP25	-180	249.475	0.005	-0.12	0	7.369
86	7	WP26	-60	84.046	-0.01	0.126	0	-1.33
87	7	WP27	-60	43.724	0.019	0.063	0	-6.105
88	7	WP28	-60	36.552	0.053	0.002	0	-11.219
89	7	WP29	-60	82.983	0.001	0.033	0	-0.197
90	7	WP30	-60	43.603	-0.022	0.053	0	5.375
91	8	Masonry SW1	0	272.961	0.066	0.383	0.517	136.676
92	8	Masonry SW2	204	67.259	-0.007	0.002	0	42.641
93	8	Masonry SW3	0	172.241	-0.033	0.56	0.74	99.015
94	8	Masonry SW4	204	71.544	-0.01	-0.032	-0.014	37.42
95	8	WP5	0	261.245	-0.023	-0.351	-0.486	36.546
96	8	WP6	204	64.203	-0.008	0.004	0.002	7.346
97	8	WP7	0	183.263	0.005	-0.514	-0.742	7.079
98	8	WP8	204	75.76	0.005	0.019	0.01	3.922
99	8	WP9	0	72.324	0.001	-0.693	-0.618	-0.103
100	8	WP10	0	66.642	-0.001	0.219	0.272	-0.043
101	8	WP11	204	27.902	0	0.001	-0.003	-0.006
102	8	WP12	204	34.716	0	0.011	0.008	-0.028
103	8	WP13	0	32.681	-0.117	-0.187	-0.192	-0.642
104	8	WP14	204	20.088	-0.005	-0.015	-0.009	-2.721
105	8	WP15	0	32.665	0.119	-0.189	-0.192	0.634
106	8	WP16	204	20.084	0.005	-0.015	-0.009	2.74
107	8	WP17	204	20.669	0.022	0	0	-3.497
108	8	WP18	0	31.4	-0.238	-0.001	-0.001	0.397
109	8	WP19	0	17.046	0	0	0	0
110	8	WP20	0	6.482	0	0	0	0
111	8	WP21	0	14.608	0	0	0	0
112	8	WP22	-180	238.356	0.002	-0.129	0	-15.835
113	8	WP23	-180	312.253	-0.004	-0.104	0	53.68
114	8	WP24	-180	316.342	-0.016	-0.102	0	-26.882
115	8	WP25	-180	243.304	0.005	-0.118	0	6.971
116	8	WP26	-60	81.694	-0.009	0.122	0	-1.286

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
117	8	WP27	-60	42.431	0.018	0.06	0	-5.976
118	8	WP28	-60	35.499	0.051	0.002	0	-10.899
119	8	WP29	-60	80.512	0.001	0.031	0	-0.193
120	8	WP30	-60	42.314	-0.021	0.051	0	5.268
121	9	Masonry SW1	0	210.682	0.055	0.305	0.409	109.246
122	9	Masonry SW2	204	74.674	-0.004	0.004	0.003	37.578
123	9	Masonry SW3	0	138	-0.024	0.431	0.57	85.159
124	9	Masonry SW4	204	64.408	-0.008	-0.018	-0.009	36.84
125	9	WP5	0	208.57	-0.02	-0.286	-0.398	24.166
126	9	WP6	204	71.303	-0.007	0.001	0	8.697
127	9	WP7	0	147.292	0.006	-0.395	-0.568	13.639
128	9	WP8	204	68.382	0.004	0.008	0.008	7.957
129	9	WP9	0	65.579	0.001	-0.645	-0.552	-0.088
130	9	WP10	0	67.554	-0.001	0.22	0.279	-0.043
131	9	WP11	204	28.426	0	0.005	0.001	-0.013
132	9	WP12	204	34.992	0	0.011	0.009	-0.028
133	9	WP13	0	31.474	-0.104	-0.176	-0.181	2.288
134	9	WP14	204	19.8	-0.006	-0.016	-0.008	-2.267
135	9	WP15	0	31.46	0.105	-0.177	-0.181	-2.29
136	9	WP16	204	19.795	0.007	-0.016	-0.009	2.281
137	9	WP17	204	20.446	0.028	0	0	-3.233
138	9	WP18	0	30.157	-0.218	-0.001	-0.001	3.063
139	9	WP19	0	17.046	0	0	0	0
140	9	WP20	0	6.482	0	0	0	0
141	9	WP21	0	14.608	0	0	0	0
142	9	WP22	-180	199.136	0.003	-0.109	0	-22.01
143	9	WP23	-180	262.854	-0.004	-0.089	0	39.301
144	9	WP24	-180	259.566	-0.013	-0.089	0	-19.43
145	9	WP25	-180	203.532	0.003	-0.1	0	17.842
146	9	WP26	-60	75.485	-0.008	0.102	0	-1.172
147	9	WP27	-60	41.012	0.013	0.055	0	-2.07
148	9	WP28	-60	34.117	0.037	0.001	0	-7.636
149	9	WP29	-60	81.439	0.001	0.038	0	-0.204
150	9	WP30	-60	40.909	-0.015	0.047	0	1.409
151	10	Masonry SW1	0	237.164	0.062	0.345	0.463	125.037
152	10	Masonry SW2	204	103.275	-0.004	0.006	0.005	47.851
153	10	Masonry SW3	0	155.543	-0.027	0.488	0.647	95.51
154	10	Masonry SW4	204	79.874	-0.01	-0.016	-0.013	43.689
155	10	WP5	0	233.978	-0.022	-0.323	-0.45	27.459
156	10	WP6	204	99.191	-0.008	0	0	10.708
157	10	WP7	0	166.085	0.007	-0.446	-0.645	15.003
158	10	WP8	204	84.652	0.004	0.006	0.013	8.882
159	10	WP9	0	73.623	0.001	-0.724	-0.623	-0.098
160	10	WP10	0	75.467	-0.001	0.247	0.314	-0.05
161	10	WP11	204	35.315	-0.001	0.005	-0.001	-0.031
162	10	WP12	204	42.626	0	0.013	0.009	-0.027
163	10	WP13	0	35.266	-0.117	-0.198	-0.204	2.476
164	10	WP14	204	23.899	-0.007	-0.02	-0.011	-3.347
165	10	WP15	0	35.25	0.119	-0.199	-0.204	-2.478
166	10	WP16	204	23.892	0.009	-0.02	-0.011	3.351
167	10	WP17	204	24.793	0.033	0	0.001	-4.558
168	10	WP18	0	33.684	-0.244	-0.001	-0.001	3.343
169	10	WP19	0	17.046	0	0	0	0
170	10	WP20	0	6.482	0	0	0	0
171	10	WP21	0	14.608	0	0	0	0

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
172	10	WP22	-180	218.34	0.004	-0.118	0	-23.722
173	10	WP23	-180	287.353	-0.005	-0.097	0	43.193
174	10	WP24	-180	284.34	-0.015	-0.097	0	-23.849
175	10	WP25	-180	223.281	0.003	-0.108	0	19.114
176	10	WP26	-60	83.011	-0.01	0.117	0	-1.314
177	10	WP27	-60	45.149	0.014	0.063	0	-2.484
178	10	WP28	-60	37.489	0.042	0.002	0	-8.659
179	10	WP29	-60	89.348	0.001	0.044	0	-0.216
180	10	WP30	-60	45.032	-0.017	0.054	0	1.75
181	12	Masonry SW1	0	31.606	0.059	-0.469	-1.46	144.684
182	12	Masonry SW2	204	-6.516	0.015	0.2	0.202	57.569
183	12	Masonry SW3	0	140.649	-91.503	0.423	0.519	747.053
184	12	Masonry SW4	204	70.601	-50.507	-0.009	-0.012	228.299
185	12	WP5	0	393.635	-0.027	-1.284	-2.628	-15.303
186	12	WP6	204	155.062	-0.015	0.17	0.387	-71.24
187	12	WP7	0	149.681	-93.5	-0.392	-0.542	864.708
188	12	WP8	204	70.647	-60.22	0.008	-0.012	333.84
189	12	WP9	0	234.06	-1.55	-4.239	-6.568	-164.985
190	12	WP10	0	-87.159	1.489	-0.991	-1.784	142.435
191	12	WP11	204	83.22	-1.178	0.373	0.366	-50.474
192	12	WP12	204	-24.794	1.226	0.238	0.259	54.485
193	12	WP13	0	29.759	16.638	-0.236	-0.174	-114.004
194	12	WP14	204	22.074	7.704	-0.034	-0.007	-41.072
195	12	WP15	0	27.43	-26.218	-0.308	-0.209	192.955
196	12	WP16	204	22.513	-11.528	0.004	0.073	70.486
197	12	WP17	204	23.829	12.524	-0.005	-0.018	-68.069
198	12	WP18	0	25.517	26.121	-0.001	0.002	-136.547
199	12	WP19	0	17.046	0	0	0	0
200	12	WP20	0	6.482	0	0	0	0
201	12	WP21	0	14.608	0	0	0	0
202	12	WP22	-180	195.809	92.332	-0.108	0	-1216.099
203	12	WP23	-180	533.593	-0.018	0.078	0	-24.493
204	12	WP24	-180	1.326	-0.02	-0.235	0	-162.162
205	12	WP25	-180	205.388	-94.497	-0.106	0	1339.086
206	12	WP26	-60	254.662	-1.473	1.009	-0.001	-164.731
207	12	WP27	-60	42.4	18	0.095	0	-183.642
208	12	WP28	-60	37.151	29.385	0.013	0	-185.607
209	12	WP29	-60	-100.256	-1.459	-0.458	0	-164.367
210	12	WP30	-60	42.389	-28.205	0.094	0	295.876
211	13	Masonry SW1	0	219.582	-92.419	0.364	0.428	894.55
212	13	Masonry SW2	204	80.414	-56.089	0.029	0.006	342.282
213	13	Masonry SW3	0	298.603	0.128	1.519	2.579	460.527
214	13	Masonry SW4	204	134.04	0.04	-0.183	-0.354	175.849
215	13	WP5	0	212.859	-161.891	-0.305	-0.409	1931.892
216	13	WP6	204	75.837	-99.851	0.002	-0.006	860.438
217	13	WP7	0	-15.473	-0.217	0.663	1.507	-310.551
218	13	WP8	204	-0.497	-0.085	-0.124	-0.214	-117.573
219	13	WP9	0	66.61	-9.769	-0.654	-0.559	110.49
220	13	WP10	0	68.542	-22.182	0.221	0.281	257.714
221	13	WP11	204	29.315	-6.758	0.013	0.01	36.415
222	13	WP12	204	35.946	-7.175	0.012	0.009	67.647
223	13	WP13	0	58.04	0.066	-0.417	-0.537	14.828
224	13	WP14	204	31.307	0.183	-0.002	-0.034	-9.128
225	13	WP15	0	5.853	0.282	0.06	0.169	10.157
226	13	WP16	204	9.321	0.197	-0.028	0.019	-4.299

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
227	13	WP17	204	20.953	0.037	0.016	-0.017	-3.246
228	13	WP18	0	30.562	-0.222	-0.191	-0.299	3.231
229	13	WP19	0	17.046	-7.085	0	0	159.996
230	13	WP20	0	6.482	-0.503	0	0	11.61
231	13	WP21	0	14.608	-10.51	0	0	246.986
232	13	WP22	-180	450.779	-0.098	0.016	0	-561.054
233	13	WP23	-180	265.025	-163.142	-0.086	0	2806.612
234	13	WP24	-180	264.408	93.375	-0.085	0	-1110.784
235	13	WP25	-180	-44.095	-0.107	-0.229	0	-491.08
236	13	WP26	-60	76.383	-10.268	0.105	0	137.066
237	13	WP27	-60	71.968	0.219	0.155	0	17.699
238	13	WP28	-60	34.483	0.039	0.021	0	-7.59
239	13	WP29	-60	82.483	22.55	0.044	0	-311.28
240	13	WP30	-60	11.03	0.197	-0.045	0	21.854
241	14	Masonry SW1	0	396.38	0.055	1.115	2.459	77.67
242	14	Masonry SW2	204	163.014	-0.021	-0.226	-0.344	20.108
243	14	Masonry SW3	0	139.727	91.446	0.444	0.583	-574.097
244	14	Masonry SW4	204	62.078	50.489	-0.025	0.026	-152.914
245	14	WP5	0	29.867	-0.011	0.677	1.657	64.512
246	14	WP6	204	-5.481	0.003	-0.134	-0.239	89.133
247	14	WP7	0	149.598	93.514	-0.4	-0.554	-837.108
248	14	WP8	204	70.183	60.229	0.008	-0.01	-317.702
249	14	WP9	0	-100.893	1.558	2.913	5.423	164.34
250	14	WP10	0	224.25	-1.477	1.443	2.362	-142.364
251	14	WP11	204	-24.647	1.181	-0.351	-0.35	50.299
252	14	WP12	204	96.684	-1.217	-0.233	-0.276	-54.468
253	14	WP13	0	34.12	-16.86	-0.12	-0.194	118.717
254	14	WP14	204	18.542	-7.722	0.001	-0.014	36.307
255	14	WP15	0	36.453	26.429	-0.052	-0.159	-197.505
256	14	WP16	204	18.112	11.537	-0.036	-0.095	-65.613
257	14	WP17	204	18.151	-12.471	0.006	0.019	61.276
258	14	WP18	0	35.677	-26.57	-0.001	-0.003	142.753
259	14	WP19	0	17.046	0	0	0	0
260	14	WP20	0	6.482	0	0	0	0
261	14	WP21	0	14.608	0	0	0	0
262	14	WP22	-180	207.273	-92.325	-0.116	0	1171.597
263	14	WP23	-180	-1.766	0.009	-0.258	0	104.103
264	14	WP24	-180	523.982	-0.008	0.054	0	122.307
265	14	WP25	-180	206.628	94.501	-0.101	0	-1303.098
266	14	WP26	-60	-101.837	1.453	-0.807	0	161.973
267	14	WP27	-60	40.645	-17.971	0.015	0	179.488
268	14	WP28	-60	31.954	-29.302	-0.01	0	170.073
269	14	WP29	-60	265.092	1.457	0.521	0	163.779
270	14	WP30	-60	40.491	28.174	0.001	0	-292.887
271	15	Masonry SW1	0	208.337	92.544	0.245	0.34	-672.28
272	15	Masonry SW2	204	76.058	56.088	-0.018	0.037	-264.633
273	15	Masonry SW3	0	-18.207	-0.206	-0.629	-1.345	-287.261
274	15	Masonry SW4	204	-1.358	-0.074	0.121	0.228	-100.391
275	15	WP5	0	210.672	161.841	-0.27	-0.35	-1882.57
276	15	WP6	204	73.768	99.831	0.001	-0.02	-842.505
277	15	WP7	0	314.769	0.2	-1.48	-2.741	338.38
278	15	WP8	204	141.326	0.074	0.17	0.344	133.755
279	15	WP9	0	66.55	9.77	-0.654	-0.561	-110.668
280	15	WP10	0	68.552	22.18	0.226	0.287	-257.801
281	15	WP11	204	29.256	6.757	-0.003	-0.008	-36.446

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
282	15	WP12	204	35.949	7.174	0.012	0.01	-67.703
283	15	WP13	0	5.857	-0.278	0.06	0.168	-10.196
284	15	WP14	204	9.317	-0.196	-0.03	0.017	4.326
285	15	WP15	0	58.015	-0.066	-0.42	-0.537	-14.794
286	15	WP16	204	31.292	-0.183	-0.003	-0.036	9.126
287	15	WP17	204	21.027	0.021	-0.015	0.018	-3.549
288	15	WP18	0	30.634	-0.221	0.188	0.297	2.97
289	15	WP19	0	17.046	7.085	0	0	-159.996
290	15	WP20	0	6.482	0.503	0	0	-11.61
291	15	WP21	0	14.608	10.51	0	0	-246.986
292	15	WP22	-180	-47.725	0.113	-0.239	0	516.327
293	15	WP23	-180	266.898	163.134	-0.099	0	-2726.898
294	15	WP24	-180	260.862	-93.4	-0.099	0	1070.978
295	15	WP25	-180	456.081	0.103	0.023	0	527.202
296	15	WP26	-60	76.463	10.251	0.103	0	-139.445
297	15	WP27	-60	11.09	-0.194	-0.043	0	-21.931
298	15	WP28	-60	34.594	0.035	-0.018	0	-7.932
299	15	WP29	-60	82.382	-22.548	0.034	0	310.869
300	15	WP30	-60	71.817	-0.228	0.141	0	-18.961
301	16	Masonry SW1	0	-45.531	0.041	-0.571	-1.571	106.046
302	16	Masonry SW2	204	-26.205	0.018	0.19	0.163	45.172
303	16	Masonry SW3	0	92.283	-91.447	0.265	0.31	719.429
304	16	Masonry SW4	204	50.131	-50.48	0	-0.009	217.998
305	16	WP5	0	320.284	-0.021	-1.179	-2.45	-25.977
306	16	WP6	204	136.146	-0.013	0.158	0.34	-73.182
307	16	WP7	0	98.246	-93.453	-0.247	-0.333	862.973
308	16	WP8	204	49.002	-60.197	0.002	-0.014	333.042
309	16	WP9	0	214.284	-1.55	-4.049	-6.394	-164.899
310	16	WP10	0	-104.655	1.489	-1.048	-1.854	142.391
311	16	WP11	204	75.4	-1.178	0.373	0.367	-50.447
312	16	WP12	204	-34.368	1.226	0.234	0.256	54.46
313	16	WP13	0	21.006	16.665	-0.186	-0.122	-113.548
314	16	WP14	204	16.512	7.701	-0.03	-0.004	-40.191
315	16	WP15	0	18.683	-26.243	-0.257	-0.157	192.474
316	16	WP16	204	16.953	-11.524	0.008	0.076	69.585
317	16	WP17	204	18.097	12.509	-0.005	-0.018	-66.967
318	16	WP18	0	17.116	26.174	-0.001	0.002	-136.374
319	16	WP19	0	12.784	0	0	0	0
320	16	WP20	0	4.861	0	0	0	0
321	16	WP21	0	10.956	0	0	0	0
322	16	WP22	-180	130.257	92.323	-0.073	0	-1212.142
323	16	WP23	-180	447.884	-0.017	0.107	0	-39.695
324	16	WP24	-180	-85.928	-0.016	-0.208	0	-154.162
325	16	WP25	-180	138.478	-94.489	-0.074	0	1337.787
326	16	WP26	-60	232.661	-1.47	0.975	-0.001	-164.333
327	16	WP27	-60	31.146	17.994	0.079	0	-181.676
328	16	WP28	-60	27.728	29.369	0.013	0	-182.396
329	16	WP29	-60	-121.214	-1.459	-0.466	0	-164.264
330	16	WP30	-60	31.167	-28.198	0.08	0	294.072
331	17	Masonry SW1	0	142.369	-92.402	0.257	0.284	855.796
332	17	Masonry SW2	204	60.698	-56.073	0.028	0.005	329.887
333	17	Masonry SW3	0	250.192	0.144	1.358	2.355	433.049
334	17	Masonry SW4	204	113.56	0.046	-0.169	-0.329	165.545
335	17	WP5	0	139.582	-161.825	-0.207	-0.274	1920.548
336	17	WP6	204	56.945	-99.828	0.001	-0.006	858.301

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
337	17	WP7	0	-66.861	-0.224	0.807	1.706	-311.732
338	17	WP8	204	-22.13	-0.09	-0.125	-0.198	-118.259
339	17	WP9	0	46.912	-9.766	-0.467	-0.39	110.499
340	17	WP10	0	50.974	-22.178	0.163	0.209	257.663
341	17	WP11	204	21.526	-6.756	0.013	0.011	36.415
342	17	WP12	204	26.337	-7.172	0.009	0.007	67.628
343	17	WP13	0	49.28	0.099	-0.366	-0.485	15.226
344	17	WP14	204	25.744	0.185	0.002	-0.031	-8.272
345	17	WP15	0	-2.891	0.249	0.111	0.22	9.753
346	17	WP16	204	3.765	0.196	-0.024	0.022	-5.159
347	17	WP17	204	15.222	0.031	0.016	-0.017	-2.183
348	17	WP18	0	22.159	-0.157	-0.19	-0.298	3.338
349	17	WP19	0	12.784	-7.084	0	0	159.972
350	17	WP20	0	4.861	-0.502	0	0	11.599
351	17	WP21	0	10.956	-10.508	0	0	246.926
352	17	WP22	-180	385.169	-0.1	0.052	0	-557.259
353	17	WP23	-180	179.408	-163.129	-0.057	0	2790.67
354	17	WP24	-180	177.064	93.371	-0.058	0	-1102.737
355	17	WP25	-180	-110.95	-0.109	-0.197	0	-491.81
356	17	WP26	-60	54.455	-10.265	0.071	0	137.392
357	17	WP27	-60	60.708	0.214	0.138	0	19.594
358	17	WP28	-60	25.061	0.024	0.02	0	-4.442
359	17	WP29	-60	61.449	22.549	0.036	0	-311.17
360	17	WP30	-60	-0.186	0.203	-0.059	0	20.14
361	18	Masonry SW1	0	319.093	0.036	1	2.266	39.02
362	18	Masonry SW2	204	143.271	-0.019	-0.215	-0.294	7.688
363	18	Masonry SW3	0	91.361	91.408	0.286	0.375	-601.08
364	18	Masonry SW4	204	41.612	50.467	-0.016	0.029	-163.137
365	18	WP5	0	-43.334	-0.005	0.77	1.761	53.849
366	18	WP6	204	-24.347	0.006	-0.127	-0.204	87.149
367	18	WP7	0	98.163	93.465	-0.255	-0.346	-838.069
368	18	WP8	204	48.538	60.202	0.002	-0.011	-318.365
369	18	WP9	0	-120.514	1.558	3.098	5.589	164.311
370	18	WP10	0	206.61	-1.477	1.384	2.289	-142.298
371	18	WP11	204	-32.404	1.181	-0.35	-0.348	50.278
372	18	WP12	204	87.04	-1.217	-0.235	-0.276	-54.43
373	18	WP13	0	25.366	-16.822	-0.07	-0.142	119.066
374	18	WP14	204	12.982	-7.716	0.005	-0.011	37.138
375	18	WP15	0	27.701	26.388	-0.001	-0.107	-197.824
376	18	WP16	204	12.554	11.529	-0.032	-0.092	-66.432
377	18	WP17	204	12.422	-12.467	0.006	0.018	62.3
378	18	WP18	0	27.271	-26.494	-0.001	-0.002	142.793
379	18	WP19	0	12.784	0	0	0	0
380	18	WP20	0	4.861	0	0	0	0
381	18	WP21	0	10.956	0	0	0	0
382	18	WP22	-180	141.714	-92.316	-0.081	0	1174.856
383	18	WP23	-180	-87.29	0.01	-0.23	0	88.889
384	18	WP24	-180	436.55	-0.003	0.082	0	130.221
385	18	WP25	-180	139.717	94.491	-0.069	0	-1303.635
386	18	WP26	-60	-123.69	1.455	-0.841	0	162.276
387	18	WP27	-60	29.392	-17.975	-0.001	0	181.321
388	18	WP28	-60	22.534	-29.316	-0.011	0	173.159
389	18	WP29	-60	243.982	1.456	0.513	0	163.774
390	18	WP30	-60	29.269	28.18	-0.013	0	-294.501
391	19	Masonry SW1	0	131.127	92.489	0.138	0.196	-710.807

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
392	19	Masonry SW2	204	56.342	56.077	-0.018	0.035	-277.053
393	19	Masonry SW3	0	-66.528	-0.203	-0.786	-1.545	-314.397
394	19	Masonry SW4	204	-21.814	-0.075	0.125	0.216	-110.612
395	19	WP5	0	137.396	161.788	-0.172	-0.217	-1892.566
396	19	WP6	204	54.876	99.813	0	-0.018	-844.294
397	19	WP7	0	263.287	0.206	-1.331	-2.515	336.865
398	19	WP8	204	119.669	0.077	0.158	0.317	132.98
399	19	WP9	0	46.851	9.767	-0.467	-0.392	-110.621
400	19	WP10	0	50.984	22.177	0.168	0.215	-257.727
401	19	WP11	204	21.468	6.756	-0.003	-0.006	-36.439
402	19	WP12	204	26.341	7.172	0.009	0.008	-67.67
403	19	WP13	0	-2.891	-0.246	0.11	0.219	-9.79
404	19	WP14	204	3.759	-0.195	-0.026	0.02	5.183
405	19	WP15	0	49.259	-0.1	-0.369	-0.486	-15.19
406	19	WP16	204	25.73	-0.185	0.001	-0.034	8.266
407	19	WP17	204	15.296	0.015	-0.015	0.018	-2.485
408	19	WP18	0	22.23	-0.156	0.188	0.297	3.077
409	19	WP19	0	12.784	7.084	0	0	-159.972
410	19	WP20	0	4.861	0.502	0	0	-11.599
411	19	WP21	0	10.956	10.508	0	0	-246.926
412	19	WP22	-180	-113.224	0.113	-0.204	0	519.753
413	19	WP23	-180	181.281	163.124	-0.071	0	-2741.377
414	19	WP24	-180	173.519	-93.387	-0.071	0	1078.839
415	19	WP25	-180	389.116	0.104	0.056	0	526.098
416	19	WP26	-60	54.535	10.253	0.069	0	-139.072
417	19	WP27	-60	-0.158	-0.199	-0.06	0	-20.027
418	19	WP28	-60	25.172	0.02	-0.018	0	-4.783
419	19	WP29	-60	61.349	-22.548	0.026	0	310.857
420	19	WP30	-60	60.589	-0.222	0.127	0	-20.665
421	21	Masonry SW1	0	182.374	0.05	0.269	0.36	96.779
422	21	Masonry SW2	204	78.044	-0.002	0.005	0.004	35.277
423	21	Masonry SW3	0	122.436	-0.02	0.373	0.492	78.86
424	21	Masonry SW4	204	61.164	-0.008	-0.011	-0.007	36.576
425	21	WP5	0	184.626	-0.018	-0.257	-0.358	18.539
426	21	WP6	204	74.53	-0.006	-0.001	-0.001	9.311
427	21	WP7	0	130.941	0.007	-0.341	-0.489	16.62
428	21	WP8	204	65.028	0.003	0.004	0.007	9.791
429	21	WP9	0	62.513	0.001	-0.623	-0.522	-0.081
430	21	WP10	0	67.968	-0.001	0.22	0.283	-0.042
431	21	WP11	204	28.664	0	0.006	0.003	-0.016
432	21	WP12	204	35.117	0	0.012	0.01	-0.028
433	21	WP13	0	30.926	-0.097	-0.171	-0.177	3.62
434	21	WP14	204	19.669	-0.006	-0.016	-0.008	-2.061
435	21	WP15	0	30.912	0.099	-0.172	-0.177	-3.619
436	21	WP16	204	19.663	0.007	-0.016	-0.009	2.073
437	21	WP17	204	20.345	0.031	0	0	-3.113
438	21	WP18	0	29.593	-0.209	-0.001	-0.001	4.275
439	21	WP19	0	17.046	0	2.927	-0.001	0
440	21	WP20	0	6.482	0	1.33	-0.001	0
441	21	WP21	0	14.608	0	2.03	-0.001	0
442	21	WP22	-180	181.309	0.004	-0.1	0	-24.815
443	21	WP23	-180	240.399	-0.004	-0.082	0	32.764
444	21	WP24	-180	233.759	-0.012	-0.083	0	-16.044
445	21	WP25	-180	185.455	0.002	-0.093	0	22.782
446	21	WP26	-60	72.663	-0.008	0.094	0	-1.12

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
447	21	WP27	-60	40.367	0.01	0.053	0	-0.294
448	21	WP28	-60	33.489	0.03	0.001	0	-6.153
449	21	WP29	-60	81.861	0.001	0.041	0	-0.209
450	21	WP30	-60	40.27	-0.013	0.045	0	-0.345
451	22	Masonry SW1	0	182.374	0.05	0.269	0.36	96.779
452	22	Masonry SW2	204	78.044	-0.002	0.005	0.004	35.277
453	22	Masonry SW3	0	122.436	-0.02	0.373	0.492	78.86
454	22	Masonry SW4	204	61.164	-0.008	-0.011	-0.007	36.576
455	22	WP5	0	184.626	-0.018	-0.257	-0.358	18.539
456	22	WP6	204	74.53	-0.006	-0.001	-0.001	9.311
457	22	WP7	0	130.941	0.007	-0.341	-0.489	16.62
458	22	WP8	204	65.028	0.003	0.004	0.007	9.791
459	22	WP9	0	62.513	0.001	-0.623	-0.522	-0.081
460	22	WP10	0	67.968	-0.001	0.22	0.283	-0.042
461	22	WP11	204	28.664	0	0.006	0.003	-0.016
462	22	WP12	204	35.117	0	0.012	0.01	-0.028
463	22	WP13	0	30.926	-0.097	-0.171	-0.177	3.62
464	22	WP14	204	19.669	-0.006	-0.016	-0.008	-2.061
465	22	WP15	0	30.912	0.099	-0.172	-0.177	-3.619
466	22	WP16	204	19.663	0.007	-0.016	-0.009	2.073
467	22	WP17	204	20.345	0.031	0	0	-3.113
468	22	WP18	0	29.593	-0.209	-0.001	-0.001	4.275
469	22	WP19	0	17.046	0	0	0	0
470	22	WP20	0	6.482	0	0	0	0
471	22	WP21	0	14.608	0	0	0	0
472	22	WP22	-180	181.309	0.004	-0.1	0	-24.815
473	22	WP23	-180	240.399	-0.004	-0.082	0	32.764
474	22	WP24	-180	233.759	-0.012	-0.083	0	-16.044
475	22	WP25	-180	185.455	0.002	-0.093	0	22.782
476	22	WP26	-60	72.663	-0.008	0.094	0	-1.12
477	22	WP27	-60	40.367	0.01	0.053	0	-0.294
478	22	WP28	-60	33.489	0.03	0.001	0	-6.153
479	22	WP29	-60	81.861	0.001	0.041	0	-0.209
480	22	WP30	-60	40.27	-0.013	0.045	0	-0.345
481	23	Masonry SW1	0	182.374	0.05	0.269	0.36	96.779
482	23	Masonry SW2	204	78.044	-0.002	0.005	0.004	35.277
483	23	Masonry SW3	0	122.436	-0.02	0.373	0.492	78.86
484	23	Masonry SW4	204	61.164	-0.008	-0.011	-0.007	36.576
485	23	WP5	0	184.626	-0.018	-0.257	-0.358	18.539
486	23	WP6	204	74.53	-0.006	-0.001	-0.001	9.311
487	23	WP7	0	130.941	0.007	-0.341	-0.489	16.62
488	23	WP8	204	65.028	0.003	0.004	0.007	9.791
489	23	WP9	0	62.513	0.001	-0.623	-0.522	-0.081
490	23	WP10	0	67.968	-0.001	0.22	0.283	-0.042
491	23	WP11	204	28.664	0	0.006	0.003	-0.016
492	23	WP12	204	35.117	0	0.012	0.01	-0.028
493	23	WP13	0	30.926	-0.097	-0.171	-0.177	3.62
494	23	WP14	204	19.669	-0.006	-0.016	-0.008	-2.061
495	23	WP15	0	30.912	0.099	-0.172	-0.177	-3.619
496	23	WP16	204	19.663	0.007	-0.016	-0.009	2.073
497	23	WP17	204	20.345	0.031	0	0	-3.113
498	23	WP18	0	29.593	-0.209	-0.001	-0.001	4.275
499	23	WP19	0	17.046	0	-2.927	0.001	0
500	23	WP20	0	6.482	0	-1.33	0.001	0
501	23	WP21	0	14.608	0	-2.03	0.001	0

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
502	23	WP22	-180	181.309	0.004	-0.1	0	-24.815
503	23	WP23	-180	240.399	-0.004	-0.082	0	32.764
504	23	WP24	-180	233.759	-0.012	-0.083	0	-16.044
505	23	WP25	-180	185.455	0.002	-0.093	0	22.782
506	23	WP26	-60	72.663	-0.008	0.094	0	-1.12
507	23	WP27	-60	40.367	0.01	0.053	0	-0.294
508	23	WP28	-60	33.489	0.03	0.001	0	-6.153
509	23	WP29	-60	81.861	0.001	0.041	0	-0.209
510	23	WP30	-60	40.27	-0.013	0.045	0	-0.345
511	24	Masonry SW1	0	182.374	0.05	0.269	0.36	96.779
512	24	Masonry SW2	204	78.044	-0.002	0.005	0.004	35.277
513	24	Masonry SW3	0	122.436	-0.02	0.373	0.492	78.86
514	24	Masonry SW4	204	61.164	-0.008	-0.011	-0.007	36.576
515	24	WP5	0	184.626	-0.018	-0.257	-0.358	18.539
516	24	WP6	204	74.53	-0.006	-0.001	-0.001	9.311
517	24	WP7	0	130.941	0.007	-0.341	-0.489	16.62
518	24	WP8	204	65.028	0.003	0.004	0.007	9.791
519	24	WP9	0	62.513	0.001	-0.623	-0.522	-0.081
520	24	WP10	0	67.968	-0.001	0.22	0.283	-0.042
521	24	WP11	204	28.664	0	0.006	0.003	-0.016
522	24	WP12	204	35.117	0	0.012	0.01	-0.028
523	24	WP13	0	30.926	-0.097	-0.171	-0.177	3.62
524	24	WP14	204	19.669	-0.006	-0.016	-0.008	-2.061
525	24	WP15	0	30.912	0.099	-0.172	-0.177	-3.619
526	24	WP16	204	19.663	0.007	-0.016	-0.009	2.073
527	24	WP17	204	20.345	0.031	0	0	-3.113
528	24	WP18	0	29.593	-0.209	-0.001	-0.001	4.275
529	24	WP19	0	17.046	0	0	0	0
530	24	WP20	0	6.482	0	0	0	0
531	24	WP21	0	14.608	0	0	0	0
532	24	WP22	-180	181.309	0.004	-0.1	0	-24.815
533	24	WP23	-180	240.399	-0.004	-0.082	0	32.764
534	24	WP24	-180	233.759	-0.012	-0.083	0	-16.044
535	24	WP25	-180	185.455	0.002	-0.093	0	22.782
536	24	WP26	-60	72.663	-0.008	0.094	0	-1.12
537	24	WP27	-60	40.367	0.01	0.053	0	-0.294
538	24	WP28	-60	33.489	0.03	0.001	0	-6.153
539	24	WP29	-60	81.861	0.001	0.041	0	-0.209
540	24	WP30	-60	40.27	-0.013	0.045	0	-0.345
541	25	Masonry SW1	0	210.682	0.055	0.305	0.409	109.246
542	25	Masonry SW2	204	74.674	-0.004	0.004	0.003	37.578
543	25	Masonry SW3	0	138	-0.024	0.431	0.57	85.159
544	25	Masonry SW4	204	64.408	-0.008	-0.018	-0.009	36.84
545	25	WP5	0	208.57	-0.02	-0.286	-0.398	24.166
546	25	WP6	204	71.303	-0.007	0.001	0	8.697
547	25	WP7	0	147.292	0.006	-0.395	-0.568	13.639
548	25	WP8	204	68.382	0.004	0.008	0.008	7.957
549	25	WP9	0	65.579	0.001	-0.645	-0.552	-0.088
550	25	WP10	0	67.554	-0.001	0.22	0.279	-0.043
551	25	WP11	204	28.426	0	0.005	0.001	-0.013
552	25	WP12	204	34.992	0	0.011	0.009	-0.028
553	25	WP13	0	31.474	-0.104	-0.176	-0.181	2.288
554	25	WP14	204	19.8	-0.006	-0.016	-0.008	-2.267
555	25	WP15	0	31.46	0.105	-0.177	-0.181	-2.29
556	25	WP16	204	19.795	0.007	-0.016	-0.009	2.281

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
557	25	WP17	204	20.446	0.028	0	0	-3.233
558	25	WP18	0	30.157	-0.218	-0.001	-0.001	3.063
559	25	WP19	0	17.046	0	5.855	-0.003	0
560	25	WP20	0	6.482	0	2.659	-0.001	0
561	25	WP21	0	14.608	0	4.061	-0.002	0
562	25	WP22	-180	199.136	0.003	-0.109	0	-22.01
563	25	WP23	-180	262.854	-0.004	-0.089	0	39.301
564	25	WP24	-180	259.566	-0.013	-0.089	0	-19.43
565	25	WP25	-180	203.532	0.003	-0.1	0	17.842
566	25	WP26	-60	75.485	-0.008	0.102	0	-1.172
567	25	WP27	-60	41.012	0.013	0.055	0	-2.07
568	25	WP28	-60	34.117	0.037	0.001	0	-7.636
569	25	WP29	-60	81.439	0.001	0.038	0	-0.204
570	25	WP30	-60	40.909	-0.015	0.047	0	1.409
571	26	Masonry SW1	0	210.682	0.055	0.305	0.409	109.246
572	26	Masonry SW2	204	74.674	-0.004	0.004	0.003	37.578
573	26	Masonry SW3	0	138	-0.024	0.431	0.57	85.159
574	26	Masonry SW4	204	64.408	-0.008	-0.018	-0.009	36.84
575	26	WP5	0	208.57	-0.02	-0.286	-0.398	24.166
576	26	WP6	204	71.303	-0.007	0.001	0	8.697
577	26	WP7	0	147.292	0.006	-0.395	-0.568	13.639
578	26	WP8	204	68.382	0.004	0.008	0.008	7.957
579	26	WP9	0	65.579	0.001	-0.645	-0.552	-0.088
580	26	WP10	0	67.554	-0.001	0.22	0.279	-0.043
581	26	WP11	204	28.426	0	0.005	0.001	-0.013
582	26	WP12	204	34.992	0	0.011	0.009	-0.028
583	26	WP13	0	31.474	-0.104	-0.176	-0.181	2.288
584	26	WP14	204	19.8	-0.006	-0.016	-0.008	-2.267
585	26	WP15	0	31.46	0.105	-0.177	-0.181	-2.29
586	26	WP16	204	19.795	0.007	-0.016	-0.009	2.281
587	26	WP17	204	20.446	0.028	0	0	-3.233
588	26	WP18	0	30.157	-0.218	-0.001	-0.001	3.063
589	26	WP19	0	17.046	0	0	0	0
590	26	WP20	0	6.482	0	0	0	0
591	26	WP21	0	14.608	0	0	0	0
592	26	WP22	-180	199.136	0.003	-0.109	0	-22.01
593	26	WP23	-180	262.854	-0.004	-0.089	0	39.301
594	26	WP24	-180	259.566	-0.013	-0.089	0	-19.43
595	26	WP25	-180	203.532	0.003	-0.1	0	17.842
596	26	WP26	-60	75.485	-0.008	0.102	0	-1.172
597	26	WP27	-60	41.012	0.013	0.055	0	-2.07
598	26	WP28	-60	34.117	0.037	0.001	0	-7.636
599	26	WP29	-60	81.439	0.001	0.038	0	-0.204
600	26	WP30	-60	40.909	-0.015	0.047	0	1.409
601	27	Masonry SW1	0	210.682	0.055	0.305	0.409	109.246
602	27	Masonry SW2	204	74.674	-0.004	0.004	0.003	37.578
603	27	Masonry SW3	0	138	-0.024	0.431	0.57	85.159
604	27	Masonry SW4	204	64.408	-0.008	-0.018	-0.009	36.84
605	27	WP5	0	208.57	-0.02	-0.286	-0.398	24.166
606	27	WP6	204	71.303	-0.007	0.001	0	8.697
607	27	WP7	0	147.292	0.006	-0.395	-0.568	13.639
608	27	WP8	204	68.382	0.004	0.008	0.008	7.957
609	27	WP9	0	65.579	0.001	-0.645	-0.552	-0.088
610	27	WP10	0	67.554	-0.001	0.22	0.279	-0.043
611	27	WP11	204	28.426	0	0.005	0.001	-0.013

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
612	27	WP12	204	34.992	0	0.011	0.009	-0.028
613	27	WP13	0	31.474	-0.104	-0.176	-0.181	2.288
614	27	WP14	204	19.8	-0.006	-0.016	-0.008	-2.267
615	27	WP15	0	31.46	0.105	-0.177	-0.181	-2.29
616	27	WP16	204	19.795	0.007	-0.016	-0.009	2.281
617	27	WP17	204	20.446	0.028	0	0	-3.233
618	27	WP18	0	30.157	-0.218	-0.001	-0.001	3.063
619	27	WP19	0	17.046	0	-5.855	0.003	0
620	27	WP20	0	6.482	0	-2.659	0.001	0
621	27	WP21	0	14.608	0	-4.061	0.002	0
622	27	WP22	-180	199.136	0.003	-0.109	0	-22.01
623	27	WP23	-180	262.854	-0.004	-0.089	0	39.301
624	27	WP24	-180	259.566	-0.013	-0.089	0	-19.43
625	27	WP25	-180	203.532	0.003	-0.1	0	17.842
626	27	WP26	-60	75.485	-0.008	0.102	0	-1.172
627	27	WP27	-60	41.012	0.013	0.055	0	-2.07
628	27	WP28	-60	34.117	0.037	0.001	0	-7.636
629	27	WP29	-60	81.439	0.001	0.038	0	-0.204
630	27	WP30	-60	40.909	-0.015	0.047	0	1.409
631	28	Masonry SW1	0	210.682	0.055	0.305	0.409	109.246
632	28	Masonry SW2	204	74.674	-0.004	0.004	0.003	37.578
633	28	Masonry SW3	0	138	-0.024	0.431	0.57	85.159
634	28	Masonry SW4	204	64.408	-0.008	-0.018	-0.009	36.84
635	28	WP5	0	208.57	-0.02	-0.286	-0.398	24.166
636	28	WP6	204	71.303	-0.007	0.001	0	8.697
637	28	WP7	0	147.292	0.006	-0.395	-0.568	13.639
638	28	WP8	204	68.382	0.004	0.008	0.008	7.957
639	28	WP9	0	65.579	0.001	-0.645	-0.552	-0.088
640	28	WP10	0	67.554	-0.001	0.22	0.279	-0.043
641	28	WP11	204	28.426	0	0.005	0.001	-0.013
642	28	WP12	204	34.992	0	0.011	0.009	-0.028
643	28	WP13	0	31.474	-0.104	-0.176	-0.181	2.288
644	28	WP14	204	19.8	-0.006	-0.016	-0.008	-2.267
645	28	WP15	0	31.46	0.105	-0.177	-0.181	-2.29
646	28	WP16	204	19.795	0.007	-0.016	-0.009	2.281
647	28	WP17	204	20.446	0.028	0	0	-3.233
648	28	WP18	0	30.157	-0.218	-0.001	-0.001	3.063
649	28	WP19	0	17.046	0	0	0	0
650	28	WP20	0	6.482	0	0	0	0
651	28	WP21	0	14.608	0	0	0	0
652	28	WP22	-180	199.136	0.003	-0.109	0	-22.01
653	28	WP23	-180	262.854	-0.004	-0.089	0	39.301
654	28	WP24	-180	259.566	-0.013	-0.089	0	-19.43
655	28	WP25	-180	203.532	0.003	-0.1	0	17.842
656	28	WP26	-60	75.485	-0.008	0.102	0	-1.172
657	28	WP27	-60	41.012	0.013	0.055	0	-2.07
658	28	WP28	-60	34.117	0.037	0.001	0	-7.636
659	28	WP29	-60	81.439	0.001	0.038	0	-0.204
660	28	WP30	-60	40.909	-0.015	0.047	0	1.409
661	29	Masonry SW1	0	136.78	0.037	0.202	0.27	72.577
662	29	Masonry SW2	204	58.533	-0.002	0.004	0.003	26.454
663	29	Masonry SW3	0	91.827	-0.015	0.28	0.369	59.148
664	29	Masonry SW4	204	45.873	-0.006	-0.008	-0.005	27.434
665	29	WP5	0	138.47	-0.014	-0.193	-0.268	13.909
666	29	WP6	204	55.897	-0.005	0	-0.001	6.986

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
667	29	WP7	0	98.206	0.006	-0.255	-0.367	12.461
668	29	WP8	204	48.771	0.003	0.003	0.005	7.342
669	29	WP9	0	46.886	0.001	-0.467	-0.391	-0.061
670	29	WP10	0	50.975	0	0.165	0.212	-0.032
671	29	WP11	204	21.498	0	0.005	0.002	-0.012
672	29	WP12	204	26.337	0	0.009	0.007	-0.021
673	29	WP13	0	23.194	-0.073	-0.128	-0.133	2.714
674	29	WP14	204	14.752	-0.005	-0.012	-0.006	-1.546
675	29	WP15	0	23.184	0.074	-0.129	-0.133	-2.714
676	29	WP16	204	14.748	0.005	-0.012	-0.007	1.555
677	29	WP17	204	15.259	0.023	0	0	-2.335
678	29	WP18	0	22.194	-0.156	-0.001	0	3.205
679	29	WP19	0	12.784	0	5.855	-0.003	0
680	29	WP20	0	4.861	0	2.659	-0.001	0
681	29	WP21	0	10.956	0	4.061	-0.002	0
682	29	WP22	-180	135.981	0.003	-0.075	0	-18.615
683	29	WP23	-180	180.299	-0.003	-0.062	0	24.578
684	29	WP24	-180	175.319	-0.009	-0.063	0	-12.026
685	29	WP25	-180	139.091	0.002	-0.069	0	17.083
686	29	WP26	-60	54.498	-0.006	0.07	0	-0.84
687	29	WP27	-60	30.276	0.007	0.04	0	-0.222
688	29	WP28	-60	25.117	0.023	0.001	0	-4.616
689	29	WP29	-60	61.394	0.001	0.031	0	-0.156
690	29	WP30	-60	30.202	-0.009	0.034	0	-0.257
691	30	Masonry SW1	0	136.78	0.037	0.202	0.27	72.577
692	30	Masonry SW2	204	58.533	-0.002	0.004	0.003	26.454
693	30	Masonry SW3	0	91.827	-0.015	0.28	0.369	59.148
694	30	Masonry SW4	204	45.873	-0.006	-0.008	-0.005	27.434
695	30	WP5	0	138.47	-0.014	-0.193	-0.268	13.909
696	30	WP6	204	55.897	-0.005	0	-0.001	6.986
697	30	WP7	0	98.206	0.006	-0.255	-0.367	12.461
698	30	WP8	204	48.771	0.003	0.003	0.005	7.342
699	30	WP9	0	46.886	0.001	-0.467	-0.391	-0.061
700	30	WP10	0	50.975	0	0.165	0.212	-0.032
701	30	WP11	204	21.498	0	0.005	0.002	-0.012
702	30	WP12	204	26.337	0	0.009	0.007	-0.021
703	30	WP13	0	23.194	-0.073	-0.128	-0.133	2.714
704	30	WP14	204	14.752	-0.005	-0.012	-0.006	-1.546
705	30	WP15	0	23.184	0.074	-0.129	-0.133	-2.714
706	30	WP16	204	14.748	0.005	-0.012	-0.007	1.555
707	30	WP17	204	15.259	0.023	0	0	-2.335
708	30	WP18	0	22.194	-0.156	-0.001	0	3.205
709	30	WP19	0	12.784	0	0	0	0
710	30	WP20	0	4.861	0	0	0	0
711	30	WP21	0	10.956	0	0	0	0
712	30	WP22	-180	135.981	0.003	-0.075	0	-18.615
713	30	WP23	-180	180.299	-0.003	-0.062	0	24.578
714	30	WP24	-180	175.319	-0.009	-0.063	0	-12.026
715	30	WP25	-180	139.091	0.002	-0.069	0	17.083
716	30	WP26	-60	54.498	-0.006	0.07	0	-0.84
717	30	WP27	-60	30.276	0.007	0.04	0	-0.222
718	30	WP28	-60	25.117	0.023	0.001	0	-4.616
719	30	WP29	-60	61.394	0.001	0.031	0	-0.156
720	30	WP30	-60	30.202	-0.009	0.034	0	-0.257
721	31	Masonry SW1	0	136.78	0.037	0.202	0.27	72.577

Wall Panel Forces (Continued)

	LC	Wall Label	Elevation [in]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
722	31	Masonry SW2	204	58.533	-0.002	0.004	0.003	26.454
723	31	Masonry SW3	0	91.827	-0.015	0.28	0.369	59.148
724	31	Masonry SW4	204	45.873	-0.006	-0.008	-0.005	27.434
725	31	WP5	0	138.47	-0.014	-0.193	-0.268	13.909
726	31	WP6	204	55.897	-0.005	0	-0.001	6.986
727	31	WP7	0	98.206	0.006	-0.255	-0.367	12.461
728	31	WP8	204	48.771	0.003	0.003	0.005	7.342
729	31	WP9	0	46.886	0.001	-0.467	-0.391	-0.061
730	31	WP10	0	50.975	0	0.165	0.212	-0.032
731	31	WP11	204	21.498	0	0.005	0.002	-0.012
732	31	WP12	204	26.337	0	0.009	0.007	-0.021
733	31	WP13	0	23.194	-0.073	-0.128	-0.133	2.714
734	31	WP14	204	14.752	-0.005	-0.012	-0.006	-1.546
735	31	WP15	0	23.184	0.074	-0.129	-0.133	-2.714
736	31	WP16	204	14.748	0.005	-0.012	-0.007	1.555
737	31	WP17	204	15.259	0.023	0	0	-2.335
738	31	WP18	0	22.194	-0.156	-0.001	0	3.205
739	31	WP19	0	12.784	0	-5.855	0.003	0
740	31	WP20	0	4.861	0	-2.659	0.001	0
741	31	WP21	0	10.956	0	-4.061	0.002	0
742	31	WP22	-180	135.981	0.003	-0.075	0	-18.615
743	31	WP23	-180	180.299	-0.003	-0.062	0	24.578
744	31	WP24	-180	175.319	-0.009	-0.063	0	-12.026
745	31	WP25	-180	139.091	0.002	-0.069	0	17.083
746	31	WP26	-60	54.498	-0.006	0.07	0	-0.84
747	31	WP27	-60	30.276	0.007	0.04	0	-0.222
748	31	WP28	-60	25.117	0.023	0.001	0	-4.616
749	31	WP29	-60	61.394	0.001	0.031	0	-0.156
750	31	WP30	-60	30.202	-0.009	0.034	0	-0.257

Concrete Wall Reinforcement

	Wall	Region	Thickness[in]	Hor. Bar Size	Vert. Bar Size
1	WP22	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
2	WP23	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
3		R2	10	#4@16in oc (ef)	#6@18in oc (ef)
4		R3	10	#4@18in oc (ef)	#6@18in oc (ef)
5	WP24	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
6		R2	10	#4@16in oc (ef)	#6@18in oc (ef)
7		R3	10	#4@18in oc (ef)	#6@18in oc (ef)
8	WP25	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
9	WP26	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
10	WP27	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
11	WP28	R1	8	#4@18in oc (ef)	#6@18in oc (ef)
12	WP29	R1	10	#4@18in oc (ef)	#6@18in oc (ef)
13	WP30	R1	10	#4@18in oc (ef)	#6@18in oc (ef)

Masonry Wall Reinforcement

	Wall	Region	Hor. Bar Size	Vert. Bar Size	Boundary Reinf.
1	Masonry SW1	R1	#5@120 oc	#5@48" oc (ef)	2-#5
2		R2	#5@120 oc	#5@48" oc (ef)	2-#5
3		R3	#5@120 oc	#5@48" oc (ef)	2-#5
4	Masonry SW2	R1	#5@120 oc	#5@48" oc (ef)	2-#5
5		R2	#5@120 oc	#5@48" oc (ef)	2-#5

Masonry Wall Reinforcement (Continued)

	Wall	Region	Hor. Bar Size	Vert. Bar Size	Boundary Reinf.
6		R3	#5@120 oc	#5@48" oc (ef)	2-#5
7	Masonry SW3	R1	#5@120 oc	#5@48" oc (ef)	2-#5
8		R2	#5@115 oc	#5@48" oc (ef)	2-#5
9		R3	#5@120 oc	#5@48" oc (ef)	2-#5
10		R4	#5@120 oc	#5@48" oc (ef)	2-#5
11	Masonry SW4	R1	#5@120 oc	#5@48" oc (ef)	2-#5
12		R2	#5@120 oc	#5@48" oc (ef)	2-#5
13		R3	#5@120 oc	#5@48" oc (ef)	2-#5
14		R4	#5@120 oc	#5@48" oc (ef)	2-#5
15	WP5	R1	#5@113 oc	#5@48" oc (ef)	2-#5
16		R2	Over Allowable	#5@48" oc (ef)	4-#5
17		R3	#5@111 oc	#5@48" oc (ef)	2-#5
18	WP6	R1	#5@120 oc	#5@48" oc (ef)	2-#5
19		R2	#5@93 oc	#5@48" oc (ef)	2-#5
20		R3	#5@120 oc	#5@48" oc (ef)	2-#5
21	WP7	R1	#5@120 oc	#5@48" oc (ef)	2-#5
22	WP8	R1	#5@120 oc	#5@48" oc (ef)	2-#5
23	WP9	R1	#5@120 oc	#5@8" oc (ctr)	1-#5
24		R2	#5@120 oc	#5@8" oc (ctr)	1-#5
25		R3	#5@120 oc	#5@8" oc (ctr)	1-#5
26		R4	#5@120 oc	#5@8" oc (ctr)	1-#5
27		R5	#5@120 oc	#5@8" oc (ctr)	1-#5
28	WP10	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
29	WP11	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
30		R2	#5@120 oc	#5@48" oc (ctr)	1-#5
31		R3	#5@120 oc	#5@48" oc (ctr)	1-#5
32		R4	#5@120 oc	#5@48" oc (ctr)	1-#5
33		R5	#5@120 oc	#5@48" oc (ctr)	1-#5
34	WP12	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
35	WP13	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
36	WP14	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
37	WP15	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
38	WP16	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
39	WP17	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
40	WP18	R1	#5@120 oc	#5@48" oc (ctr)	1-#5
41	WP19	R1	#5@120 oc	#5@32" oc (ef)	2-#5
42	WP20	R1	#5@120 oc	#5@24" oc (ef)	2-#5
43	WP21	R1	#5@120 oc	#5@32" oc (ef)	2-#5

Masonry Lintel Reinforcement

	Wall	Lintel	Flex. Steel	Stirrup
1	Masonry SW1	L2	1-#5	Not Reqd.
2	Masonry SW2	L4	1-#5	Not Reqd.
3	Masonry SW3	L1	1-#5	Not Reqd.
4	Masonry SW4	L3	1-#5	Not Reqd.
5	WP5	L2	1-#5	Not Reqd.
6	WP6	L4	1-#5	Not Reqd.
7	WP9	L13	1-#5	Not Reqd.
8		L14	1-#5	Not Reqd.
9	WP11	L11	1-#5	Not Reqd.
10		L12	1-#5	Not Reqd.

ACI 318-19 Wall Panel Concrete Code Checks (In-Plane)

	Wall Panel	Region	Max UC	LC	Shear UC	LC	Pn*phi[k]	Mn*phi[k-ft]	Vn*phi[k]
1	WP22	R1	0.158	19	0.147	12	-715.694	3285.383	630.05
2	WP23	R1	0.226	19	0.224	13	NC	3373.632	432.859
3		R2	0.21	15	0.489	15	NC	231.906	86.232
4		R3	0.219	17	0.222	15	NC	2151.18	346.287
5	WP24	R1	0.099	17	0.139	15	NC	3373.632	432.859
6		R2	0.054	15	0.249	15	820.576	NC	86.232
7		R3	0.108	19	0.139	13	NC	2151.18	346.287
8	WP25	R1	0.155	17	0.15	14	-715.694	3172.48	630.05
9	WP26	R1	0.201	18	0.019	15	-620.268	777.537	553.098
10	WP27	R1	0.125	12	0.067	12	NC	1470.019	269.335
11	WP28	R1	0.126	16	0.126	12	NC	1450.726	237.459
12	WP29	R1	0.195	16	0.041	13	-620.268	840.561	553.098
13	WP30	R1	0.203	12	0.105	14	NC	1455.109	269.335

ACI 318-19 Wall Panel Concrete Code Checks (Out-of-Plane)

	Wall Panel	Region	Max UC	LC	Shear UC	LC	Pn*phi[k/ft]	Mn*phi[k-ft/in]	Vn*phi[k/ft]
1	WP22	R1	0.158 (Int)	19	0.001	15	-2.732	NC	9.819
2	WP23	R1	0.083 (Int)	12	0.003	13	19.125	1.434	6.848
3		R2	0.031 (Int)	12	0.002	12	19.538	NC	6.377
4		R3	0.09 (Int)	12	0.004	17	19.125	1.434	5.524
5	WP24	R1	0.083 (Int)	14	0.002	15	19.125	1.434	6.345
6		R2	0.054 (Int)	15	0.002	14	19.538	NC	6.293
7		R3	0.087 (Int)	14	0.004	13	19.125	1.434	6.763
8	WP25	R1	0.155 (Int)	17	0.001	17	-2.732	NC	9.819
9	WP26	R1	0.201 (Int)	18	0.009	18	-2.697	NC	9.819
10	WP27	R1	0.033 (Int)	13	0.004	12	19.305	NC	6.185
11	WP28	R1	0.029 (Ext)	5	0.002	19	NC	0.852	5.097
12	WP29	R1	0.195 (Int)	16	0.002	16	-2.697	NC	9.819
13	WP30	R1	0.033 (Int)	15	0.004	12	19.305	NC	6.185

TMS 402-16: STRENGTH Wall Panel Masonry Code Checks (In-Plane)

	Wall Panel	Region	Design Rule	Axial UC	LC	Bending UC	LC	Shear UC	LC	Pn*phi[k]	Mn*phi[k-ft]	Vn*phi[k]
1	Masonry SW1	R1	10" Wall	0.33	14	0.322	19	0.609	17	658.402	845.144	92.142
2		R2	10" Wall	0.14	14	0.213	17	0.864	17	178.145	109.485	20.708
3		R3	10" Wall	0.34	14	0.312	17	0.588	15	526.722	598.598	81.918
4	Masonry SW2	R1	10" Wall	0.156	14	0.171	19	0.382	13	573.898	639.961	88.102
5		R2	10" Wall	0.057	10	0.074	17	0.574	19	165.691	104.339	19.305
6		R3	10" Wall	0.16	14	0.182	17	0.412	15	459.118	475.105	69.556
7	Masonry SW3	R1	10" Wall	0.355	13	0.462	18	0.958	18	651.087	758.061	80.859
8		R2	10" Wall	0.123	13	0.158	16	1	12	203.594	126.322	22.555
9		R3	10" Wall	0.118	13	0.235	16	0.866	16	217.085	119.614	22.059
10		R4	10" Wall	0.395	14	0.141	16	0.944	16	131.68	85.716	15.116
11	Masonry SW4	R1	10" Wall	0.184	13	0.157	18	0.507	18	567.521	631.426	82.543
12		R2	10" Wall	0.035	14	0.091	12	0.646	12	189.361	120.388	21.647
13		R3	10" Wall	0.064	13	0.172	12	0.683	12	217.085	122.801	22.462
14		R4	10" Wall	0.169	14	0.089	12	0.731	12	114.78	93.055	15.28
15	WP5	R1	10" Wall	0.323	12	0.947	19	1	15	658.402	602.79	83.686
16		R2	10" Wall	0.146	12	0.202	17	1.237	15	178.145	208.151	26.709
17		R3	10" Wall	0.344	12	0.904	17	1	13	526.722	406.609	63.906
18	WP6	R1	10" Wall	0.142	12	0.462	19	0.686	13	573.898	496.88	87.645
19		R2	10" Wall	0.056	10	0.142	19	1	13	165.691	104.646	19.722
20		R3	10" Wall	0.16	12	0.394	17	0.689	15	459.118	383.896	70.468

TMS 402-16: STRENGTH Wall Panel Masonry Code Checks (In-Plane) (Continued)

	Wall Panel	Region	Design Rule	Axial UC	LC	Bending UC	LC	Shear UC	LC	Pn*phi[k]	Mn*phi[k-ft]	Vn*phi[k]
21	WP7	R1	10" Wall	0.328	15	0.526	16	0.801	18	958.341	1640.502	117.661
22	WP8	R1	10" Wall	0.169	15	0.283	16	0.533	16	835.34	1177.008	112.588
23	WP9	R1	Typical 8"	0.366	12	0.123	17	0.15	12	118.333	36.836	27.833
24		R2	Typical 8"	0.055	12	0.11	13	0.092	13	442.104	85.171	63.372
25		R3	Typical 8"	0.395	12	0.259	17	0.109	19	325.415	147.216	64.414
26		R4	Typical 8"	0.065	12	0.11	15	0.101	12	442.104	85.164	71.368
27		R5	Typical 8"	0.525	12	0.122	19	0.201	12	118.333	36.834	29.035
28	WP10	R1	Typical 8"	0.359	14	0.456	12	0.275	17	624.883	312.374	81.965
29	WP11	R1	Typical 8"	0.346	12	0.087	19	0.149	14	43.286	30.594	9.806
30		R2	Typical 8"	0.046	12	0.063	15	0.16	15	172.868	78.547	21.594
31		R3	Typical 8"	0.398	12	0.199	19	0.242	19	119.035	114.3	19.474
32		R4	Typical 8"	0.055	12	0.063	13	0.16	13	172.868	78.483	21.545
33		R5	Typical 8"	0.483	12	0.109	18	0.197	14	43.286	28.025	9.775
34	WP12	R1	Typical 8"	0.233	14	0.174	12	0.079	17	414.82	312.374	94.588
35	WP13	R1	Typical 8"	0.191	13	0.488	16	0.454	18	304.291	232.508	38.508
36	WP14	R1	Typical 8"	0.155	13	0.187	16	0.198	18	201.999	214.796	38.887
37	WP15	R1	Typical 8"	0.191	15	0.862	16	0.738	18	304.291	223.365	37.502
38	WP16	R1	Typical 8"	0.155	15	0.334	18	0.267	18	201.999	199.174	45.178
39	WP17	R1	Typical 8"	0.123	10	0.314	18	0.336	18	201.999	198.657	35.801
40	WP18	R1	Typical 8"	0.117	14	0.628	16	0.685	16	304.291	217.194	41.884
41	WP19	R1	10" Wall	0.059	5	0.51	17	0.217	13	337.78	313.512	32.713
42	WP20	R1	10" Wall	0.06	5	0.127	17	0.039	13	126.576	91.026	12.85
43	WP21	R1	10" Wall	0.064	5	0.988	17	0.39	13	264.743	249.908	26.941

TMS 402-16: STRENGTH Wall Panel Masonry Code Checks (Out-of-Plane)

	Wall Panel	Region	Design Rule	Axial UC	LC	Bending UC	LC	Pn*phi[k]	Mn*phi[k-ft]
1	Masonry SW1	R1	10" Wall	0.506	14	0.015	14	1.58	0.5
2		R2	10" Wall	0.248	14	0.011	14	1.58	0.365
3		R3	10" Wall	0.786	14	0.017	14	1.58	0.5
4	Masonry SW2	R1	10" Wall	0.104	14	0.012	14	1.58	0.279
5		R2	10" Wall	0.077	14	0.007	14	1.58	0.258
6		R3	10" Wall	0.11	14	0.013	14	1.58	0.283
7	Masonry SW3	R1	10" Wall	0.822	13	0.02	13	1.58	0.481
8		R2	10" Wall	0.291	13	0.007	13	1.58	0.383
9		R3	10" Wall	0.224	13	0.011	13	1.58	0.345
10		R4	10" Wall	0.734	13	0.049	13	1.58	0.412
11	Masonry SW4	R1	10" Wall	0.057	13	0.013	13	1.58	0.252
12		R2	10" Wall	0.061	13	0.004	13	1.58	0.25
13		R3	10" Wall	0.109	13	0.005	13	1.58	0.278
14		R4	10" Wall	0.083	13	0.009	13	1.58	0.266
15	WP5	R1	10" Wall	0.747	12	0.016	12	1.58	0.486
16		R2	10" Wall	0.292	12	0.011	12	1.58	0.388
17		R3	10" Wall	0.796	12	0.017	12	1.58	0.503
18	WP6	R1	10" Wall	0.103	12	0.012	12	1.58	0.277
19		R2	10" Wall	0.077	12	0.007	12	1.58	0.258
20		R3	10" Wall	0.11	12	0.013	12	1.58	0.283
21	WP7	R1	10" Wall	0.76	15	0.022	15	1.58	0.466
22	WP8	R1	10" Wall	0.066	15	0.01	15	1.58	0.259
23	WP9	R1	Typical 8"	0.592	12	0.076	12	3.05	0.613
24		R2	Typical 8"	0.136	12	0.008	12	3.05	0.598
25		R3	Typical 8"	0.639	12	0.092	12	3.05	0.618
26		R4	Typical 8"	0.161	12	0.011	12	3.05	0.604
27		R5	Typical 8"	0.848	12	0.112	12	3.05	0.627
28	WP10	R1	Typical 8"	0.719	14	0.041	14	1.357	0.251
29	WP11	R1	Typical 8"	0.247	12	0.043	12	0.339	0.134

TMS 402-16: STRENGTH Wall Panel Masonry Code Checks (Out-of-Plane) (Continued)

	Wall Panel	Region	Design Rule	Axial UC	LC	Bending UC	LC	Pn*phi[k]	Mn*phi[k-ft]
30		R2	Typical 8"	0.057	12	0.014	12	1.357	0.132
31		R3	Typical 8"	0.264	12	0.05	12	0.339	0.137
32		R4	Typical 8"	0.043	12	0.021	12	1.357	0.125
33		R5	Typical 8"	0.198	12	0.067	12	0.339	0.132
34	WP12	R1	Typical 8"	0.261	14	0.034	14	0.339	0.137
35	WP13	R1	Typical 8"	0.382	13	0.025	13	1.357	0.189
36	WP14	R1	Typical 8"	0.077	13	0.005	13	0.339	0.114
37	WP15	R1	Typical 8"	0.382	15	0.025	15	1.357	0.189
38	WP16	R1	Typical 8"	0.477	14	0.008	14	0.339	0.112
39	WP17	R1	Typical 8"	0.101	13	0.003	13	0.339	0.127
40	WP18	R1	Typical 8"	0.201	13	0.017	13	1.357	0.16
41	WP19	R1	10" Wall	0.046	25	0.977	25	1.82	0.347
42	WP20	R1	10" Wall	0.044	25	0.99	25	2.06	0.45
43	WP21	R1	10" Wall	0.048	25	0.857	25	1.82	0.348

Wall Panel TMS 402-16: Strength Masonry Code Checks for Lintels

	Wall Panel	Lintel	Design Rule	Bending UC	LC	Shear UC	LC	Vn*phi Total[k]	Mn*phi Total[k-ft]
1	Masonry SW1	L2	10" Wall	0.54	14	0.481	14	33.058	32.309
2	Masonry SW2	L4	10" Wall	0.115	10	0.154	13	33.058	32.309
3	Masonry SW3	L1	10" Wall	0.404	13	0.448	14	33.058	32.309
4	Masonry SW4	L3	10" Wall	0.152	14	0.174	14	33.058	32.309
5	WP5	L2	10" Wall	0.55	12	0.489	12	33.058	32.309
6	WP6	L4	10" Wall	0.133	15	0.18	15	33.058	32.309
7	WP9	L13	Typical 8"	0.48	12	0.516	12	32.736	40.376
8		L14	Typical 8"	0.408	12	0.443	12	32.736	40.376
9	WP11	L11	Typical 8"	0.17	12	0.182	12	32.736	40.376
10		L12	Typical 8"	0.14	12	0.14	12	32.736	40.376

AWC NDS-18: ASD Wall Panel Wood Code Checks (Axial)

No Data to Print...

AWC NDS-18: ASD Wall Panel Wood Code Checks (In-Plane)

No Data to Print...

AWC NDS-18: ASD Wall Panel Wood Code Checks (Header)

No Data to Print...

AISI S100-16: ASD Wall Panel CFS Code Checks (Axial)

No Data to Print...

AISI S100-16: ASD Wall Panel CFS Code Checks (In-Plane)

No Data to Print...

ACI 318-19 Wall Panel Concrete Code Checks (Seismic)

No Data to Print...

TMS 402-16: STRENGTH Wall Panel Masonry Code Checks (Seismic)

	Wall Panel	Seismic Design Rule	Region	UC Shear In Plane	LC	Seismic Detailing	BZ Req'd?
1	Masonry SW1	Intermediate	R1	0.609	17	PASS	No
2			R2	0.864	17	PASS	No

TMS 402-16: STRENGTH Wall Panel Masonry Code Checks (Seismic) (Continued)

	Wall Panel	Seismic Design Rule	Region	UC Shear In Plane	LC	Seismic Detailing	BZ Req'd?
3			R3	0.588	15	PASS	No
4	Masonry SW2	Intermediate	R1	0.382	13	PASS	No
5			R2	0.574	19	PASS	No
6			R3	0.412	15	PASS	No
7	Masonry SW3	Intermediate	R1	0.958	18	PASS	No
8			R2	1	12	PASS	No
9			R3	0.866	16	PASS	No
10			R4	0.944	16	PASS	No
11	Masonry SW4	Intermediate	R1	0.507	18	PASS	No
12			R2	0.646	12	PASS	No
13			R3	0.683	12	PASS	No
14			R4	0.731	12	PASS	No
15	WP5	Intermediate	R1	1	15	PASS	No
16			R2	1.237	15	PASS	No
17			R3	1	13	PASS	No
18	WP6	Intermediate	R1	0.686	13	PASS	No
19			R2	1	13	PASS	No
20			R3	0.689	15	PASS	No
21	WP7	Intermediate	R1	0.801	18	PASS	No
22	WP8	Intermediate	R1	0.533	16	PASS	No
23	WP9	Intermediate	R1	0.15	12	PASS	No
24			R2	0.092	13	PASS	No
25			R3	0.109	19	PASS	No
26			R4	0.101	12	PASS	No
27			R5	0.201	12	PASS	No
28	WP10	Intermediate	R1	0.275	17	PASS	No
29	WP11	Intermediate	R1	0.149	14	PASS	No
30			R2	0.16	15	PASS	No
31			R3	0.242	19	PASS	No
32			R4	0.16	13	PASS	No
33			R5	0.197	14	PASS	No
34	WP12	Intermediate	R1	0.079	17	PASS	No
35	WP13	Intermediate	R1	0.454	18	PASS	No
36	WP14	Intermediate	R1	0.198	18	PASS	No
37	WP15	Intermediate	R1	0.738	18	PASS	No
38	WP16	Intermediate	R1	0.267	18	PASS	No
39	WP17	Intermediate	R1	0.336	18	PASS	No
40	WP18	Intermediate	R1	0.685	16	PASS	No
41	WP19	Intermediate	R1	0.217	13	PASS	No
42	WP20	Intermediate	R1	0.039	13	PASS	No
43	WP21	Intermediate	R1	0.39	13	PASS	No

Masonry Wall Suggested Design

No Data to Print...

Wood Wall Suggested Design

No Data to Print...

X-Direction Story Drift - Service

No Data to Print...

Z-Direction Story Drift - Service

No Data to Print...

X-Direction Story Drift - Strength

No Data to Print...

Z-Direction Story Drift - Strength

No Data to Print...

Wall Panel Point Loads

No Data to Print...

Member Area Loads

No Data to Print...

Masonry Wall Panel Lintel Parameters

	Label	Depth [in]	Bear Length [in]	Bar Size	Min # Bars Per Layer	Max # Bars Per Layer	Num of Layers	c/c Sp of Layers [in]	Dist To Bot [in]	Stirrup Size	Analysis Method
1	Typical 8"	30	8	#5	1	3	1	N/A	3.5	#3	Simply Supported
2	10" Wall	24	8	#5	1	3	1	N/A	3.5	#3	Simply Supported

Masonry Wall Panel Out-of-Plane Parameters

	Label	Bar Size	Bar Space Min	Bar Space Max	Bar Placement	Cover [in]	Mortar Type	Cement Type	Transfer Load
1	Typical 8"	#5	8"	48"	Center	Min	Type M or S	Portland, Lime/Mortar	
2	10" Wall	#5	8"	48"	Each Face	Min	Type M or S	Portland, Lime/Mortar	

Masonry Wall Panel In-Plane Parameters

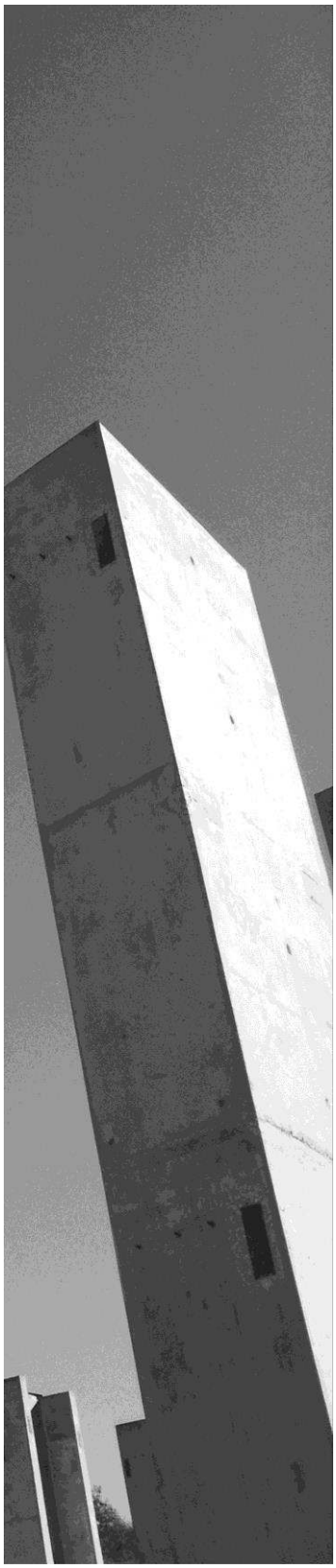
	Label	Vert Bar Size	Bars Per Cell	Min Bound Zone Width [in]	Max Bound Zone Width [in]	Horz Bar Size	Transfer Load
1	Typical 8"	#5	1	8	40	#5	
2	10" Wall	#5	2	8	40	#5	

Masonry Wall Panel Parameters

	Label	Block Nom Width	Block Grouting	Reinforced	Wall Area Method
1	Typical 8"	8"	Partially Grouted	Yes	NCMA
2	10" Wall	10"	Partially Grouted	Yes	NCMA

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

EXTERIOR WALL STUD DESIGN



KPFF JOB # 10212200038

Screw Capacities

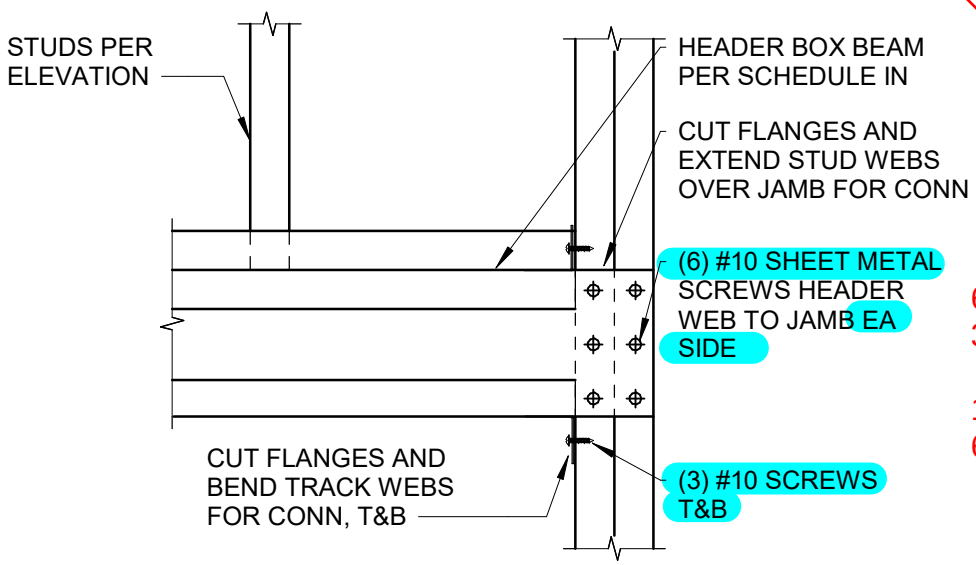
CFS JAMBS AND HEADERS DESIGN

Table Notes

1. Capacities based on AISI S100 Section E4.
2. When connecting materials of different steel thicknesses or tensile strengths, use the lowest values. Tabulated values assume two sheets of equal thickness are connected.
3. Capacities are based on Allowable Strength Design (ASD) and include safety factor of 3.0.
4. Where multiple fasteners are used, screws are assumed to have a center-to-center spacing of at least 3 times the nominal diameter (d).
5. Screws are assumed to have a center-of-screw to edge-of-steel dimension of at least 1.5 times the nominal diameter (d) of the screw.
6. Pull-out capacity is based on the lesser of pull-out capacity in sheet closest to screw tip or tension strength of screw.
7. Pull-over capacity is based on the lesser of pull-over capacity for sheet closest to screw header or tension strength of screw.
8. Values are for pure shear or tension loads. See AISI Section E4.5 for combined shear and pull-over.
9. Screw Shear (Pss), tension (Pts), diameter, and head diameter are from CFSEI Tech Note (F701-12).
10. Screw shear strength is the average value, and tension strength is the lowest value listed in CFSEI Tech Note (F701-12).
11. Higher values for screw strength (Pss, Pts), may be obtained by specifying screws from a specific manufacturer.

Allowable Screw Connection Capacity (lbs)

Thickness (Mils)	Design Thickness	Fy Yield (ksi)	Fu Tensile (ksi)	#6 Screw (Pss = 643 lbs, Pts = 419 lbs) 0.138" dia, 0.272" Head			#8 Screw (Pss= 1278 lbs, Pts = 586 lbs) 0.164" dia, 0.272" Head			#10 Screw (Pss= 1644 lbs, Pts = 1158 lbs) 0.190" dia, 0.340" Head			#12 Screw (Pss= 2330 lbs, Pts = 2325 lbs) 0.216" dia, 0.340" Head			¼" Screw (Pss= 3048 lbs, Pts = 3201 lbs) 0.250" dia, 0.409" Head		
				Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over
18	0.0188	33	33	44	24	84	48	29	84	52	33	105	55	38	105	60	44	127
27	0.0283	33	33	82	37	127	89	43	127	96	50	159	102	57	159	110	66	191
30	0.0312	33	33	95	40	140	103	48	140	111	55	175	118	63	175	127	73	211
33	0.0346	33	45	151	61	140	164	72	195	177	84	265	188	95	265	203	110	318
43	0.0451	33	45	214	79	140	244	94	195	263	109	345	280	124	345	302	144	415
54	0.0566	33	45	214	100	140	344	118	195	370	137	386	394	156	433	424	180	521
68	0.0713	33	45	214	125	140	426	149	195	523	173	386	557	196	545	600	227	656
97	0.1017	33	45	214	140	140	426	195	195	548	246	386	777	280	775	1,016	324	936
118	0.1242	33	45	214	140	140	426	195	195	548	301	386	777	342	775	1,016	396	1,067
54	0.0566	50	65	214	140	140	426	171	195	534	198	386	569	225	625	613	261	752
68	0.0713	50	65	214	140	140	426	195	195	548	249	386	777	284	775	866	328	948
97	0.1017	50	65	214	140	140	426	195	195	548	356	386	777	405	775	1,016	468	1,067
118	0.1242	50	65	214	140	140	426	195	195	548	386	386	777	494	775	1,016	572	1,067



2B HEADER TO JAMB CONNECTION
NO SCALE

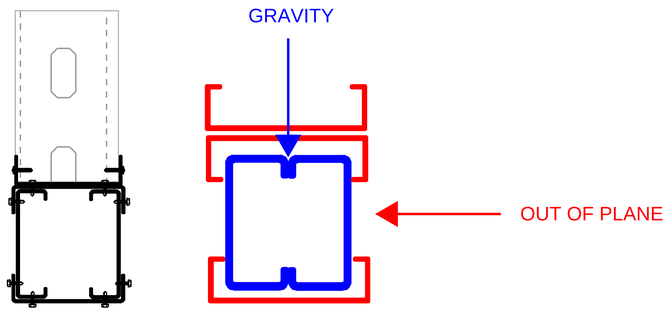
6 SCREWS = CAPACITY OF 3.21 KIPS OUT OF PLANE

12 SCREWS = CAPACITY OF 6.42 KIPS GRAVITY

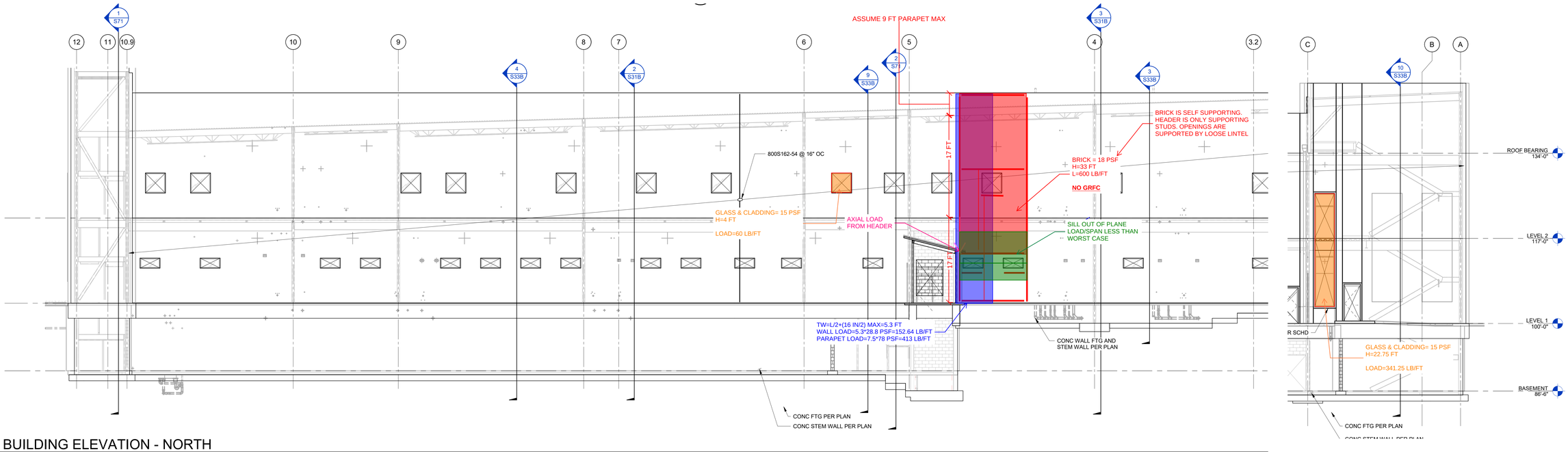
CFS JAMB AND HEADER DESIGN

APPROACH:

DESIGN GRAVITY AND OUT OF PLANE SEPERATELY IN CFS DESIGNER. CONNECTIONS CHECKED AFTERWARDS.



CASE 1: MAX 8'-0" OPENING

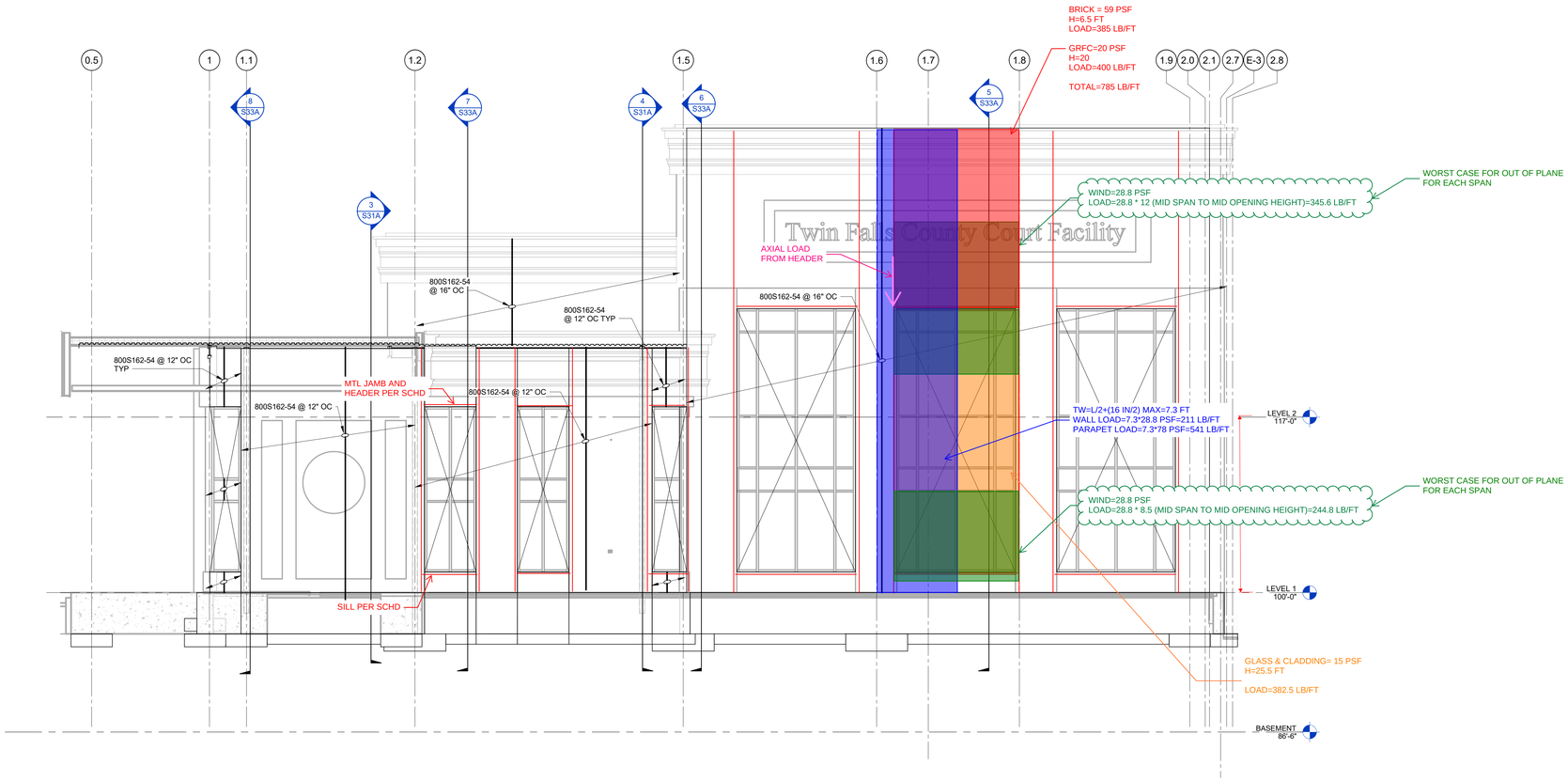


2 / S308 BUILDING ELEVATION - NORTH

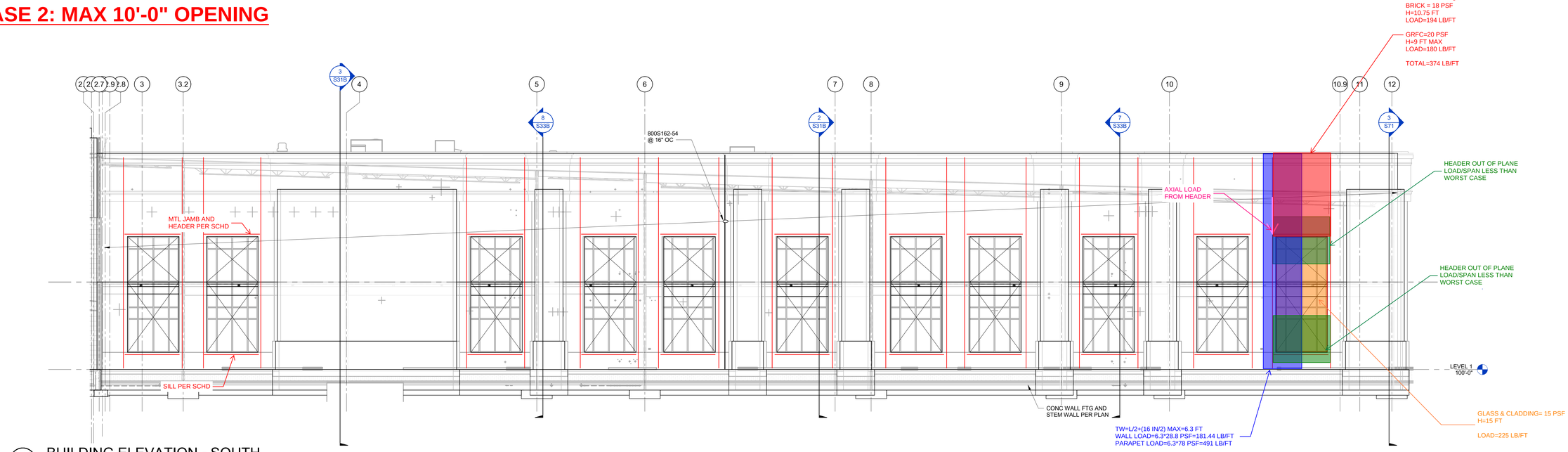
1/8" = 1'-0"

CASE 3: MAX 12'-0" OPENING

CFS JAMB AND HEADER DESIGN



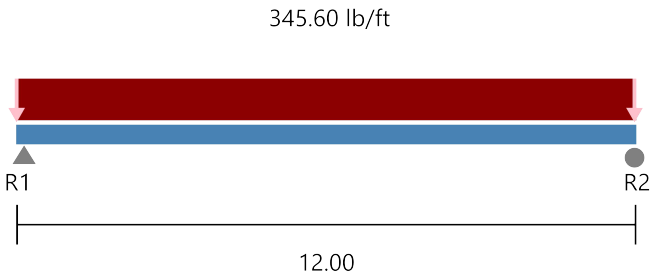
CASE 2: MAX 10'-0" OPENING



4 S30B BUILDING ELEVATION - SOUTH

1/8" = 1'-0"

CFS JAMBS AND HEADERS DESIGN



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800T200-54(50)	5.149	33.3 %	0.679	33.3 %
2	800T200-54(50)	5.149	33.3 %	0.679	33.3 %
3	800T200-54(50)	5.149	33.3 %	0.679	33.3 %

Overall Member Inputs:

		Flexure				Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	144	0	N/A	N/A	N/A	N/A

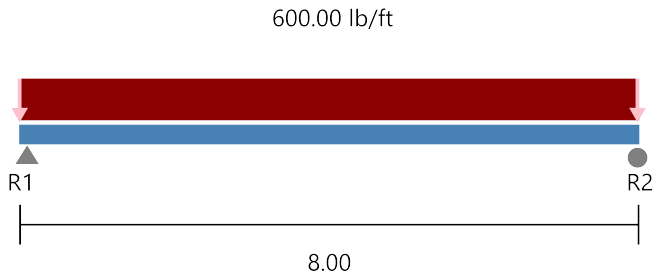
Reaction And Point Load Data:

	R1	R2
Load (lb)	2073.6	2073.6
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800T200-54(50)	L/407	0.954	No	0.34	0.34	N/A	0.00	0.95
800T200-54(50)	L/407	0.954	No	0.34	0.34	N/A	0.00	0.95
800T200-54(50)	L/407	0.954	No	0.34	0.34	N/A	0.00	0.95

CFS JAMBS AND HEADERS DESIGN



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800S162-54(50)	5.600	50.0 %	0.670	50.0 %
2	800S162-54(50)	5.600	50.0 %	0.670	50.0 %

Overall Member Inputs:

	Flexure					Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	96	0	N/A	N/A	N/A	N/A

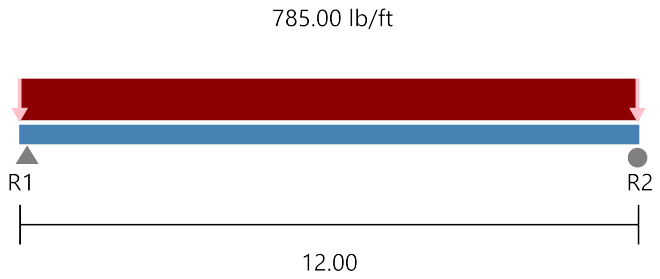
Reaction And Point Load Data:

	R1	R2
Load (lb)	2400.0	2400.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800S162-54(50)	L/574	0.878	Yes	0.57	0.57	N/A	0.00	0.78
800S162-54(50)	L/574	0.878	Yes	0.57	0.57	N/A	0.00	0.78

CFS JAMBS AND HEADERS DESIGN



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %
2	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %
3	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %
4	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %

Overall Member Inputs:

		Flexure				Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	144	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	4710.0	4710.0
Brng (in)	6.00	6.00

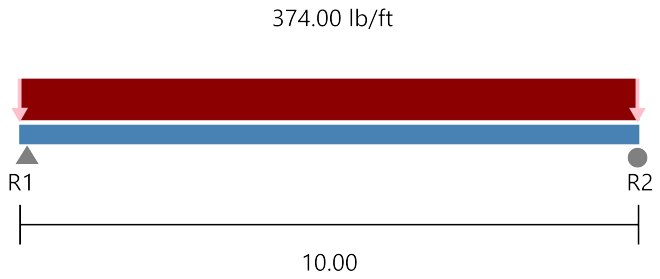
Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74
1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74
1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74

1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74

CFS JAMBS AND HEADERS DESIGN

CFS JAMBS AND HEADERS DESIGN



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800S162-54(50)	5.600	50.0 %	0.670	50.0 %
2	800S162-54(50)	5.600	50.0 %	0.670	50.0 %

Overall Member Inputs:

		Flexure				Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	120	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	1870.0	1870.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800S162-54(50)	L/471	0.855	No	0.45	0.45	N/A	0.00	0.76
800S162-54(50)	L/471	0.855	No	0.45	0.45	N/A	0.00	0.76

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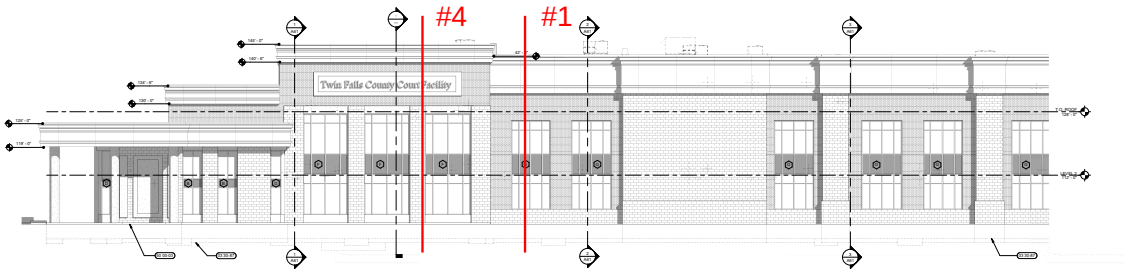
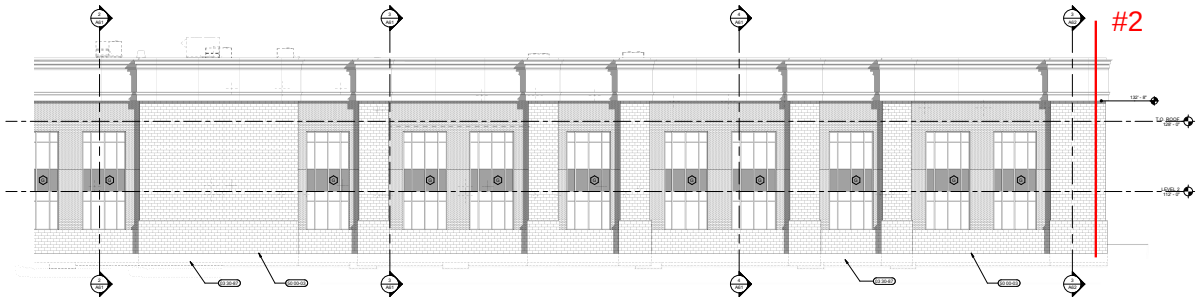
project	Twin Falls Judicial Building	by MG, NP	sheet no.
location	Twin Falls, Idaho	date 1-5-2022	
client	CSHQA	job no. 10212200038	
Typical Stud Locations			

CASE 1 AND 4:
LONG SPANS. SHORT PARAPET



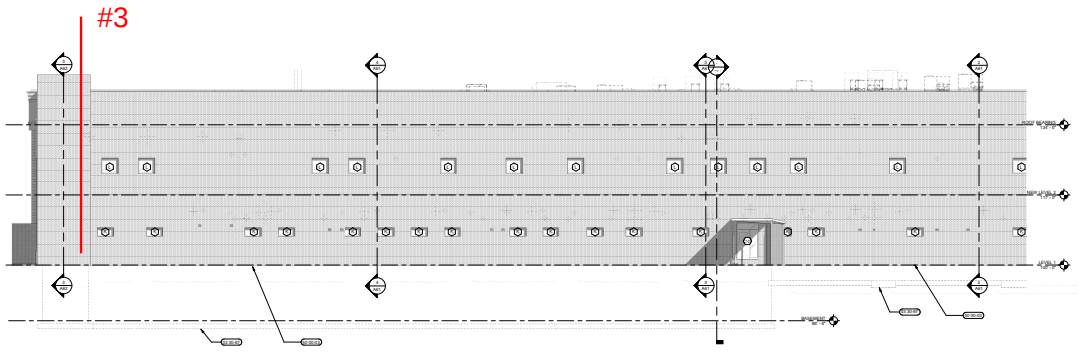
1 FRONT ELEVATION A

CASE 2:
SHORT SPANS. TALL PARAPET W/ BRACE (BRACE IS REQUIRED FOR 16 IN OC. NOT REQUIRED FOR 12 IN OC)



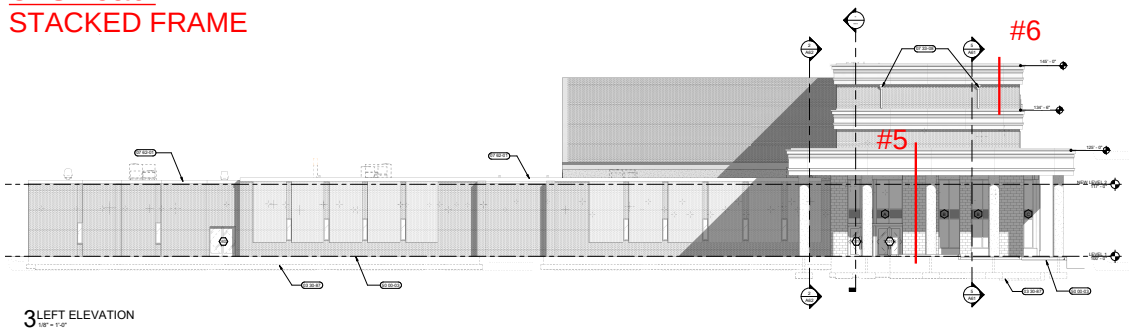
2 FRONT ELEVATION B

CASE 3:
STAIRS

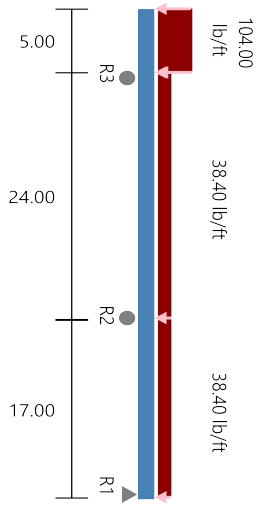


2 REAR ELEVATION B

CASE 5&6:
STACKED FRAME



3 LEFT ELEVATION



Section: 800S162-54 (50 ksi) @ 16" o.c. Single C Stud (punched)
Maxo = 3065.9 ft-lb **Va =** 2091.3 lb **I =** 5.60 in^4

Loads have not been modified for strength checks
Loads have been multiplied by 0.70 for deflection calculations

Bridging Connectors - Design Method =AISI S100

Span	Axial KyLy, KtLt	Flexual, Distortional	Connector	Stress Ratio
Top Cant.	NA	None, 60.0"	N/A	-
Top	NA	48.0", 288.0"	LSUBH3.25 (Min)	0.55
Bottom	NA	48.0", 204.0"	LSUBH3.25 (Min)	0.55

Web Crippling

Support	Load (lb)	Bearing (in)	Pa (lb)	M (ft-lbs)	Max Int.	Stiffener?
R3	959.4	--Shear Connection	w/ clip--			NO
R2	915.2	--Shear Connection	w/ clip--			NO
R1	219.7	--Shear Connection	w/ clip--			NO

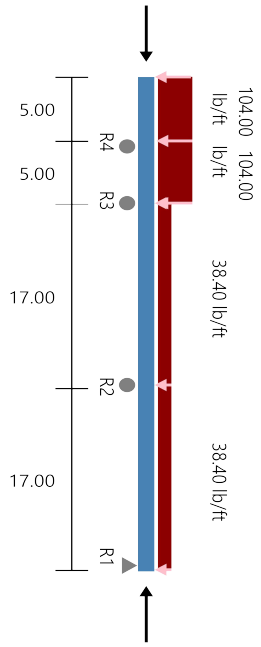
	Code Check	Required	Allowed	Interaction	Notes
Top Cant.	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	520.0	2091.3	25%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1300.0	2734.3	48%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	829.9	2846.4	29%	
	Shear/Moment	0.49	1.00	49%	Shear 520.0, Moment 1300.0
	Axial/Moment	0.42	1.00	42%	Axial 0.0(c), Moment 1300.0
	Deflection Cant., in	0.104	--meets L/1154--		2 x Cantilever
Top Span	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	482.2	2091.3	23%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1813.1	2734.3	66%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	1214.2	2783.5	44%	
	Shear/Moment	0.63	1.00	63%	Shear 482.2, Moment 1813.1
	Axial/Moment	0.59	1.00	59%	Axial 0.0(c), Moment 1813.1
	Deflection Span, in	0.395	--meets L/729--		
Bottom Span	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	433.1	2091.3	21%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1813.1	2734.3	66%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	628.8	2787.1	23%	
	Shear/Moment	0.63	1.00	63%	Shear 433.1, Moment 1813.1
	Axial/Moment	0.59	1.00	59%	Axial 0.0(c), Moment 1813.1
	Deflection Span, in	0.077	--meets L/2648--		

Simpson Strong-Tie® Connectors

Support	Rx(lb)	Ry(lb)	Simpson Strong-Tie® Connector	Connector Interaction	Anchor Interaction
R3	959.42	0	SCB45.5(3) & (2) #12-24 SST X or XL to A36 Steel	96.91 %	86.05 %

R2	915.23	0	SCB45.5(3) & (2) #12-24 SST X or XL to A36 Steel	92.45 %	82.08 %
R1	219.75	0	FCB43.5 Min(4#12-14) & (2) #12-24 SST X or XL to A36 Steel	22.54 %	19.71 %

* Reference catalog for connector and anchor requirement notes as well as screw placements requirement



Section: 800S162-54 (50 ksi) @ 16" o.c. Single C Stud (punched)
Maxo = 3065.9 ft-lb **Va =** 2091.3 lb **I =** 5.60 in^4

Loads have not been modified for strength checks
Loads have been multiplied by 0.70 for deflection calculations

Bridging Connectors - Design Method =AISI S100

Span	Axial KyLy, KtLt	Flexual, Distortional	Connector	Stress Ratio
Top Cant.	NA	None, 60.0"	N/A	-
Top	NA	None, 60.0"	N/A	-
Middle	NA	48.0", 204.0"	LSUBH3.25 (Min)	0.55
Bottom	48.0", 48.0"	48.0", 204.0"	LSUBH3.25 (Min)	0.60

Web Crippling

Support	Load (lb)	Bearing (in)	Pa (lb)	M (ft-lbs)	Max Int.	Stiffener?
R4	937.7	6.00	1954.8	1300.0	0.52	NO
R3	384.7	--Shear Connection w/ clip--				NO
R2	770.9	--Shear Connection w/ clip--				NO
R1	252.3	--Shear Connection w/ clip--				NO

"*" after support means punched near support

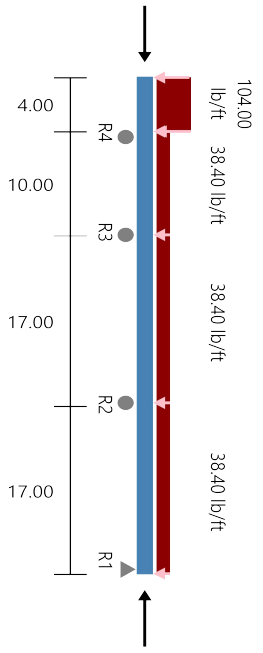
	Code Check	Required	Allowed	Interaction	Notes
Top Cant.	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	520.0	2091.3	25%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1300.0	2734.3	48%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	829.9	2846.4	29%	
	Shear/Moment	0.49	1.00	49%	Shear 520.0, Moment 1300.0
	Axial/Moment	0.42	1.00	42%	Axial 0.0(c), Moment 1300.0
	Deflection Cant., in	0.135	--meets L/892--		2 x Cantilever
Top Span	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	417.7	2091.3	20%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1300.0	2734.3	48%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	932.7	2685.9	35%	
	Shear/Moment	0.47	1.00	47%	Shear 417.7, Moment 1300.0
	Axial/Moment	0.42	1.00	42%	Axial 0.0(c), Moment 1300.0
	Deflection Span, in	0.015	--meets L/4083--		
Middle Span	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	370.4	2091.3	18%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1259.3	2734.3	46%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	527.0	2788.6	19%	
	Shear/Moment	0.45	1.00	45%	Shear 370.4, Moment 1259.3
	Axial/Moment	0.41	1.00	41%	Axial 0.0(c), Moment 1259.3
	Deflection Span, in	0.074	--meets L/2773--		
Bottom Span	Max. Axial, lbs	1000.0(c)	5517.8(c)	18%	KΦ=0.00 lb-in/in Max KL/r = 89
	Max. Shear, lbs	400.5	2091.3	19%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1259.3	2734.3	46%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	829.0	2785.3	30%	

Shear/Moment	0.45	1.00	45%	Shear 400.5, Moment 1259.3
Axial/Moment	0.66	1.00	66%	Axial 1000.0(c), Moment 1259.3
Deflection Span, in	0.143	--meets L/1427--		

Simpson Strong-Tie® Connectors

Support	Rx(lb)	Ry(lb)	Simpson Strong-Tie® Connector	Connector Interaction	Anchor Interaction
R4	937.7	0	By Others & Anchorage Designed by Engineer	NA	NA
R3	384.71	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	18.15 %	15.12 %
R2	770.87	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	36.36 %	30.29 %
R1	252.32	1000	FCB45.5 Max(9#12-14) & 2" Hard Side and 1" Free Side Weld to A36 Steel	74.78 %	66.49 %

* Reference catalog for connector and anchor requirement notes as well as screw placements requirement



Section: 800S162-54 (50 ksi) @ 16" o.c. Single C Stud (punched)
Maxo = 3065.9 ft-lb **Va =** 2091.3 lb **I =** 5.60 in^4

Loads have not been modified for strength checks
Loads have been multiplied by 0.70 for deflection calculations

Bridging Connectors - Design Method =AISI S100

Span	Axial KyLy, KtLt	Flexual, Distortional	Connector	Stress Ratio
Top Cant.	NA	None, 48.0"	N/A	-
Top	NA	48.0", 120.0"	LSUBH3.25 (Min)	0.55
Middle	NA	48.0", 204.0"	LSUBH3.25 (Min)	0.55
Bottom	48.0", 48.0"	48.0", 204.0"	LSUBH3.25 (Min)	0.60

Web Crippling

Support	Load (lb)	Bearing (in)	Pa (lb)	M (ft-lbs)	Max Int.	Stiffener?
R4	641.2	--Shear Connection		w/ clip--		NO
R3	440.3	--Shear Connection		w/ clip--		NO
R2	771.9	--Shear Connection		w/ clip--		NO
R1	252.1	--Shear Connection		w/ clip--		NO

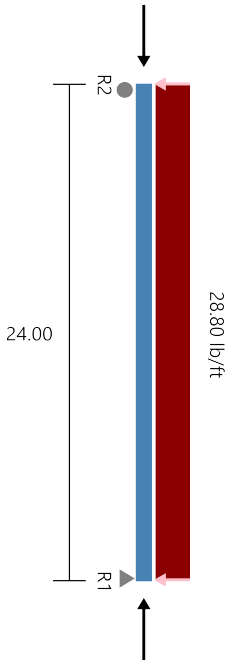
	Code Check	Required	Allowed	Interaction	Notes
Top Cant.	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	416.0	2091.3	20%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	832.0	2734.3	30%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	531.1	3008.0	18%	
	Shear/Moment	0.34	1.00	34%	Shear 416.0, Moment 832.0
	Axial/Moment	0.27	1.00	27%	Axial 0.0(c), Moment 832.0
	Deflection Cant., in	0.083	--meets L/1155--		2 x Cantilever
Top Span	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	225.2	2091.3	11%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	832.0	2734.3	30%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	456.9	2779.6	16%	
	Shear/Moment	0.29	1.00	29%	Shear 225.2, Moment 832.0
	Axial/Moment	0.27	1.00	27%	Axial 0.0(c), Moment 832.0
	Deflection Span, in	0.025	--meets L/4859--		
Middle Span	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	371.3	2091.3	18%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1262.3	2734.3	46%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	532.4	2788.5	19%	
	Shear/Moment	0.45	1.00	45%	Shear 371.3, Moment 1262.3
	Axial/Moment	0.41	1.00	41%	Axial 0.0(c), Moment 1262.3
	Deflection Span, in	0.075	--meets L/2727--		
Bottom Span	Max. Axial, lbs	1000.0(c)	5517.8(c)	18%	KΦ=0.00 lb-in/in Max KL/r = 89
	Max. Shear, lbs	400.7	2091.3	19%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1262.3	2734.3	46%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	827.9	2785.3	30%	
	Shear/Moment	0.45	1.00	45%	Shear 400.7, Moment 1262.3

Axial/Moment	0.66	1.00	66%	Axial 1000.0(c), Moment 1262.3
Deflection Span, in	0.143	--meets L/1431--		

Simpson Strong-Tie® Connectors

Support	Rx(lb)	Ry(lb)	Simpson Strong-Tie® Connector	Connector Interaction	Anchor Interaction
R4	641.23	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	30.25 %	25.20 %
R3	440.32	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	20.77 %	17.30 %
R2	771.9	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	36.41 %	30.33 %
R1	252.15	1000	FCB45.5 Max(9#12-14) & 2" Hard Side and 1" Free Side Weld to A36 Steel	74.77 %	66.48 %

* Reference catalog for connector and anchor requirement notes as well as screw placements requirement



Section: 1000S162-54 (50 ksi) @ 12" o.c. Single C Stud (punched)
Maxo = 3922.2 ft-lb **Va =** 1660.8 lb **I =** 9.39 in^4

Loads have not been modified for strength checks
Loads have been multiplied by 0.70 for deflection calculations

Bridging Connectors - Design Method =AISI S100

Span	Axial KyLy, KtLt	Flexual, Distortional	Connector	Stress Ratio
Span	48.0", 48.0"	48.0", 288.0"	MSUBH3.25 (Max)	0.60

Web Crippling

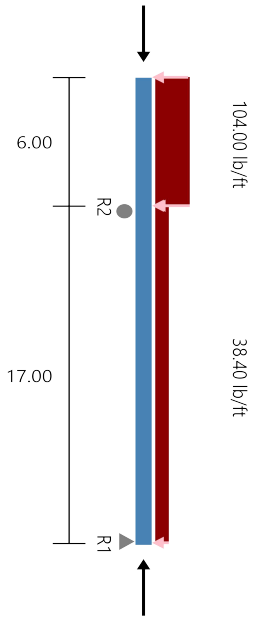
Support	Load (lb)	Bearing (in)	Pa (lb)	M (ft-lbs)	Max Int.	Stiffener?
R2	345.6	--Shear Connection		w/ clip--		NO
R1	345.6	--Shear Connection		w/ clip--		NO

	Code Check	Required	Allowed	Interaction	Notes
Span	Max. Axial, lbs	1000.0(c)	5267.0(c)	19%	KΦ=0.00 lb-in/in Max KL/r = 94
	Max. Shear, lbs	345.6	1660.8	21%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	2073.6	3364.1	62%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	2073.6	3534.9	59%	
	Shear/Moment	0.53	1.00	53%	Shear 0.0, Moment 2073.6
	Axial/Moment	0.84	1.00	84%	Axial 1000.0(c), Moment 2073.6
	Deflection Span, in	0.543	--meets L/530--		

Simpson Strong-Tie® Connectors

Support	Rx(lb)	Ry(lb)	Simpson Strong-Tie® Connector	Connector Interaction	Anchor Interaction
R2	345.6	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	16.30 %	13.58 %
R1	345.6	1000	FCB45.5 Max(9#12-14) & 2" Hard Side and 1" Free Side Weld to A36 Steel	83.22 %	71.87 %

* Reference catalog for connector and anchor requirement notes as well as screw placements requirement



Section: 800S162-54 (50 ksi) @ 16" o.c. Single C Stud (punched)
Maxo = 3065.9 ft-lb **Va =** 2091.3 lb **I =** 5.60 in^4

Loads have not been modified for strength checks
Loads have been multiplied by 0.70 for deflection calculations

Bridging Connectors - Design Method =AISI S100

Span	Axial KyLy, KtLt	Flexual, Distortional	Connector	Stress Ratio
Top Cant.	NA	None, 72.0"	N/A	-
Span	48.0", 48.0"	48.0", 204.0"	LSUBH3.25 (Min)	0.60

Web Crippling

Support	Load (lb)	Bearing (in)	Pa (lb)	M (ft-lbs)	Max Int.	Stiffener?
R2	1060.5	--Shear Connection w/ clip--				NO
R1	216.3	--Shear Connection w/ clip--				NO

	Code Check	Required	Allowed	Interaction	Notes
Top Cant.	Max. Axial, lbs	0.0(t)	-	0%	KΦ=0.00 lb-in/in Max KL/r = N/A
	Max. Shear, lbs	624.0	2091.3	30%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1872.0	2734.3	68%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	1195.1	2619.8	46%	
	Shear/Moment	0.68	1.00	68%	Shear 624.0, Moment 1872.0
	Axial/Moment	0.61	1.00	61%	Axial 0.0(c), Moment 1872.0
	Deflection Cant., in	0.244	--meets L/590--		2 x Cantilever
Span	Max. Axial, lbs	1000.0(c)	5517.8(c)	18%	KΦ=0.00 lb-in/in Max KL/r = 89
	Max. Shear, lbs	436.5	2091.3	21%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	1872.0	2734.3	68%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	609.1	2787.4	22%	
	Shear/Moment	0.65	1.00	65%	Shear 436.5, Moment 1872.0
	Axial/Moment	0.90	1.00	90%	Axial 1000.0(c), Moment 1872.0
	Deflection Span, in	0.071	--meets L/2893--		

Simpson Strong-Tie® Connectors

Support	Rx(lb)	Ry(lb)	Simpson Strong-Tie® Connector	Connector Interaction	Anchor Interaction
R2	1060.52	0	SC62-5/97(3) & (4) #12-24 SST X or XL to A36 Steel	50.02 %	41.67 %
R1	216.28	1000	SCS62-5/97(8#10, R2) & (3) #12-24 SST XL to A36 Steel	40.20 %	95.18 %

* Reference catalog for connector and anchor requirement notes as well as screw placements requirement

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O:208.336.6985
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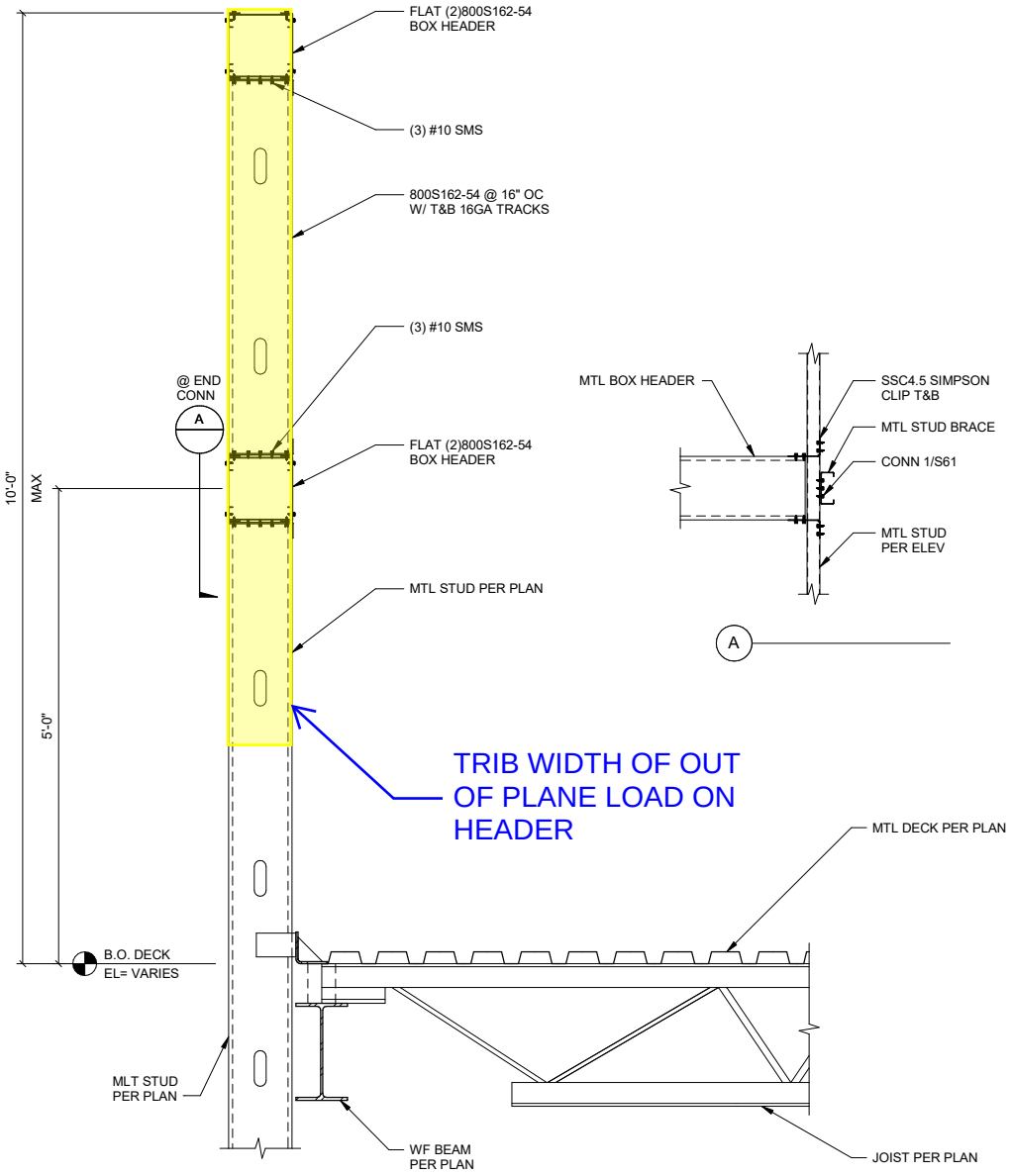
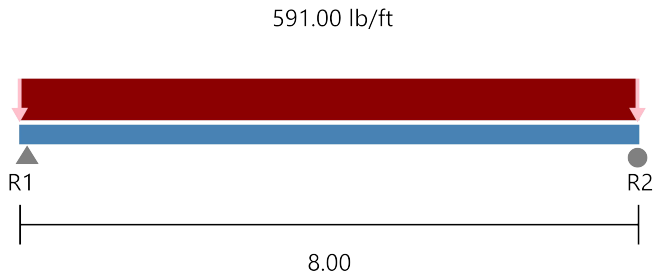
project	Twin Falls Judicial Building	by MG, NP	sheet no.
location	Twin Falls, Idaho	date 1-5-2022	
client	CSHQA	job no. 10212200038	
	Parapet Header		



2 / S61 PARAPET WALL AND METAL STUD BRACE
1/2" = 1'-0"

OUT OF PLANE LOAD ON HDR:

WL=7.5 FT*78.8 PSF=591 LB/FT



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800S162-54(50)	5.600	33.3 %	0.670	33.3 %
2	800S162-54(50)	5.600	33.3 %	0.670	33.3 %
3	800S162-54(50)	5.600	33.3 %	0.670	33.3 %

Overall Member Inputs:

	Flexure				Axial			
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	96	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	2364.0	2364.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800S162-54(50)	L/873	0.576	No	0.38	0.38	N/A	0.00	0.51
800S162-54(50)	L/873	0.576	No	0.38	0.38	N/A	0.00	0.51
800S162-54(50)	L/873	0.576	No	0.38	0.38	N/A	0.00	0.51

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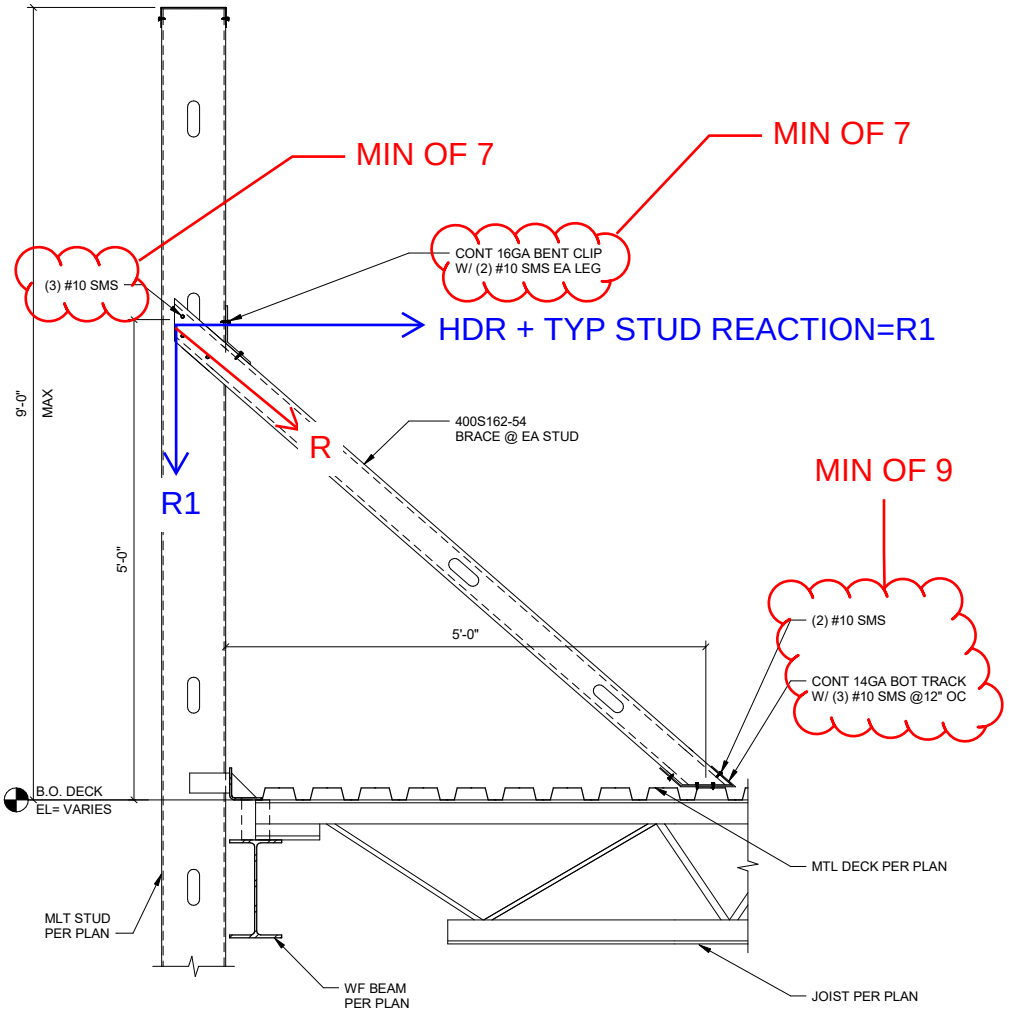
project	Twin Falls Judicial Building	by MG, NP	sheet no.
location	Twin Falls, Idaho	date 1-5-2022	
client	CSHQA	job no. 10212200038	
Parapet Brace Design - 16 IN OC			

16 IN OC (EVERY STUD)



1 / S61 PARAPET WALL AND METAL STUD BRACE
1/2" = 1'-0"

REACTION FROM STUDS (R1)

R1=CFS STUD DESIGNER=2364+937=3301

TOTAL REACTION FROM STUDS (R)

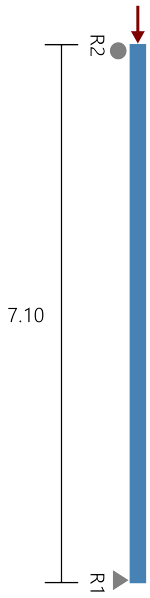
R=SQRT(3301^2+3301^2)

R=4668 LBS

MAX LENGTH OF BRACE

L=SQRT(5^2+(5)^2)

L=7.1 FT



Section : 800S162-54 (50 ksi) Single C Stud (punched)
Maxo = 3065.9 ft-lb **Va =** 2091.3 lb **I =** 5.60 in^4

Loads have not been modified for strength checks
Loads have been multiplied by 0.70 for deflection calculations

Bridging Connectors - Design Method =AISI S100

Span	Axial KyLy, KtLt	Flexual, Distortional	Connector	Stress Ratio
Span	48.0", 48.0"	48.0", 85.2"	N/A	-

Web Crippling

Support	Load (lb)	Bearing (in)	Pa (lb)	M (ft-lbs)	Max Int.	Stiffener?
R2	0.0	--Shear Connection w/ clip--				NO
R1	0.0	--Stud/Track Design, Ref Connectors--				NO

Gravity Load

Type	Load (lb)
Uniform	
P1y	4668.00lb @ 7.10ft

	Code Check	Required	Allowed	Interaction	Notes
Span	Max. Axial, lbs	4668.0(c)	5517.8(c)	85%	KΦ=0.00 lb-in/in Max KL/r = 89
	Max. Shear, lbs	0.0	2091.3	0%	Shear (Punched)
	Max. Moment (MaFy, Ma-dist), ft-lbs	0.0	2734.3	0%	Ma-dist (control),KΦ=0.00 lb-in/in
	Moment Stability, ft-lbs	0.0	2779.6	0%	
	Shear/Moment	0.00	1.00	0%	Shear 0.0, Moment 0.0
	Axial/Moment	0.85	1.00	85%	Axial 4668.0(c), Moment 0.0
	Deflection Span, in	0.000	--meets L/0--		

Support	Rx(lb)	Ry(lb)	Simpson Strong-Tie Connector	Connector Interaction	Anchor Interaction
R2	0.0	0.0	SCB45.5(2) & (2) #12-24 SST X or XL to A36 Steel	0.00 %	0.00 %
R1	0.0	4668.0	800T125-33 (33) & (1) .157" SST PDPA/PDPAT-62KP to steel (3/16" to 1/2" thickness)	0.00 %	0.00 %

* Reference catalog for connector and anchor requirement notes as well as screw placement requirements

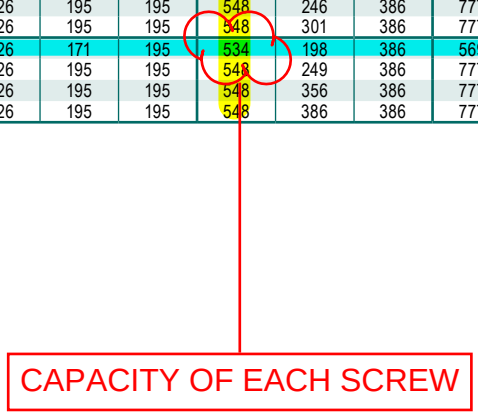
Screw Capacities

Table Notes

1. Capacities based on AISI S100 Section E4.
2. When connecting materials of different steel thicknesses or tensile strengths, use the lowest values. Tabulated values assume two sheets of equal thickness are connected.
3. Capacities are based on Allowable Strength Design (ASD) and include safety factor of 3.0.
4. Where multiple fasteners are used, screws are assumed to have a center-to-center spacing of at least 3 times the nominal diameter (d).
5. Screws are assumed to have a center-of-screw to edge-of-steel dimension of at least 1.5 times the nominal diameter (d) of the screw.
6. Pull-out capacity is based on the lesser of pull-out capacity in sheet closest to screw tip or tension strength of screw.
7. Pull-over capacity is based on the lesser of pull-over capacity for sheet closest to screw header or tension strength of screw.
8. Values are for pure shear or tension loads. See AISI Section E4.5 for combined shear and pull-over.
9. Screw Shear (Pss), tension (Pts), diameter, and head diameter are from CFSEI Tech Note (F701-12).
10. Screw shear strength is the average value, and tension strength is the lowest value listed in CFSEI Tech Note (F701-12).
11. Higher values for screw strength (Pss, Pts), may be obtained by specifying screws from a specific manufacturer.

Allowable Screw Connection Capacity (lbs)

Thickness (Mils)	Design Thickness	Fy Yield (ksi)	Fu Tensile (ksi)	#6 Screw (Pss = 643 lbs, Pts = 419 lbs) 0.138" dia, 0.272" Head			#8 Screw (Pss= 1278 lbs, Pts = 586 lbs) 0.164" dia, 0.272" Head			#10 Screw (Pss= 1644 lbs, Pts = 1158 lbs) 0.190" dia, 0.340" Head			#12 Screw (Pss= 2330 lbs, Pts = 2325 lbs) 0.216" dia, 0.340" Head			¼" Screw (Pss= 3048 lbs, Pts = 3201 lbs) 0.250" dia, 0.409" Head		
				Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over
18	0.0188	33	33	44	24	84	48	29	84	52	33	105	55	38	105	60	44	127
27	0.0283	33	33	82	37	127	89	43	127	96	50	159	102	57	159	110	66	191
30	0.0312	33	33	95	40	140	103	48	140	111	55	175	118	63	175	127	73	211
33	0.0346	33	45	151	61	140	164	72	195	177	84	265	188	95	265	203	110	318
43	0.0451	33	45	214	79	140	244	94	195	263	109	345	280	124	345	302	144	415
54	0.0566	33	45	214	100	140	344	118	195	370	137	386	394	156	433	424	180	521
68	0.0713	33	45	214	125	140	426	149	195	523	173	386	557	196	545	600	227	656
97	0.1017	33	45	214	140	140	426	195	195	548	246	386	777	280	775	1,016	324	936
118	0.1242	33	45	214	140	140	426	195	195	548	301	386	777	342	775	1,016	396	1,067
54	0.0566	50	65	214	140	140	426	171	195	534	198	386	569	225	625	613	261	752
68	0.0713	50	65	214	140	140	426	195	195	548	249	386	777	284	775	866	328	948
97	0.1017	50	65	214	140	140	426	195	195	548	356	386	777	405	775	1,016	468	1,067
118	0.1242	50	65	214	140	140	426	195	195	548	386	386	777	494	775	1,016	572	1,067



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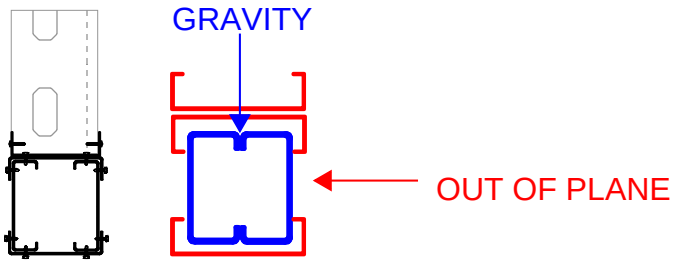
client	CSHQA	job no. 10212200038	
	Typical Headers		

APPROACH:

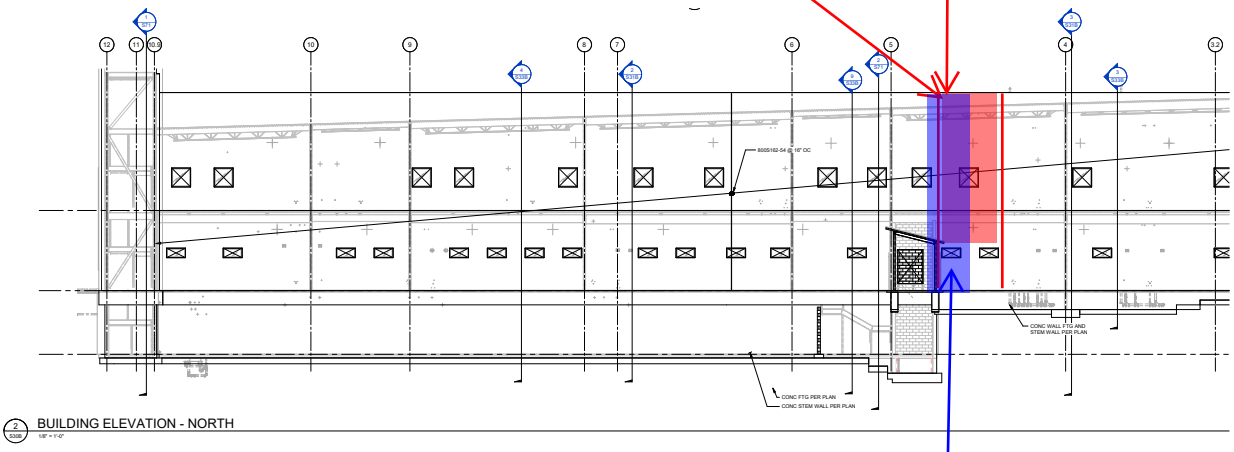
DESIGN GRAVITY AND OUT OF PLANE SEPERATELY IN CFS DESIGNER. CONNECTIONS CHECKED AFTERWARDS.



CASE 1: MAX 8'-0" OPENING

BRICK IS SELF SUPPORTING. HEADER IS ONLY SUPPORTING STUDS. OPENINGS ARE SUPPORTED BY LOOSE LINTEL

BRICK = 18 PSF
H=33 FT
L=600 LB/FT



TW=L/2+(16 IN/2) MAX=5.3 FT
WALL LOAD=5.3*28.8 PSF*0.6 ASD=92 LB/FT
PARAPET LOAD=5.3*78 PSF*0.6 ASD=252 LB/FT

CASE 4: 6'-0" OPENING

SAME GRAVITY LOADING (600 LB/FT). OUT OF PLANE TW=4.3 FT. WALL LOAD=75 LB/FT. PARAPET LOAD=205 LB/FT

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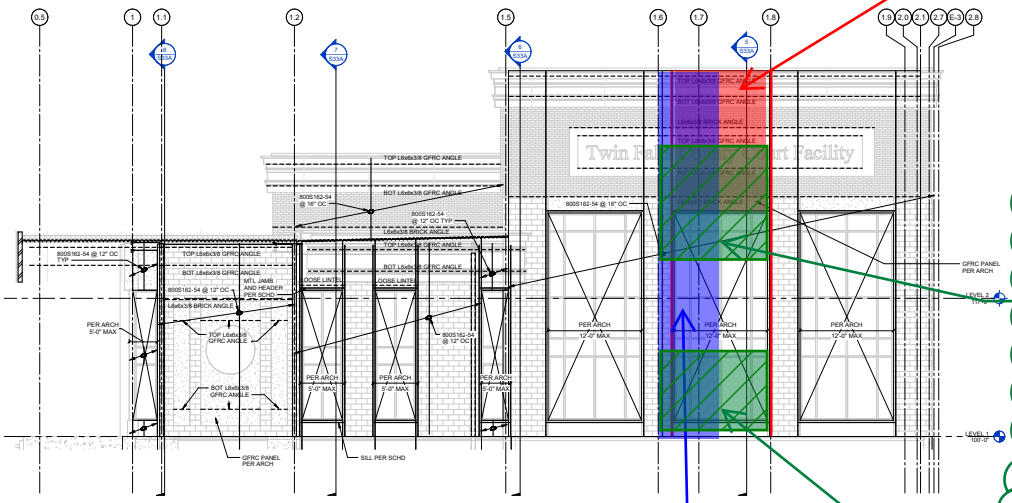
client	CSHQA	job no. 10212200038	
	Typical Headers		

CASE 2: MAX 12'-0" OPENING

BRICK = 59 PSF
H=6.5 FT
LOAD=385 LB/FT
GRFC=20 PSF
H=20
LOAD=400 LB/FT

TOTAL=785 LB/FT



3 BUILDING ELEVATIONS - SOUTH
3/16" = 1'-0"

WORST CASE 1-4:
WIND=28.8 PSF
LOAD=28.8 * 12 *0.6 (MID SPAN TO MID OPENING HEIGHT)
207 LB/FT

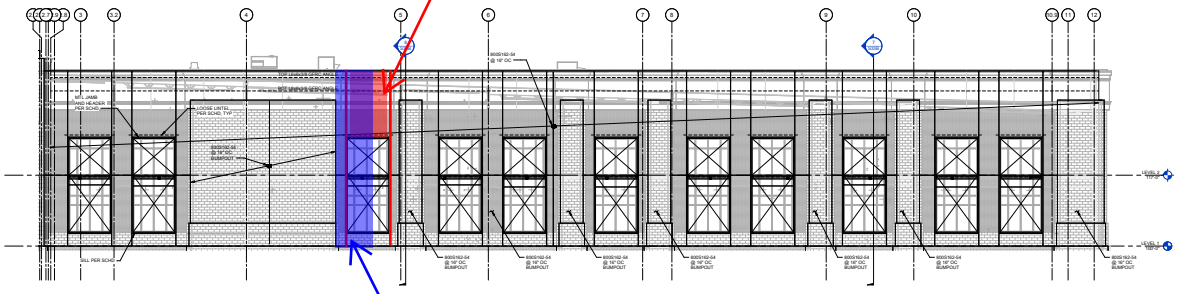
WORST CASE 2-3:
WIND=28.8 PSF
LOAD=28.8 * 8.5*0.6 (MID SPAN TO MID OPENING HEIGHT)
147 LB/FT

TW=L/2+(16 IN/2) MAX=7.3 FT
WALL LOAD=7.3*28.8 PSF*0.6 ASD=125.71 LB/FT
PARAPET LOAD=7.3*78 PSF*0.6 ASD=347 LB/FT

CASE 3: MAX 10'-0" OPENING

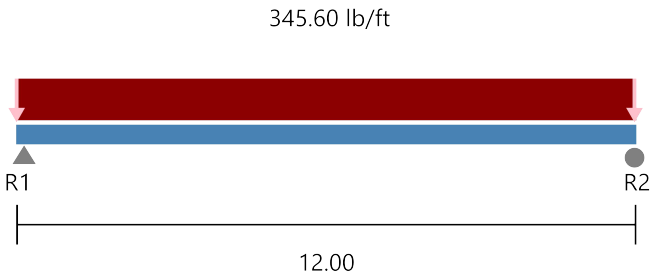
BRICK = 59 PSF
H=7 FT
LOAD=413 LB/FT
GRFC=20 PSF
H=9 FT MAX
LOAD=180 LB/FT

TOTAL=593 LB/FT



1 BUILDING ELEVATION - SOUTH
1/8" = 1'-0"

TW=L/2+(16 IN/2) MAX=6.3 FT
WALL LOAD=6.3*28.8 PSF*0.6 ASD=109.5 LB/FT
PARAPET LOAD=6.3*78 PSF=300 LB/FT



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800T200-54(50)	5.149	33.3 %	0.679	33.3 %
2	800T200-54(50)	5.149	33.3 %	0.679	33.3 %
3	800T200-54(50)	5.149	33.3 %	0.679	33.3 %

Overall Member Inputs:

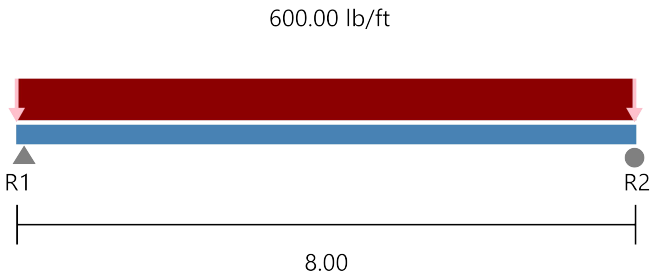
		Flexure				Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	144	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	2073.6	2073.6
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800T200-54(50)	L/407	0.954	No	0.34	0.34	N/A	0.00	0.95
800T200-54(50)	L/407	0.954	No	0.34	0.34	N/A	0.00	0.95
800T200-54(50)	L/407	0.954	No	0.34	0.34	N/A	0.00	0.95



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800S162-54(50)	5.600	33.3 %	0.670	33.3 %
2	800S162-54(50)	5.600	33.3 %	0.670	33.3 %
3	800S162-54(50)	5.600	33.3 %	0.670	33.3 %

Overall Member Inputs:

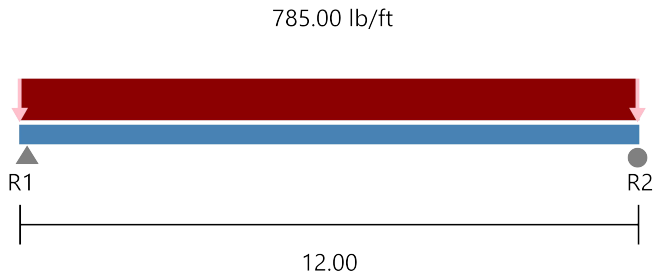
		Flexure				Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	96	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	2400.0	2400.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800S162-54(50)	L/860	0.585	No	0.38	0.38	N/A	0.00	0.52
800S162-54(50)	L/860	0.585	No	0.38	0.38	N/A	0.00	0.52
800S162-54(50)	L/860	0.585	No	0.38	0.38	N/A	0.00	0.52



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %
2	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %
3	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %
4	1200S162-54(50)	14.298	25.0 %	0.896	25.0 %

Overall Member Inputs:

		Flexure				Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	144	0	N/A	N/A	N/A	N/A

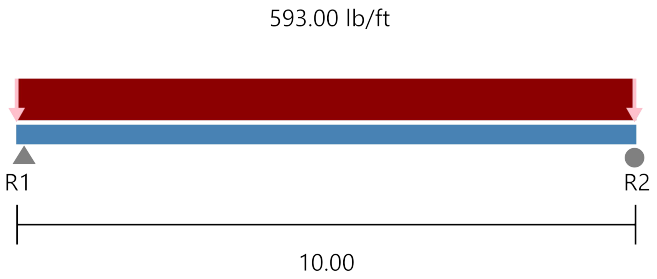
Reaction And Point Load Data:

	R1	R2
Load (lb)	4710.0	4710.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74
1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74
1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74

1200S162-54(50)	L/663	0.907	Yes	0.85	0.85	N/A	0.00	0.74



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	1000S162-54(50)	9.391	33.3 %	0.783	33.3 %
2	1000S162-54(50)	9.391	33.3 %	0.783	33.3 %
3	1000S162-54(50)	9.391	33.3 %	0.783	33.3 %

Overall Member Inputs:

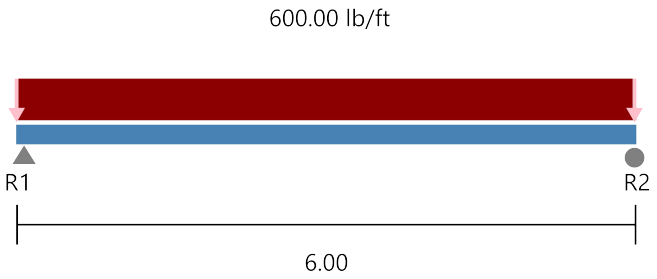
	Flexure				Axial			
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	120	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	2965.0	2965.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
1000S162-54(50)	L/747	0.734	No	0.60	0.60	N/A	0.00	0.63
1000S162-54(50)	L/747	0.734	No	0.60	0.60	N/A	0.00	0.63
1000S162-54(50)	L/747	0.734	No	0.60	0.60	N/A	0.00	0.63



Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	800S162-54(50)	5.600	50.0 %	0.670	50.0 %
2	800S162-54(50)	5.600	50.0 %	0.670	50.0 %

Overall Member Inputs:

	Flexure					Axial		
Span	Bracing (in)	K-phi (lb-in/in)	Lm (in)	Load (lb)	KyLy (in)	KtLt (in)	K-phi (lb-in/in)	Lm (in)
Span	Full	0	72	0	N/A	N/A	N/A	N/A

Reaction And Point Load Data:

	R1	R2
Load (lb)	1800.0	1800.0
Brng (in)	6.00	6.00

Analysis Summary:

	Flexure		Web Cripling	Shear & Bending			Axial	
Section	Defl	M/Ma	Stiffen Req'd	V/Va	Unstiffened	Stiffened	P/Pa	Combined
800S162-54(50)	L/1360	0.494	No	0.43	0.43	N/A	0.00	0.44
800S162-54(50)	L/1360	0.494	No	0.43	0.43	N/A	0.00	0.44

Twin Falls Judicial – Twin Falls, ID

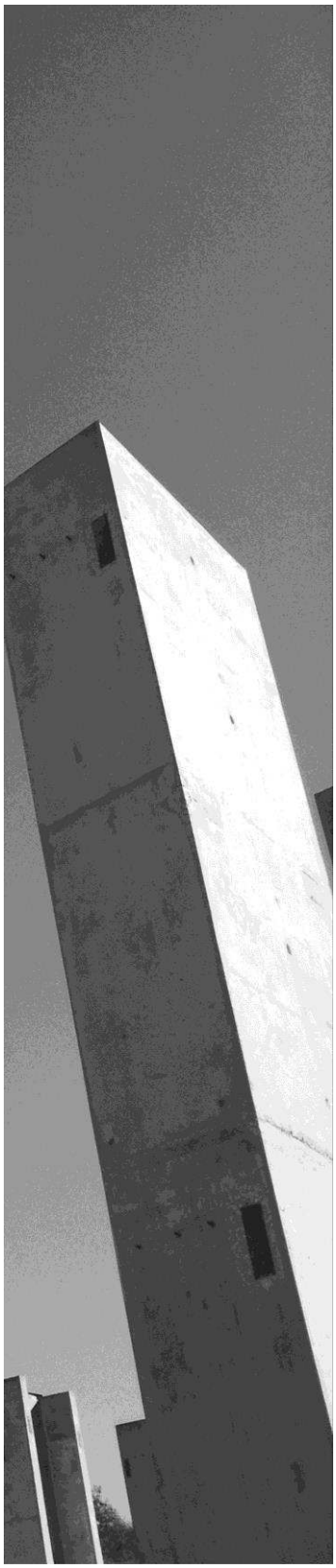
Permit Submittal Structural Calculations

KPFF JOB # 10212200038

ORIGINAL 1967 BUILDING ALTERATION CALCS

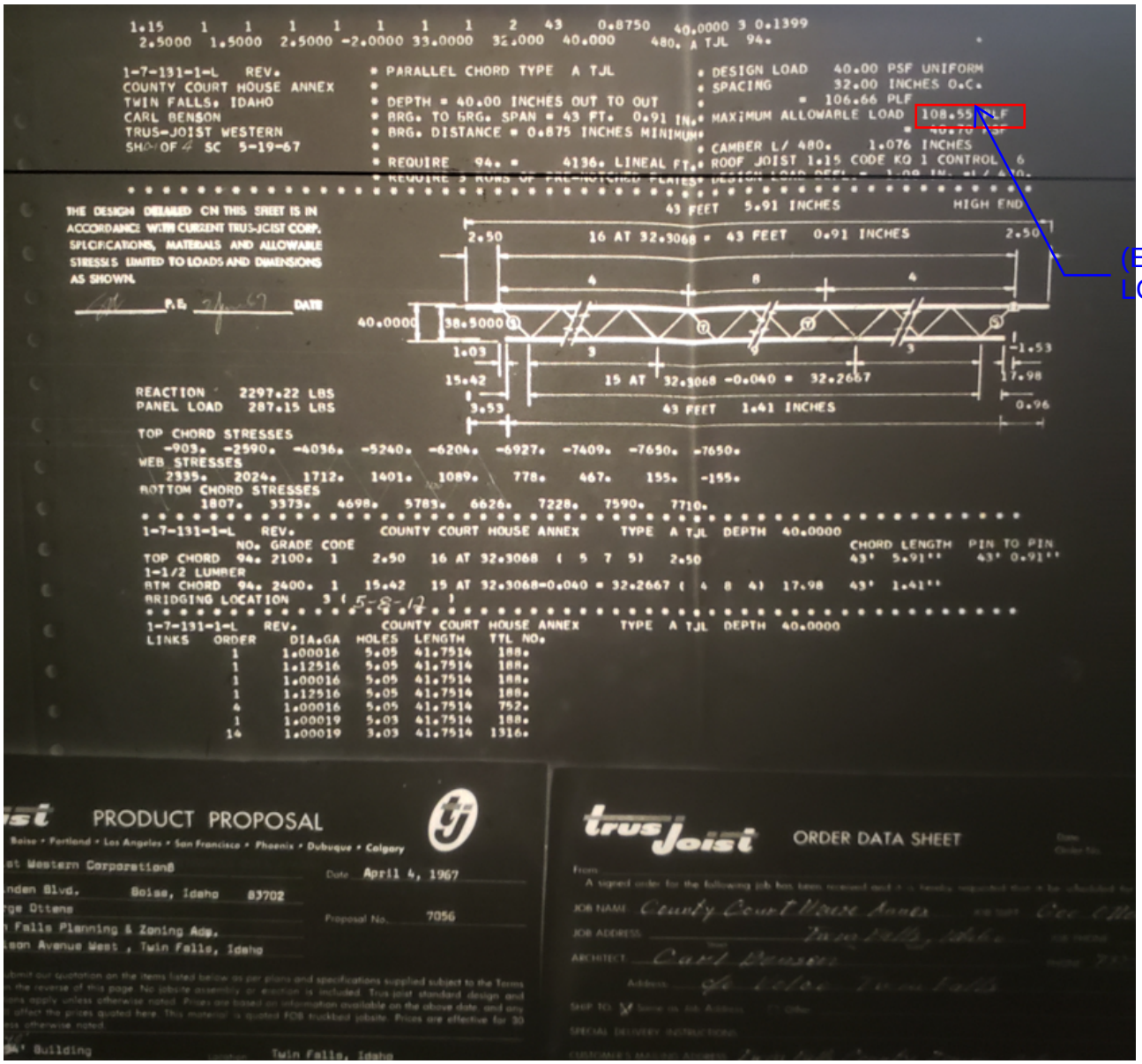
420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

1967 BUILDING ROOF RETROFIT CALCULATIONS



KPFF JOB # 10212200038

EXISTING TRUSS CALCULATION FOR THE ORIGNIAL 1967 BUILDING



Mmax = WL^2/8 = ((108.55 PLF)*(43 FT)^2)/8 = **25.1 K-FT**

IEBC 502.4 Existing Structural Elements Carrying Gravity Load:
Any existing gravity load-carrying structural element for which an adition and its related alterations cause an drift effects, of more than 5 percent shall be rpelaced or altered as needed to carry the gravity loads required by the International Building Code for new structures.

Allowable Moment for an Existing Joist = 1.05 * 25.1 K-FT = 26.4 K-FT
Allowable Distributed Load for an Existing Joist = 1.05 * 108.55 PLF = 113.98 PLF

SNOW LOADING SCHEDULE				
P	Pm	Pf	Pd	W
P1	25 PSF	11.6 PSF	-	-
P2	25 PSF	11.6 PSF	76.5 PSF	19.2 FT
P3	25 PSF	11.6 PSF	50.5 PSF	12.7 FT
P4	25 PSF	11.6 PSF	86.4 PSF	21.7 FT
P5	25 PSF	11.6 PSF	83.2 PSF	20.9 FT
P6	25 PSF	11.6 PSF	62.4 PSF	15.6 FT
P7	25 PSF	11.6 PSF	35.9 PSF	9 FT

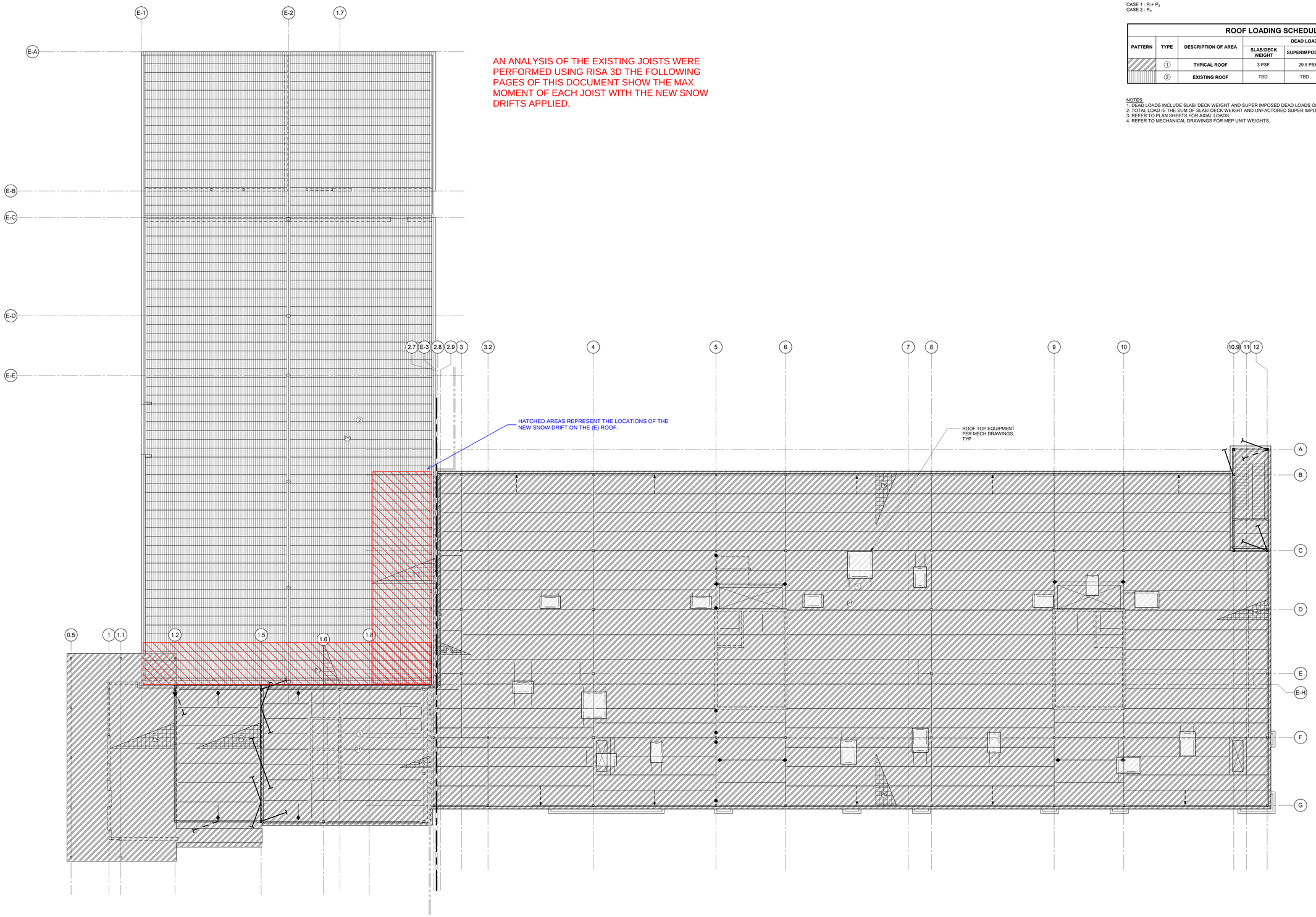
NOTES:
1. COMBINE FLAT ROOF SNOW LOAD (P_f) AND DRIFT LOAD (P_d), AS INDICATED ON PLAN SNOW LOAD SHALL BE APPLIED TO ALL ROOF JOIST. MINIMUM FLAT ROOF SNOW LOAD (P_m) IS A SEPARATE LOAD CASE AND SHALL BE APPLIED AS REQUIRED BY ASCE 7-16, SECTION 7.3.4.

CASE 1 : $P_f + P_d$
CASE 2 : P_m

ROOF LOADING SCHEDULE						
PATTERN	TYPE	DESCRIPTION OF AREA	DEAD LOAD[1]			LIVE LOAD (R=REDUCIBLE) (NR=NON-REDUCIBLE)
			SLAB/DECK WEIGHT	SUPERIMPOSED	TOTAL[2]	
	1	TYPICAL ROOF	3 PSF	29.5 PSF	32.5 PSF	20 PSF (R)
	2	EXISTING ROOF	TBD	TBD	TBD	TBD

NOTES:
1. DEAD LOADS INCLUDE SLAB/ DECK WEIGHT AND SUPER IMPOSED DEAD LOADS ONLY. WF BEAM AND JOIST WEIGHTS ARE NOT INCLUDED.
2. TOTAL LOAD IS THE SUM OF SLAB/ DECK WEIGHT AND UNFACTORED SUPER IMPOSED DEAD LOAD.
3. REFER TO PLAN SHEETS FOR AXIAL LOADS.
4. REFER TO MECHANICAL DRAWINGS FOR MEP UNIT WEIGHTS.

AN ANALYSIS OF THE EXISTING JOISTS WERE PERFORMED USING RISA 3D THE FOLLOWING PAGES OF THIS DOCUMENT SHOW THE MAX MOMENT OF EACH JOIST WITH THE NEW SNOW DRIFTS APPLIED.



1 S11 LOADING PLAN - ROOF PLAN
1" = 10'-0"

05/Jan/23 6:10:08 PM

PRELIMINARY
NOT FOR
CONSTRUCTION

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CSHQA

99% CD SET

PROJECT	DATE
10212200038	01/13/2023
DRAWN	CHECKED
CW	NLP

REVISED

kpff
412 E. Park Center Blvd.
Suite 200
Boise, ID 83706
O: 208.336.6985
www.kpff.com

SHEET TITLE
ROOF LOADING PLAN

SHEET
S11

ORIGINAL SHEET SIZE
36" x 48"

FORTEWEB

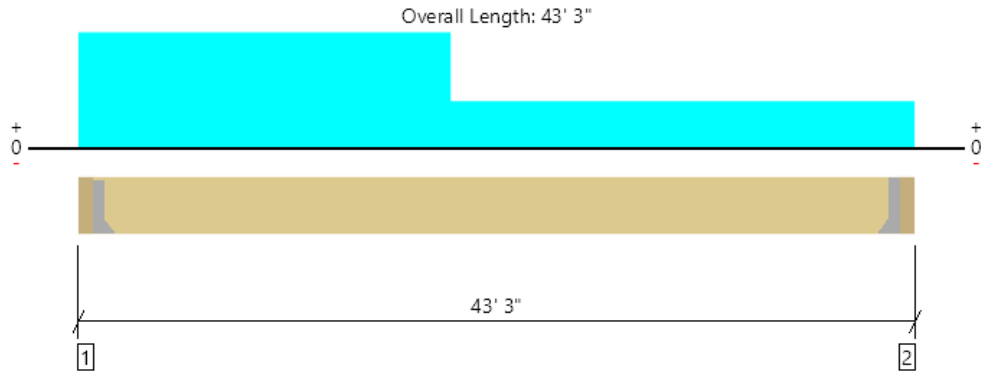
MEMBER REPORT

PASSED

(N) LVL BETWEEN (E) JOIST DESIGN

Level, (N) Joist Parallel to Truss

2 piece(s) 1 3/4" x 18" 2.0E Microllam® LVL



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2803 @ 3 1/2"	3938 (1.50")	Passed (71%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	2559 @ 1' 9 1/2"	13766	Passed (19%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	24101 @ 17' 5 13/16"	44566	Passed (54%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	1.298 @ 20' 1 9/16"	2.133	Passed (L/394)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	2.300 @ 20' 9 3/8"	2.844	Passed (L/223)	--	1.0 D + 1.0 S (All Spans)

System : Roof
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Roof Live	Snow	Factored	
1 - Hanger on 18" SPF Ledger	3.50"	Hanger[1]	1.50"	969	577	1877	2846	See note [1]
2 - Hanger on 18" SPF Ledger	3.50"	Hanger[1]	1.50"	969	577	773	1742	See note [1]

- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	7' 9" o/c	
Bottom Edge (Lu)	42' 8" o/c	

•Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie						
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	Connector not found	N/A	N/A	N/A	N/A	
2 - Face Mount Hanger	Connector not found	N/A	N/A	N/A	N/A	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.25)	Snow (1.15)	Comments
0 - Self Weight (PLF)	3 1/2" to 42' 11 1/2"	N/A	18.4	--	--	
1 - Uniform (PSF)	0 to 43' 3" (Front)	1' 4"	20.0	20.0	12.0	In-Situ Load
2 - Uniform (PSF)	0 to 19' 2 3/8" (Front)	1' 4"	-	-	76.5	Snow Drift

Member Notes

New truss parallel to the existing truss

Weyerhaeuser Notes

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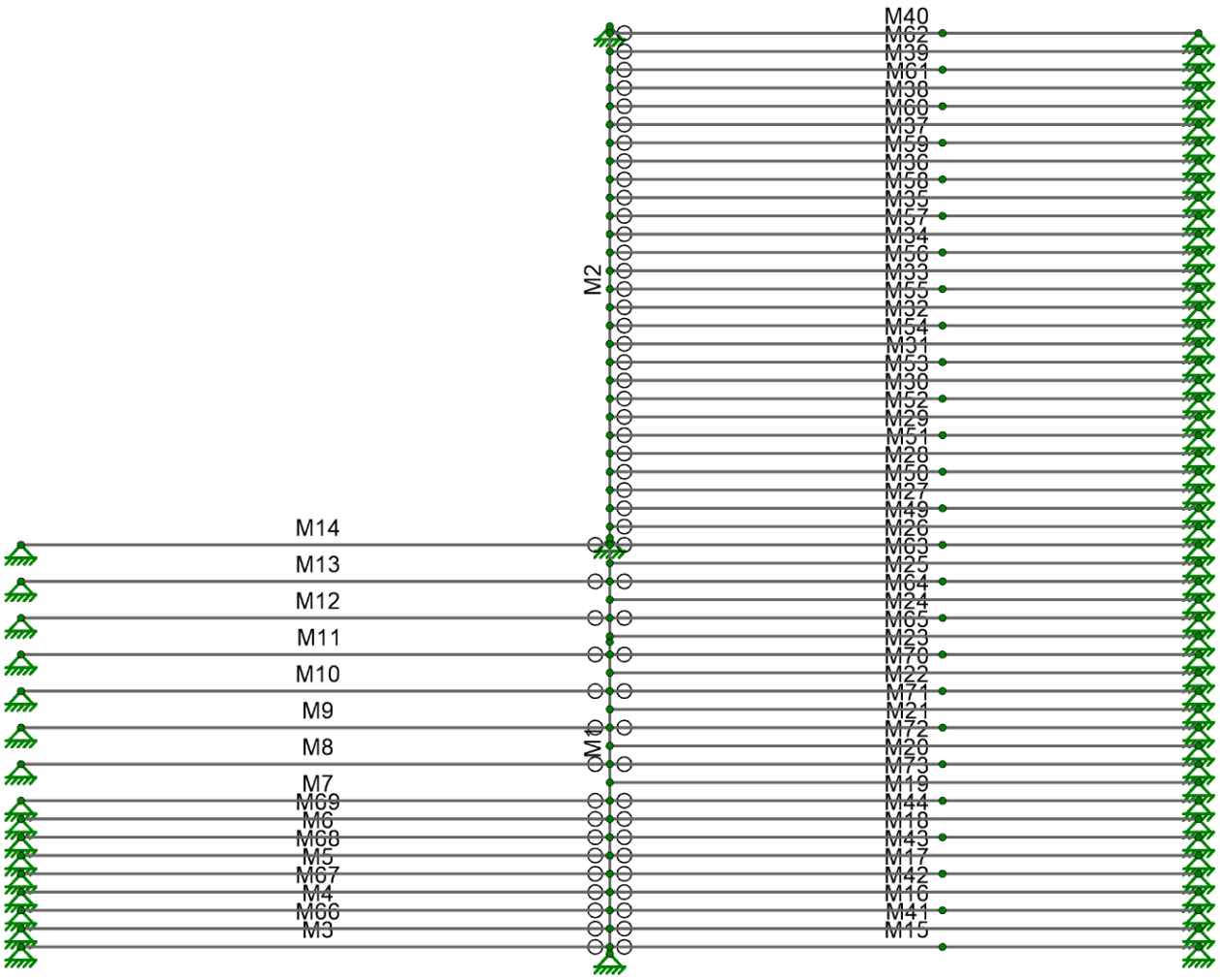
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Kaden Harris KPFF (435) 339-7708 kaden.harris@kpff.com	

1/19/2023 6:15:54 PM UTC

ForteWEB v3.5, Engine: V8.2.3.63, Data: V8.1.3.6

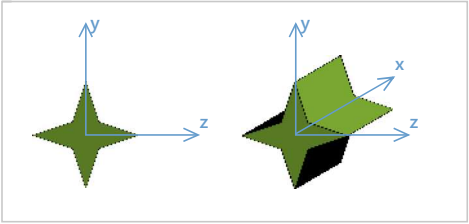
File Name: Twin Falls Judicial Bldg



kpff	existing roof loading	SK-1
kaden.harris	PLAN VIEW OF MEMBERS	Jan 06, 2023
		(E) Joist Analysis with Intermedi…

EACH MEMBER WAS MODELED AS A RIGID ELEMENT FOR THE PURPOSE OF ANALYZING THE NEW MOMENTS ON THE BEAM.

Detail Report: M3 **Unity Check:** No Calc **Load Combination:** Envelope

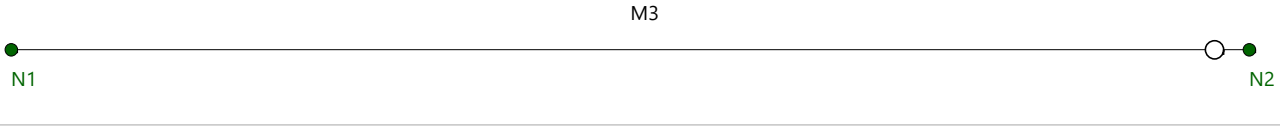


Input Data:

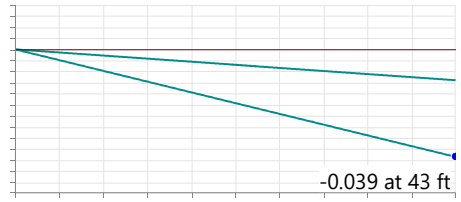
Shape:		I Node:	N1
Member Type:	None	J Node:	N2
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

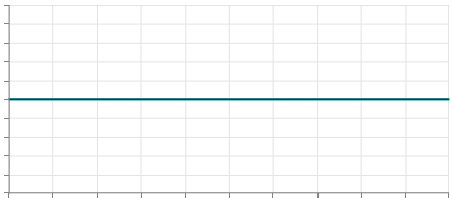
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

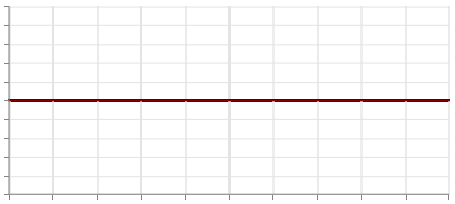


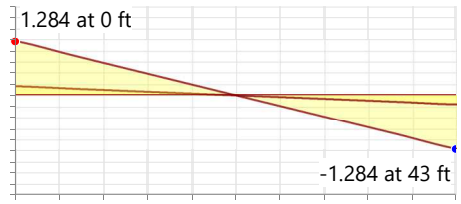
Diagrams:



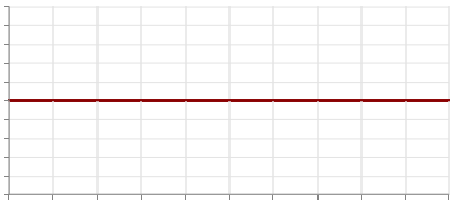
y Deflection (in)

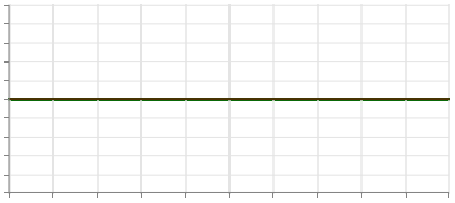

z Deflection (in)

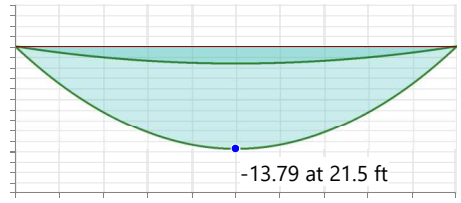

Axial Force (kips)



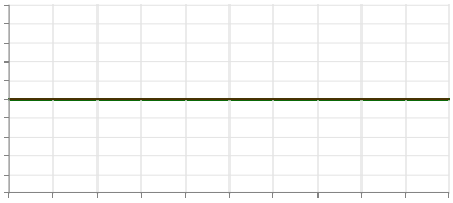
y Shear Force (kips)

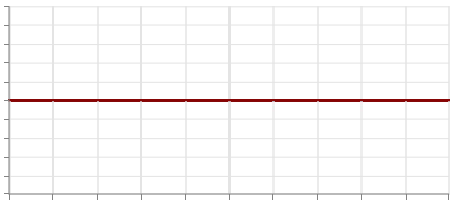

z Shear Force (kips)

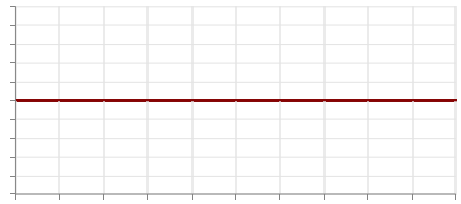

Torsion (kip-ft)

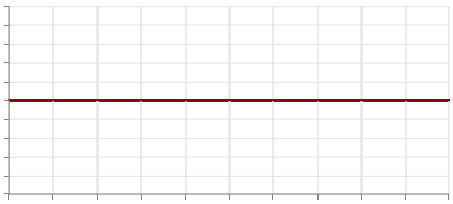


z-z Moment (kip-ft)

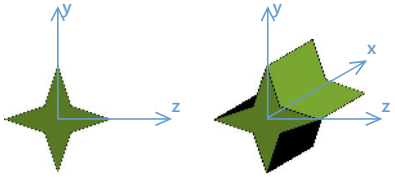

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M4 **Unity Check:** No Calc **Load Combination:** Envelope



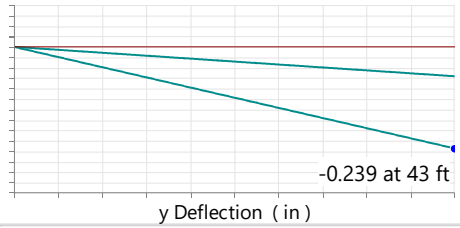
Input Data:

Shape:		I Node:	N4
Member Type:	None	J Node:	N5
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

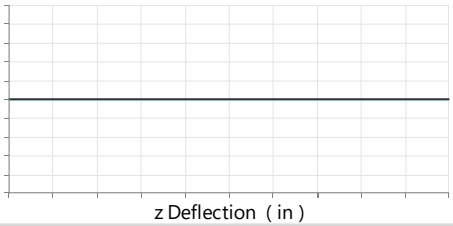
Material Properties:

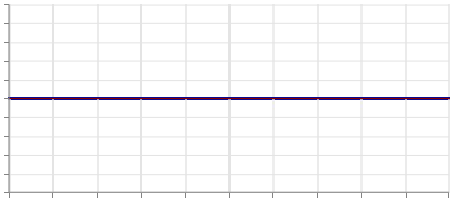
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

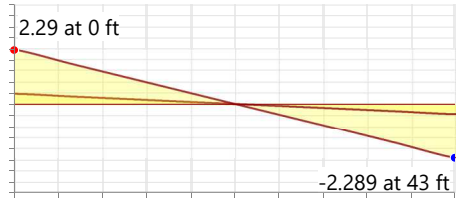
Diagrams:



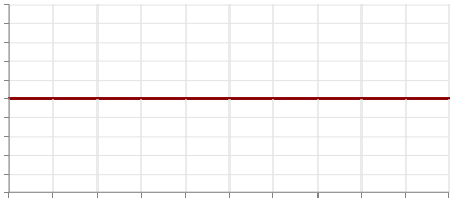
y Deflection (in)

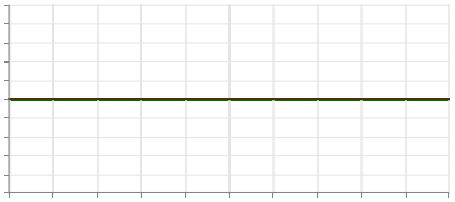

z Deflection (in)

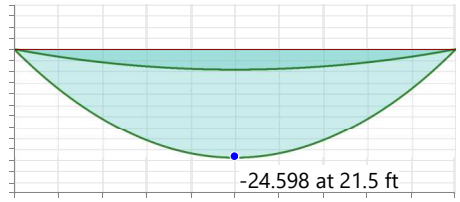

Axial Force (kips)



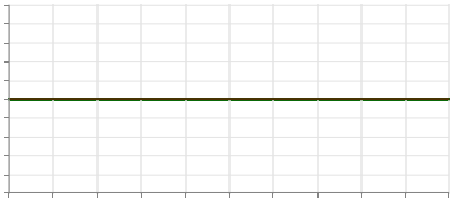
y Shear Force (kips)

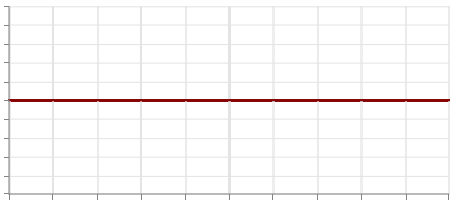

z Shear Force (kips)

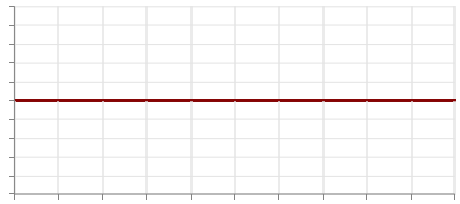

Torsion (kip-ft)

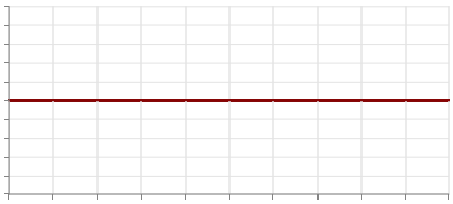


z-z Moment (kip-ft)

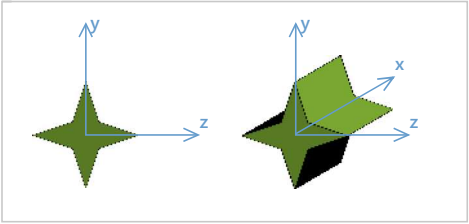

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M5 **Unity Check:** No Calc **Load Combination:** Envelope

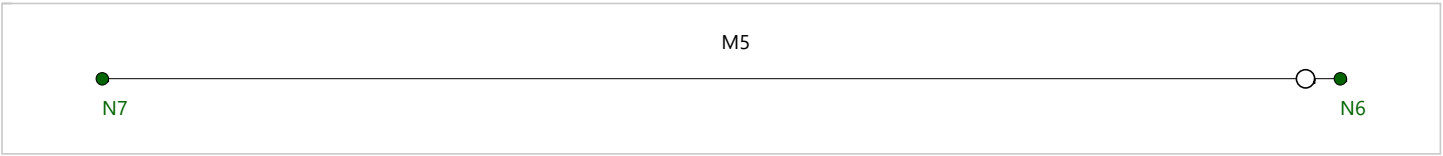


Input Data:

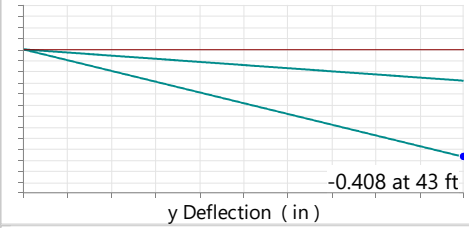
Shape:		I Node:	N7
Member Type:	None	J Node:	N6
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

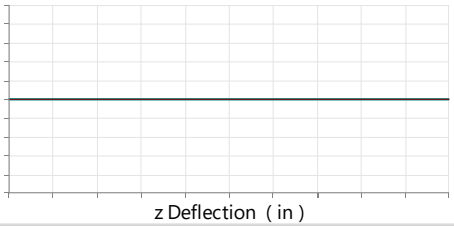
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

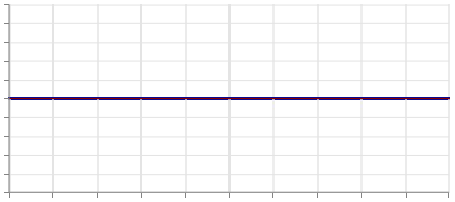


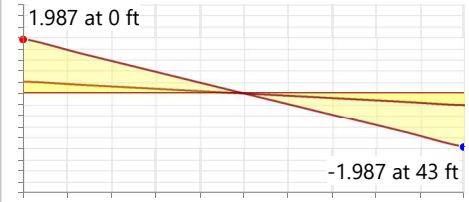
Diagrams:



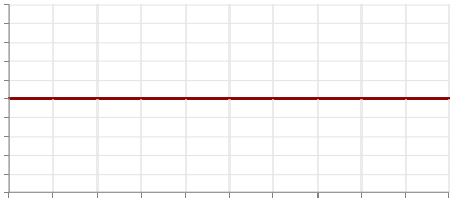
y Deflection (in)

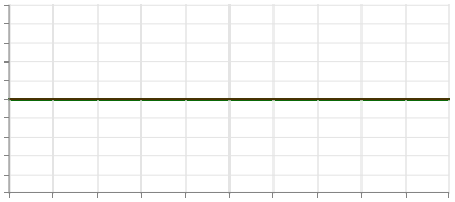

z Deflection (in)

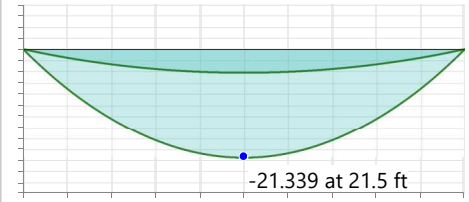

Axial Force (kips)



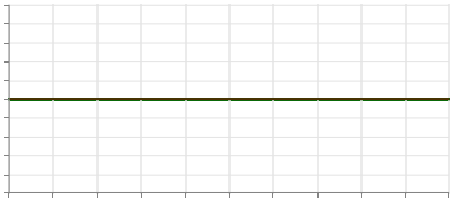
y Shear Force (kips)

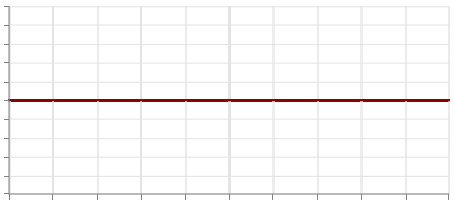

z Shear Force (kips)

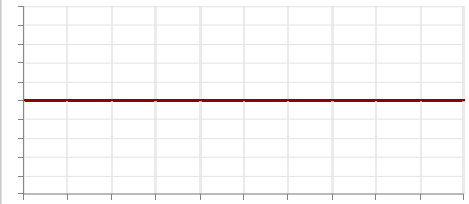

Torsion (kip-ft)

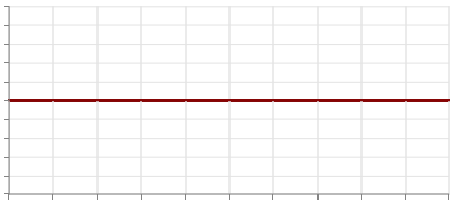


z-z Moment (kip-ft)

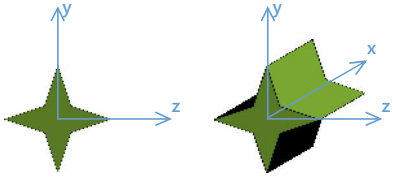

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M6 **Unity Check:** No Calc **Load Combination:** Envelope

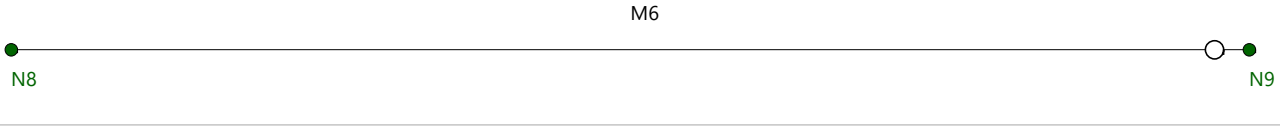


Input Data:

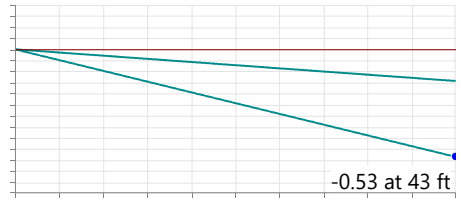
Shape:		I Node:	N8
Member Type:	None	J Node:	N9
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

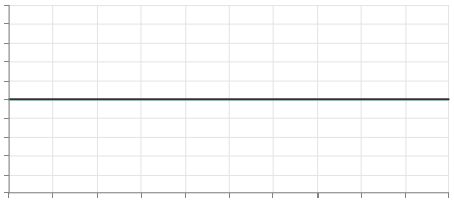
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

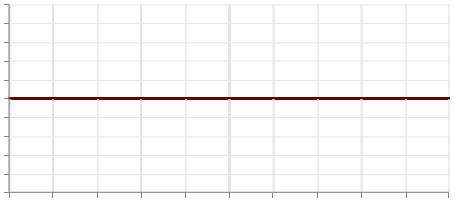


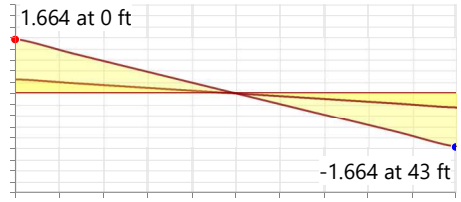
Diagrams:



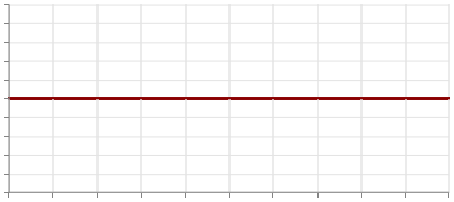
y Deflection (in)

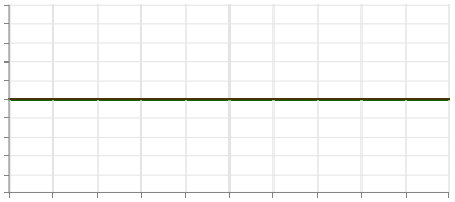

z Deflection (in)

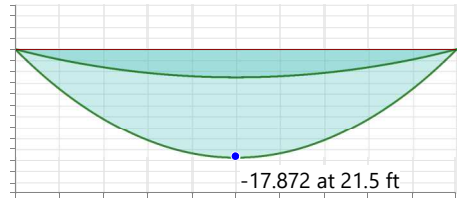

Axial Force (kips)



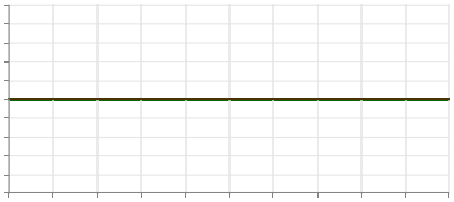
y Shear Force (kips)

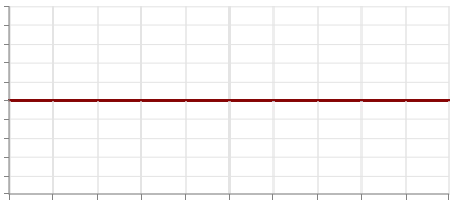

z Shear Force (kips)

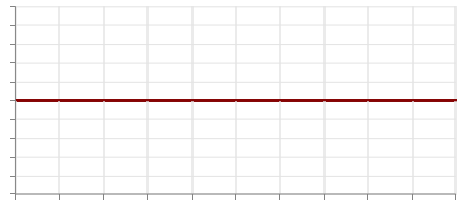

Torsion (kip-ft)

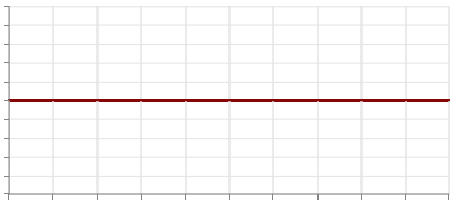


z-z Moment (kip-ft)

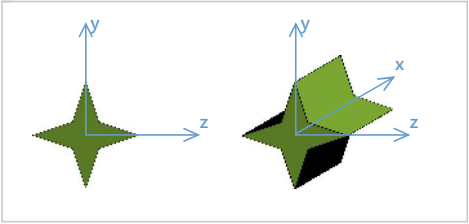

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M7 **Unity Check:** No Calc **Load Combination:** Envelope

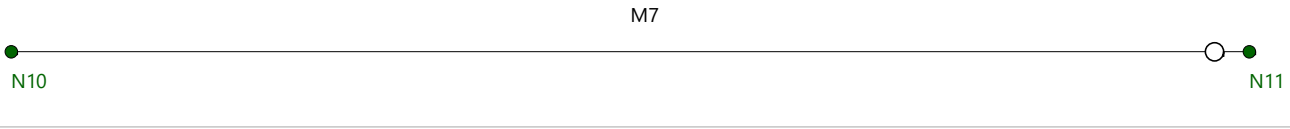


Input Data:

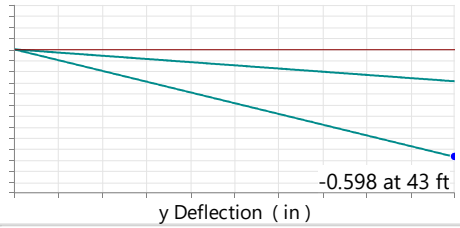
Shape:		I Node:	N10
Member Type:	None	J Node:	N11
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

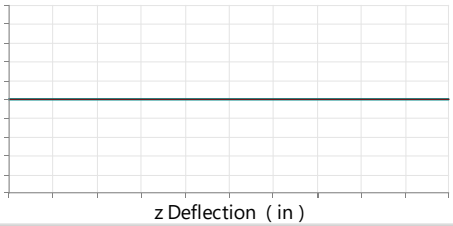
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

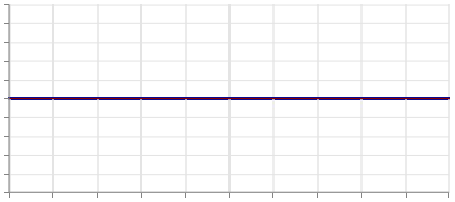


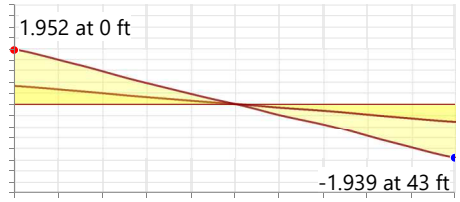
Diagrams:



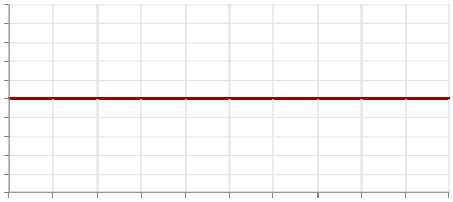
y Deflection (in)

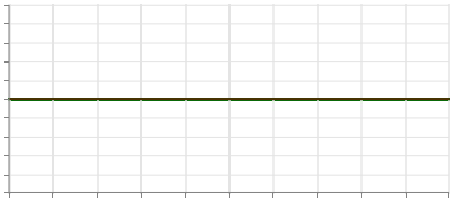

z Deflection (in)

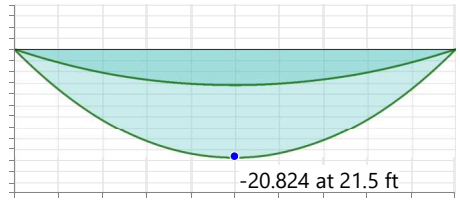

Axial Force (kips)



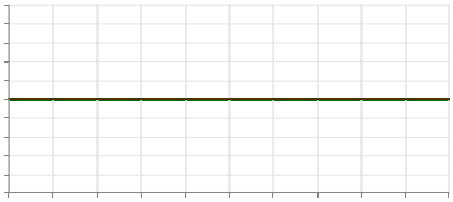
y Shear Force (kips)

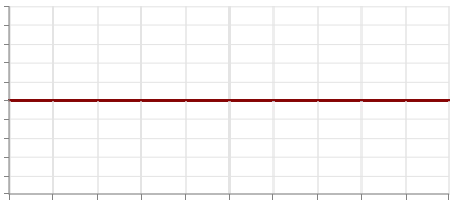

z Shear Force (kips)

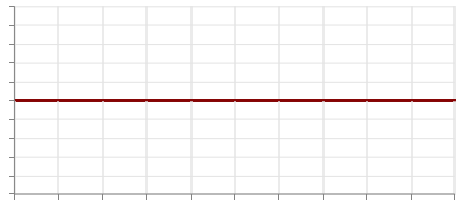

Torsion (kip-ft)

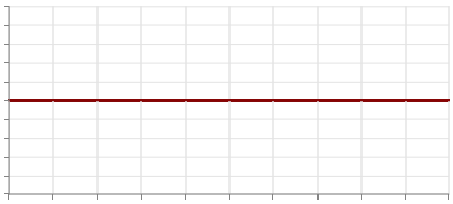


z-z Moment (kip-ft)

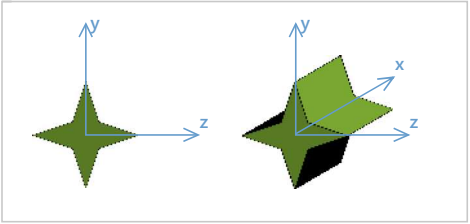

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M8 **Unity Check:** No Calc **Load Combination:** Envelope

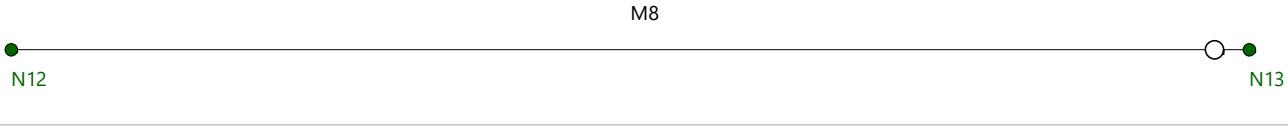


Input Data:

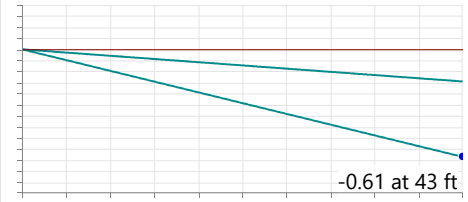
Shape:		I Node:	N12
Member Type:	None	J Node:	N13
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

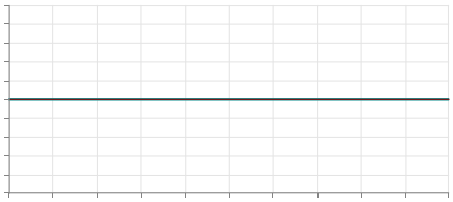
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

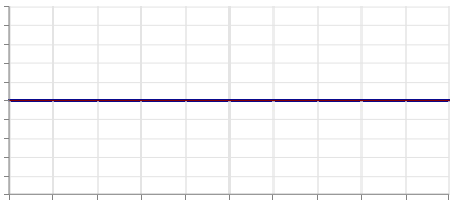


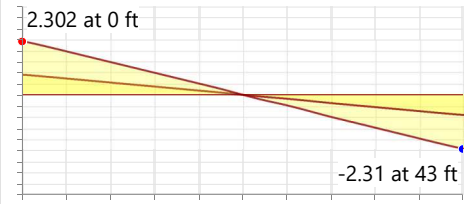
Diagrams:



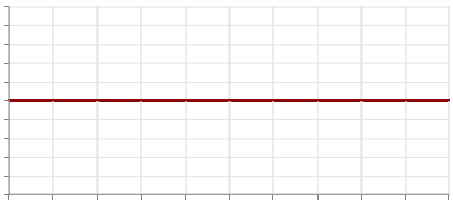
y Deflection (in)

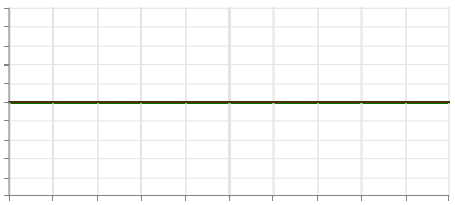

z Deflection (in)

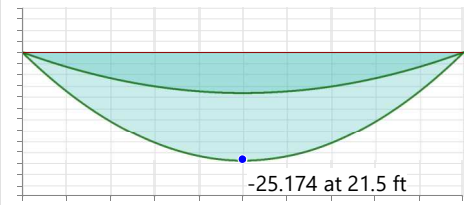

Axial Force (kips)



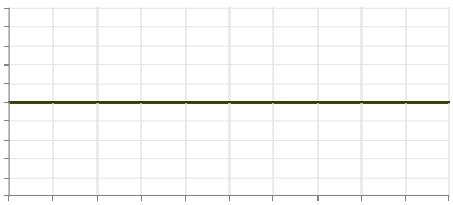
y Shear Force (kips)

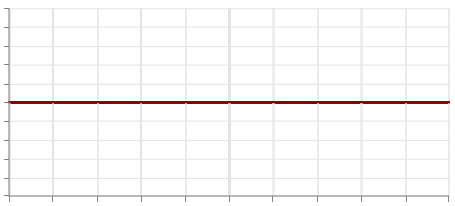

z Shear Force (kips)

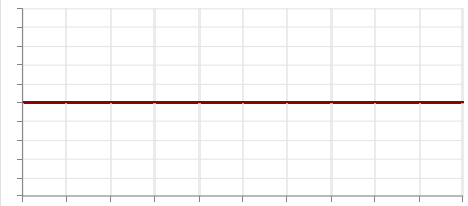

Torsion (kip-ft)

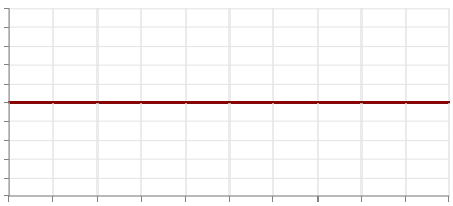


z-z Moment (kip-ft)

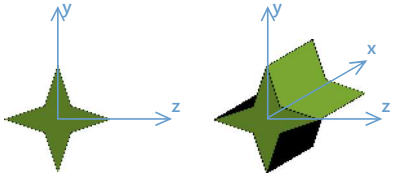

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M9 **Unity Check:** No Calc **Load Combination:** Envelope

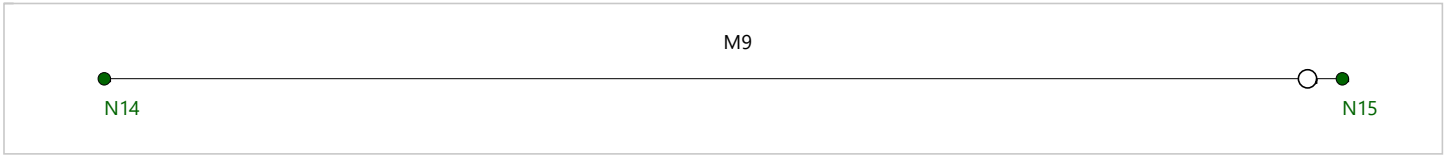


Input Data:

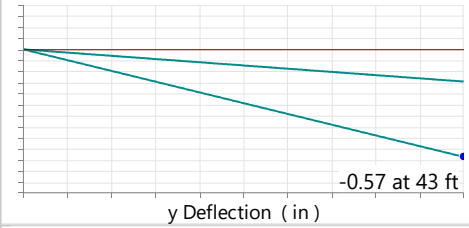
Shape:		I Node:	N14
Member Type:	None	J Node:	N15
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

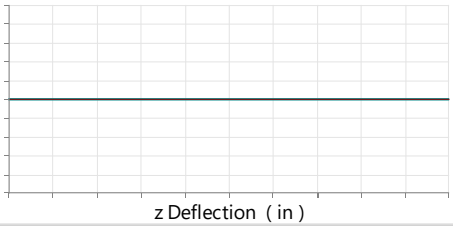
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

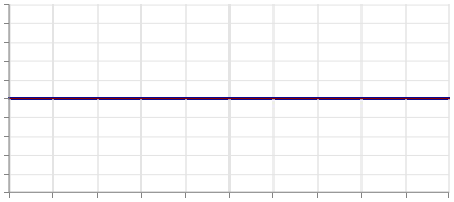


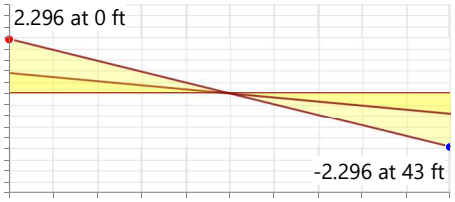
Diagrams:



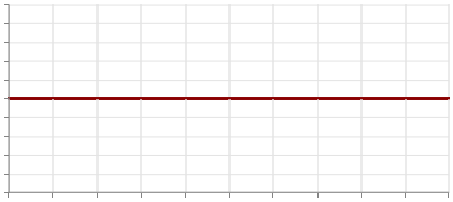
y Deflection (in)

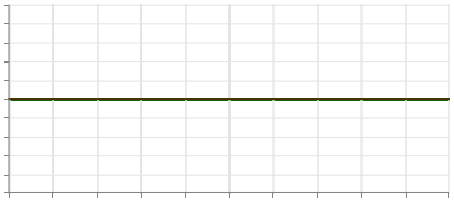

z Deflection (in)

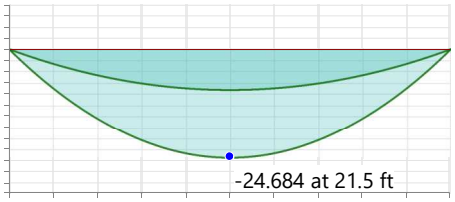

Axial Force (kips)



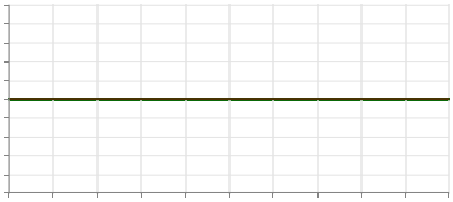
y Shear Force (kips)

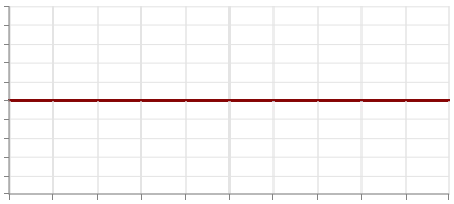

z Shear Force (kips)

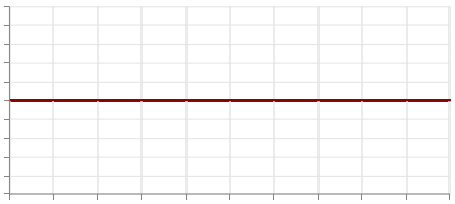

Torsion (kip-ft)

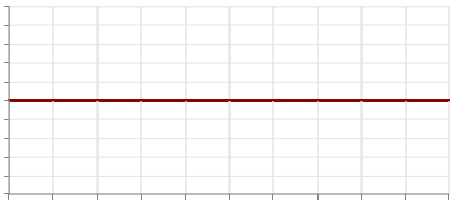


z-z Moment (kip-ft)

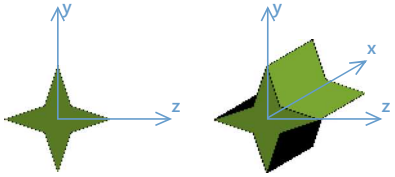

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M10 **Unity Check:** No Calc **Load Combination:** Envelope

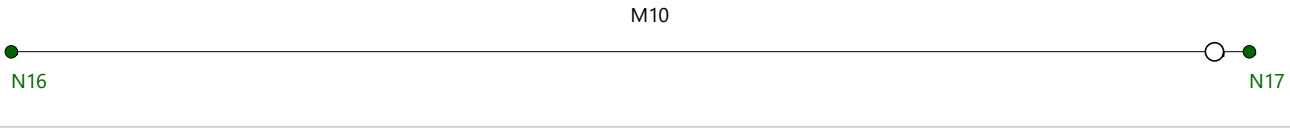


Input Data:

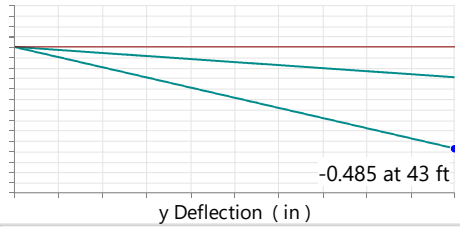
Shape:		I Node:	N16
Member Type:	None	J Node:	N17
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

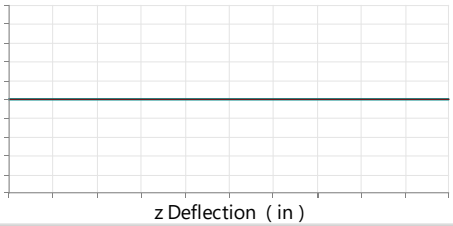
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

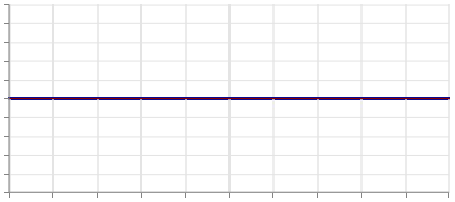


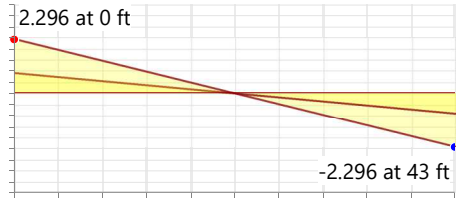
Diagrams:



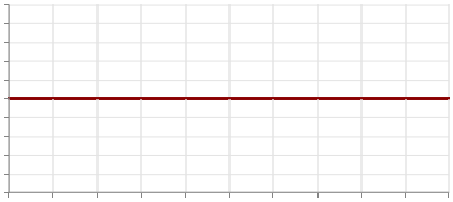
y Deflection (in)

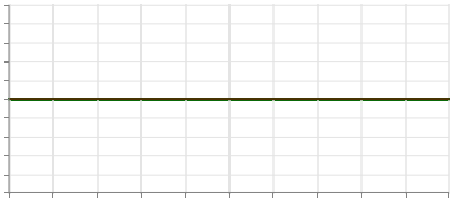

z Deflection (in)

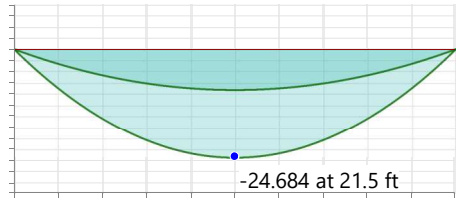

Axial Force (kips)



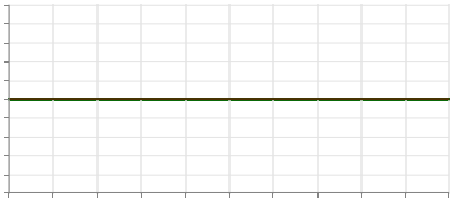
y Shear Force (kips)

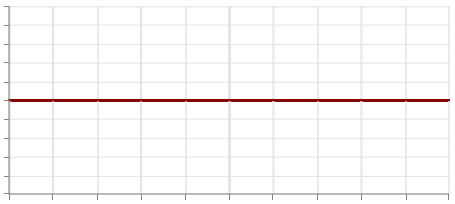

z Shear Force (kips)

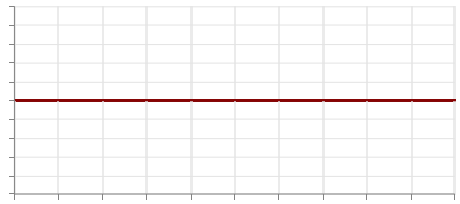

Torsion (kip-ft)

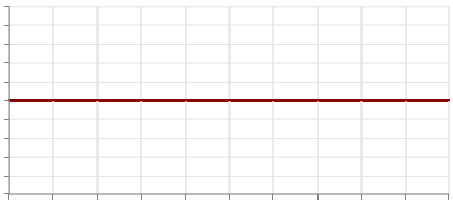


z-z Moment (kip-ft)

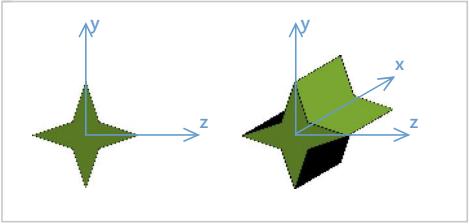

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M11 **Unity Check:** No Calc **Load Combination:** Envelope



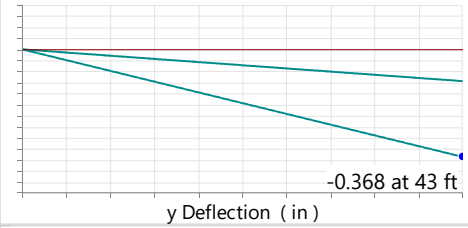
Input Data:

Shape:		I Node:	N18
Member Type:	None	J Node:	N19
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

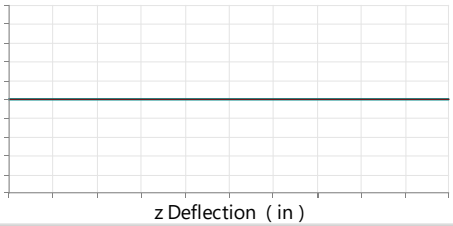
Material Properties:

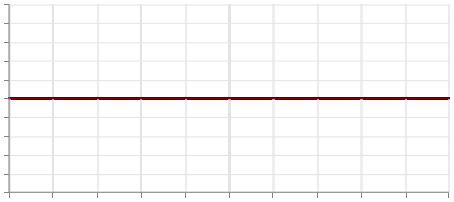
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

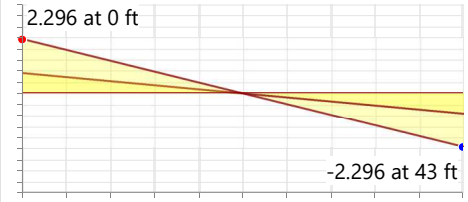
Diagrams:



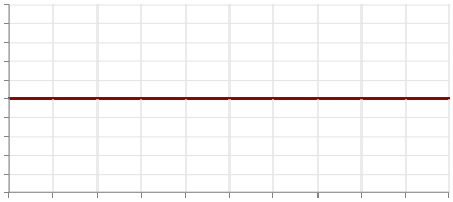
y Deflection (in)

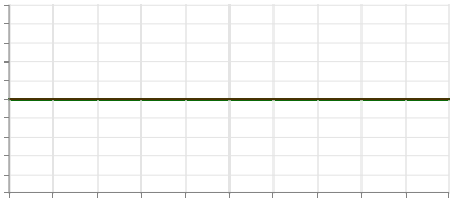

z Deflection (in)

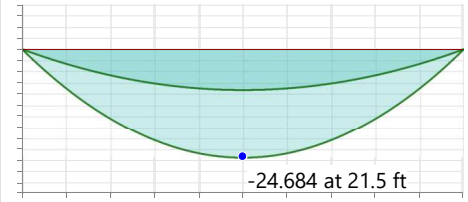

Axial Force (kips)



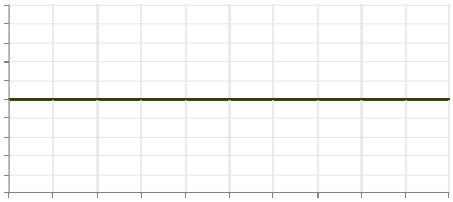
y Shear Force (kips)

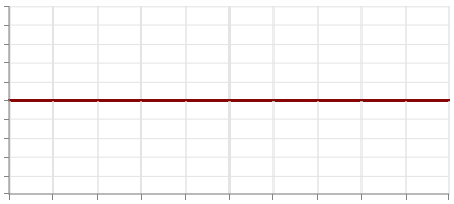

z Shear Force (kips)

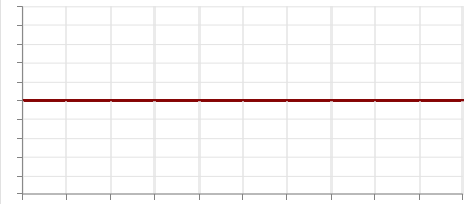

Torsion (kip-ft)

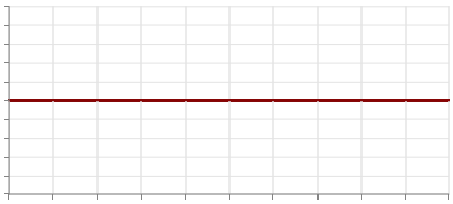


z-z Moment (kip-ft)

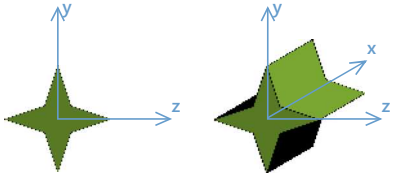

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M12 **Unity Check:** No Calc **Load Combination:** Envelope

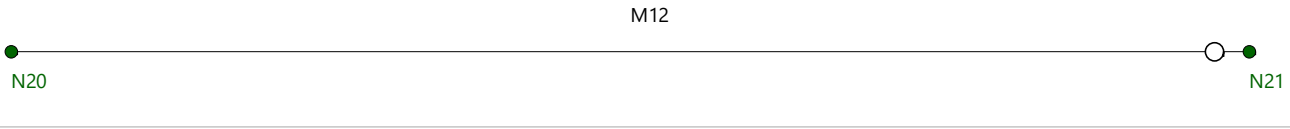


Input Data:

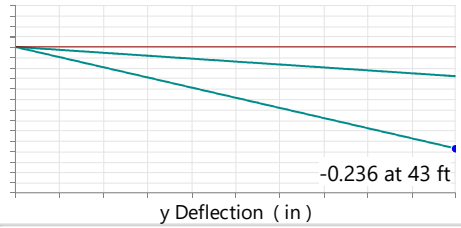
Shape:		I Node:	N20
Member Type:	None	J Node:	N21
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

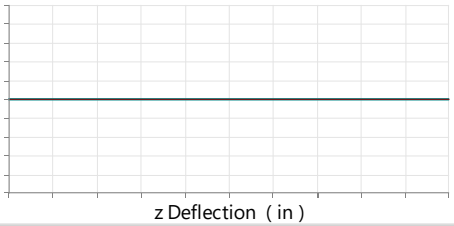
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

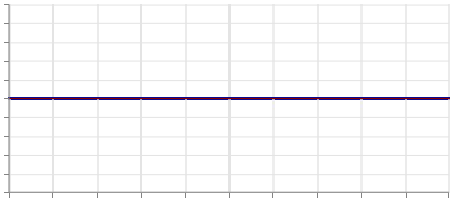


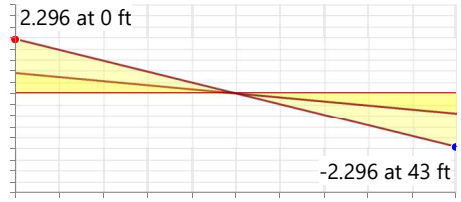
Diagrams:



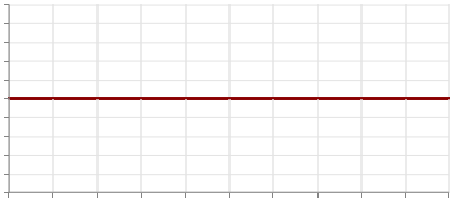
y Deflection (in)

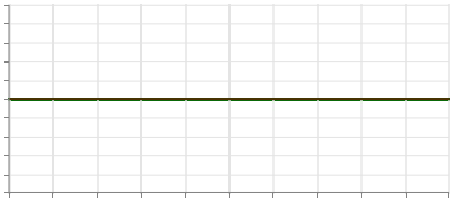

z Deflection (in)

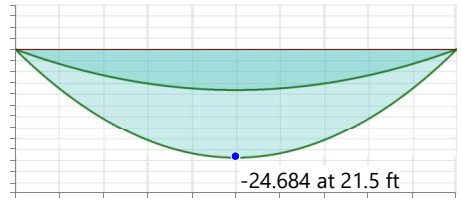

Axial Force (kips)



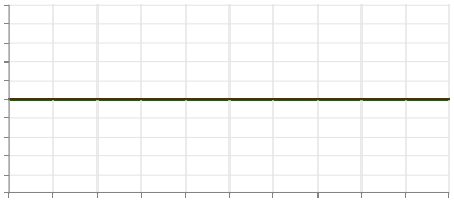
y Shear Force (kips)

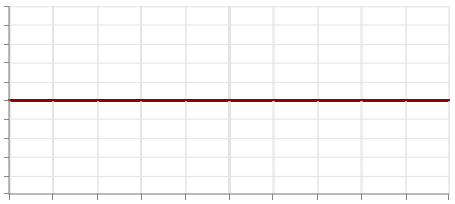

z Shear Force (kips)

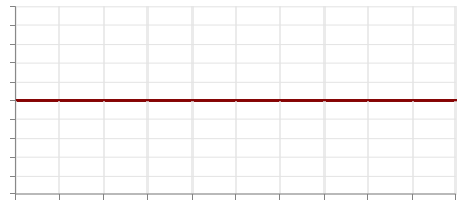

Torsion (kip-ft)

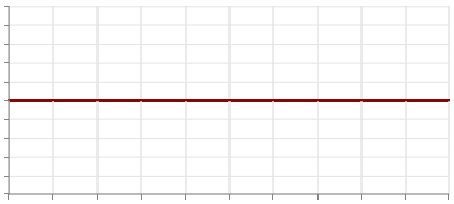


z-z Moment (kip-ft)

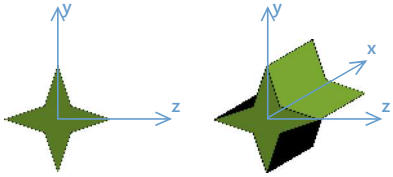

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M13 **Unity Check:** No Calc **Load Combination:** Envelope

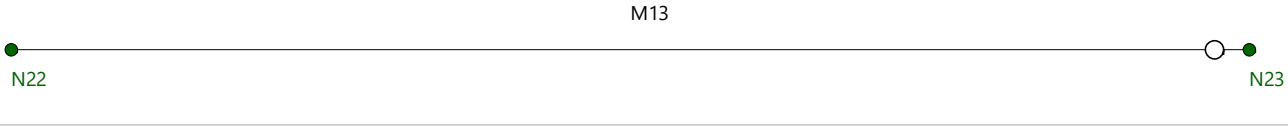


Input Data:

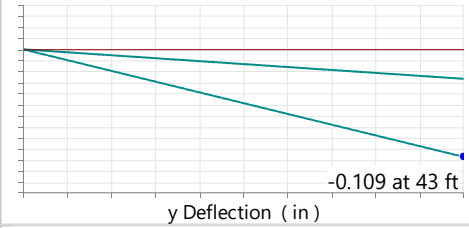
Shape:		I Node:	N22
Member Type:	None	J Node:	N23
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

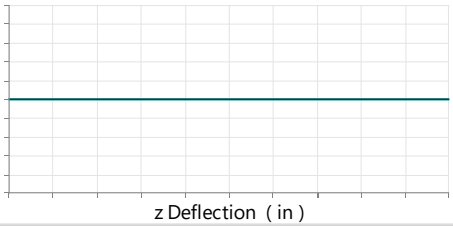
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

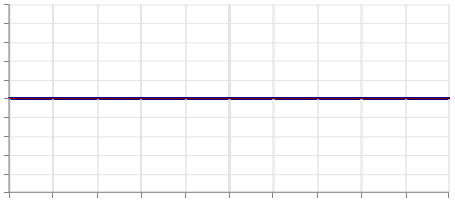


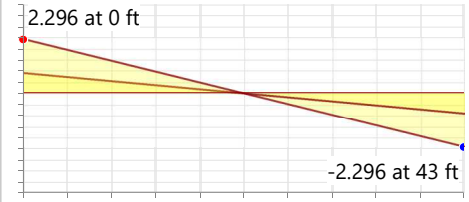
Diagrams:



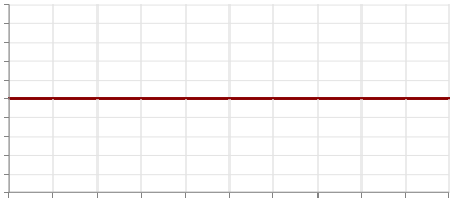
y Deflection (in)

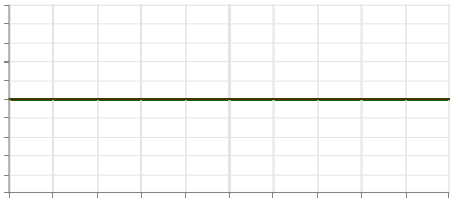

z Deflection (in)

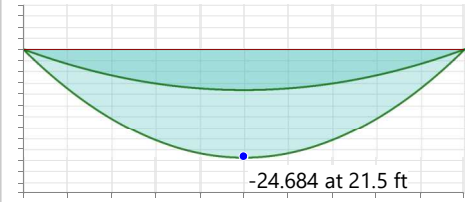

Axial Force (kips)



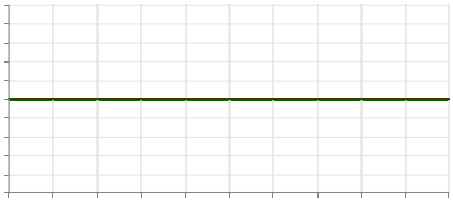
y Shear Force (kips)

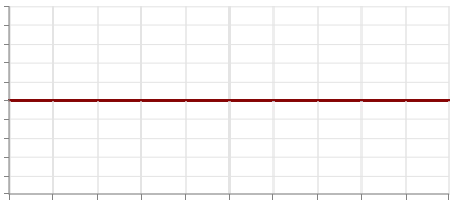

z Shear Force (kips)

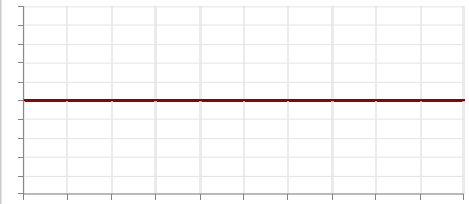

Torsion (kip-ft)

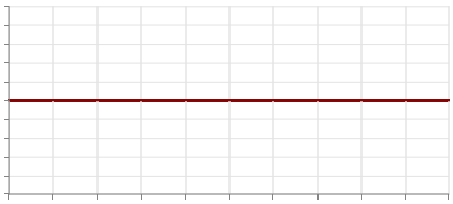


z-z Moment (kip-ft)

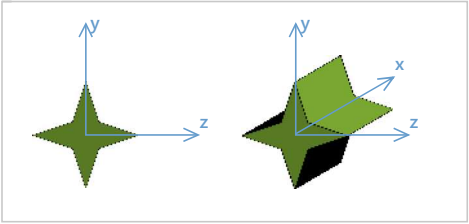

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M14 **Unity Check:** No Calc **Load Combination:** Envelope

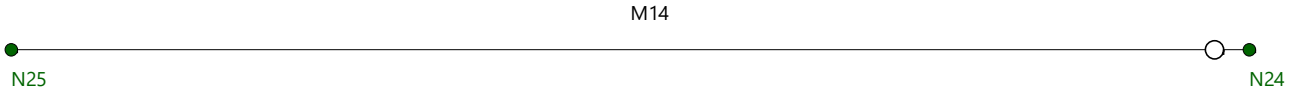


Input Data:

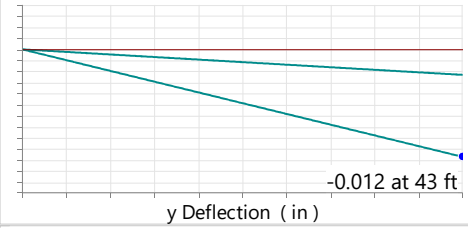
Shape:		I Node:	N25
Member Type:	None	J Node:	N24
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

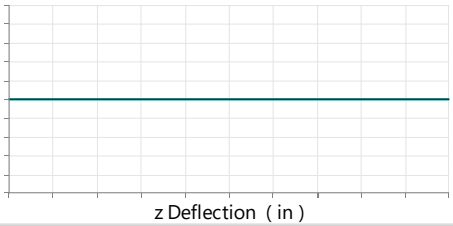
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

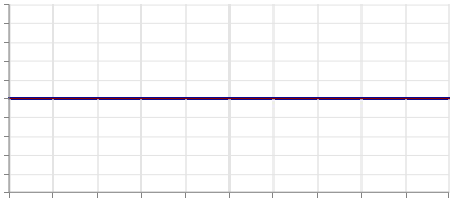


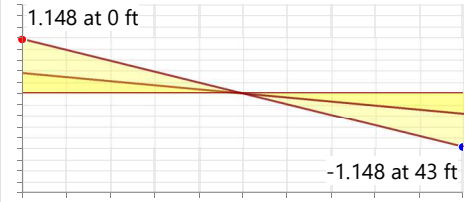
Diagrams:



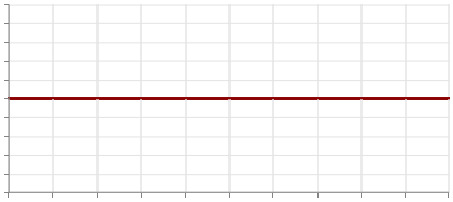
y Deflection (in)

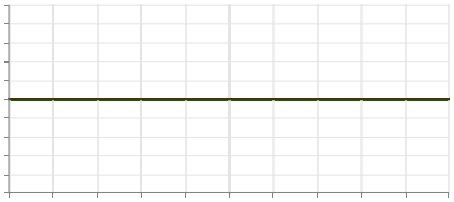

z Deflection (in)

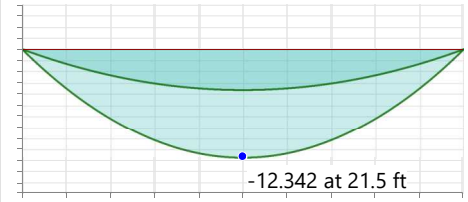

Axial Force (kips)



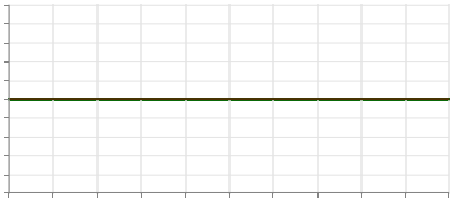
y Shear Force (kips)

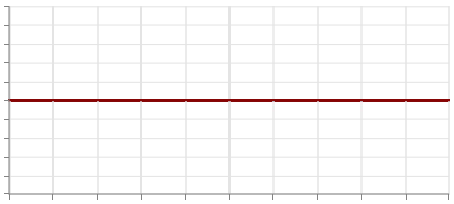

z Shear Force (kips)

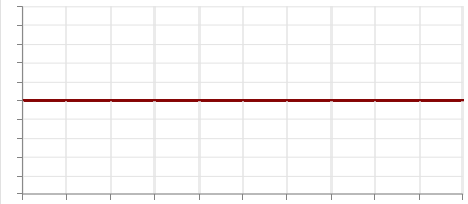

Torsion (kip-ft)

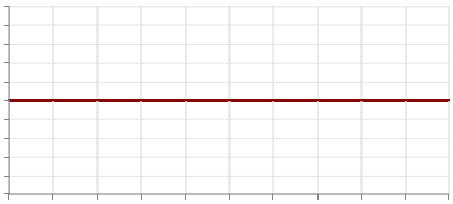


z-z Moment (kip-ft)

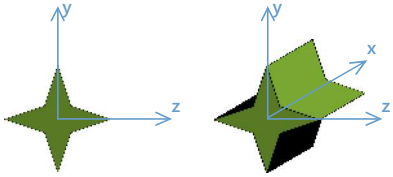

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M15 **Unity Check:** No Calc **Load Combination:** Envelope

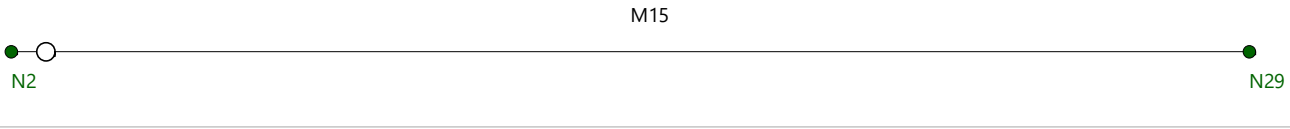


Input Data:

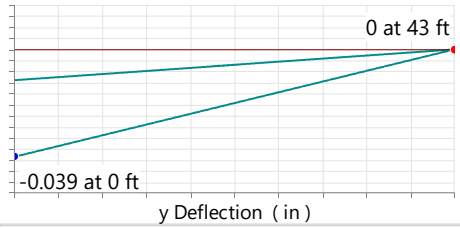
Shape:		I Node:	N2
Member Type:	None	J Node:	N29
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

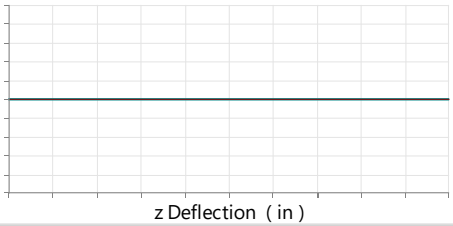
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

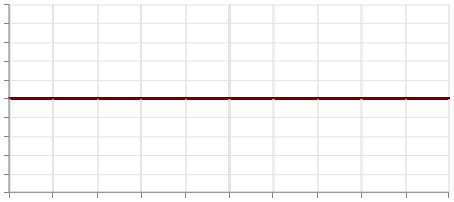


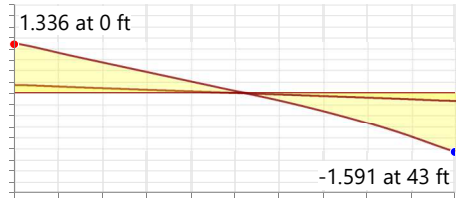
Diagrams:



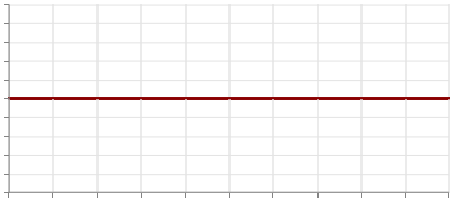
y Deflection (in)

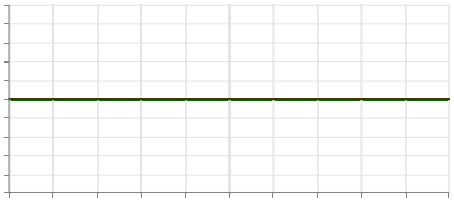

z Deflection (in)


Axial Force (kips)

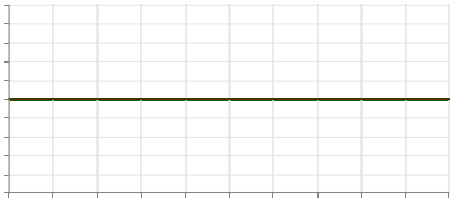


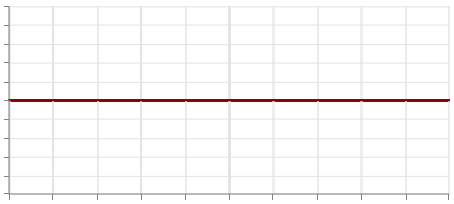
y Shear Force (kips)

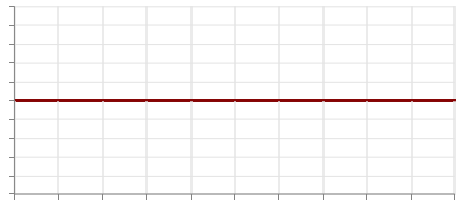

z Shear Force (kips)

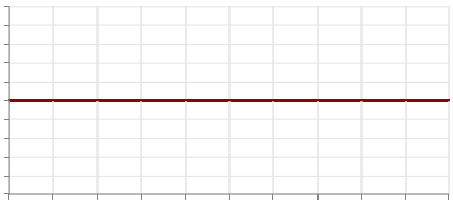

Torsion (kip-ft)

z-z Moment (kip-ft)

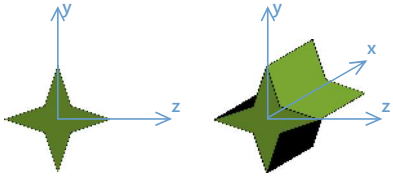

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M16 **Unity Check:** No Calc **Load Combination:** Envelope

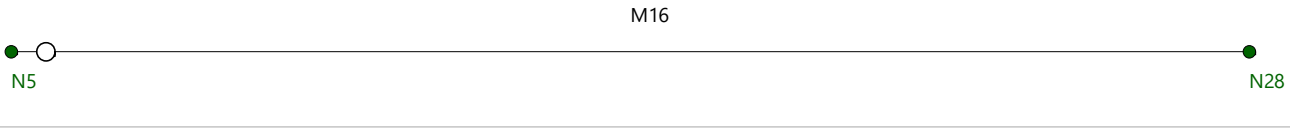


Input Data:

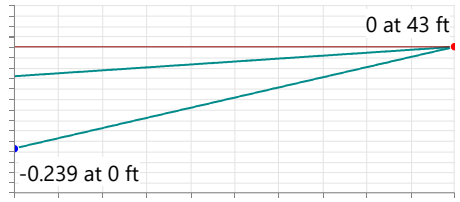
Shape:		I Node:	N5
Member Type:	None	J Node:	N28
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

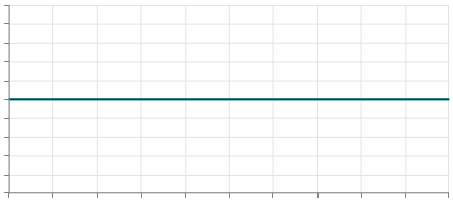
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

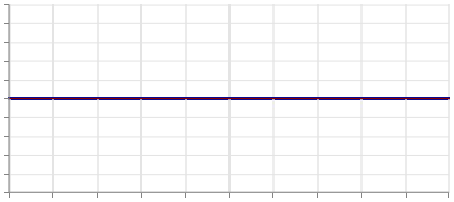


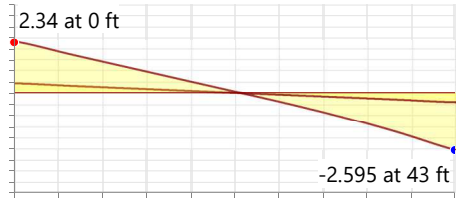
Diagrams:



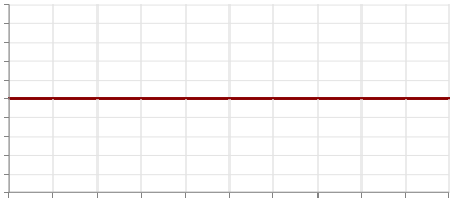
y Deflection (in)

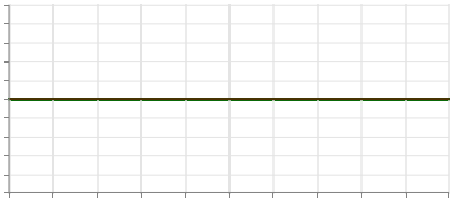

z Deflection (in)


Axial Force (kips)

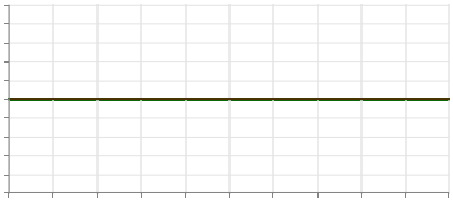


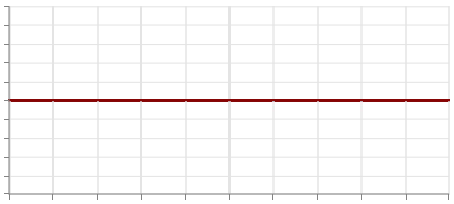
y Shear Force (kips)

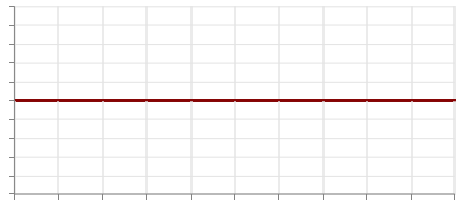

z Shear Force (kips)

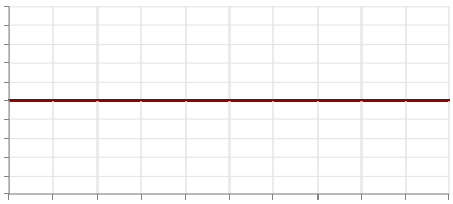

Torsion (kip-ft)

z-z Moment (kip-ft)

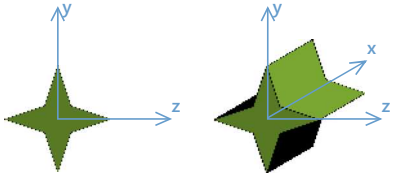

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M17 **Unity Check:** No Calc **Load Combination:** Envelope

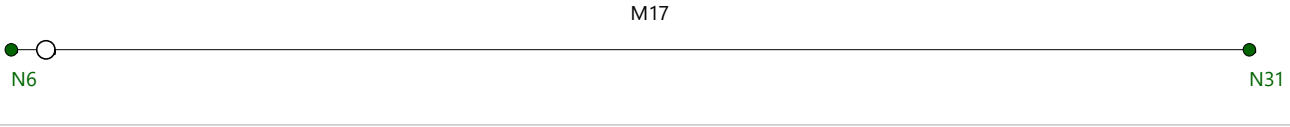


Input Data:

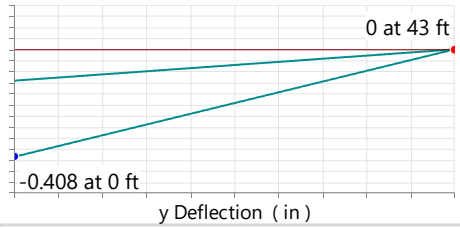
Shape:		I Node:	N6
Member Type:	None	J Node:	N31
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

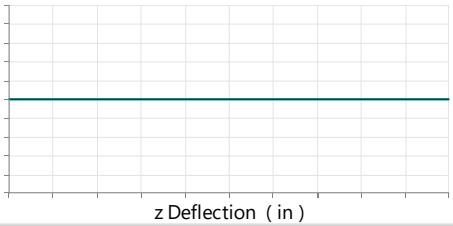
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

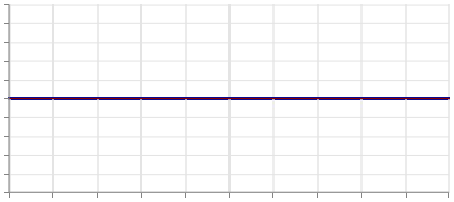


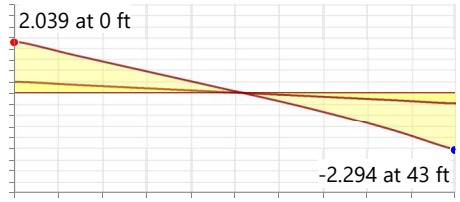
Diagrams:



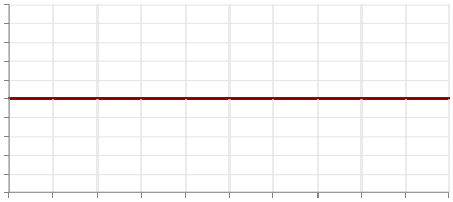
y Deflection (in)

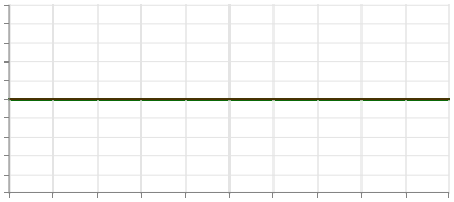

z Deflection (in)

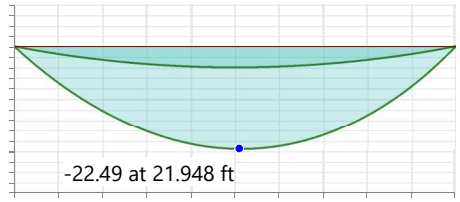

Axial Force (kips)



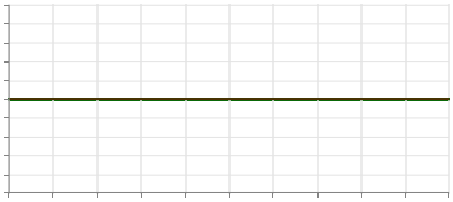
y Shear Force (kips)

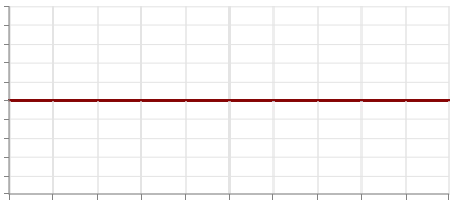

z Shear Force (kips)

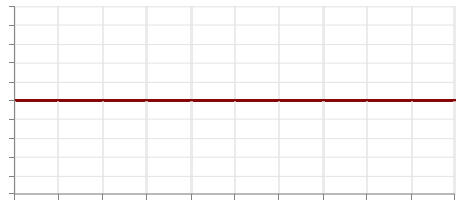

Torsion (kip-ft)

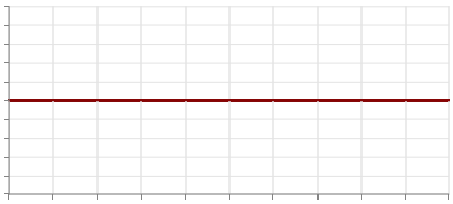


z-z Moment (kip-ft)

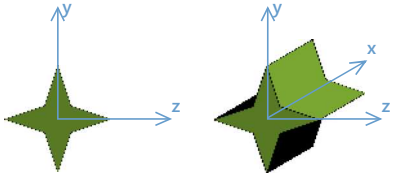

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M18 **Unity Check:** No Calc **Load Combination:** Envelope



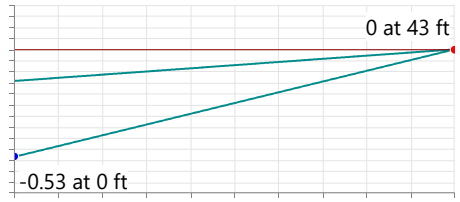
Input Data:

Shape:		I Node:	N9
Member Type:	None	J Node:	N32
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

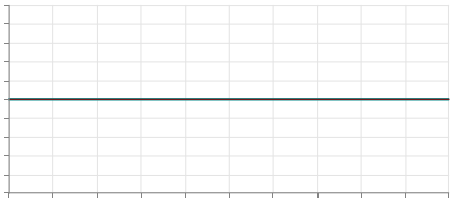
Material Properties:

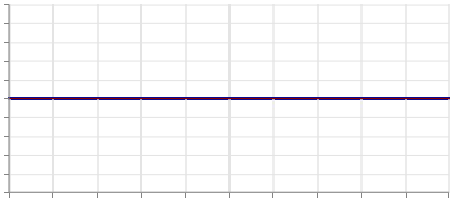
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

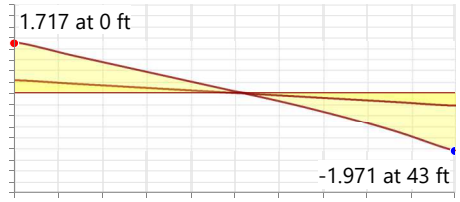
Diagrams:



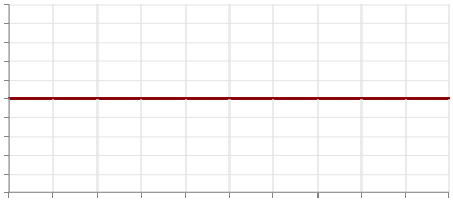
y Deflection (in)

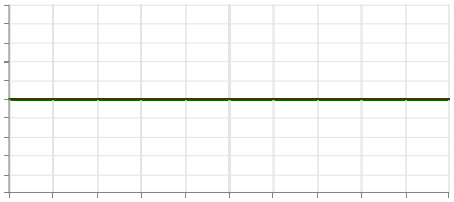

z Deflection (in)


Axial Force (kips)

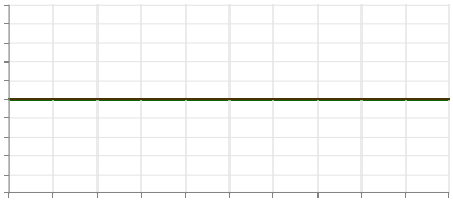


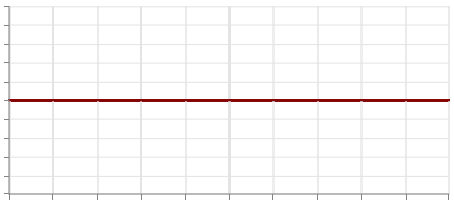
y Shear Force (kips)

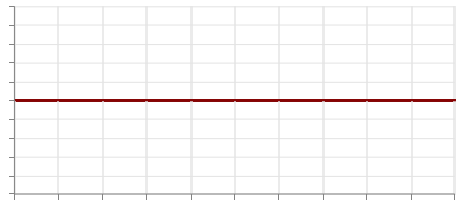

z Shear Force (kips)

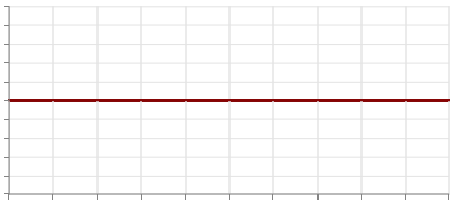

Torsion (kip-ft)

z-z Moment (kip-ft)

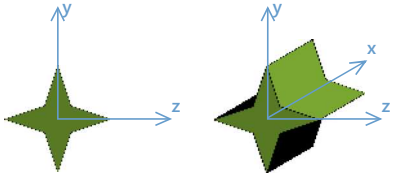

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M19 **Unity Check:** No Calc **Load Combination:** Envelope

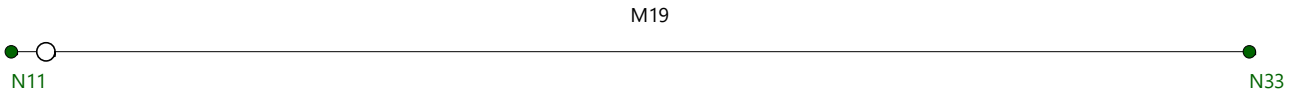


Input Data:

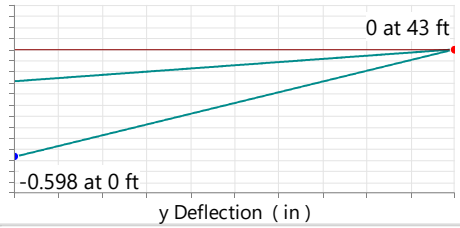
Shape:		I Node:	N11
Member Type:	None	J Node:	N33
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

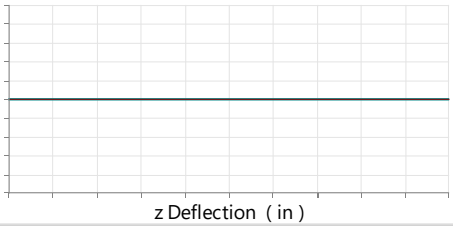
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

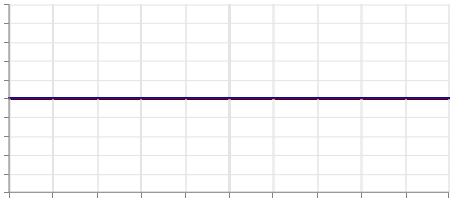


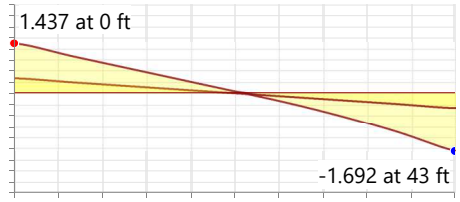
Diagrams:



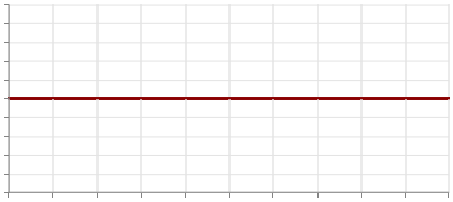
y Deflection (in)

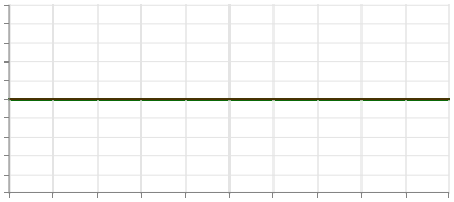

z Deflection (in)


Axial Force (kips)

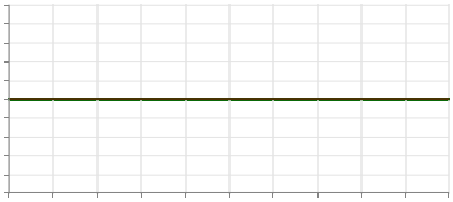


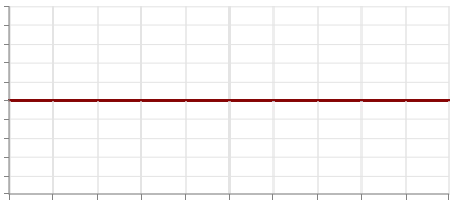
y Shear Force (kips)

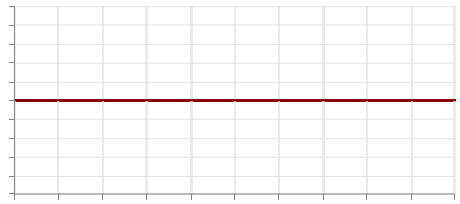

z Shear Force (kips)

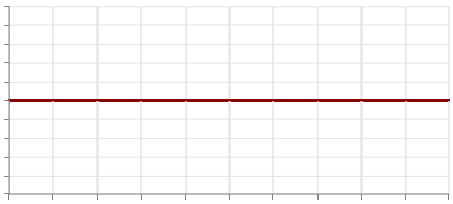

Torsion (kip-ft)

z-z Moment (kip-ft)

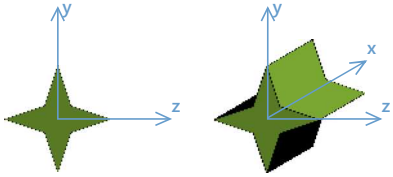

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M20 **Unity Check:** No Calc **Load Combination:** Envelope

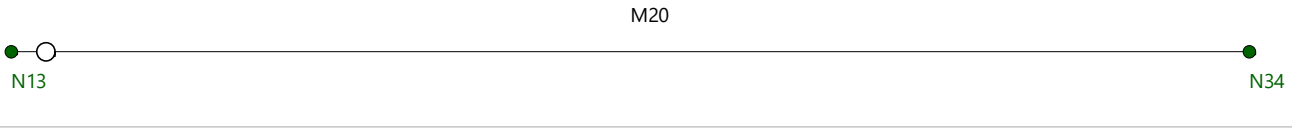


Input Data:

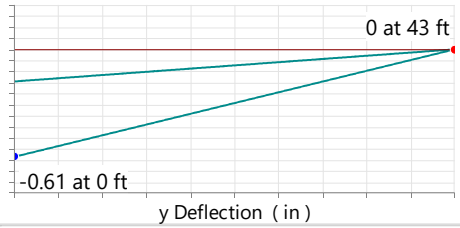
Shape:		I Node:	N13
Member Type:	None	J Node:	N34
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

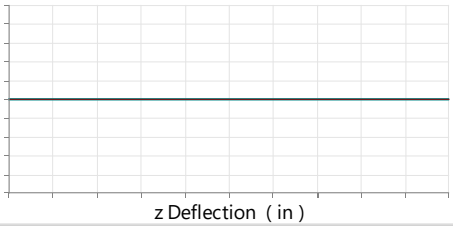
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

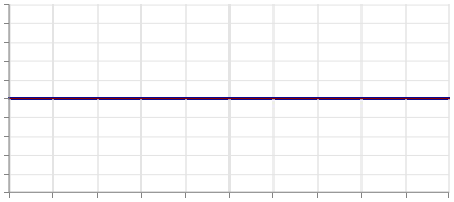


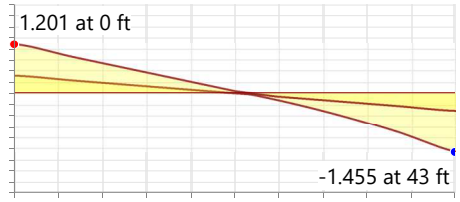
Diagrams:



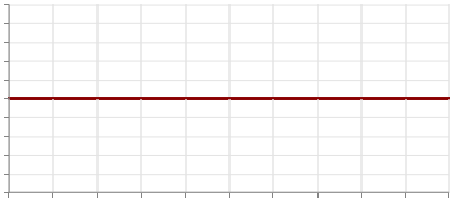
y Deflection (in)

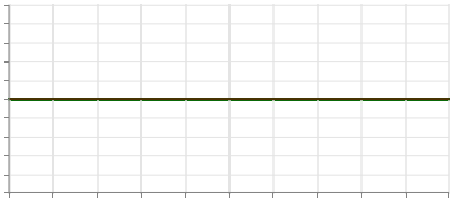

z Deflection (in)


Axial Force (kips)

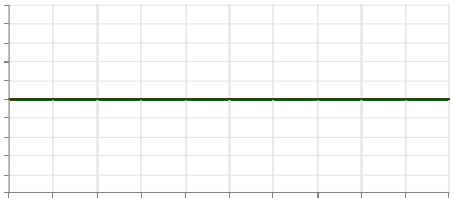


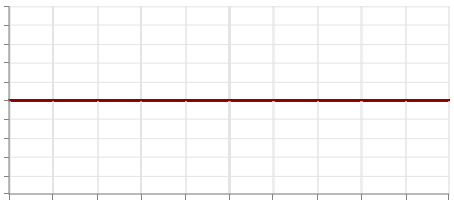
y Shear Force (kips)

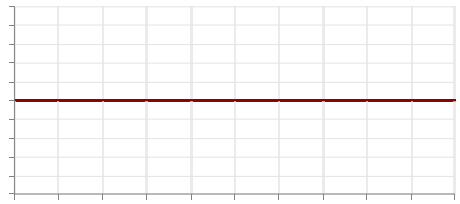

z Shear Force (kips)

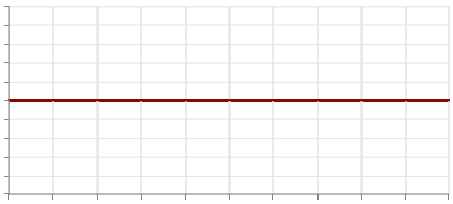

Torsion (kip-ft)

z-z Moment (kip-ft)

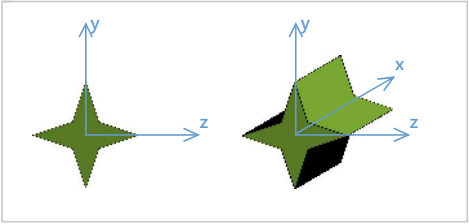

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M21 **Unity Check:** No Calc **Load Combination:** Envelope

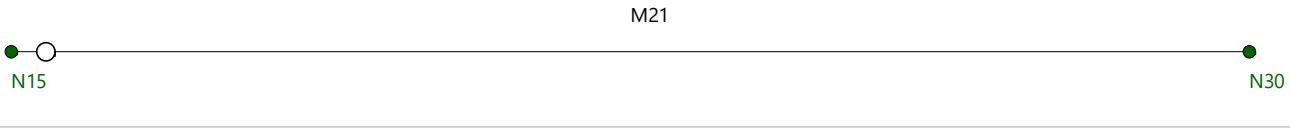


Input Data:

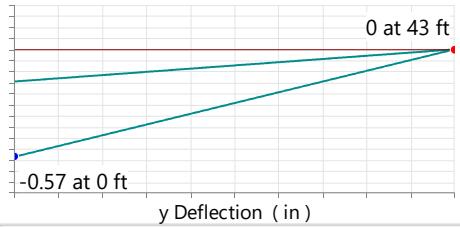
Shape:		I Node:	N15
Member Type:	None	J Node:	N30
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

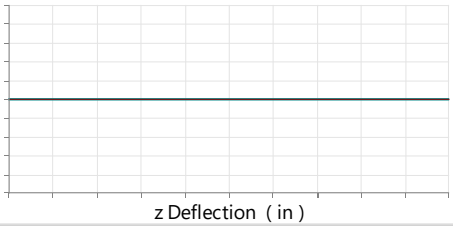
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

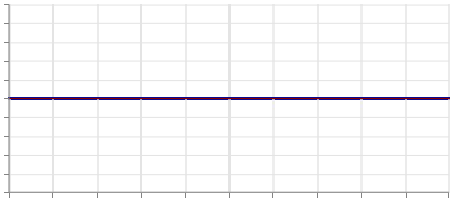


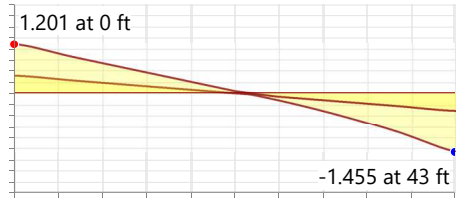
Diagrams:



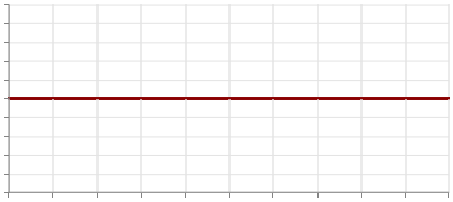
y Deflection (in)

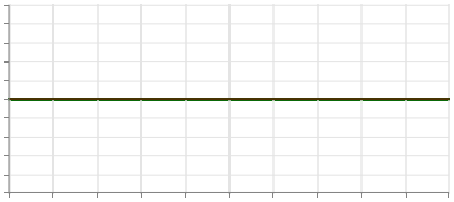

z Deflection (in)


Axial Force (kips)

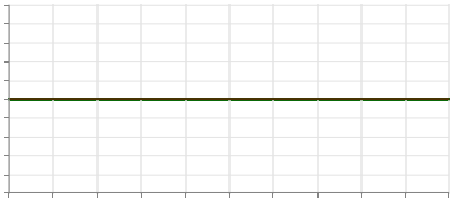


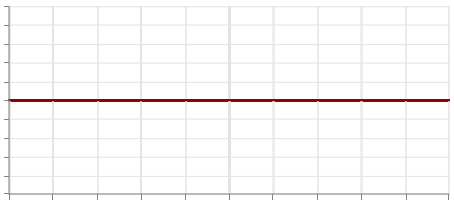
y Shear Force (kips)

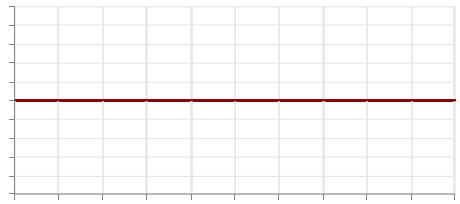

z Shear Force (kips)

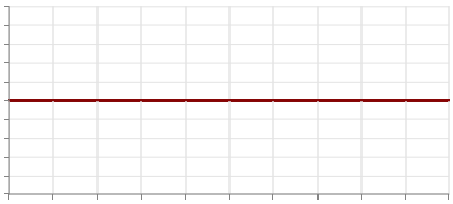

Torsion (kip-ft)

z-z Moment (kip-ft)

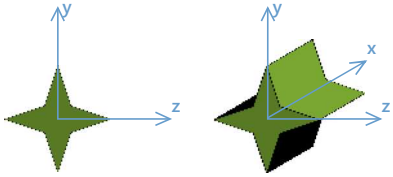

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M22 **Unity Check:** No Calc **Load Combination:** Envelope

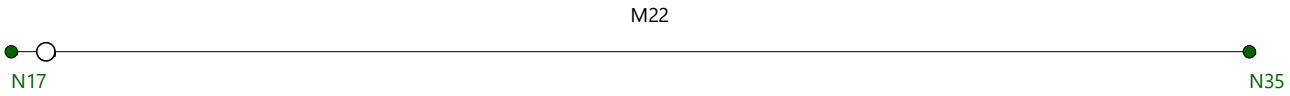


Input Data:

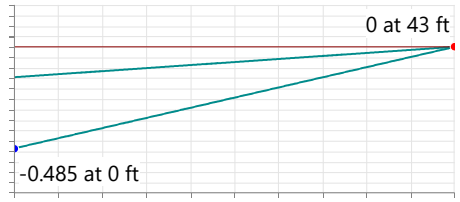
Shape:		I Node:	N17
Member Type:	None	J Node:	N35
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

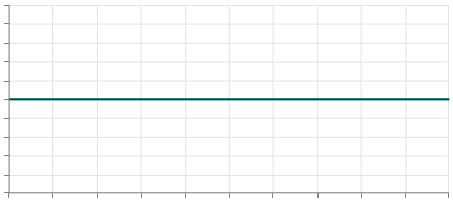
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

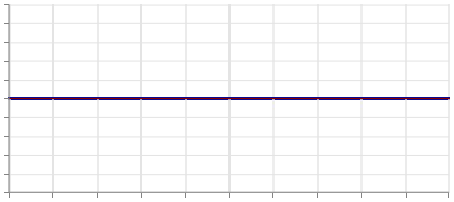


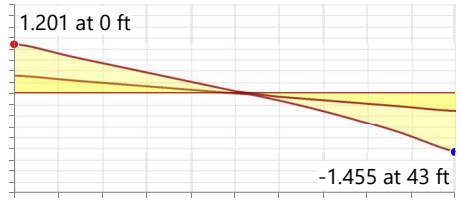
Diagrams:



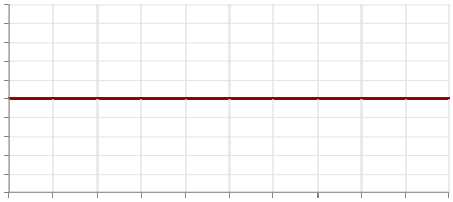
y Deflection (in)

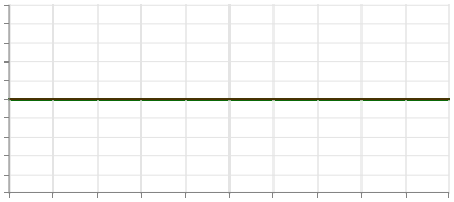

z Deflection (in)


Axial Force (kips)

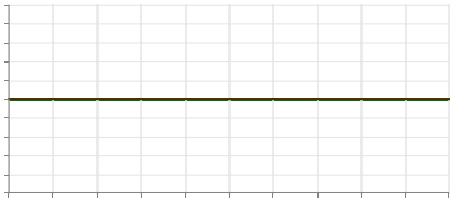


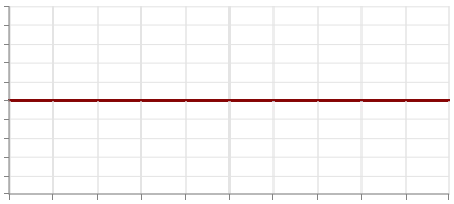
y Shear Force (kips)

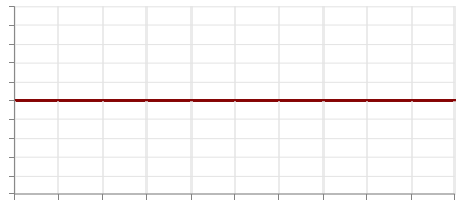

z Shear Force (kips)

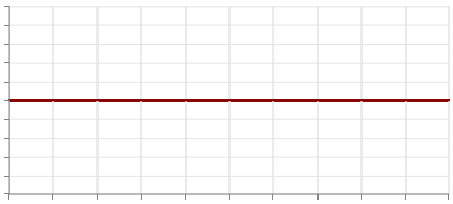

Torsion (kip-ft)

z-z Moment (kip-ft)

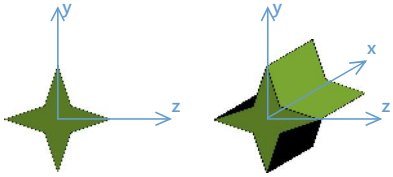

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M23 **Unity Check:** No Calc **Load Combination:** Envelope

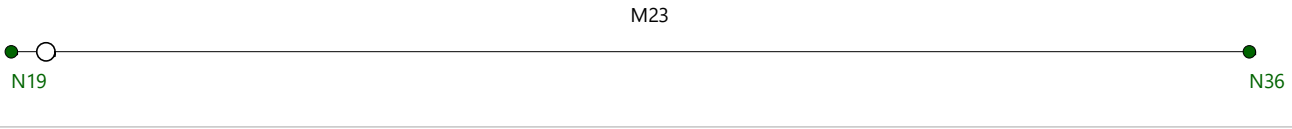


Input Data:

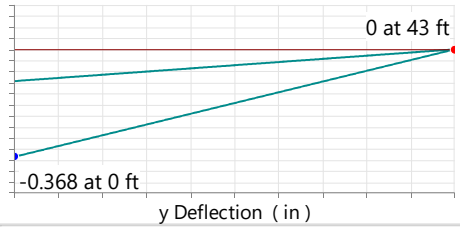
Shape:		I Node:	N19
Member Type:	None	J Node:	N36
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

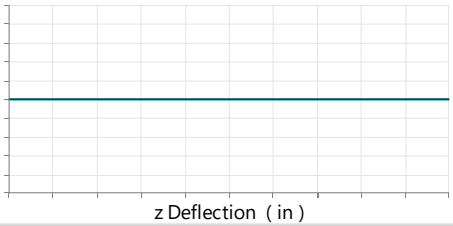
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

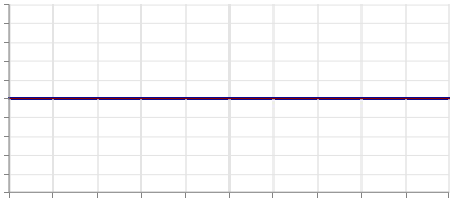


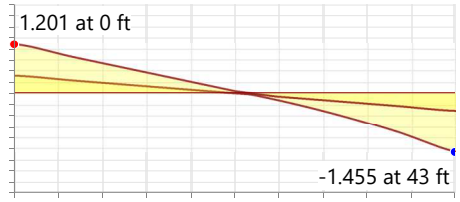
Diagrams:



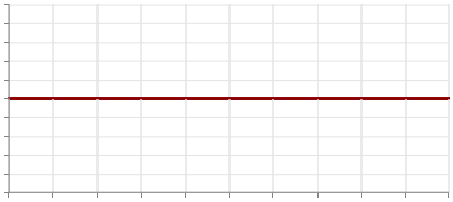
y Deflection (in)

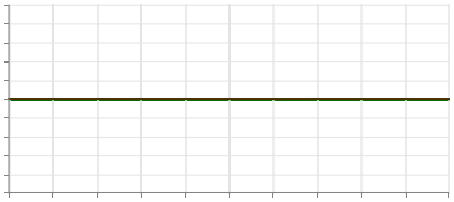

z Deflection (in)


Axial Force (kips)

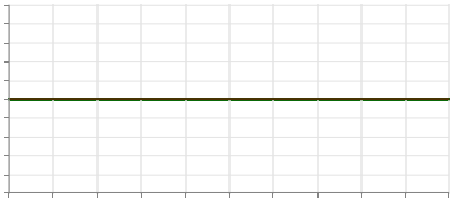


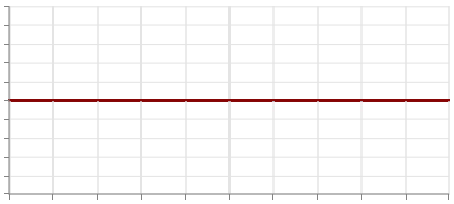
y Shear Force (kips)

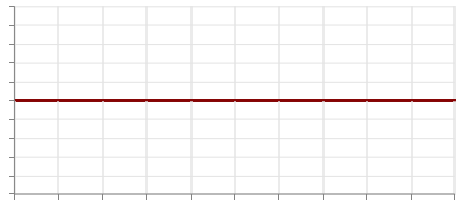

z Shear Force (kips)

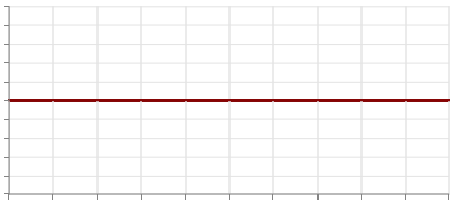

Torsion (kip-ft)

z-z Moment (kip-ft)

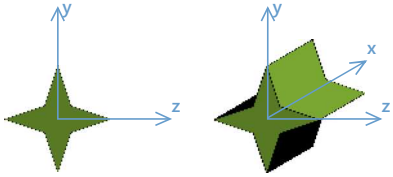

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M24 **Unity Check:** No Calc **Load Combination:** Envelope

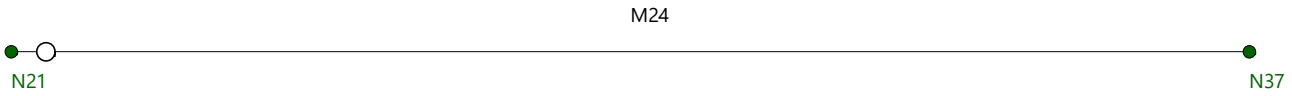


Input Data:

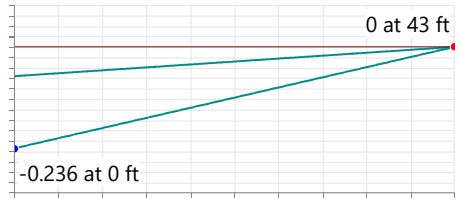
Shape:		I Node:	N21
Member Type:	None	J Node:	N37
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

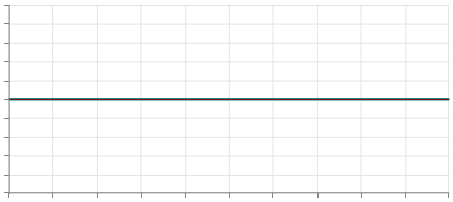
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

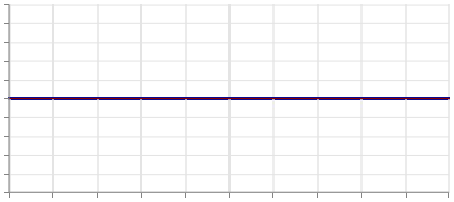


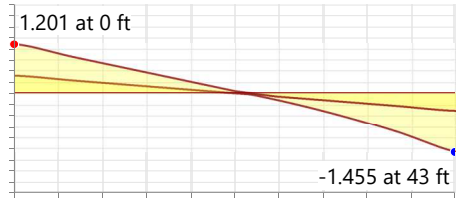
Diagrams:



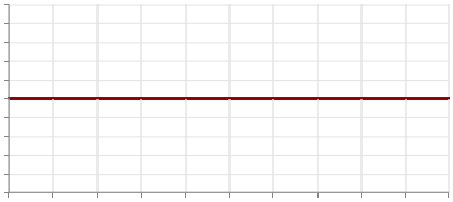
y Deflection (in)

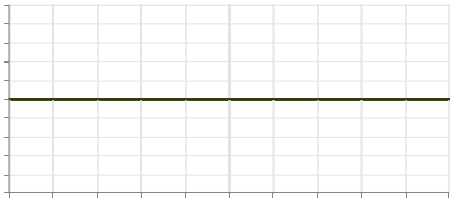

z Deflection (in)


Axial Force (kips)

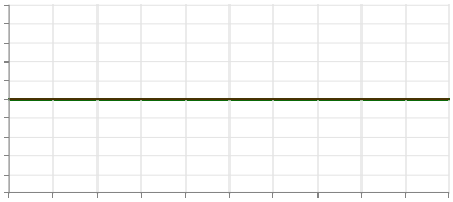


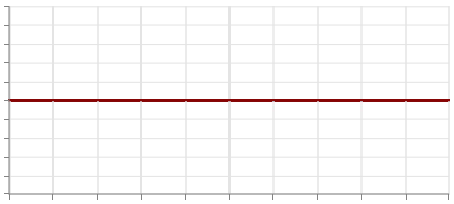
y Shear Force (kips)

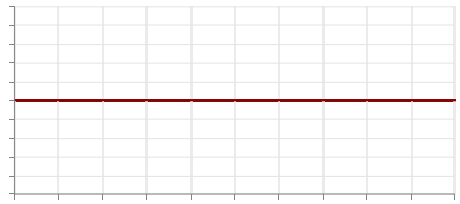

z Shear Force (kips)

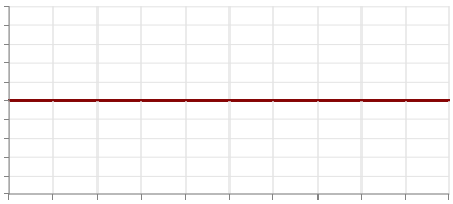

Torsion (kip-ft)

z-z Moment (kip-ft)

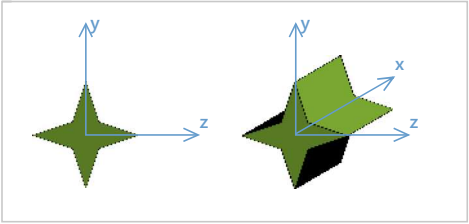

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M25 **Unity Check:** No Calc **Load Combination:** Envelope

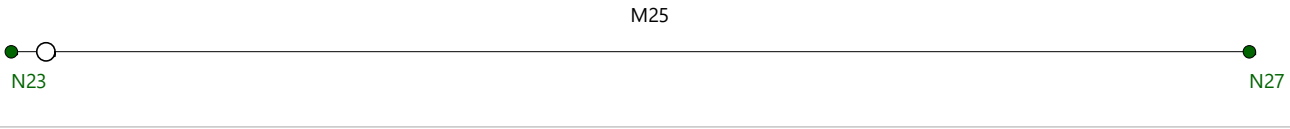


Input Data:

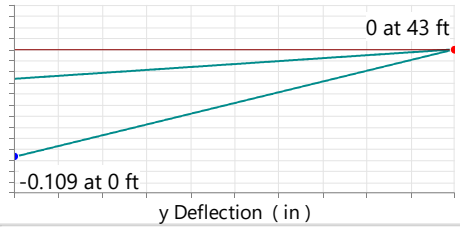
Shape:		I Node:	N23
Member Type:	None	J Node:	N27
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

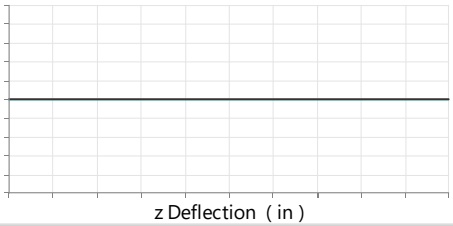
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

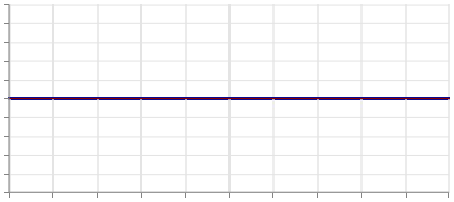


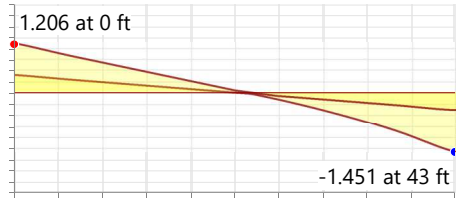
Diagrams:



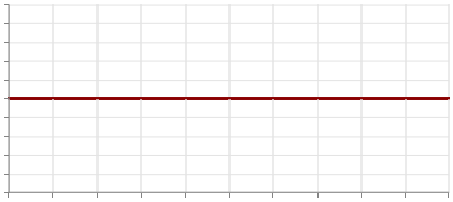
y Deflection (in)

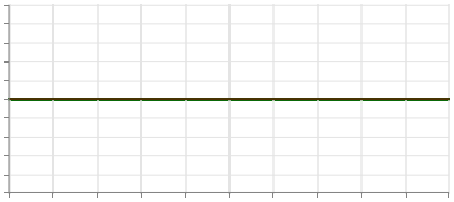

z Deflection (in)

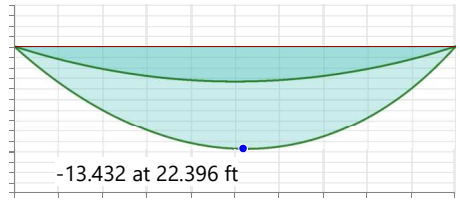

Axial Force (kips)



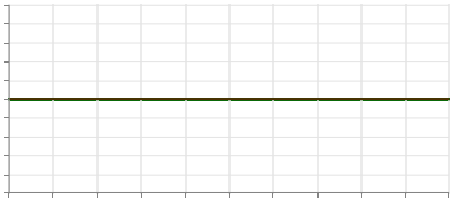
y Shear Force (kips)

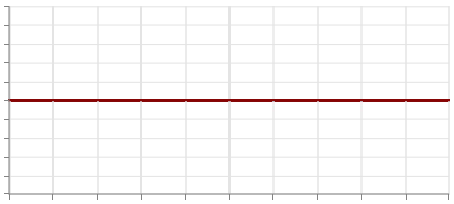

z Shear Force (kips)

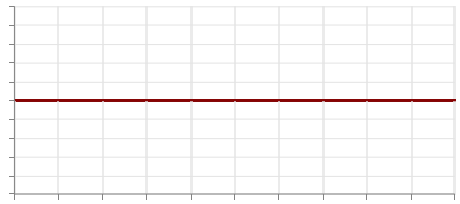

Torsion (kip-ft)

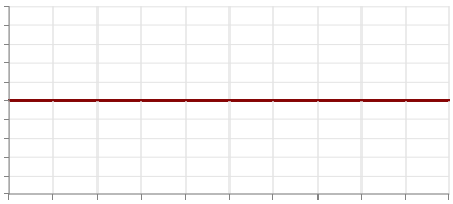


z-z Moment (kip-ft)

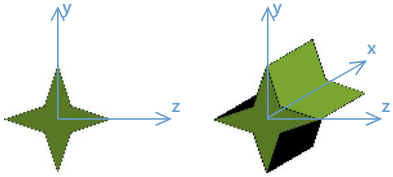

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M26 **Unity Check:** No Calc **Load Combination:** Envelope

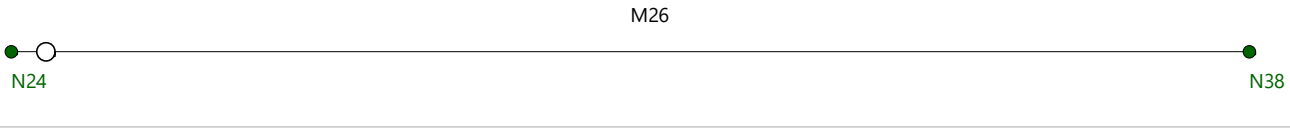


Input Data:

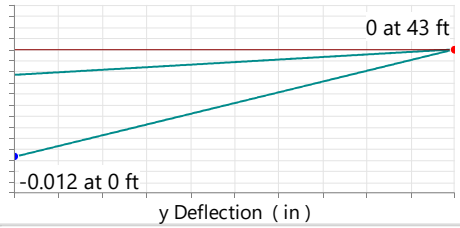
Shape:		I Node:	N24
Member Type:	None	J Node:	N38
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

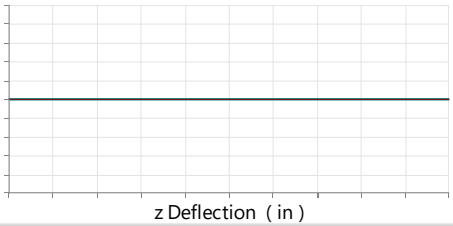
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

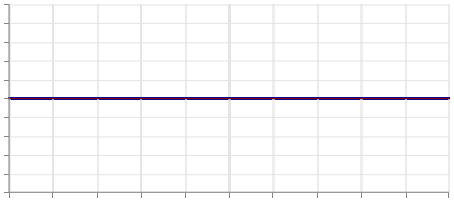


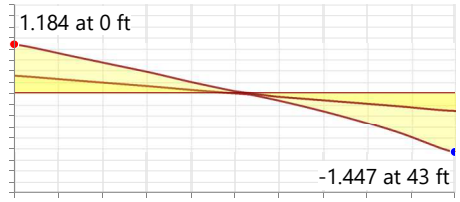
Diagrams:



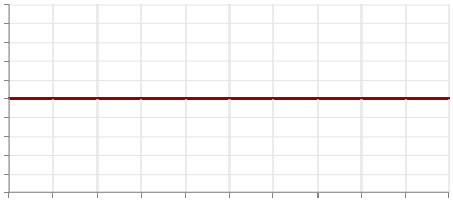
y Deflection (in)

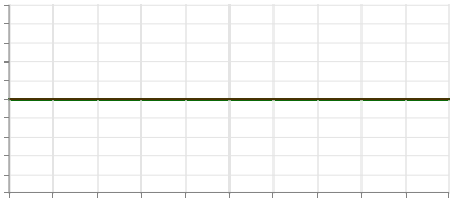

z Deflection (in)


Axial Force (kips)

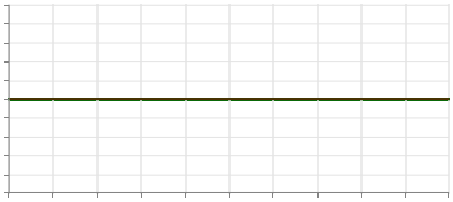


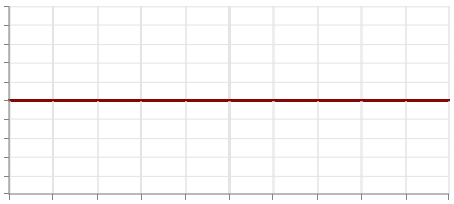
y Shear Force (kips)

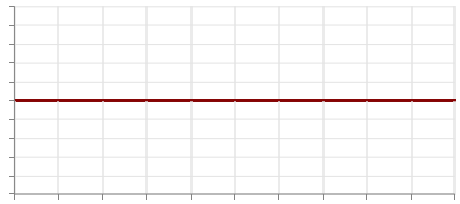

z Shear Force (kips)

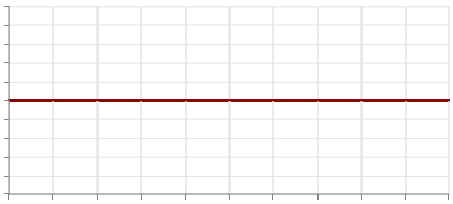

Torsion (kip-ft)

z-z Moment (kip-ft)

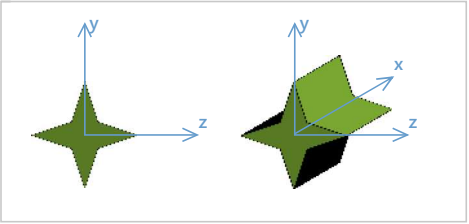

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M27 **Unity Check:** No Calc **Load Combination:** Envelope

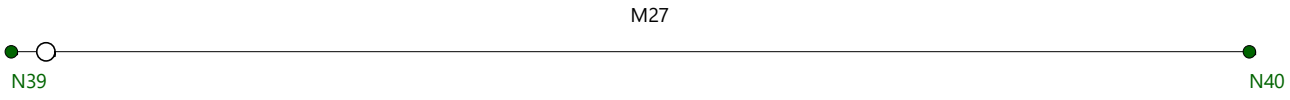


Input Data:

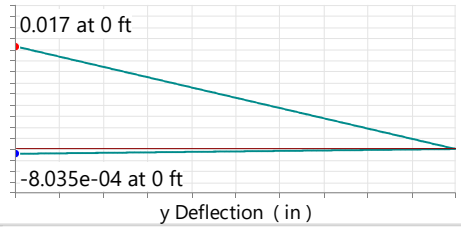
Shape:		I Node:	N39
Member Type:	None	J Node:	N40
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

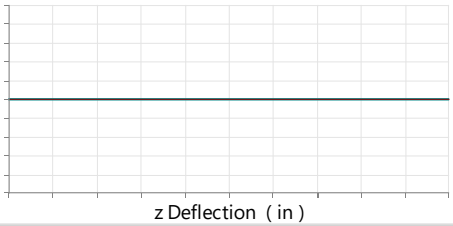
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

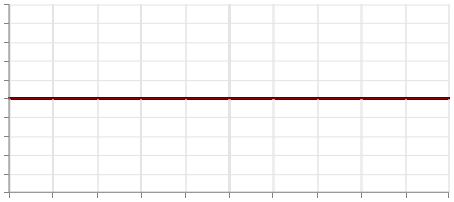


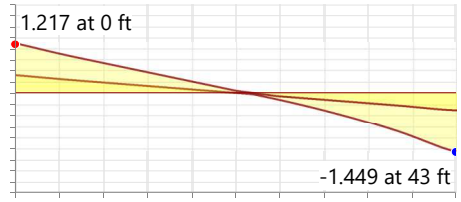
Diagrams:



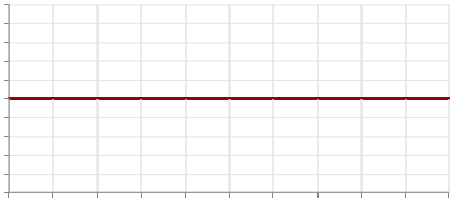
y Deflection (in)

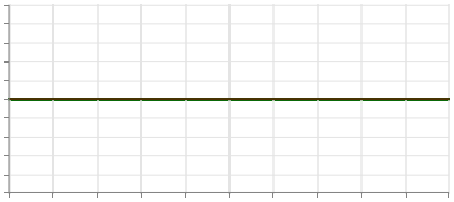

z Deflection (in)


Axial Force (kips)

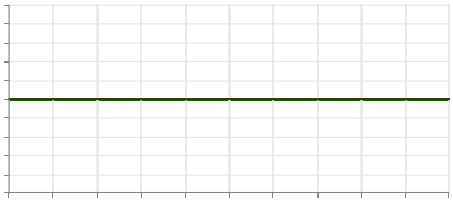


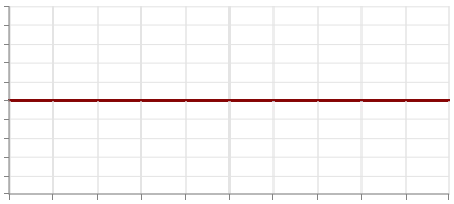
y Shear Force (kips)

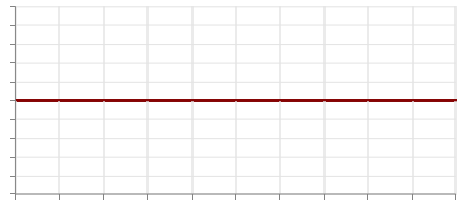

z Shear Force (kips)

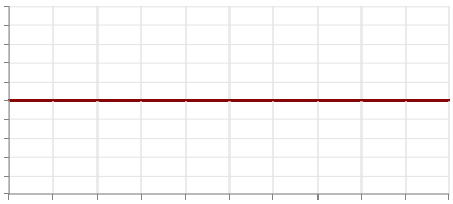

Torsion (kip-ft)

z-z Moment (kip-ft)

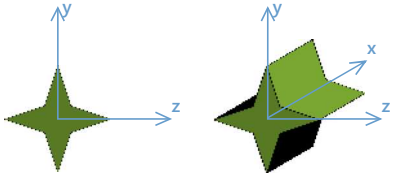

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M28 **Unity Check:** No Calc **Load Combination:** Envelope

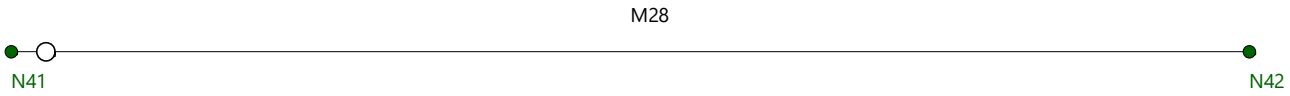


Input Data:

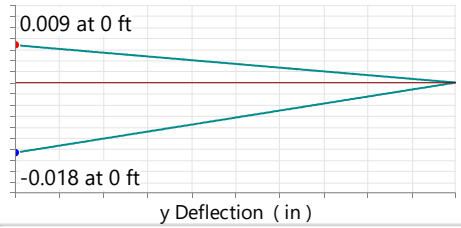
Shape:		I Node:	N41
Member Type:	None	J Node:	N42
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

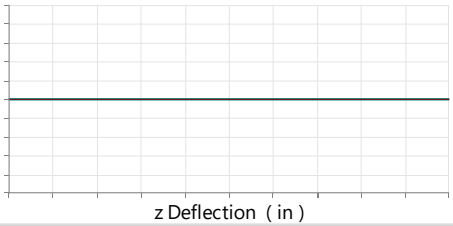
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

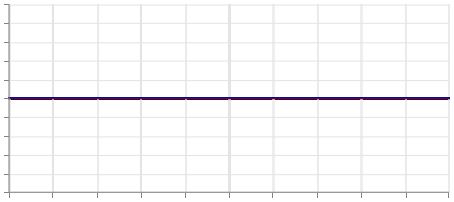


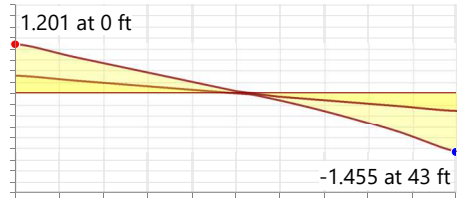
Diagrams:



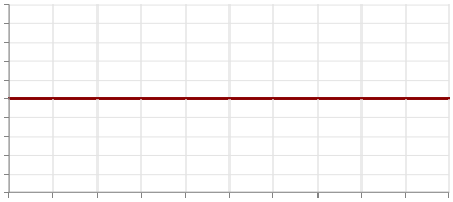
y Deflection (in)

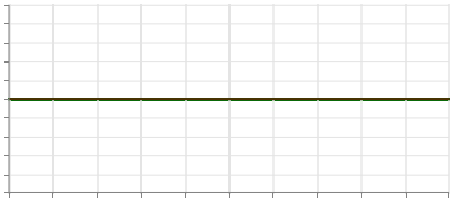

z Deflection (in)


Axial Force (kips)

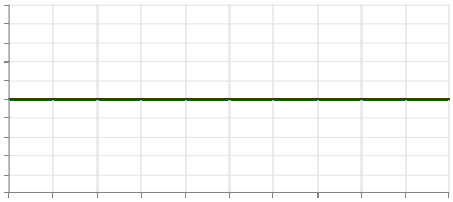


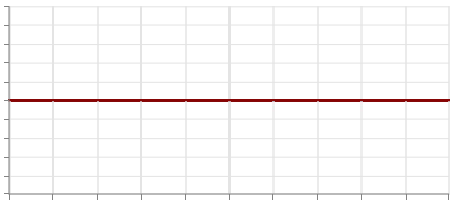
y Shear Force (kips)

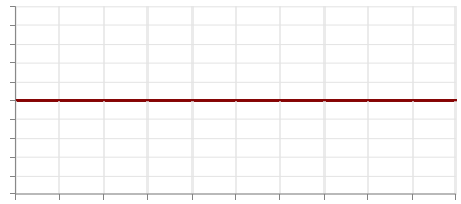

z Shear Force (kips)

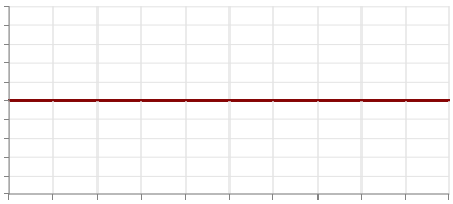

Torsion (kip-ft)

z-z Moment (kip-ft)

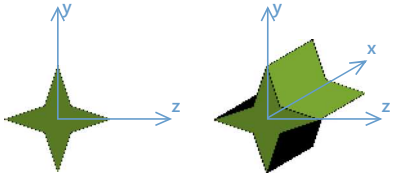

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M29 **Unity Check:** No Calc **Load Combination:** Envelope

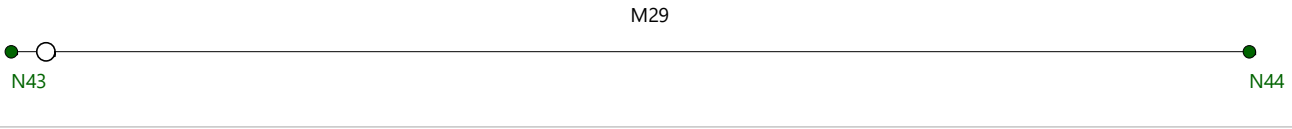


Input Data:

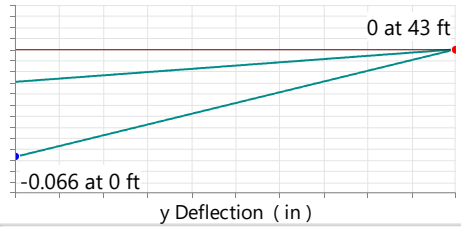
Shape:		I Node:	N43
Member Type:	None	J Node:	N44
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

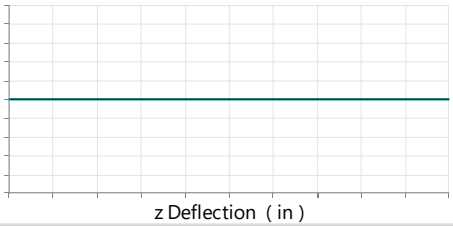
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

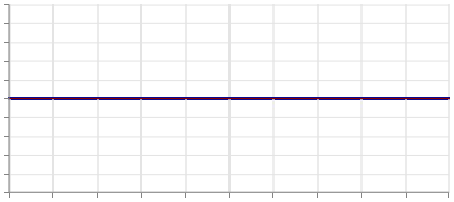


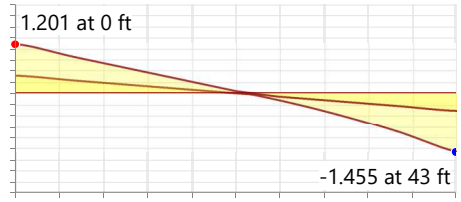
Diagrams:



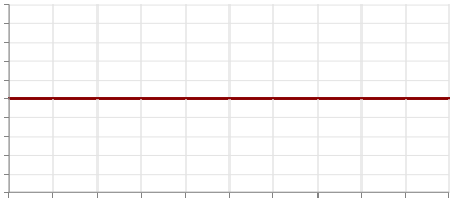
y Deflection (in)

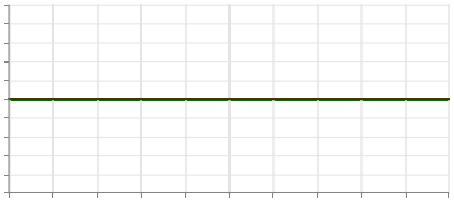

z Deflection (in)


Axial Force (kips)

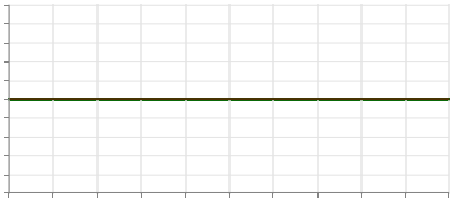


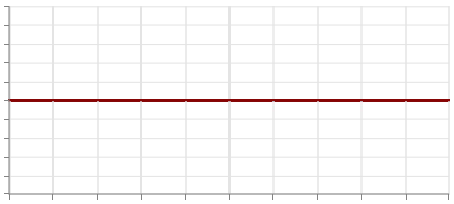
y Shear Force (kips)

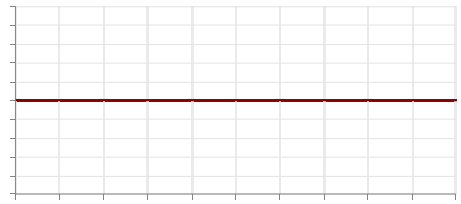

z Shear Force (kips)

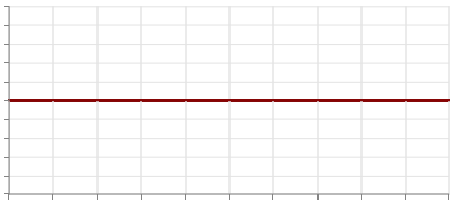

Torsion (kip-ft)

z-z Moment (kip-ft)

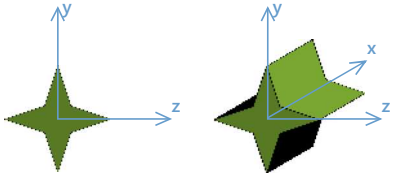

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M30 **Unity Check:** No Calc **Load Combination:** Envelope

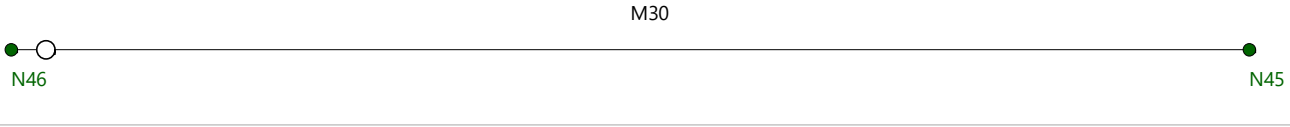


Input Data:

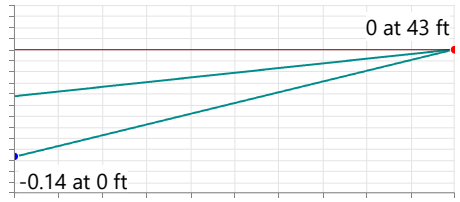
Shape:		I Node:	N46
Member Type:	None	J Node:	N45
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

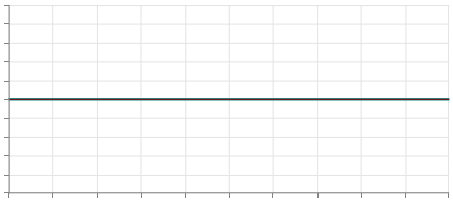
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

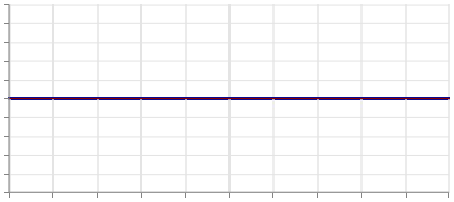


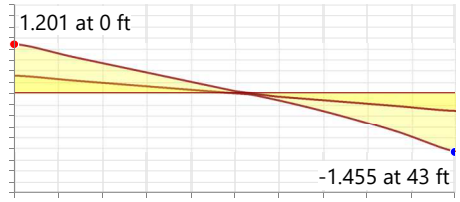
Diagrams:



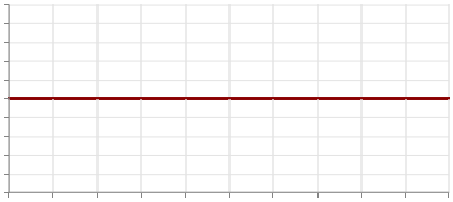
y Deflection (in)

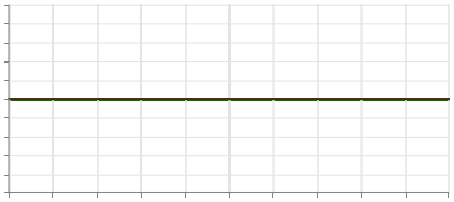

z Deflection (in)


Axial Force (kips)

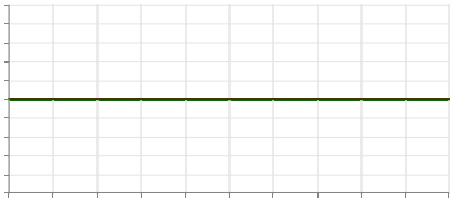


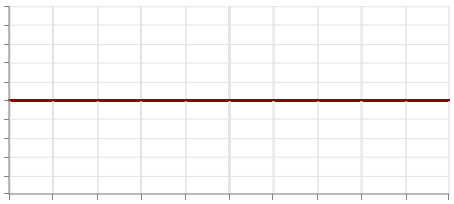
y Shear Force (kips)

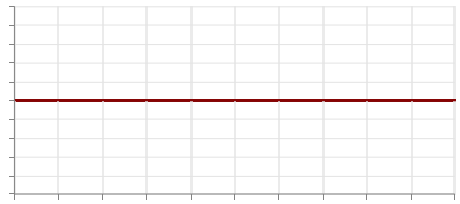

z Shear Force (kips)

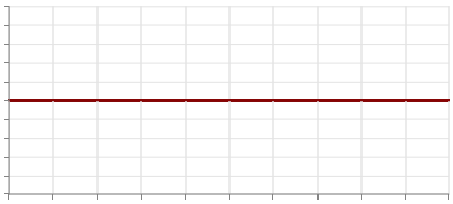

Torsion (kip-ft)

z-z Moment (kip-ft)

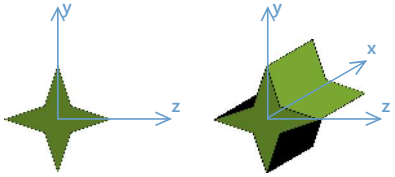

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M31 **Unity Check:** No Calc **Load Combination:** Envelope

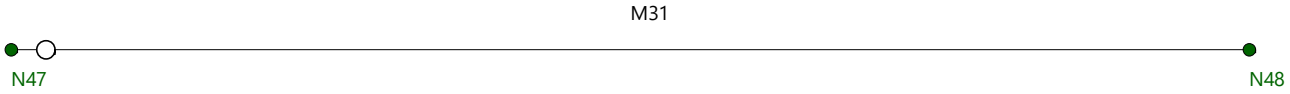


Input Data:

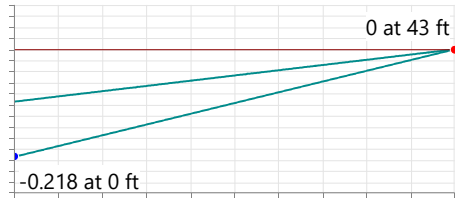
Shape:		I Node:	N47
Member Type:	None	J Node:	N48
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

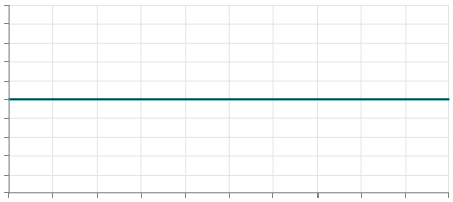
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

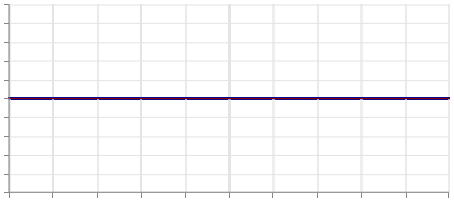


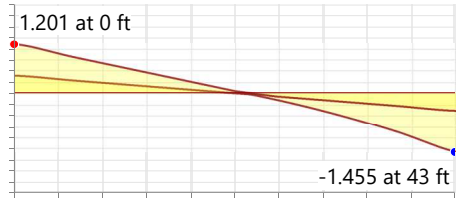
Diagrams:



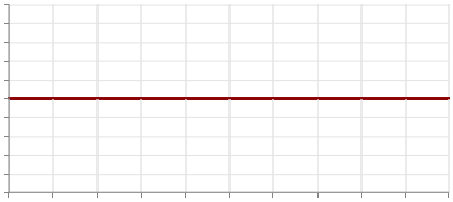
y Deflection (in)

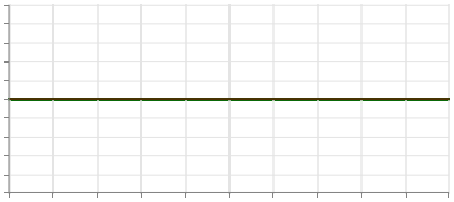

z Deflection (in)


Axial Force (kips)

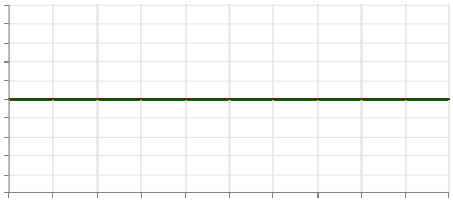


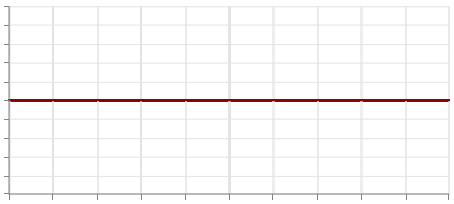
y Shear Force (kips)

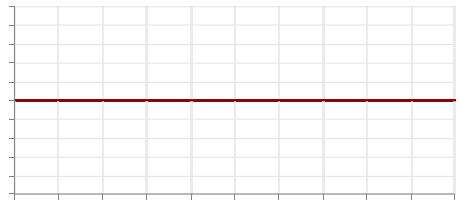

z Shear Force (kips)

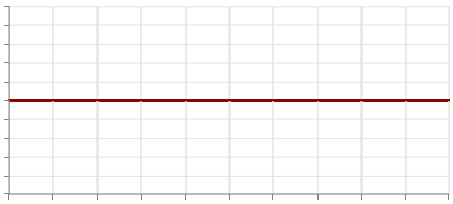

Torsion (kip-ft)

z-z Moment (kip-ft)

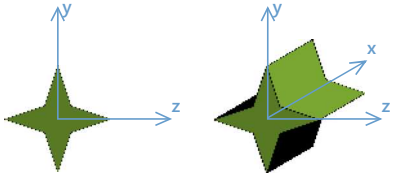

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M32 **Unity Check:** No Calc **Load Combination:** Envelope

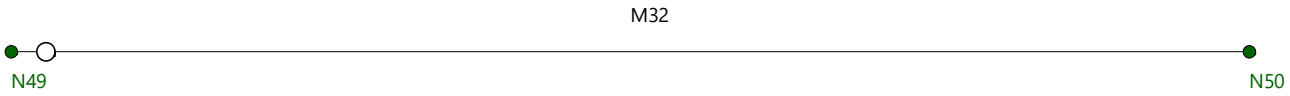


Input Data:

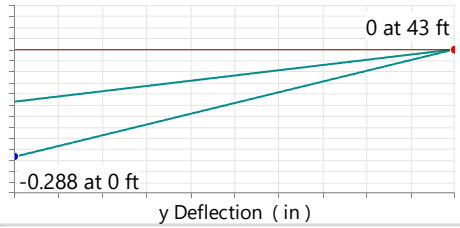
Shape:		I Node:	N49
Member Type:	None	J Node:	N50
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

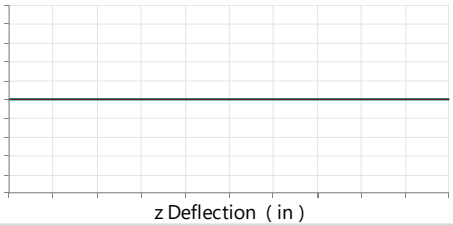
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

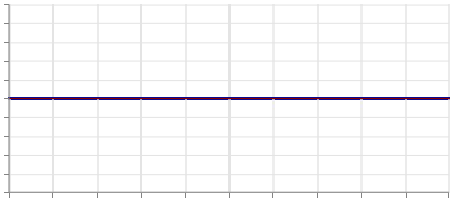


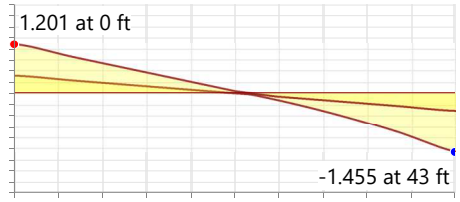
Diagrams:



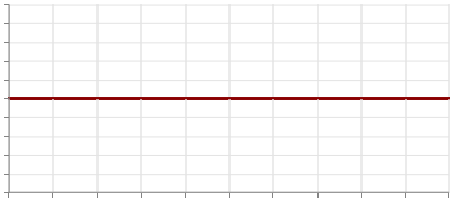
y Deflection (in)

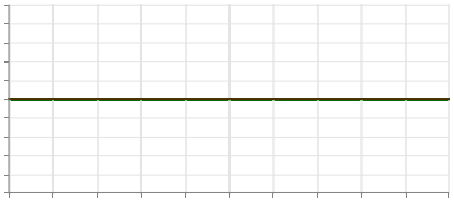

z Deflection (in)


Axial Force (kips)

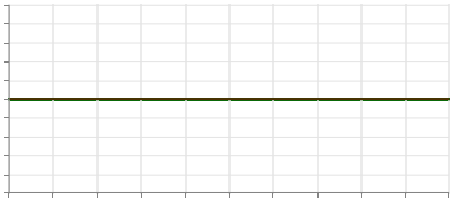


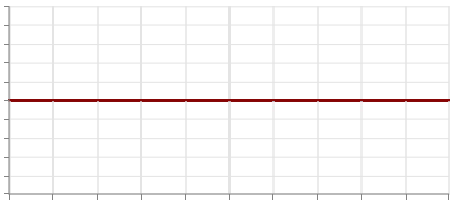
y Shear Force (kips)

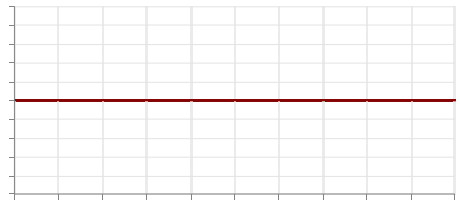

z Shear Force (kips)

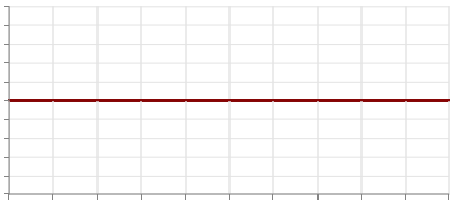

Torsion (kip-ft)

z-z Moment (kip-ft)

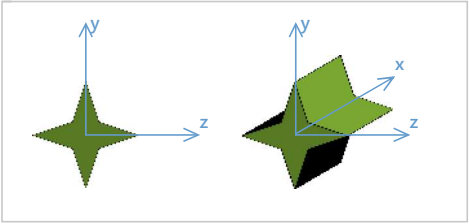

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M33 **Unity Check:** No Calc **Load Combination:** Envelope

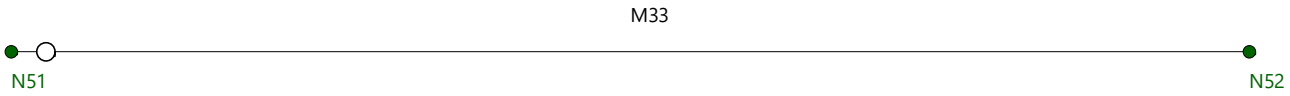


Input Data:

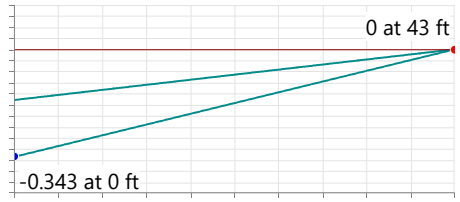
Shape:		I Node:	N51
Member Type:	None	J Node:	N52
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

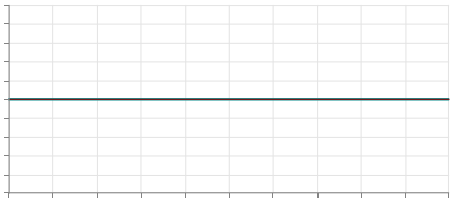
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

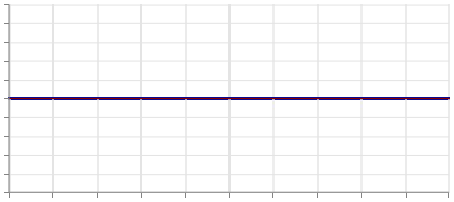


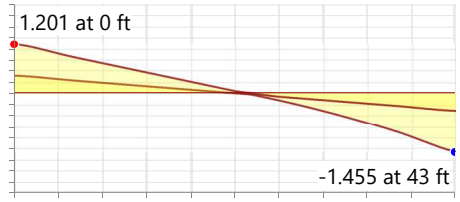
Diagrams:



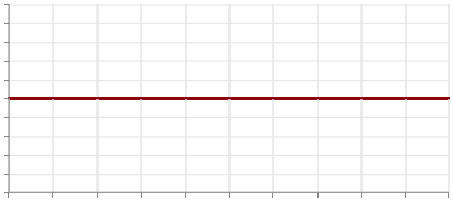
y Deflection (in)

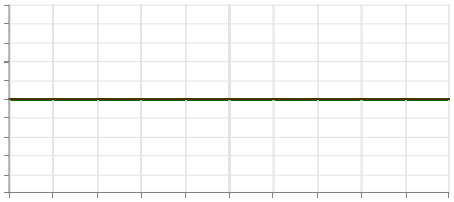

z Deflection (in)


Axial Force (kips)

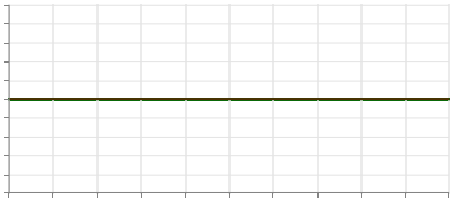


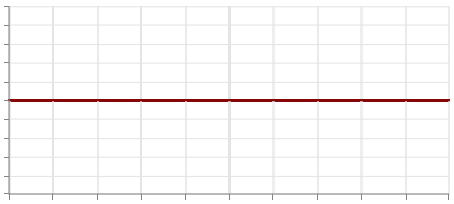
y Shear Force (kips)

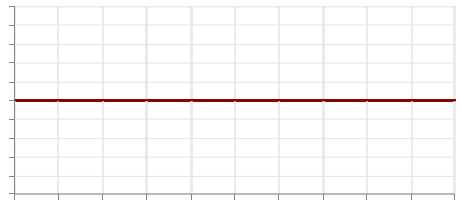

z Shear Force (kips)

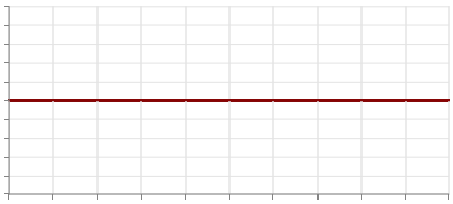

Torsion (kip-ft)

z-z Moment (kip-ft)

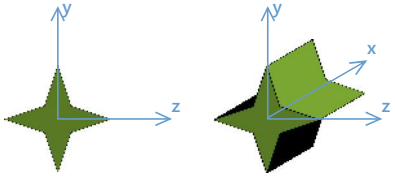

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M34 **Unity Check:** No Calc **Load Combination:** Envelope

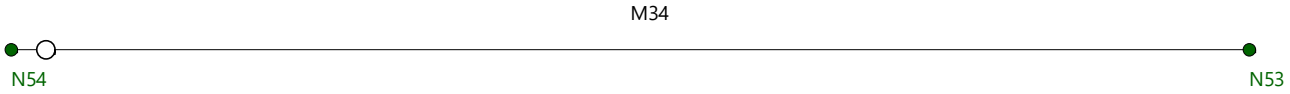


Input Data:

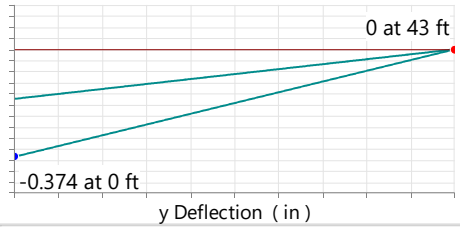
Shape:		I Node:	N54
Member Type:	None	J Node:	N53
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

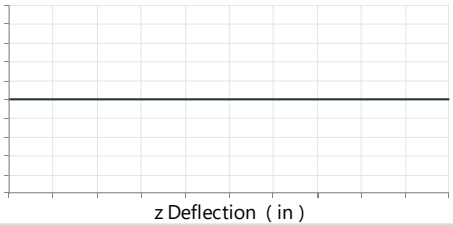
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

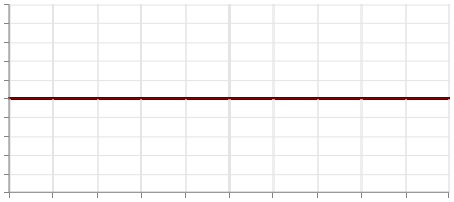


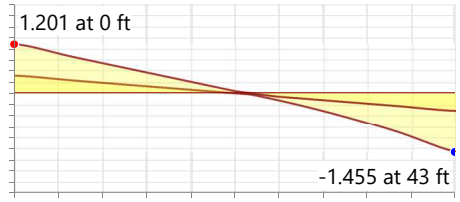
Diagrams:



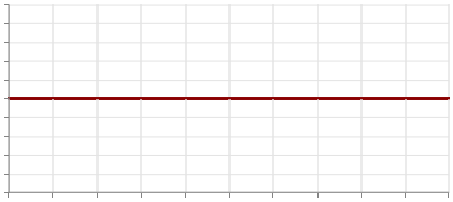
y Deflection (in)

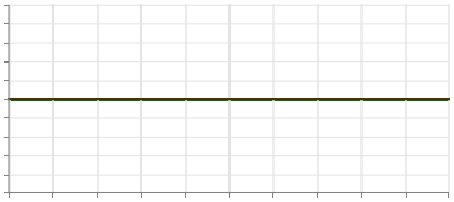

z Deflection (in)


Axial Force (kips)

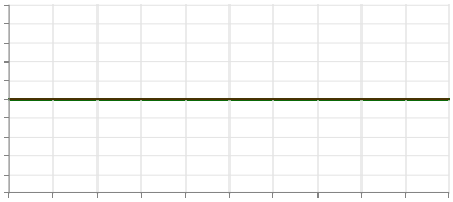


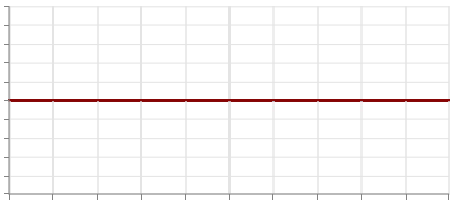
y Shear Force (kips)

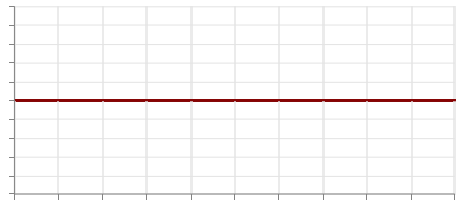

z Shear Force (kips)

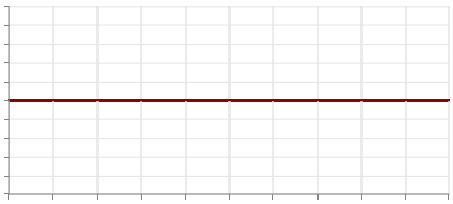

Torsion (kip-ft)

z-z Moment (kip-ft)

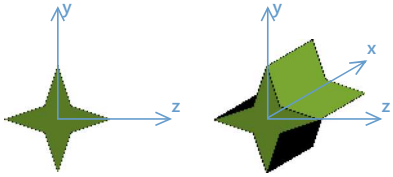

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M35 **Unity Check:** No Calc **Load Combination:** Envelope

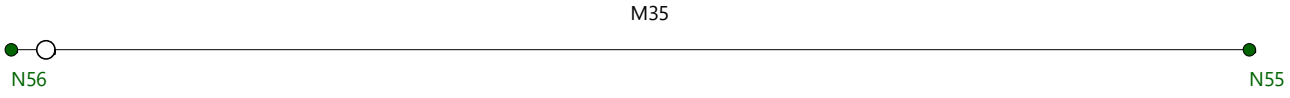


Input Data:

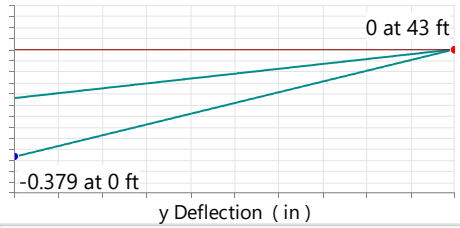
Shape:		I Node:	N56
Member Type:	None	J Node:	N55
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

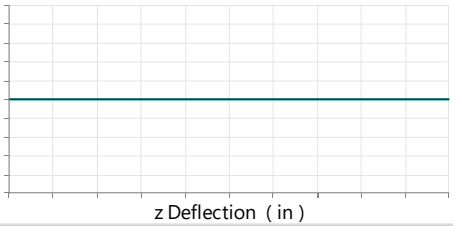
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

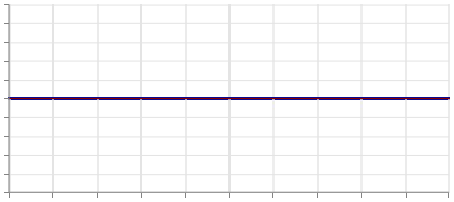


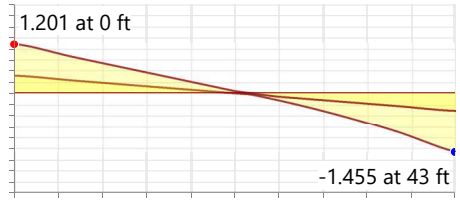
Diagrams:



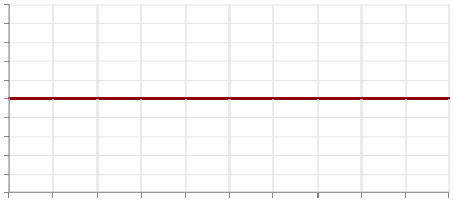
y Deflection (in)

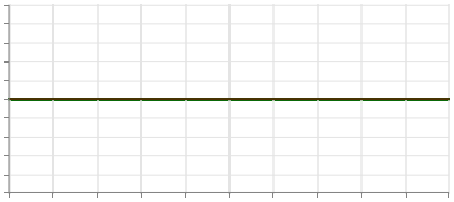

z Deflection (in)


Axial Force (kips)

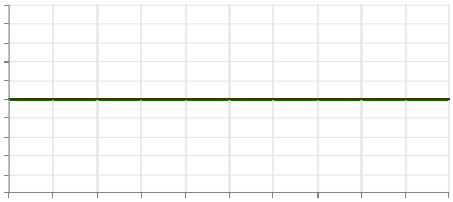


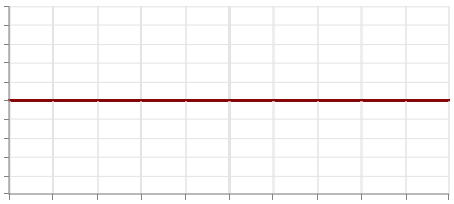
y Shear Force (kips)

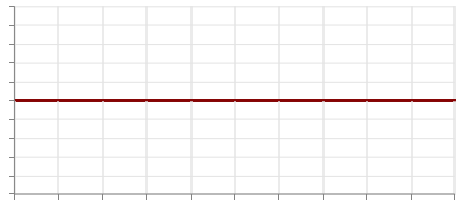

z Shear Force (kips)

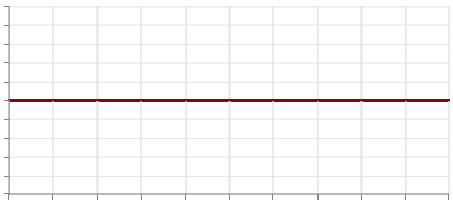

Torsion (kip-ft)

z-z Moment (kip-ft)

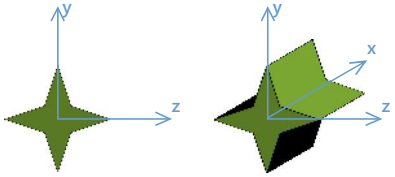

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M36 **Unity Check:** No Calc **Load Combination:** Envelope

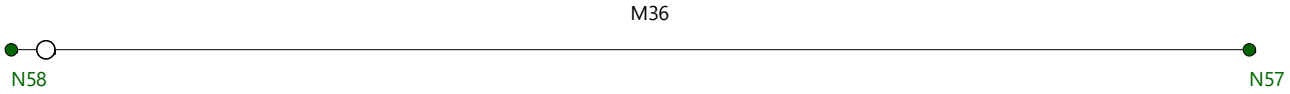


Input Data:

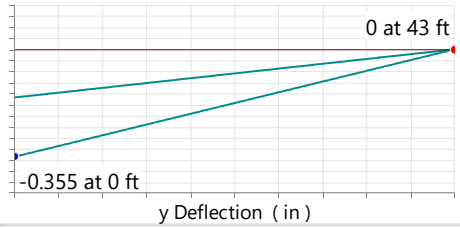
Shape:		I Node:	N58
Member Type:	None	J Node:	N57
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

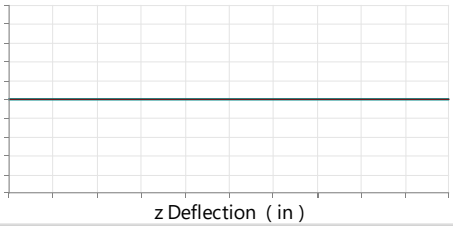
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

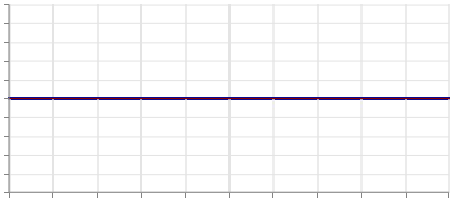


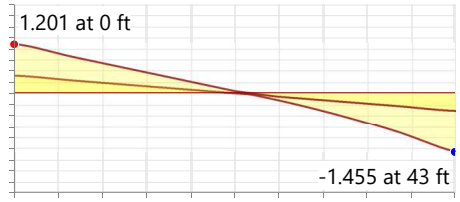
Diagrams:



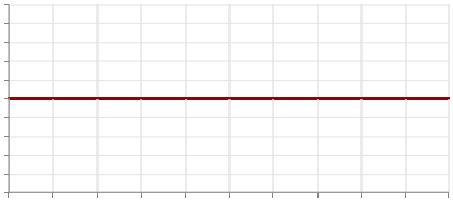
y Deflection (in)

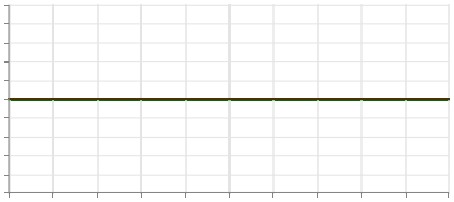

z Deflection (in)


Axial Force (kips)

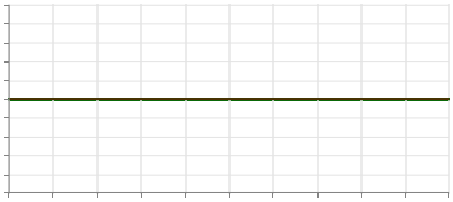


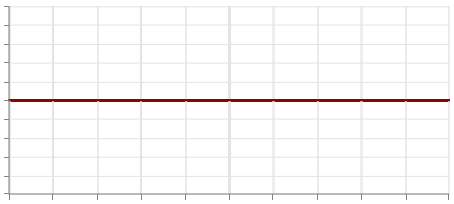
y Shear Force (kips)

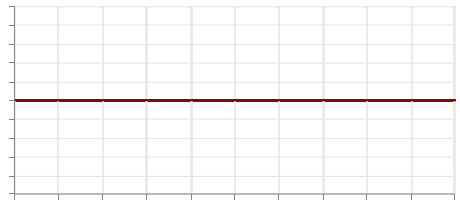

z Shear Force (kips)

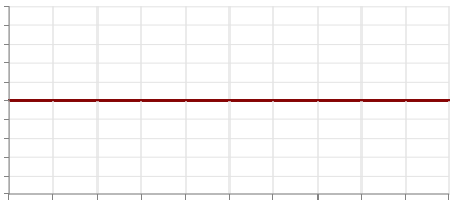

Torsion (kip-ft)

z-z Moment (kip-ft)

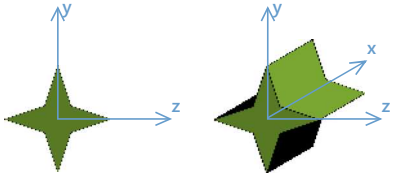

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M37 **Unity Check:** No Calc **Load Combination:** Envelope

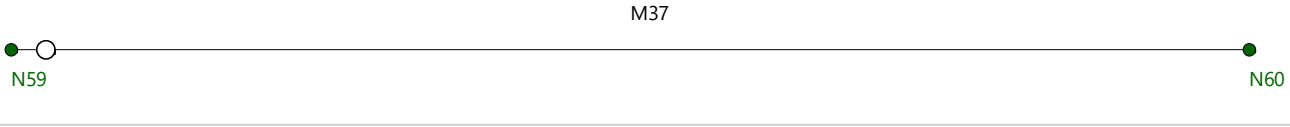


Input Data:

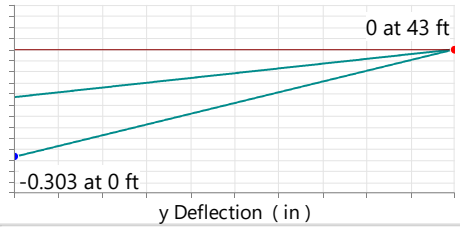
Shape:		I Node:	N59
Member Type:	None	J Node:	N60
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

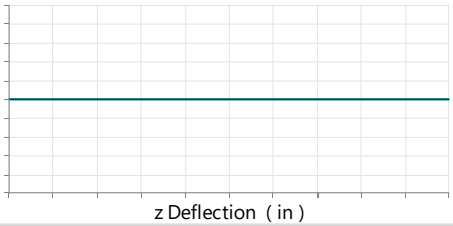
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

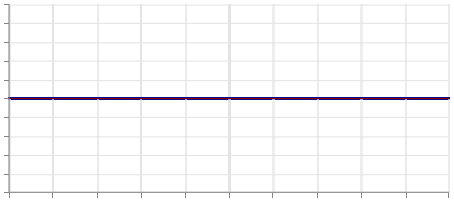


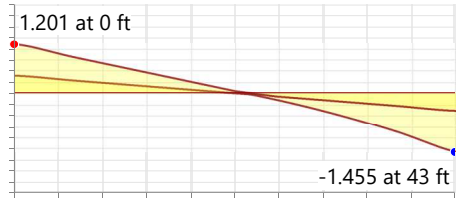
Diagrams:



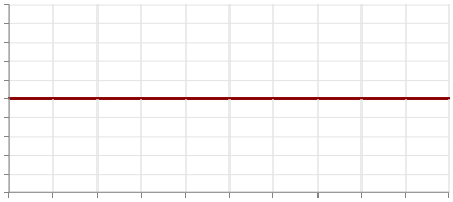
y Deflection (in)

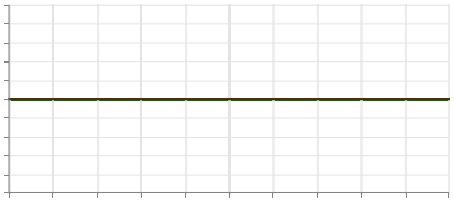

z Deflection (in)

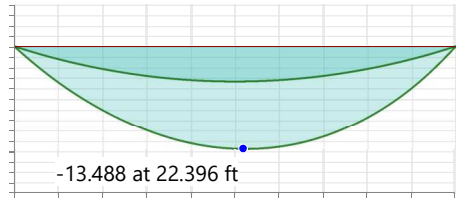

Axial Force (kips)



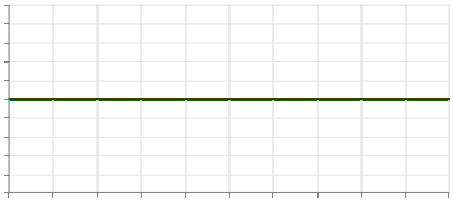
y Shear Force (kips)

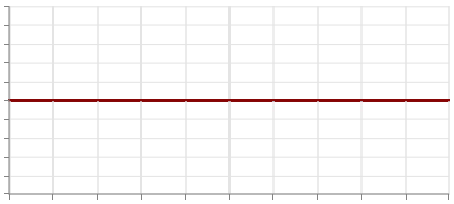

z Shear Force (kips)

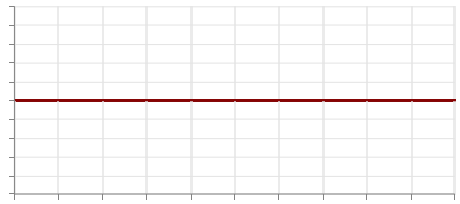

Torsion (kip-ft)

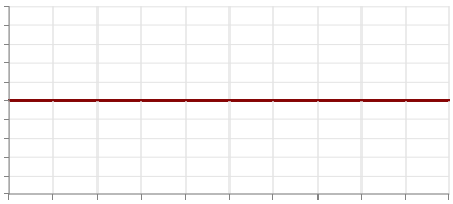


z-z Moment (kip-ft)

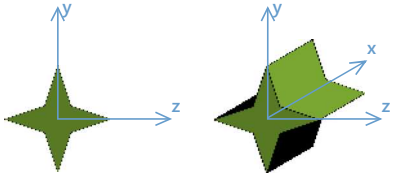

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M38 **Unity Check:** No Calc **Load Combination:** Envelope

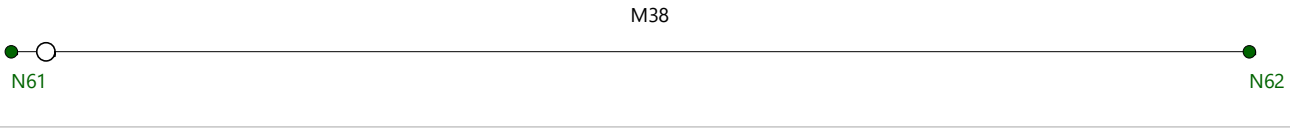


Input Data:

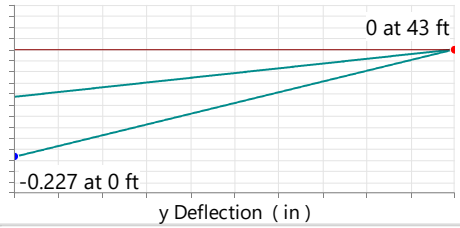
Shape:		I Node:	N61
Member Type:	None	J Node:	N62
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

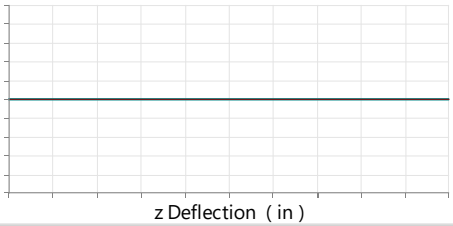
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

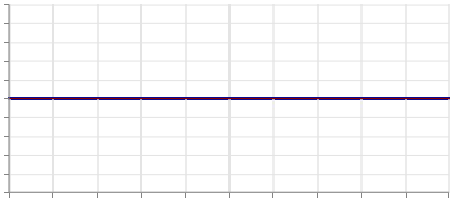


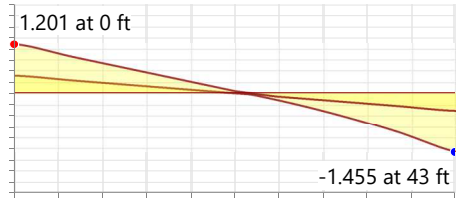
Diagrams:



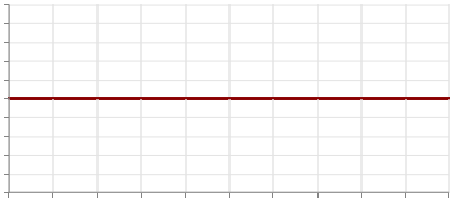
y Deflection (in)

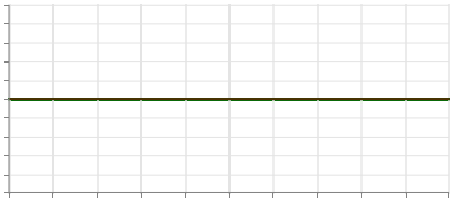

z Deflection (in)


Axial Force (kips)

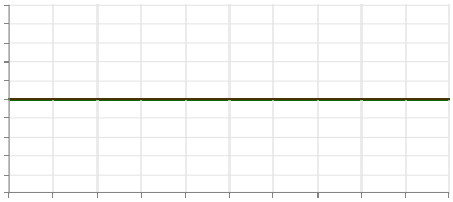


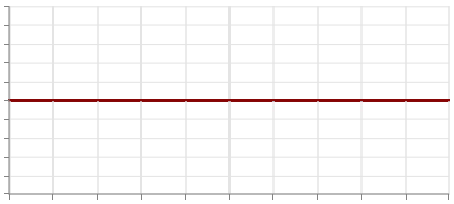
y Shear Force (kips)

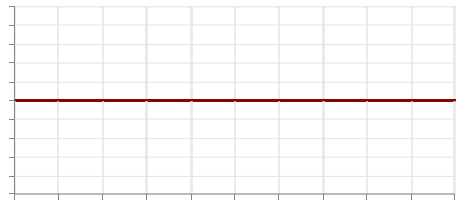

z Shear Force (kips)

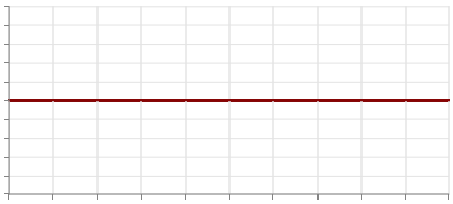

Torsion (kip-ft)

z-z Moment (kip-ft)

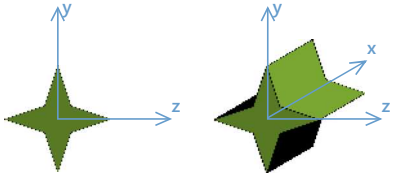

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M39 **Unity Check:** No Calc **Load Combination:** Envelope



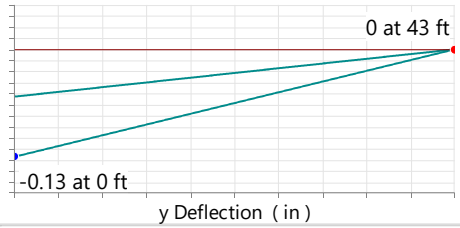
Input Data:

Shape:		I Node:	N63
Member Type:	None	J Node:	N64
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

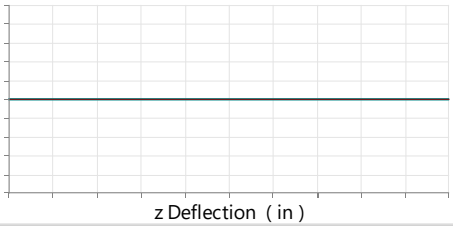
Material Properties:

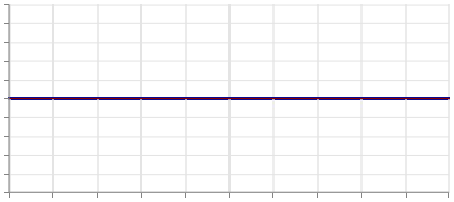
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

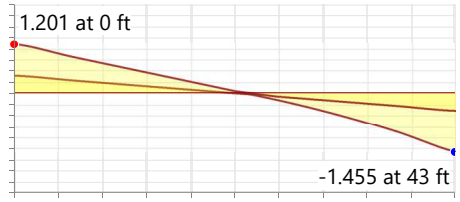
Diagrams:



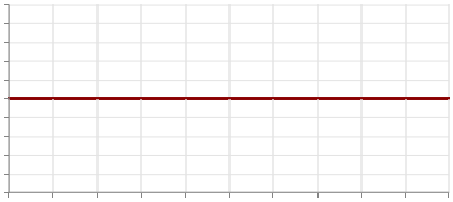
y Deflection (in)

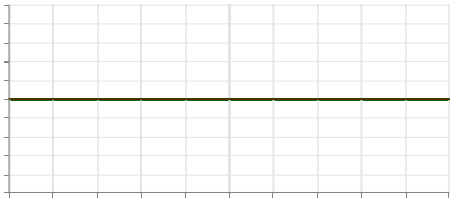

z Deflection (in)


Axial Force (kips)

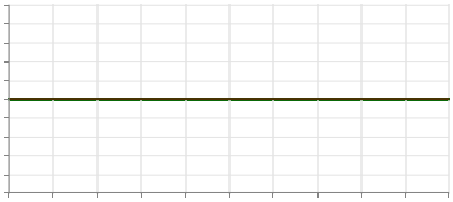


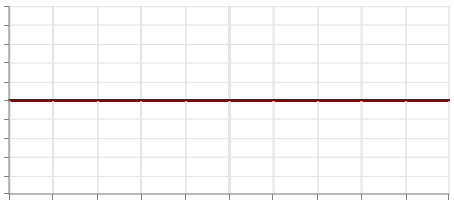
y Shear Force (kips)

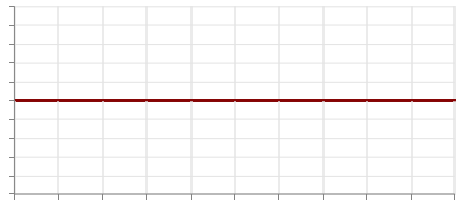

z Shear Force (kips)

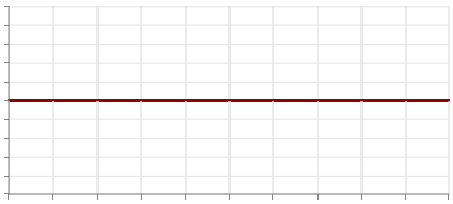

Torsion (kip-ft)

z-z Moment (kip-ft)

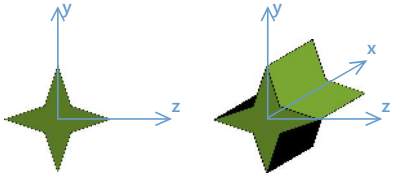

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M40 **Unity Check:** No Calc **Load Combination:** Envelope

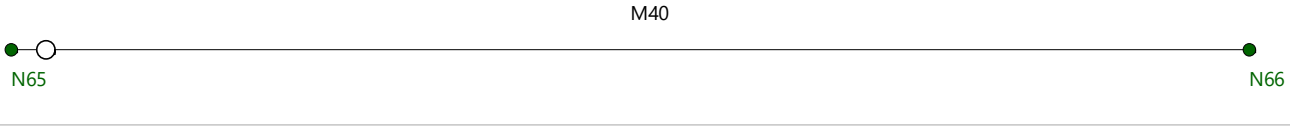


Input Data:

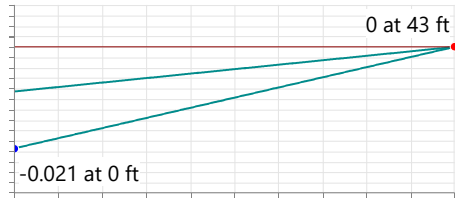
Shape:		I Node:	N65
Member Type:	None	J Node:	N66
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

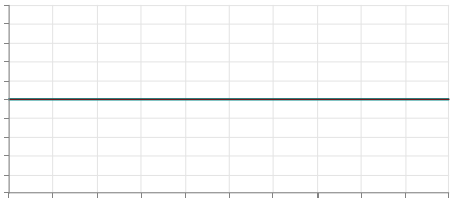
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

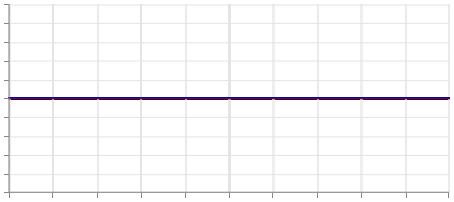


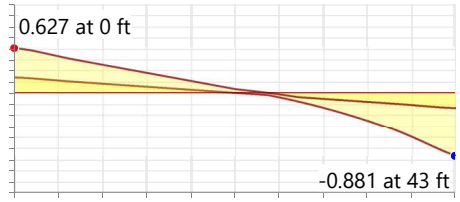
Diagrams:



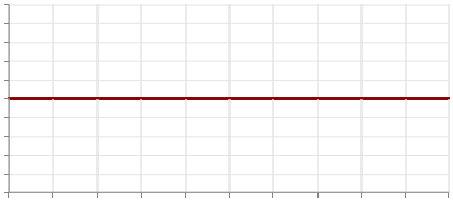
y Deflection (in)

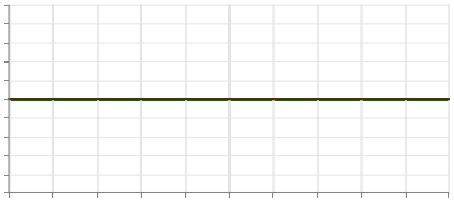

z Deflection (in)

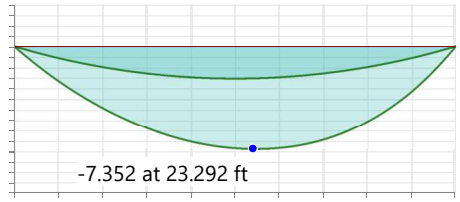

Axial Force (kips)



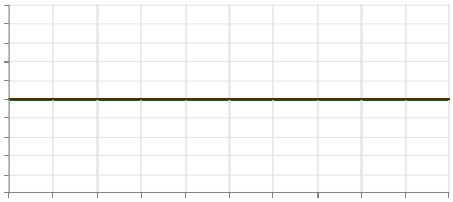
y Shear Force (kips)

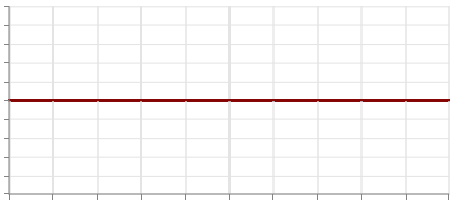

z Shear Force (kips)

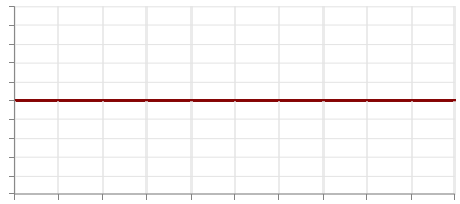

Torsion (kip-ft)

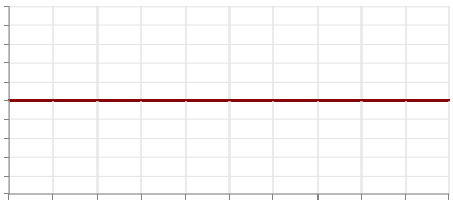


z-z Moment (kip-ft)

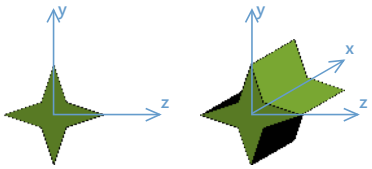

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M41 **Unity Check:** No Calc **Load Combination:** Envelope

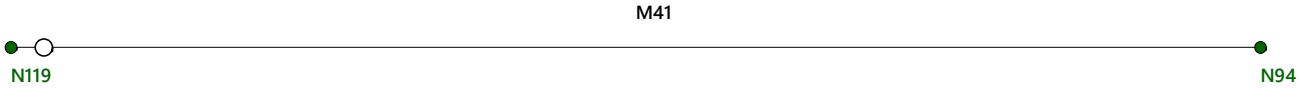


Input Data:

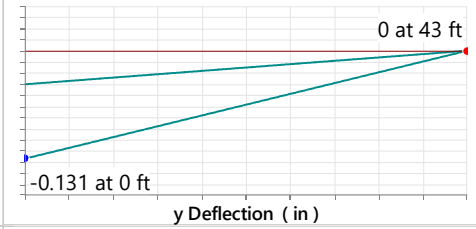
Shape:		I Node:	N119
Member Type:	None	J Node:	N94
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

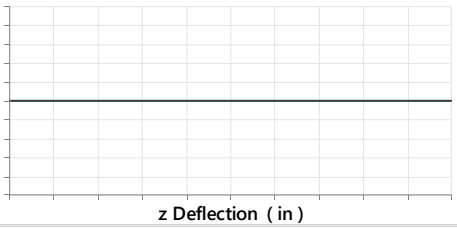
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^5°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^3):	0

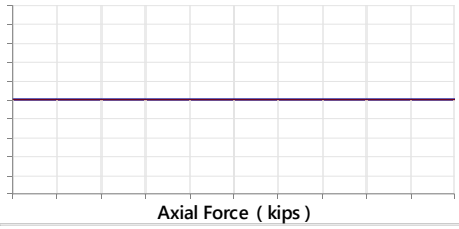


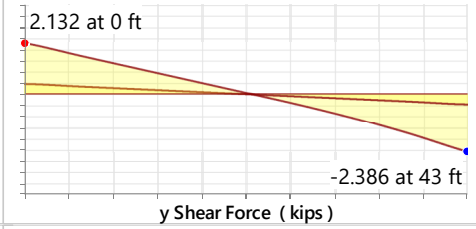
Diagrams:



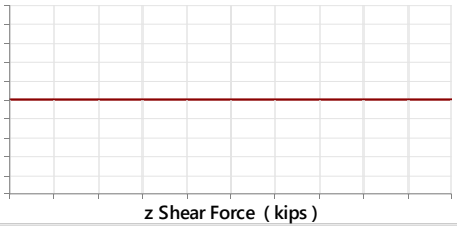
y Deflection (in)

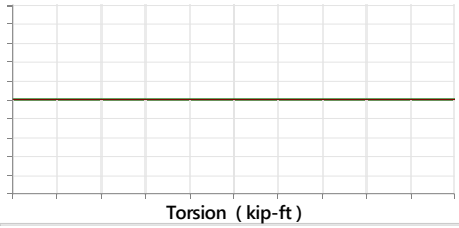

z Deflection (in)

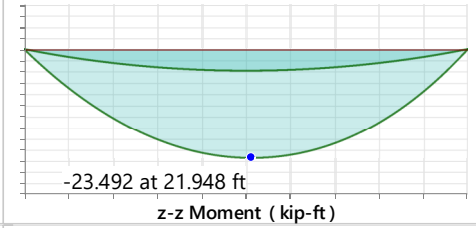

Axial Force (kips)



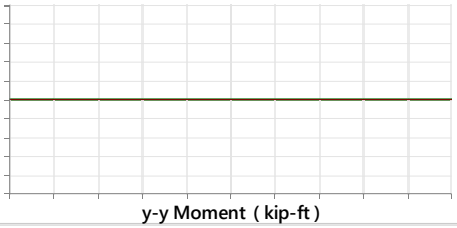
y Shear Force (kips)

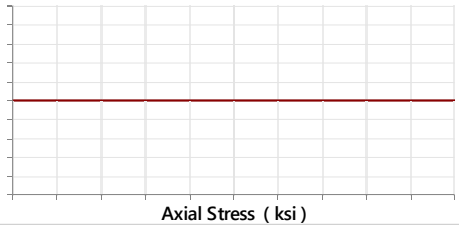

z Shear Force (kips)

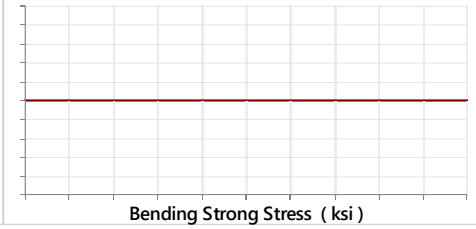

Torsion (kip-ft)

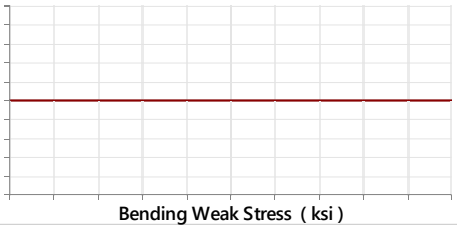


z-z Moment (kip-ft)


y-y Moment (kip-ft)

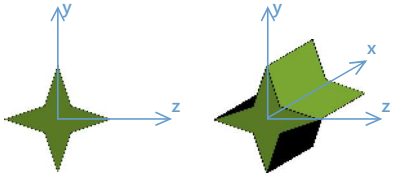

Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

W = ((23.492 K-FT) * 8)/(43 -FT)^2 = 101.64 PLF
ALLOWABLE LOAD 113.98 PLF, **JOIST OKAY**

Detail Report: M42 **Unity Check:** No Calc **Load Combination:** Envelope

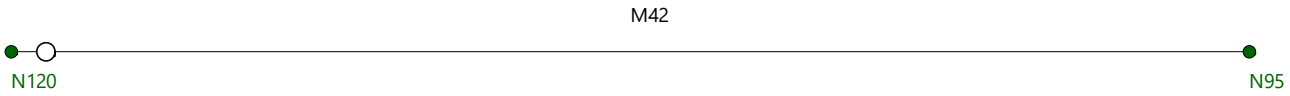


Input Data:

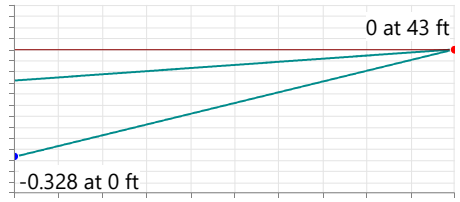
Shape:		I Node:	N120
Member Type:	None	J Node:	N95
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

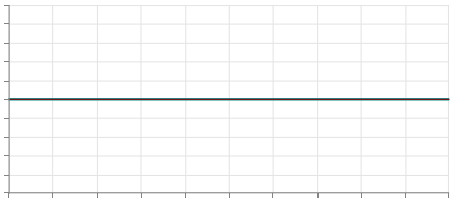
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

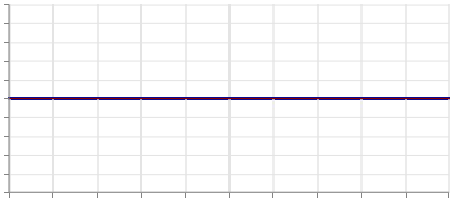


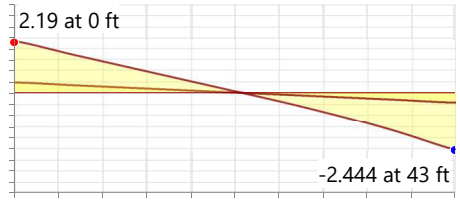
Diagrams:



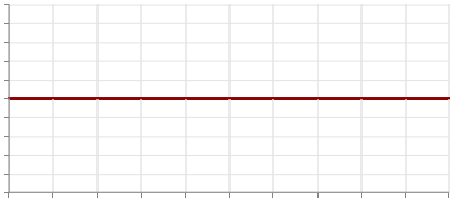
y Deflection (in)

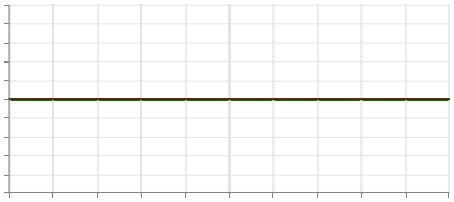

z Deflection (in)

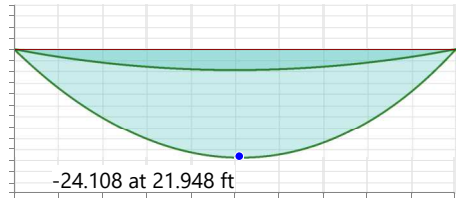

Axial Force (kips)



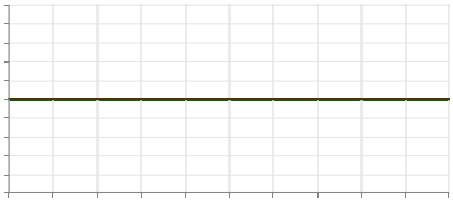
y Shear Force (kips)

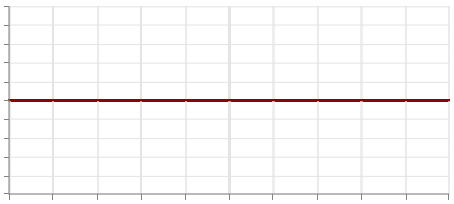

z Shear Force (kips)

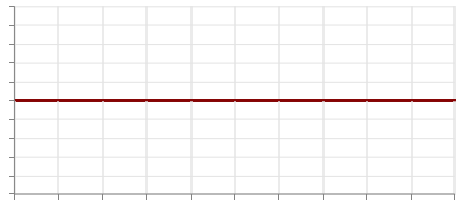

Torsion (kip-ft)

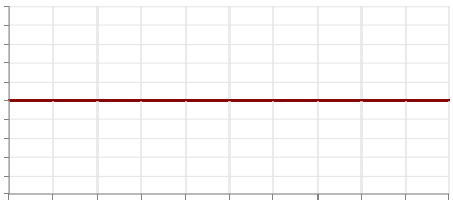


z-z Moment (kip-ft)


y-y Moment (kip-ft)

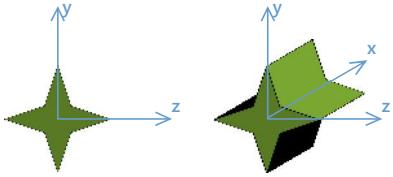

Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

W = ((24.108 K-FT) * 8)/(43 -FT)^2 = 104.31 PLF
ALLOWABLE LOAD 113.98 PLF, **JOIST OKAY**

Detail Report: M43 **Unity Check:** No Calc **Load Combination:** Envelope

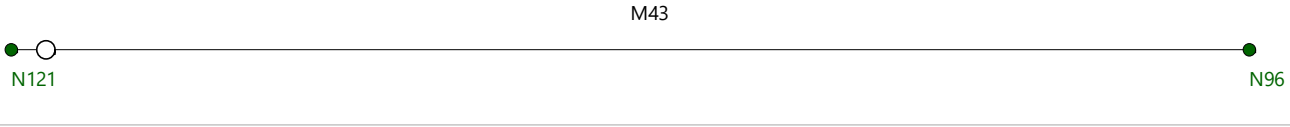


Input Data:

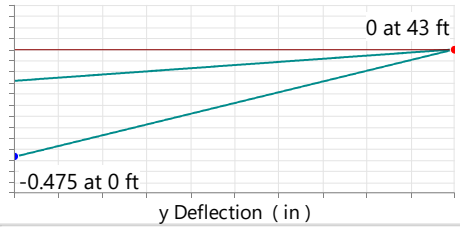
Shape:		I Node:	N121
Member Type:	None	J Node:	N96
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

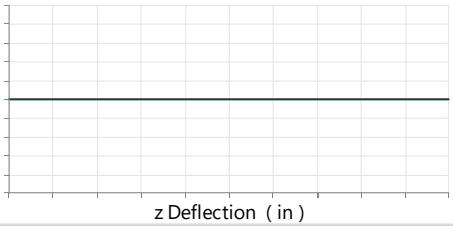
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

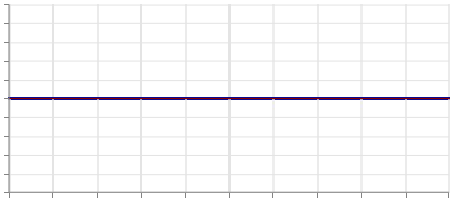


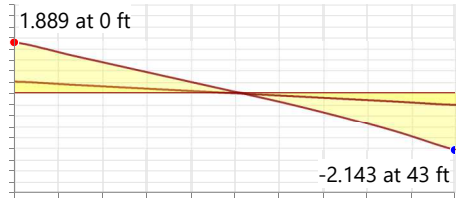
Diagrams:



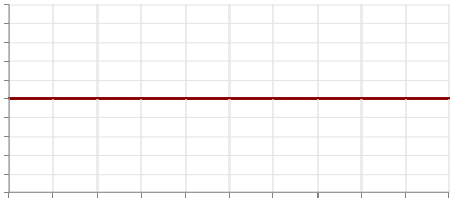
y Deflection (in)

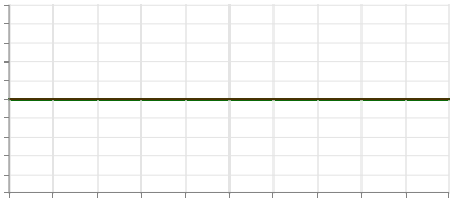

z Deflection (in)

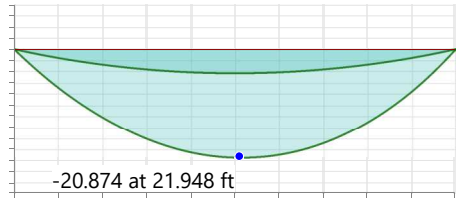

Axial Force (kips)



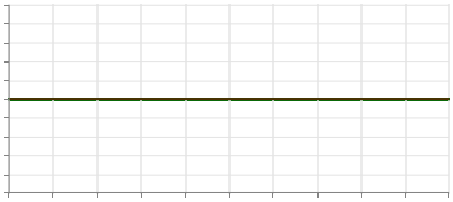
y Shear Force (kips)

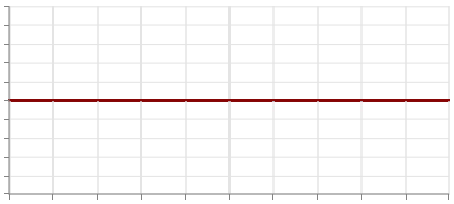

z Shear Force (kips)

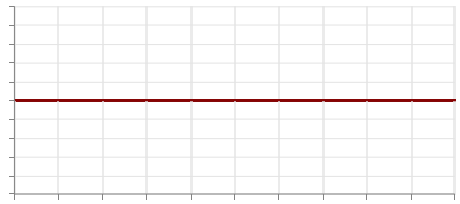

Torsion (kip-ft)

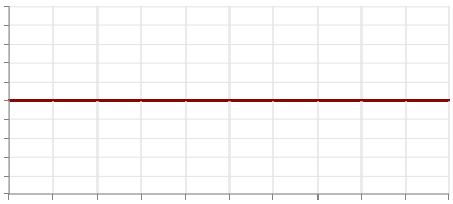


z-z Moment (kip-ft)

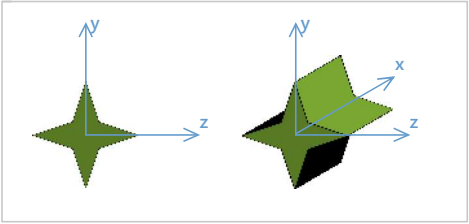

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M44 **Unity Check:** No Calc **Load Combination:** Envelope

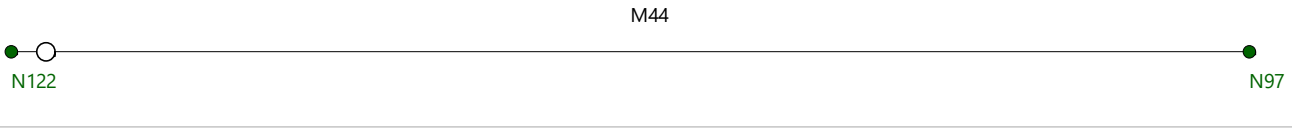


Input Data:

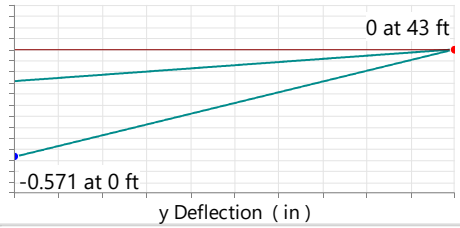
Shape:		I Node:	N122
Member Type:	None	J Node:	N97
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

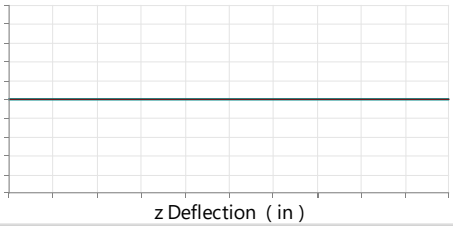
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

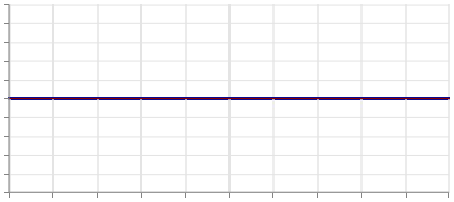


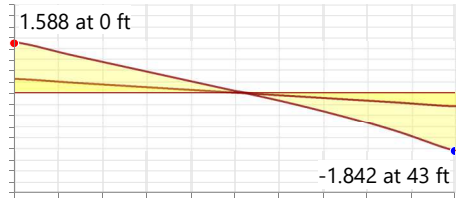
Diagrams:



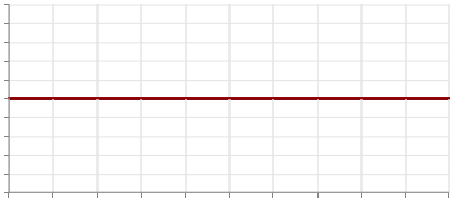
y Deflection (in)

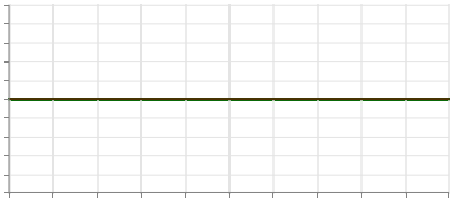

z Deflection (in)


Axial Force (kips)

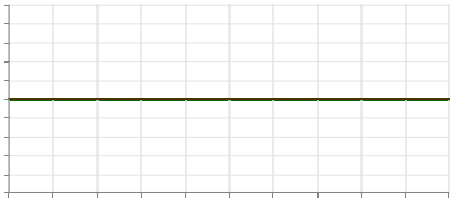


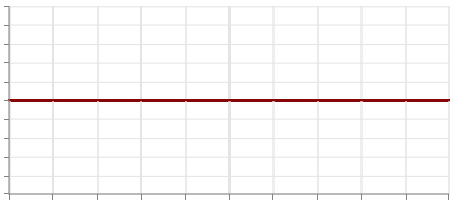
y Shear Force (kips)

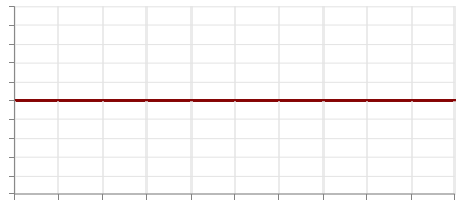

z Shear Force (kips)

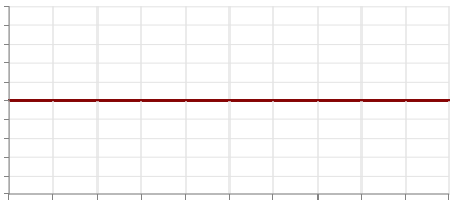

Torsion (kip-ft)

z-z Moment (kip-ft)

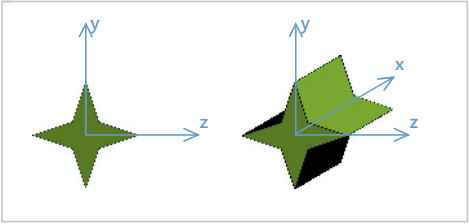

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M66 **Unity Check:** No Calc **Load Combination:** Envelope

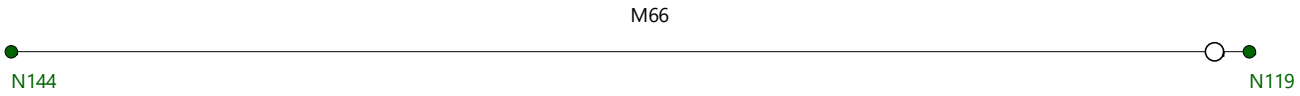


Input Data:

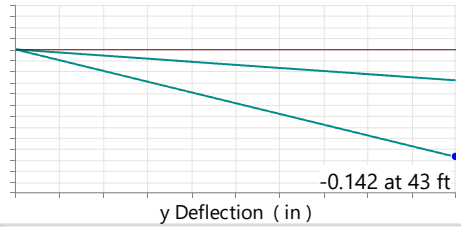
Shape:		I Node:	N144
Member Type:	None	J Node:	N119
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

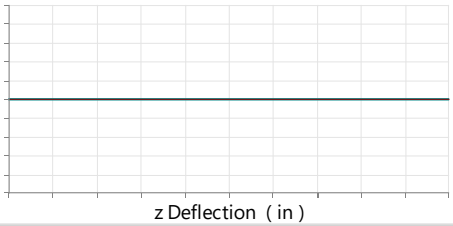
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

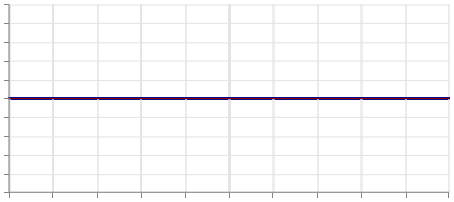


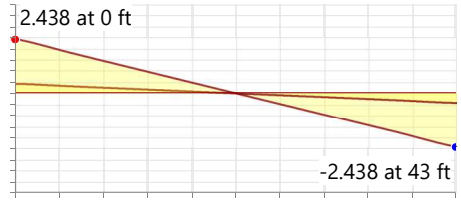
Diagrams:



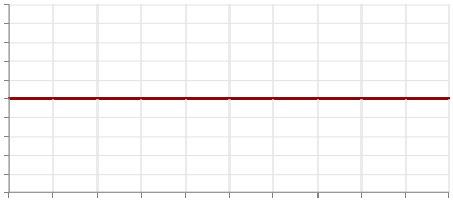
y Deflection (in)

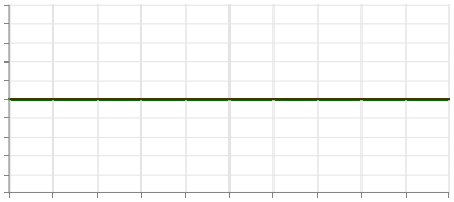

z Deflection (in)

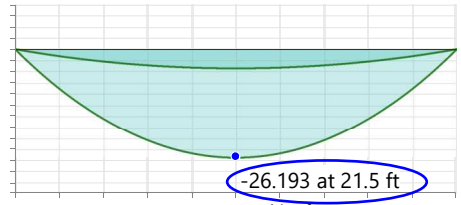

Axial Force (kips)



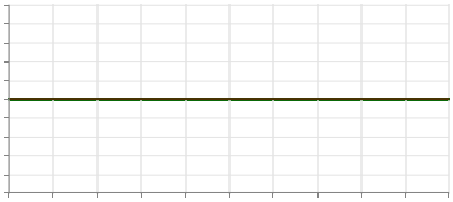
y Shear Force (kips)

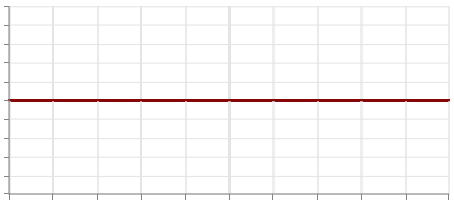

z Shear Force (kips)

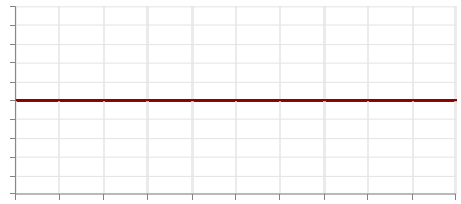

Torsion (kip-ft)

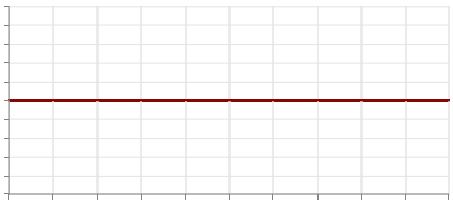


z-z Moment (kip-ft)


y-y Moment (kip-ft)

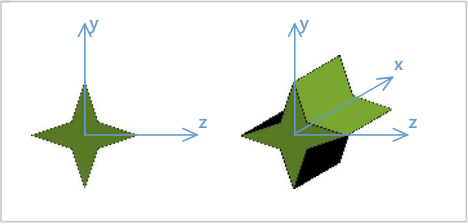

Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

W = ((26.193 K-FT) * 8)/(43 -FT)^2 = 113.32 PLF
ALLOWABLE LOAD 113.98 PLF, **JOIST OKAY**

Detail Report: M67 **Unity Check:** No Calc **Load Combination:** Envelope

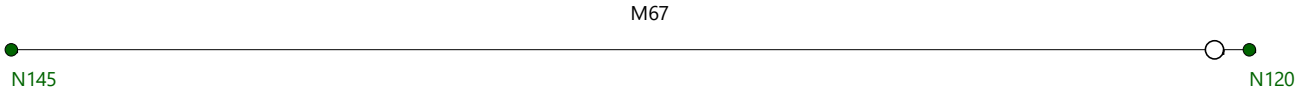


Input Data:

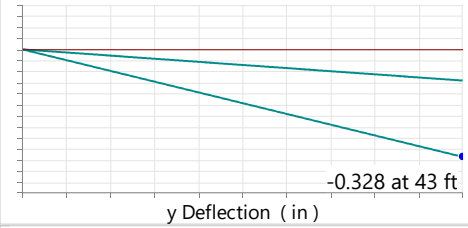
Shape:		I Node:	N145
Member Type:	None	J Node:	N120
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

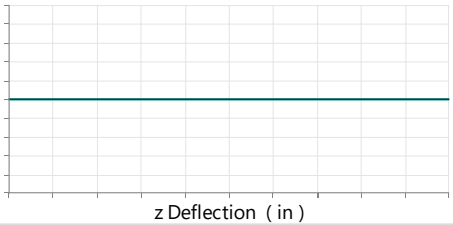
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

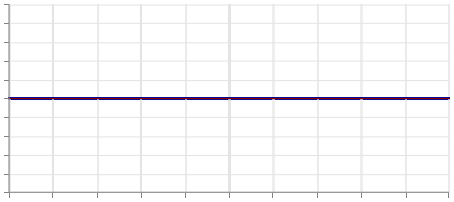


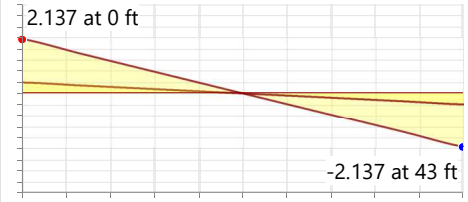
Diagrams:



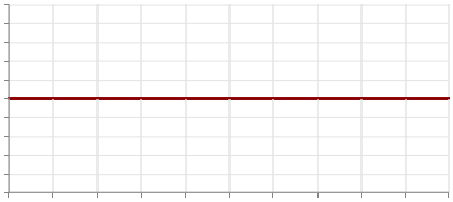
y Deflection (in)

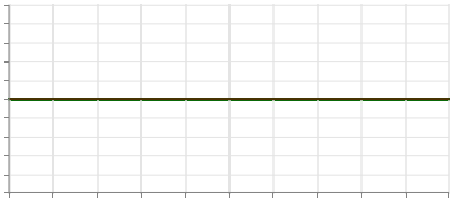

z Deflection (in)

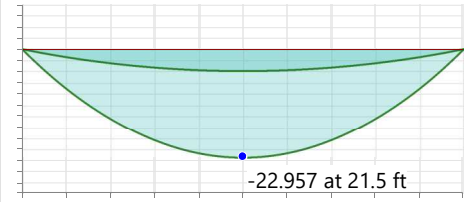

Axial Force (kips)



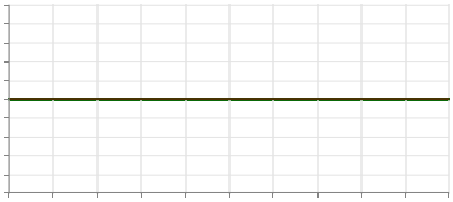
y Shear Force (kips)

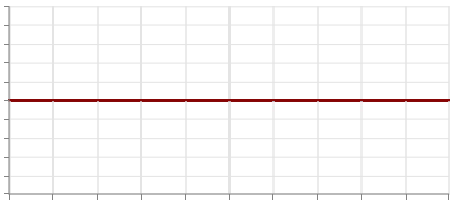

z Shear Force (kips)

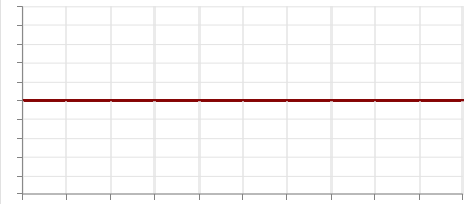

Torsion (kip-ft)

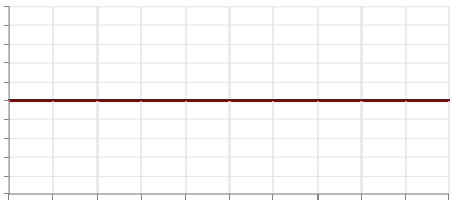


z-z Moment (kip-ft)

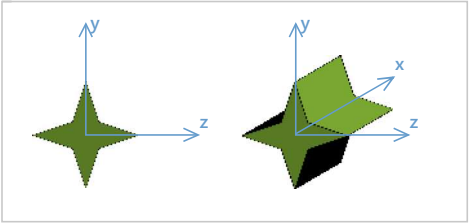

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M68 **Unity Check:** No Calc **Load Combination:** Envelope



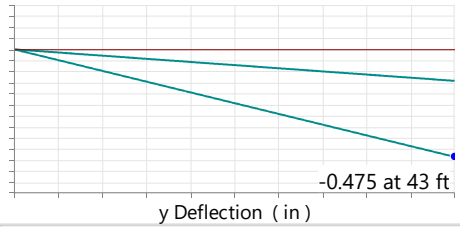
Input Data:

Shape:		I Node:	N146
Member Type:	None	J Node:	N121
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

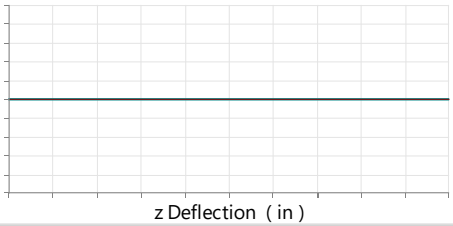
Material Properties:

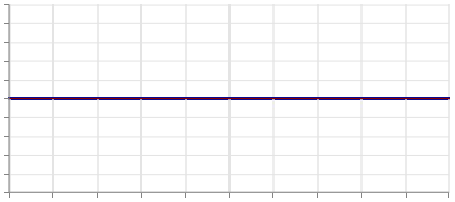
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

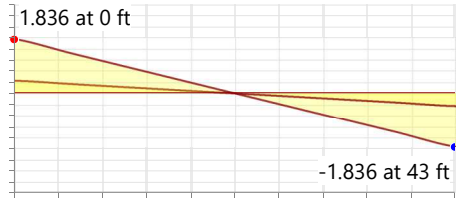
Diagrams:



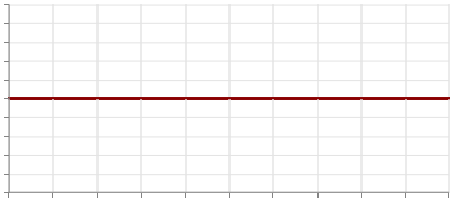
y Deflection (in)

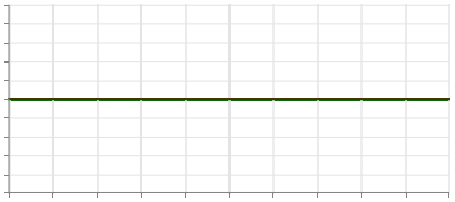

z Deflection (in)

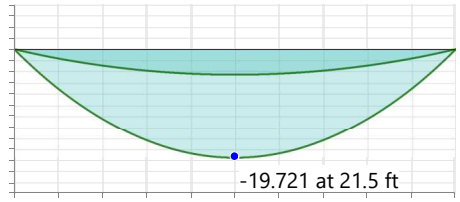

Axial Force (kips)



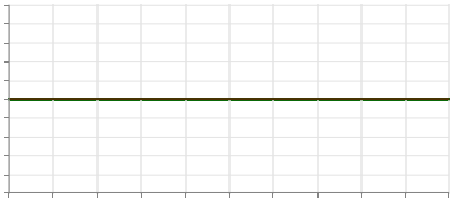
y Shear Force (kips)

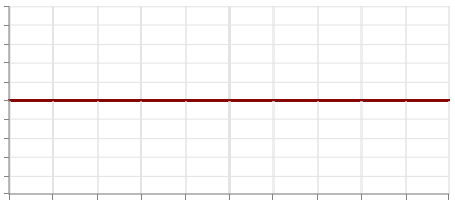

z Shear Force (kips)

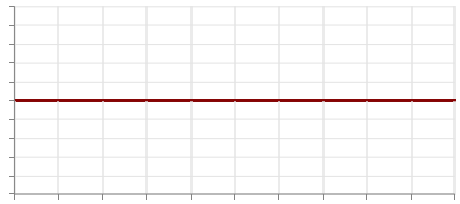

Torsion (kip-ft)

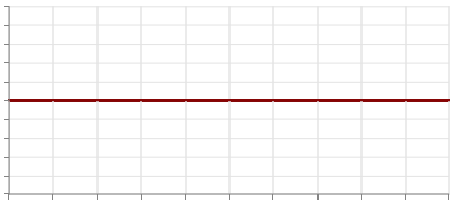


z-z Moment (kip-ft)

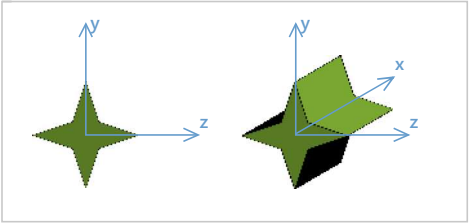

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M69 **Unity Check:** No Calc **Load Combination:** Envelope

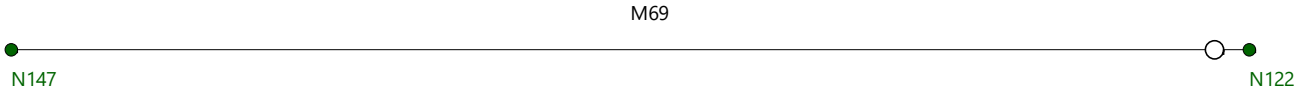


Input Data:

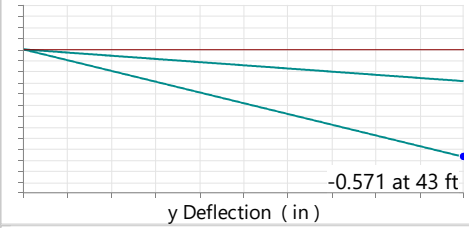
Shape:		I Node:	N147
Member Type:	None	J Node:	N122
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	BenPIN
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

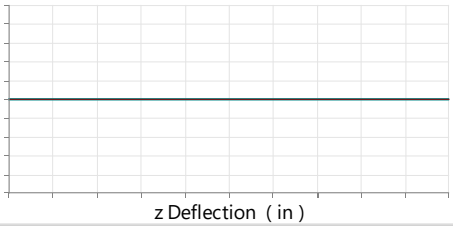
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

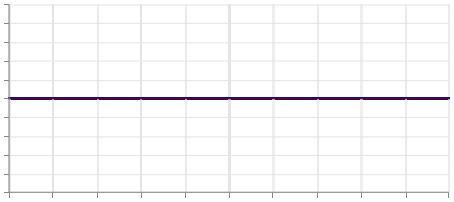


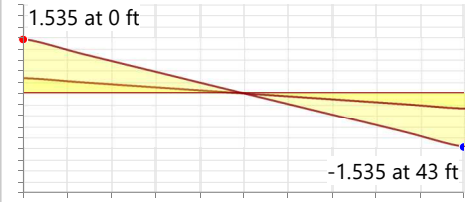
Diagrams:



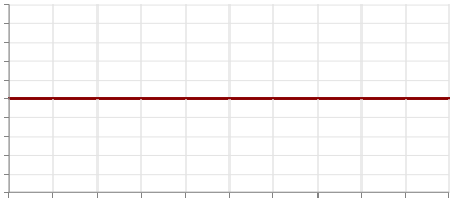
y Deflection (in)

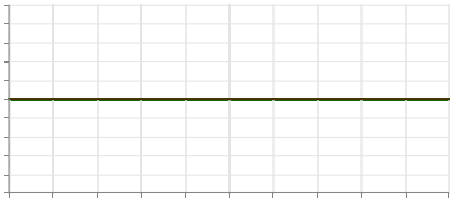

z Deflection (in)

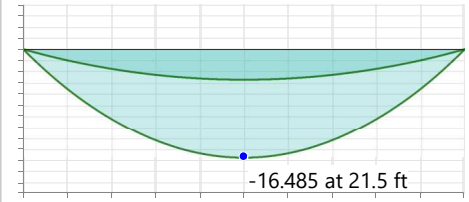

Axial Force (kips)



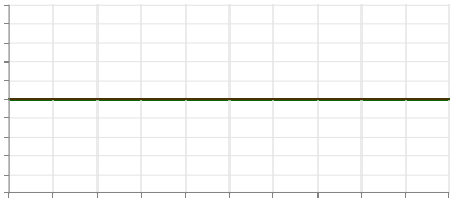
y Shear Force (kips)

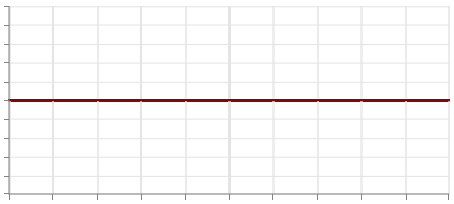

z Shear Force (kips)

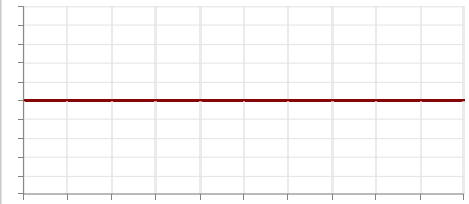

Torsion (kip-ft)

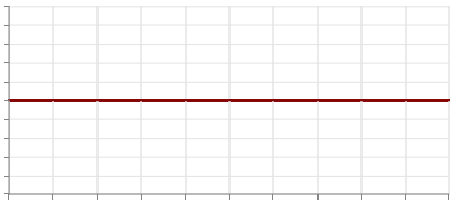


z-z Moment (kip-ft)

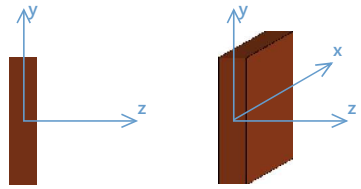

y-y Moment (kip-ft)


Axial Stress (ksi)


Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M1 **Unity Check:** 0.872 (LC 3) **Load Combination:** Envelope



Input Data:

Shape:	7X32.5FS (nominal)	I Node:	N3
Member Type:	Beam	J Node:	N26
Length (ft):	30.37	I Release:	Fixed
Material Type:	Wood	J Release:	Fixed
Design Rule:	Typical	I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

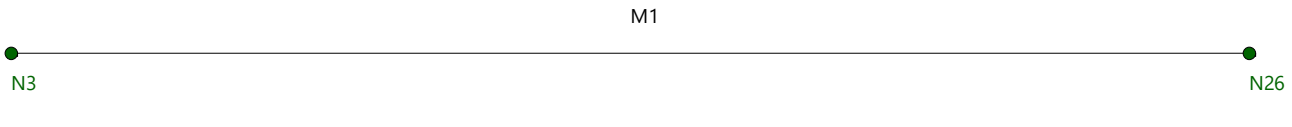
Material:	24F-1.8E SP Balanced	Grade:	na	Nu:	0.3
Type:	Glulam	Cm:	No	Therm. Coeff. ($1e^{5}°F^{-1}$):	0.3
Database:	NDS Table 5A	Ci:	No	Density (k/ft^{3}):	0.035
Species:	24F-1.8E_SP_BAL	Emod:	1		

Shape Properties:

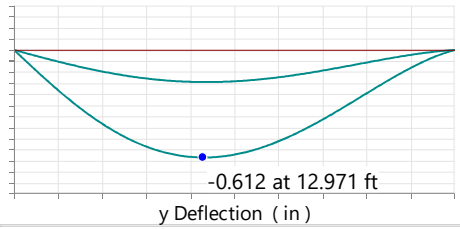
Fbx+ (ksi):	2.4	Ft (ksi):	1.1	Ey (ksi):	1600
Fbx- (ksi):	2.4	Fc (ksi):	1.6	Ey_min (ksi):	845.566
Fby (ksi):	1.45	E mod:	1	Eaxial (ksi):	1680
Fvx (ksi):	0.3	Eaxial_min (ksi):	887.845	b (actual) (in):	7
COV_E (Table F1):	0.1	Ex (ksi):	1800	d (actual) (in):	32.5
Fvy (ksi):	0.26	Ex_min (ksi):	951.262		

Design Properties:

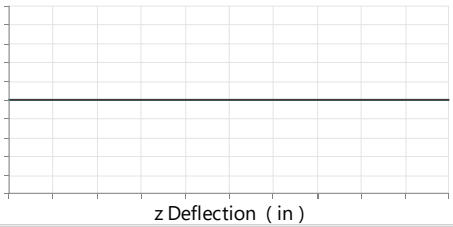
le2 (ft):	1	C_D:	1	Max Defl Ratio:	L/595
le1 (ft):	N/A	R_B:	15.547	Max Defl Location:	12.971
le-bend top (ft):	Lbyy	C_L:	0.945	Span:	1
le-bend bot (ft):	N/A	C_V:	0.92		
K_{y-y}:	1	C_r:	1		
K_{z-z}:	1	C_{fu}:	1		
y sway:	No	C_P:	0.968		
z sway:	No				

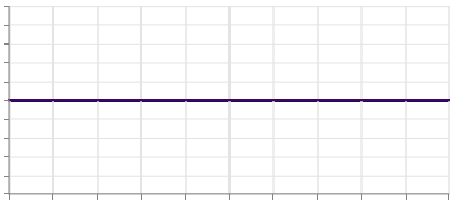


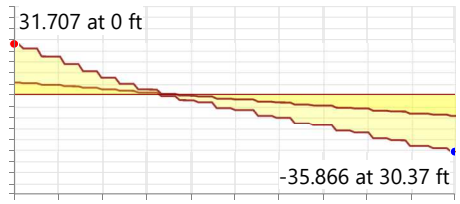
Diagrams:



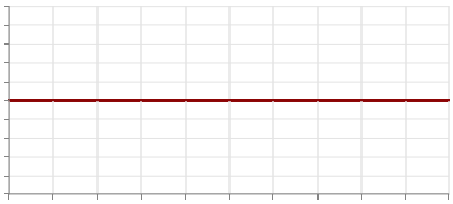
y Deflection (in)

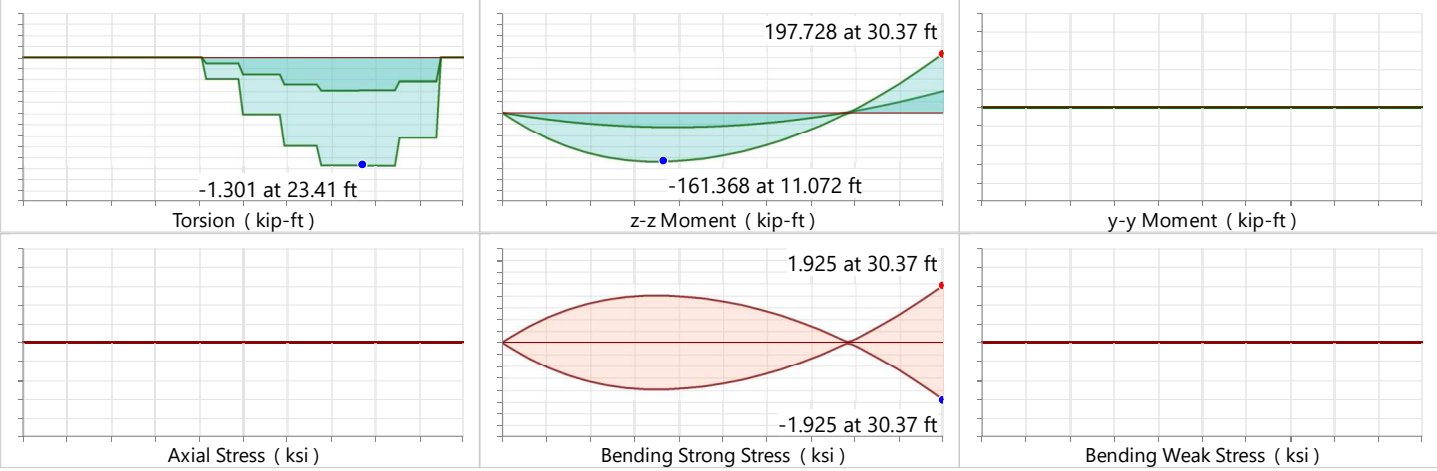

z Deflection (in)


Axial Force (kips)



y Shear Force (kips)

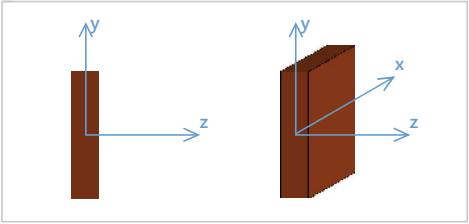

z Shear Force (kips)



AWC NDS-18: ASD Code Check

Limit State	Gov. LC	Required	Available	Unity Check	Result
Applied Loading - Bending/Axial	3	-	-	-	-
Applied Loading - Shear + Torsion	3	-	-	-	-
Axial Compression Analysis		0.000 ksi	1.549 ksi	-	-
Axial Tension Analysis		0.000 ksi	1.1 ksi	-	-
Flexural Analysis, Fb1'		1.925 ksi	2.207 ksi	-	-
Flexural Analysis, Fb2'		0.000 ksi	1.45 ksi	-	-
Bending & Axial Compression Analysis		-	-	0.872	Pass
Bending & Axial Tension Analysis		-	-	0.872	Pass
Shear Analysis		0.238 ksi	0.3 ksi	0.792	Pass

Detail Report: M2 **Unity Check:** 0.969 (LC 3) **Load Combination:** Envelope



Input Data:

Shape:	7X32.5FS (nominal)	I Node:	N26
Member Type:	Beam	J Node:	N67
Length (ft):	37.38	I Release:	Fixed
Material Type:	Wood	J Release:	Fixed
Design Rule:	Typical	I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

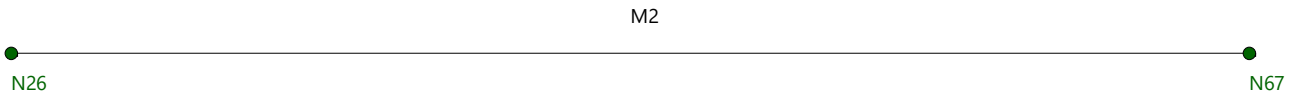
Material:	24F-1.8E DF Balanced	Grade:	na	Nu:	0.3
Type:	Glulam	Cm:	No	Therm. Coeff. ($1e^{5}°F^{-1}$):	0.3
Database:	NDS Table 5A	Ci:	No	Density (k/ft^{3}):	0.035
Species:	24F-1.8E_DF_BAL	Emod:	1		

Shape Properties:

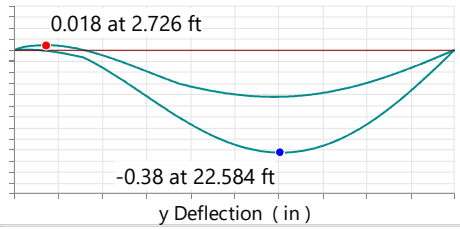
Fbx+ (ksi):	2.4	Ft (ksi):	1.1	Ey (ksi):	1600
Fbx- (ksi):	2.4	Fc (ksi):	1.6	Ey_min (ksi):	845.566
Fby (ksi):	1.45	E mod:	1	Eaxial (ksi):	1680
Fvx (ksi):	0.265	Eaxial_min (ksi):	887.845	b (actual) (in):	7
COV_E (Table F1):	0.1	Ex (ksi):	1800	d (actual) (in):	32.5
Fvy (ksi):	0.23	Ex_min (ksi):	951.262		

Design Properties:

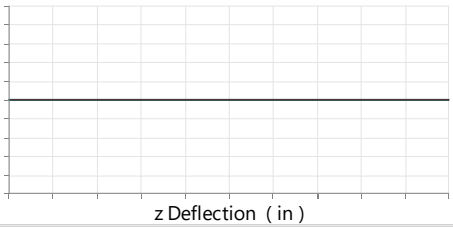
le2 (ft):	1	C_D:	1	Max Defl Ratio:	L/1179
le1 (ft):	N/A	R_B:	17.249	Max Defl Location:	22.584
le-bend top (ft):	Lbyy	C_L:	0.917	Span:	1
le-bend bot (ft):	N/A	C_V:	0.828		
K_{y-y}:	1	C_r:	1		
K_{z-z}:	1	C_{fu}:	1		
y sway:	No	C_P:	0.945		
z sway:	No				

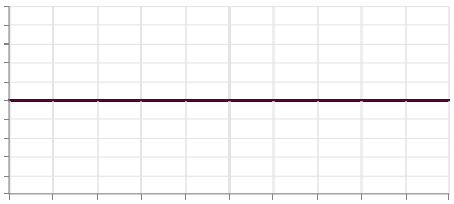


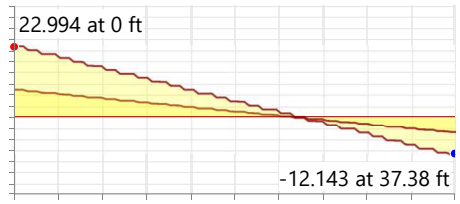
Diagrams:



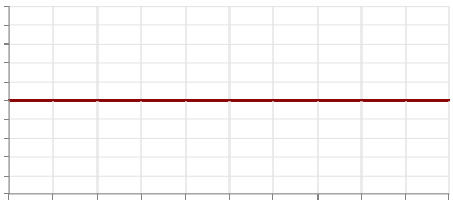
y Deflection (in)

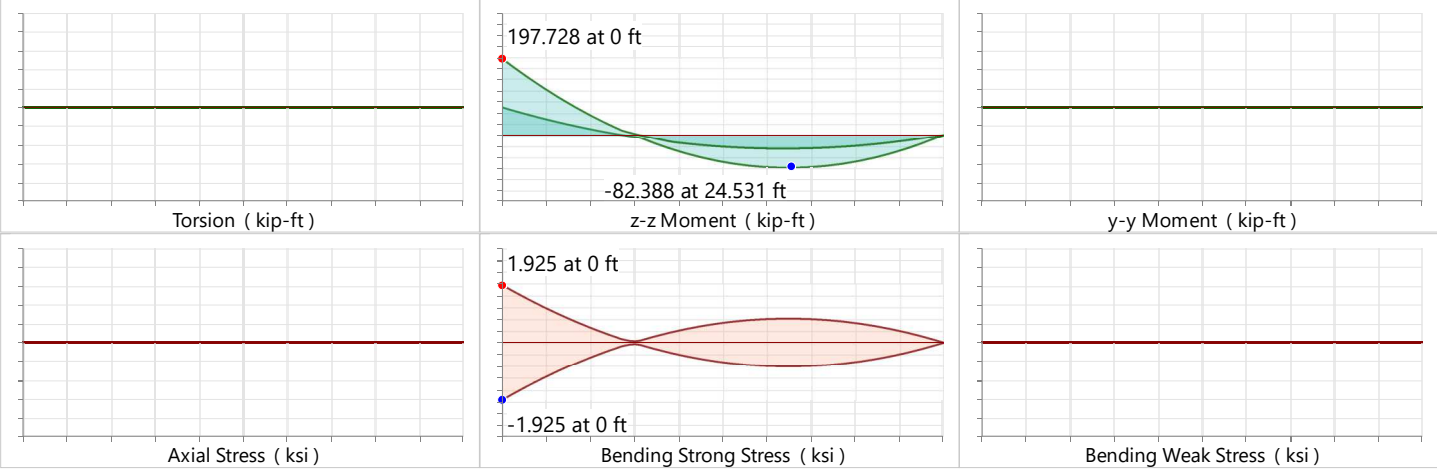

z Deflection (in)


Axial Force (kips)



y Shear Force (kips)

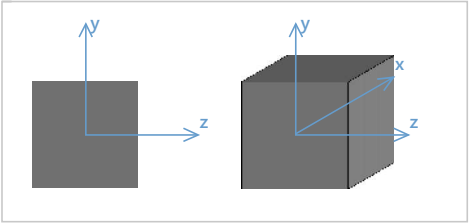

z Shear Force (kips)



AWC NDS-18: ASD Code Check

Limit State	Gov. LC	Required	Available	Unity Check	Result
Applied Loading - Bending/Axial	3	-	-	-	-
Applied Loading - Shear + Torsion	3	-	-	-	-
Axial Compression Analysis		0.000 ksi	1.512 ksi	-	-
Axial Tension Analysis		0.000 ksi	1.1 ksi	-	-
Flexural Analysis, Fb1'		1.925 ksi	1.988 ksi	-	-
Flexural Analysis, Fb2'		0.000 ksi	1.45 ksi	-	-
Bending & Axial Compression Analysis		-	-	0.969	Pass
Bending & Axial Tension Analysis		-	-	0.969	Pass
Shear Analysis		0.152 ksi	0.265 ksi	0.572	Pass

Detail Report: M49 **Unity Check:** No Calc **Load Combination:** Envelope

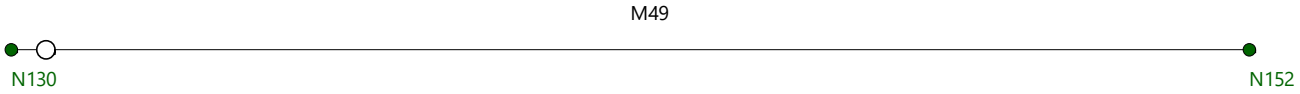


Input Data:

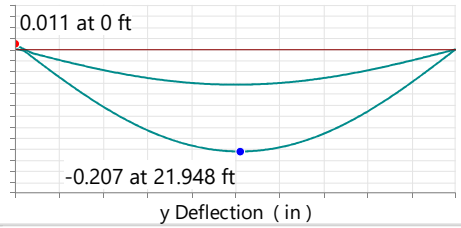
Shape:	RE4X4	I Node:	N130
Member Type:	Beam	J Node:	N152
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

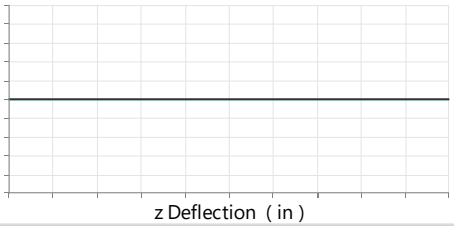
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

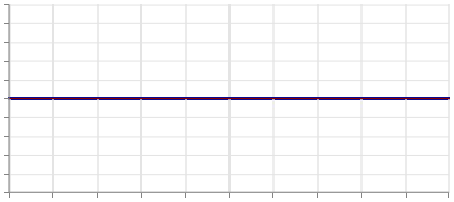


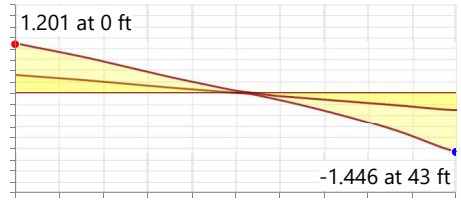
Diagrams:



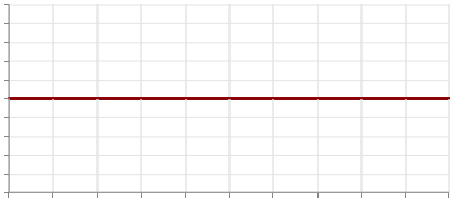
y Deflection (in)

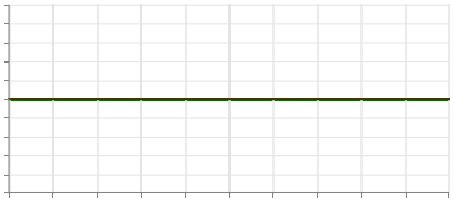

z Deflection (in)


Axial Force (kips)

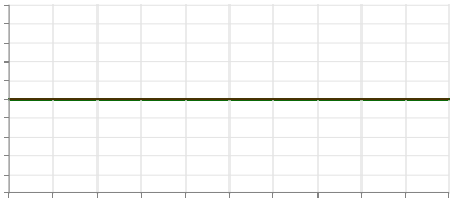


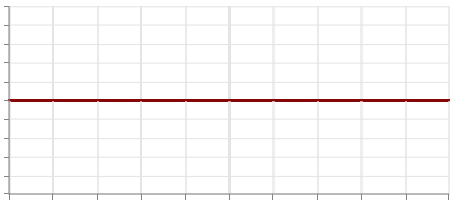
y Shear Force (kips)

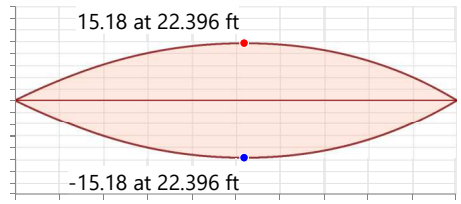

z Shear Force (kips)


Torsion (kip-ft)

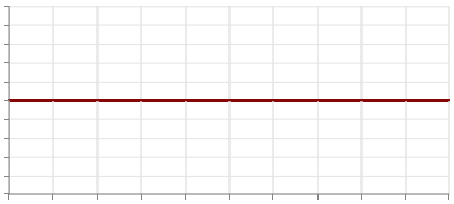
z-z Moment (kip-ft)


y-y Moment (kip-ft)

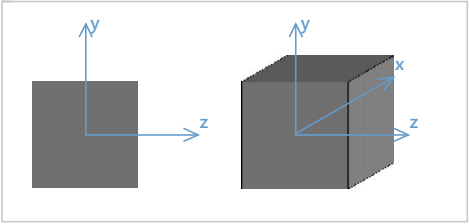

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M50 **Unity Check:** No Calc **Load Combination:** Envelope

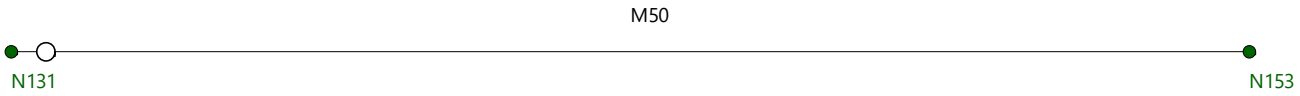


Input Data:

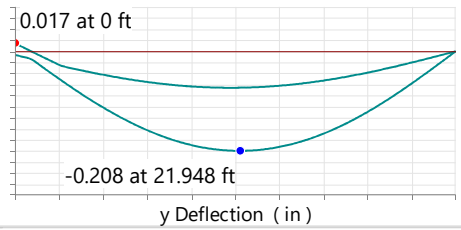
Shape:	RE4X4	I Node:	N131
Member Type:	Beam	J Node:	N153
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

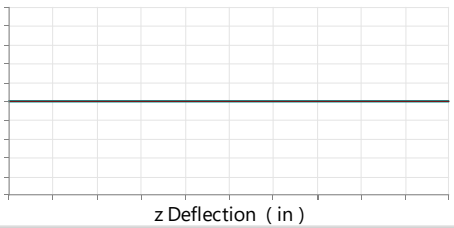
Material Properties:

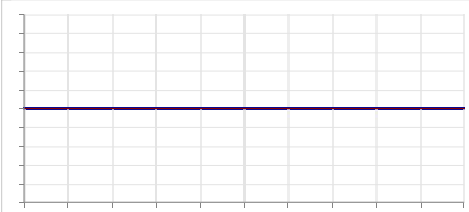
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

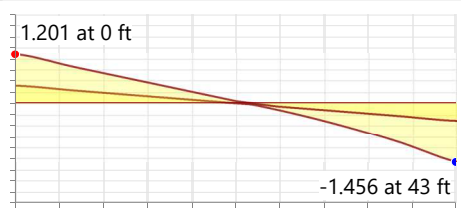


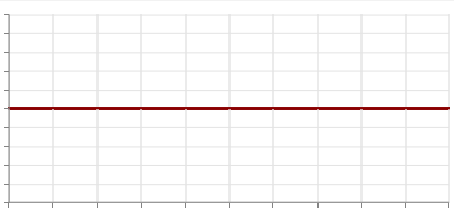
Diagrams:

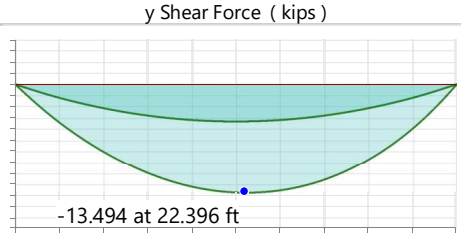


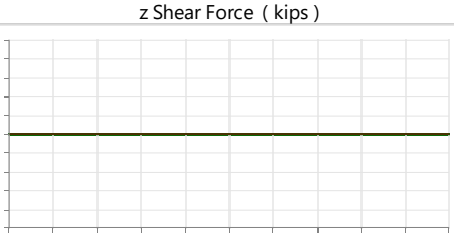


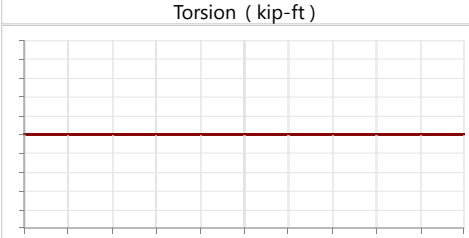


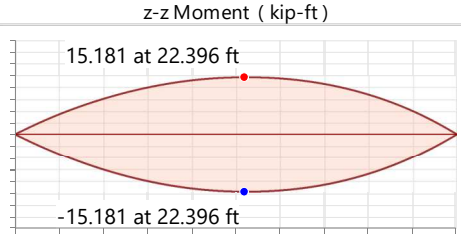


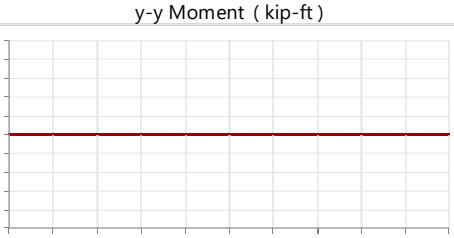




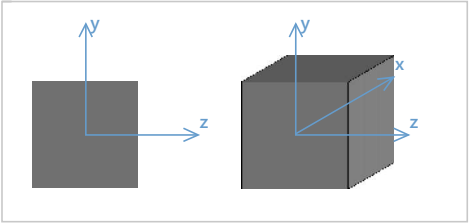








Detail Report: M51 **Unity Check:** No Calc **Load Combination:** Envelope

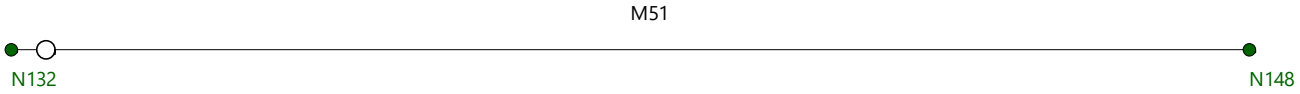


Input Data:

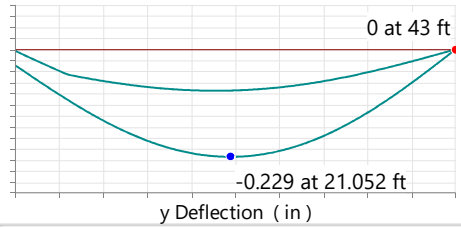
Shape:	RE4X4	I Node:	N132
Member Type:	Beam	J Node:	N148
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

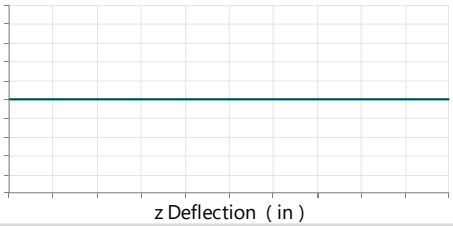
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

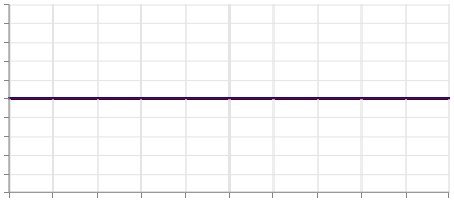


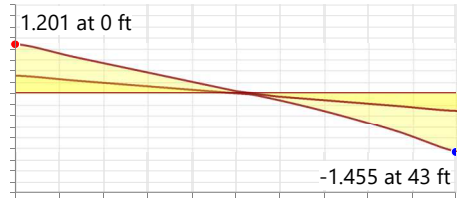
Diagrams:



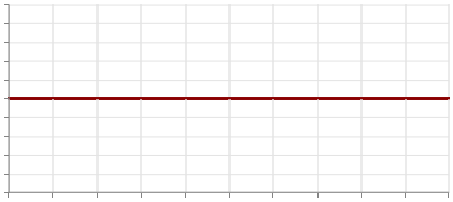
y Deflection (in)

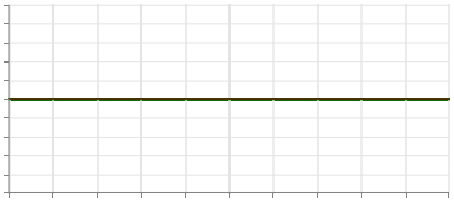

z Deflection (in)


Axial Force (kips)

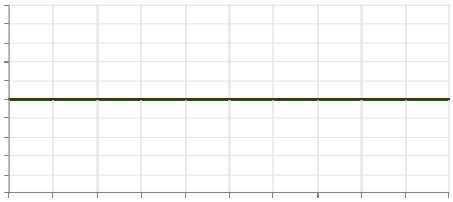


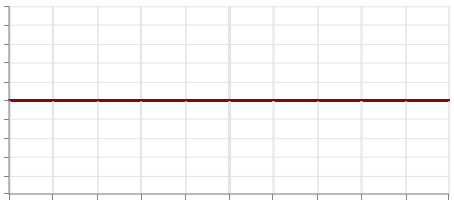
y Shear Force (kips)

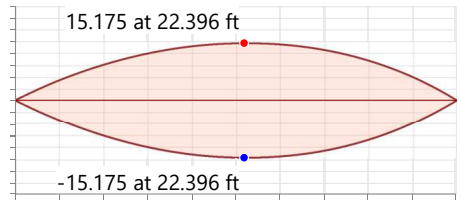

z Shear Force (kips)


Torsion (kip-ft)

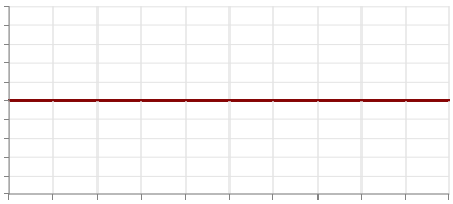
z-z Moment (kip-ft)


y-y Moment (kip-ft)

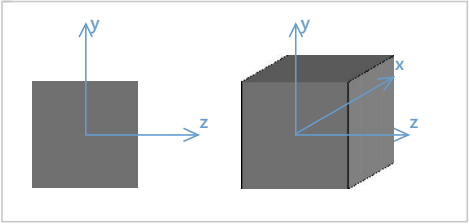

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M52 **Unity Check:** No Calc **Load Combination:** Envelope

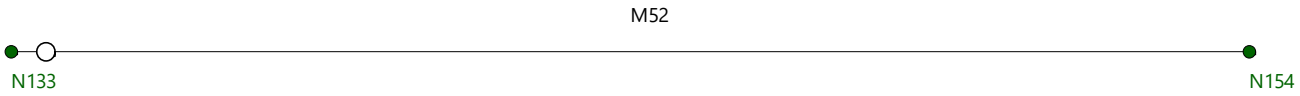


Input Data:

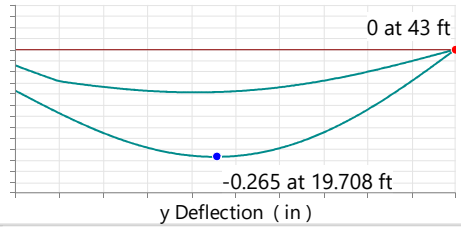
Shape:	RE4X4	I Node:	N133
Member Type:	Beam	J Node:	N154
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

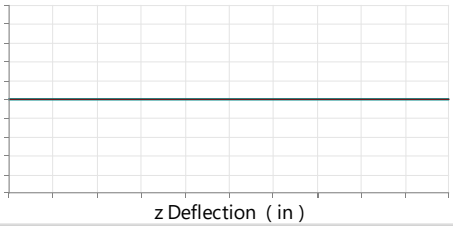
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

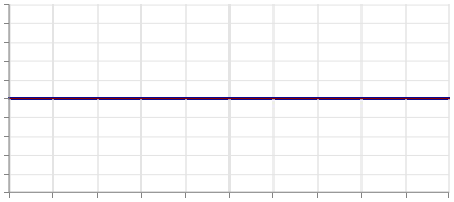


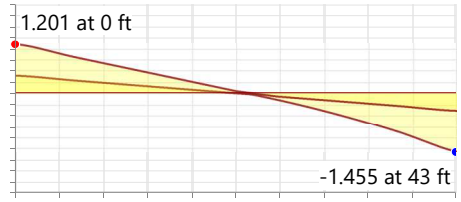
Diagrams:



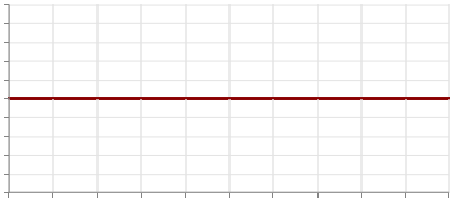
y Deflection (in)

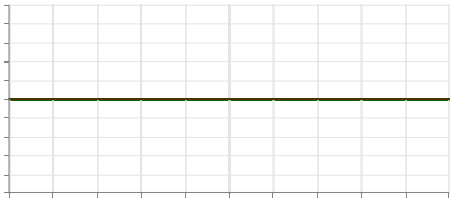

z Deflection (in)


Axial Force (kips)

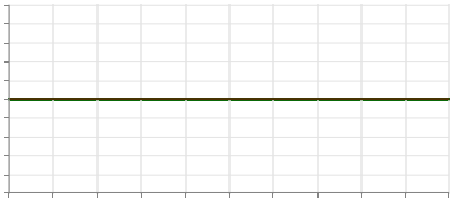


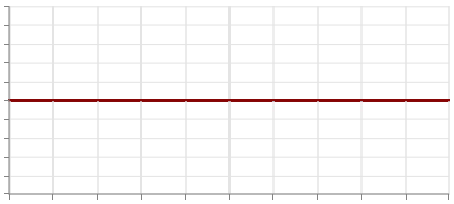
y Shear Force (kips)

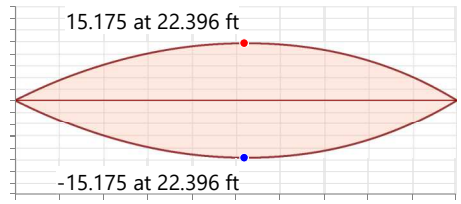

z Shear Force (kips)


Torsion (kip-ft)

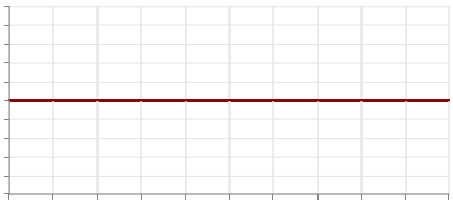
z-z Moment (kip-ft)


y-y Moment (kip-ft)

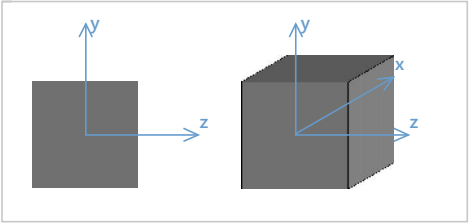

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M53 **Unity Check:** No Calc **Load Combination:** Envelope

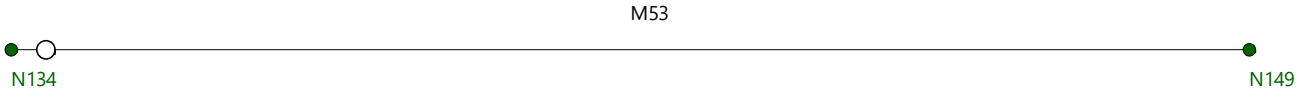


Input Data:

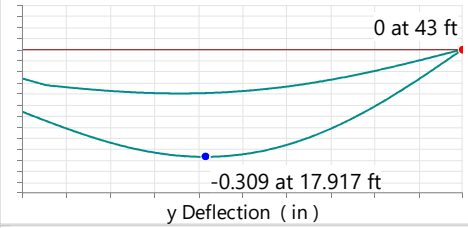
Shape:	RE4X4	I Node:	N134
Member Type:	Beam	J Node:	N149
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

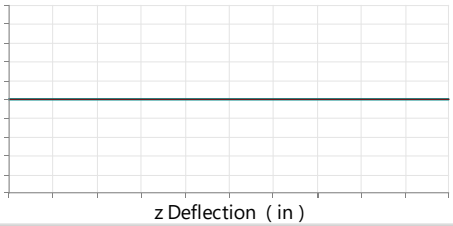
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

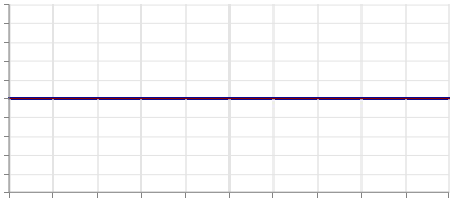


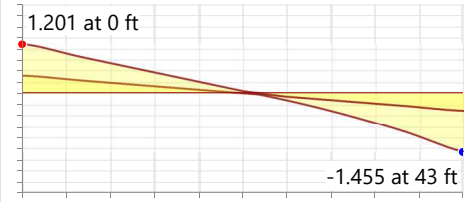
Diagrams:



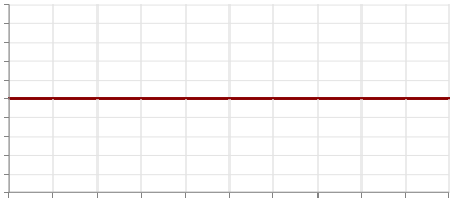
y Deflection (in)

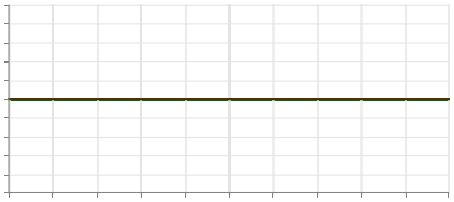

z Deflection (in)

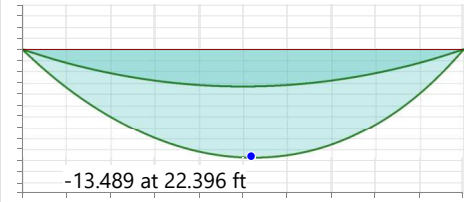

Axial Force (kips)



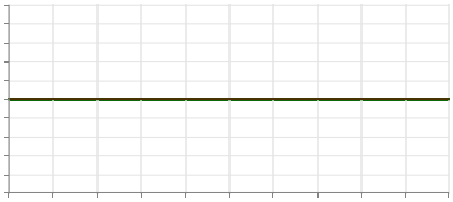
y Shear Force (kips)

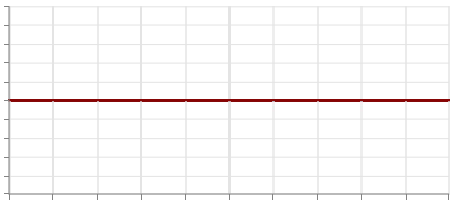

z Shear Force (kips)

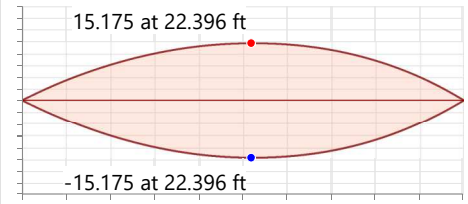

Torsion (kip-ft)



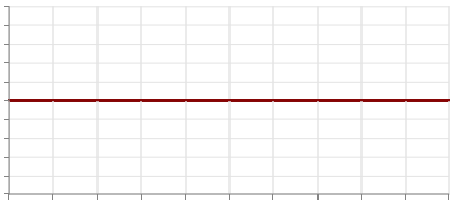
z-z Moment (kip-ft)


y-y Moment (kip-ft)

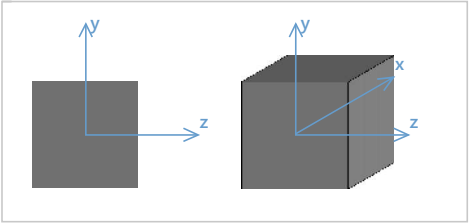

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M54 **Unity Check:** No Calc **Load Combination:** Envelope

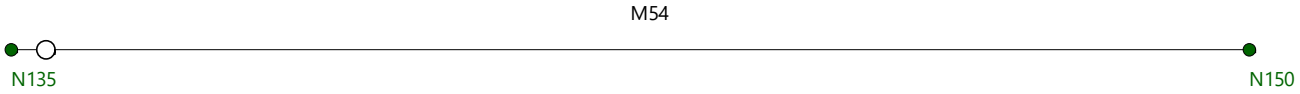


Input Data:

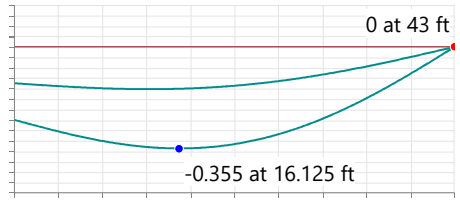
Shape:	RE4X4	I Node:	N135
Member Type:	Beam	J Node:	N150
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

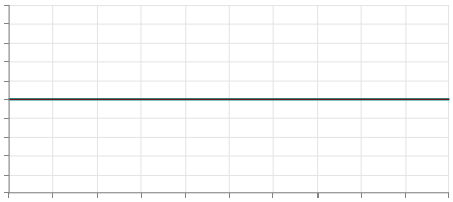
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

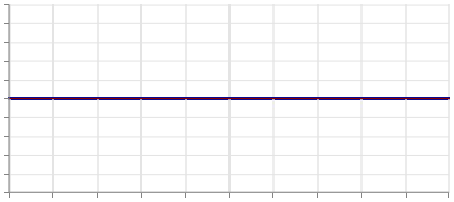


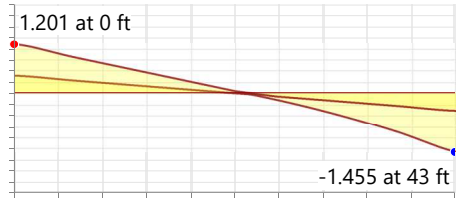
Diagrams:



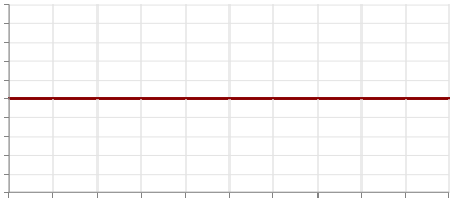
y Deflection (in)

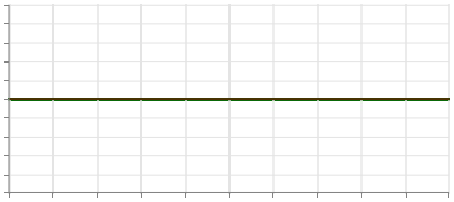

z Deflection (in)


Axial Force (kips)

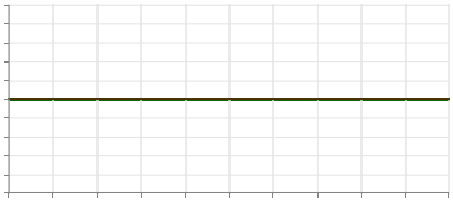


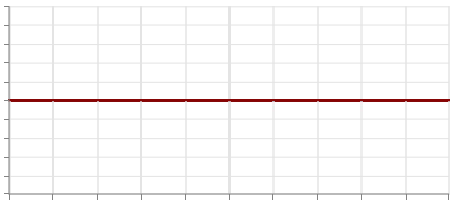
y Shear Force (kips)

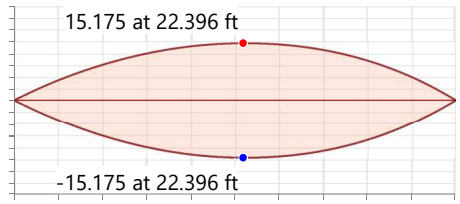

z Shear Force (kips)


Torsion (kip-ft)

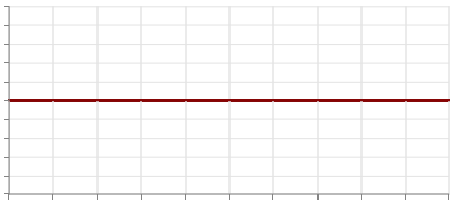
z-z Moment (kip-ft)


y-y Moment (kip-ft)

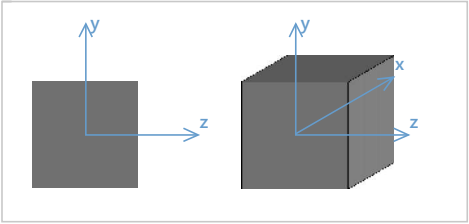

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M55 **Unity Check:** No Calc **Load Combination:** Envelope

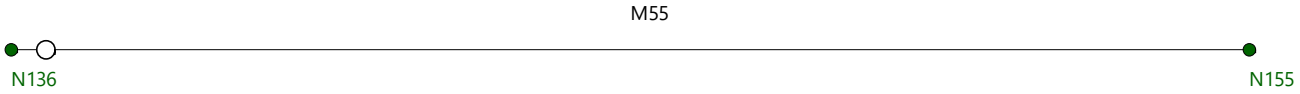


Input Data:

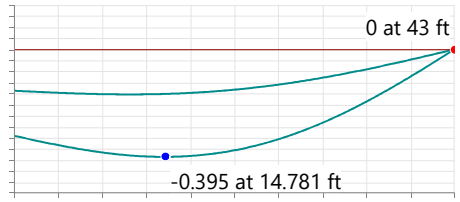
Shape:	RE4X4	I Node:	N136
Member Type:	Beam	J Node:	N155
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

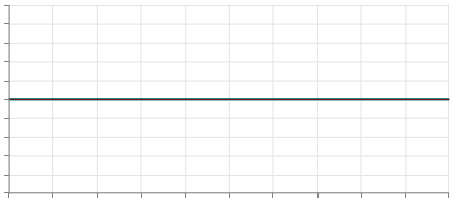
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

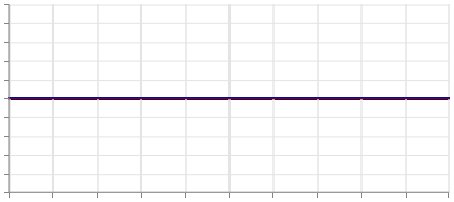


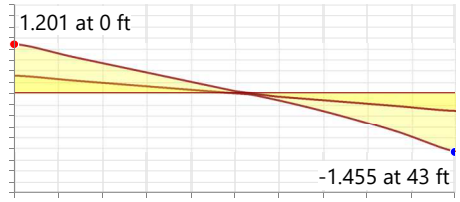
Diagrams:



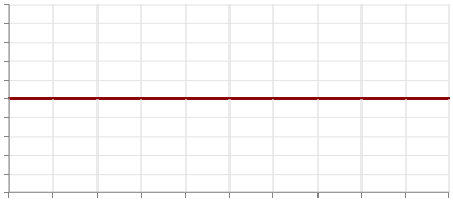
y Deflection (in)

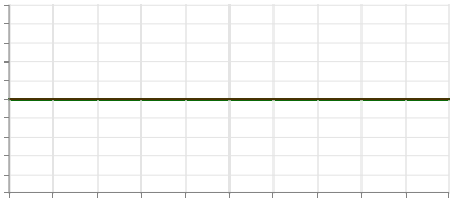

z Deflection (in)


Axial Force (kips)

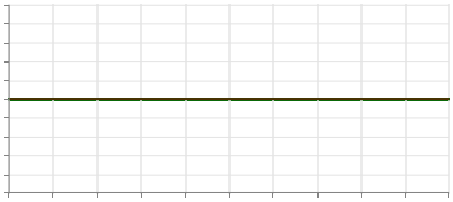


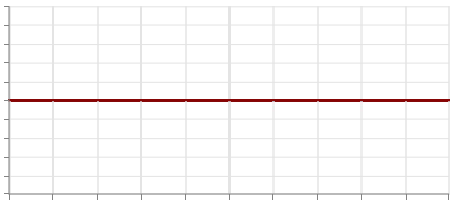
y Shear Force (kips)

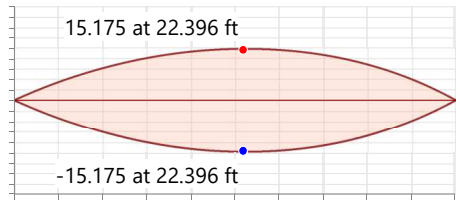

z Shear Force (kips)


Torsion (kip-ft)

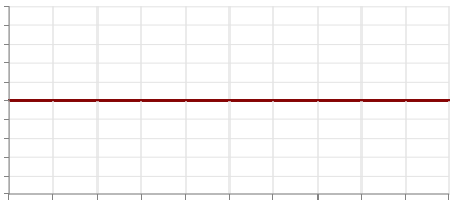
z-z Moment (kip-ft)


y-y Moment (kip-ft)

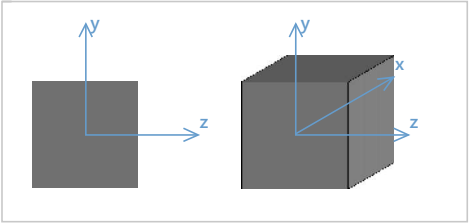

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M56 **Unity Check:** No Calc **Load Combination:** Envelope

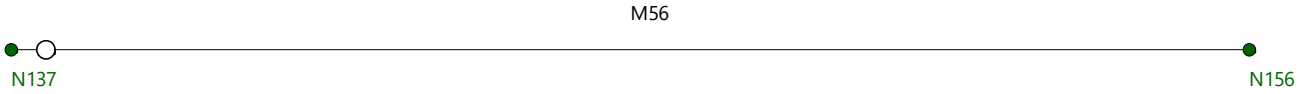


Input Data:

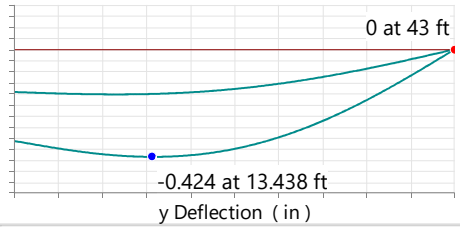
Shape:	RE4X4	I Node:	N137
Member Type:	Beam	J Node:	N156
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

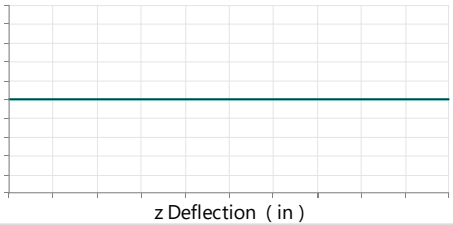
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

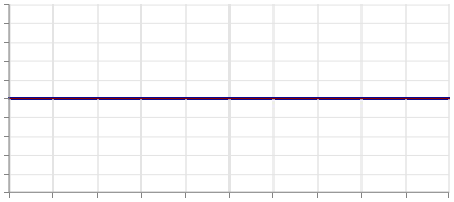


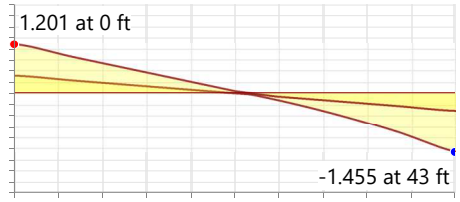
Diagrams:



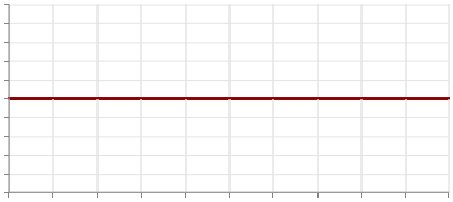
y Deflection (in)

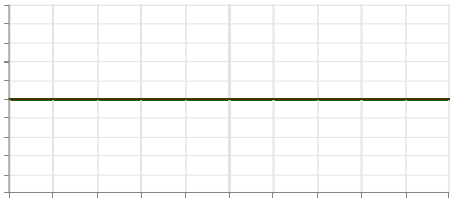

z Deflection (in)

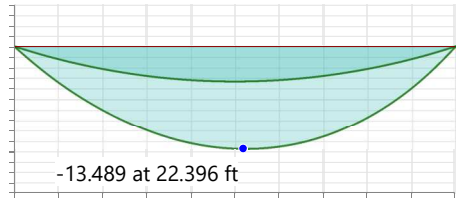

Axial Force (kips)



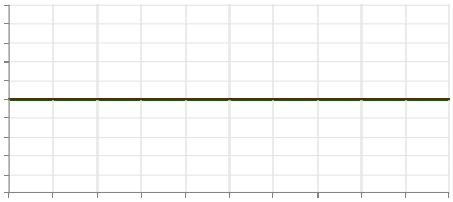
y Shear Force (kips)

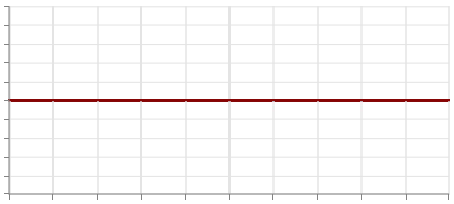

z Shear Force (kips)

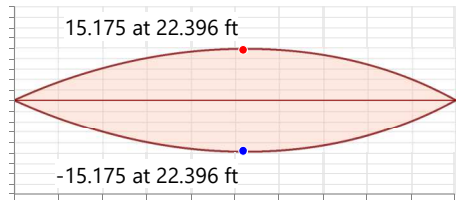

Torsion (kip-ft)



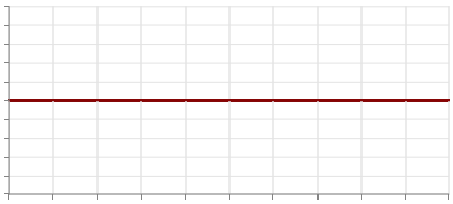
z-z Moment (kip-ft)


y-y Moment (kip-ft)

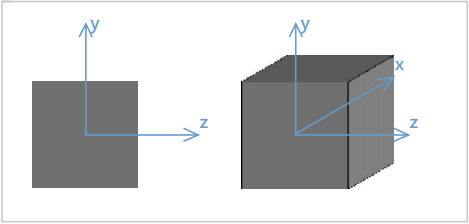

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M57 **Unity Check:** No Calc **Load Combination:** Envelope

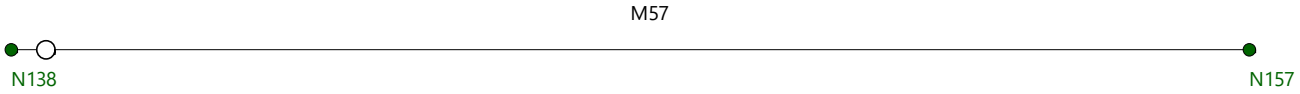


Input Data:

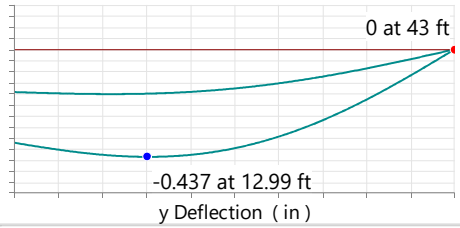
Shape:	RE4X4	I Node:	N138
Member Type:	Beam	J Node:	N157
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

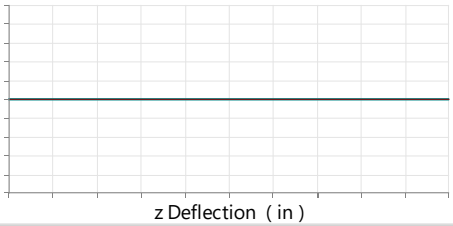
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

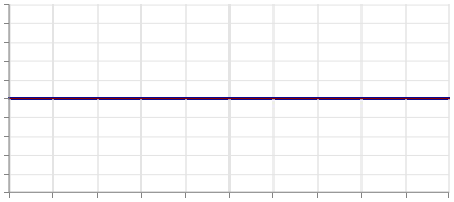


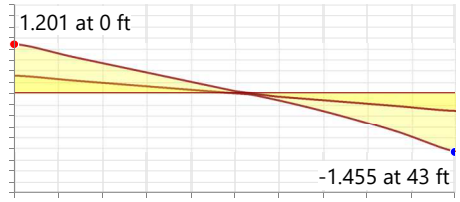
Diagrams:



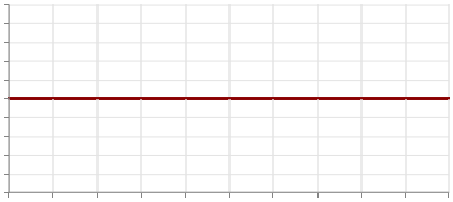
y Deflection (in)

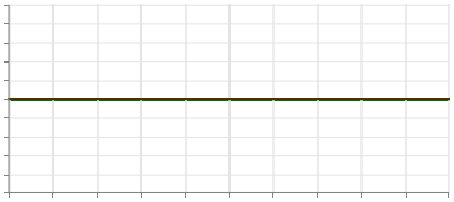

z Deflection (in)


Axial Force (kips)

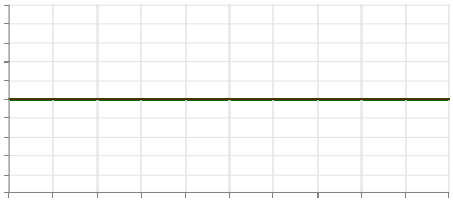


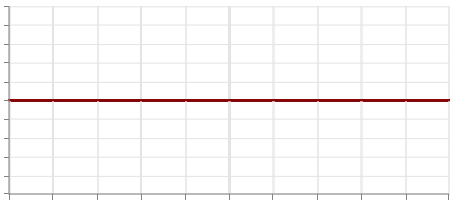
y Shear Force (kips)

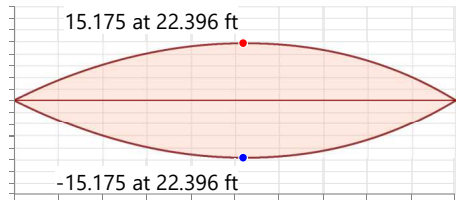

z Shear Force (kips)


Torsion (kip-ft)

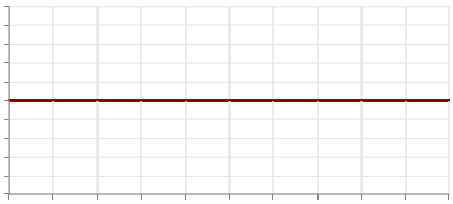
z-z Moment (kip-ft)


y-y Moment (kip-ft)

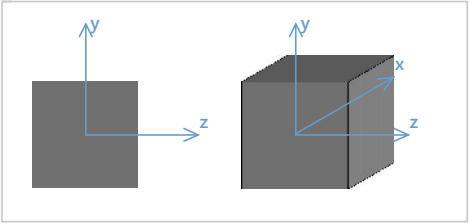

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M58 **Unity Check:** No Calc **Load Combination:** Envelope

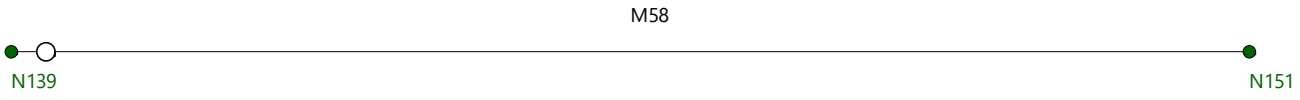


Input Data:

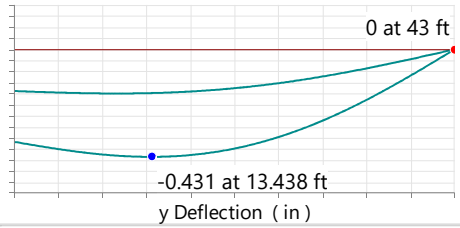
Shape:	RE4X4	I Node:	N139
Member Type:	Beam	J Node:	N151
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

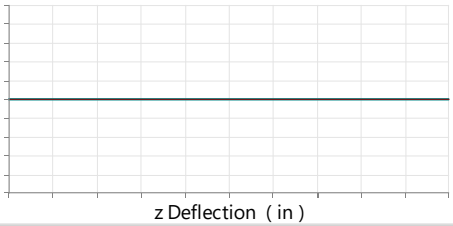
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

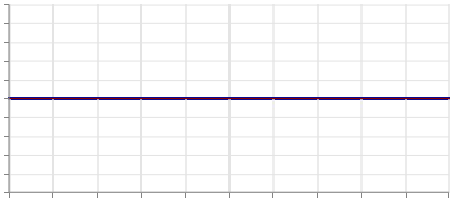


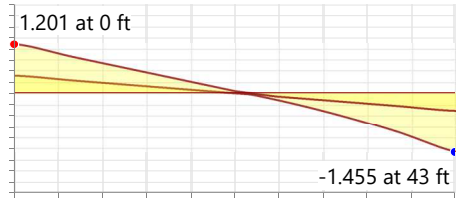
Diagrams:



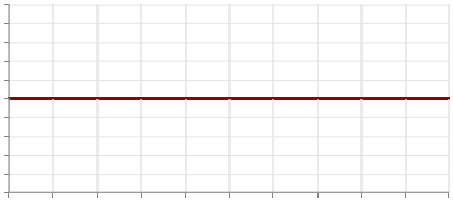
y Deflection (in)

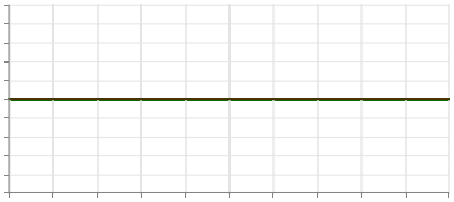

z Deflection (in)


Axial Force (kips)

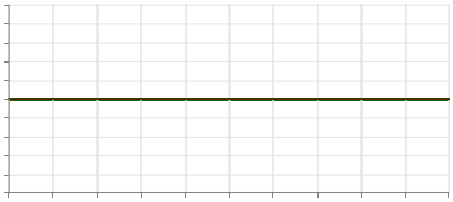


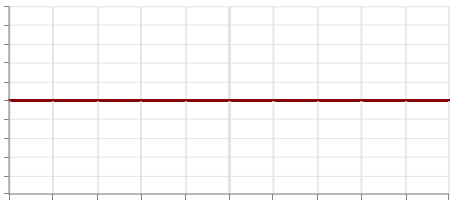
y Shear Force (kips)

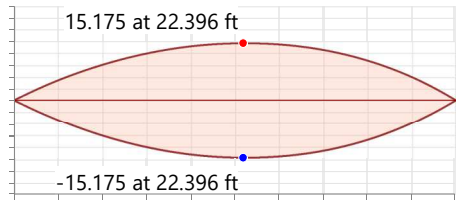

z Shear Force (kips)


Torsion (kip-ft)

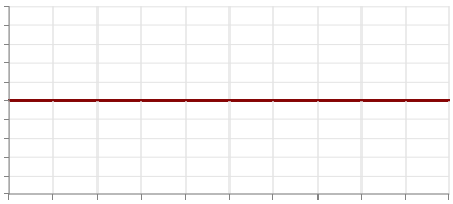
z-z Moment (kip-ft)


y-y Moment (kip-ft)

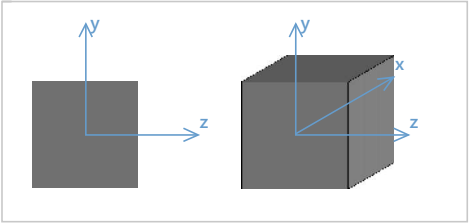

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M59 **Unity Check:** No Calc **Load Combination:** Envelope

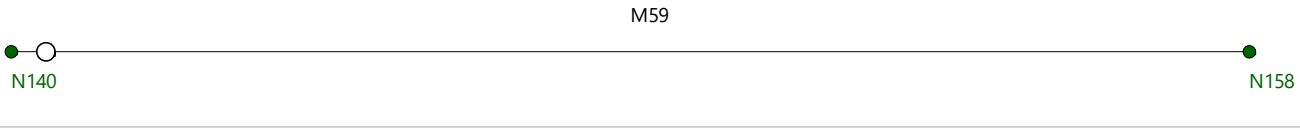


Input Data:

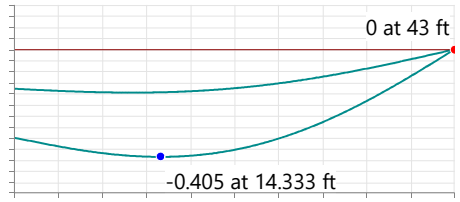
Shape:	RE4X4	I Node:	N140
Member Type:	Beam	J Node:	N158
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

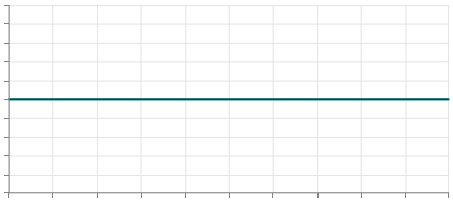
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

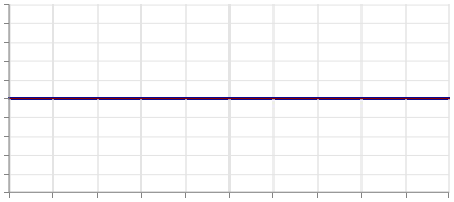


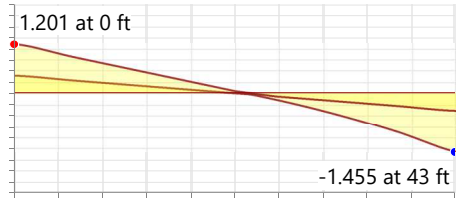
Diagrams:



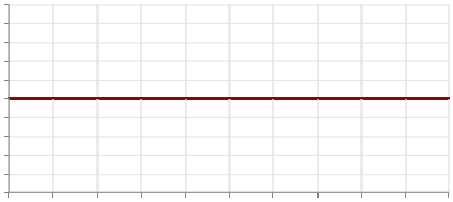
y Deflection (in)

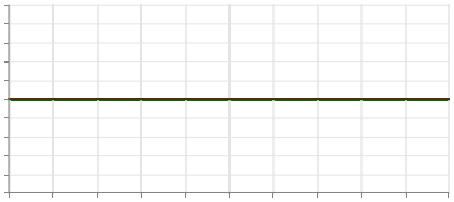

z Deflection (in)


Axial Force (kips)

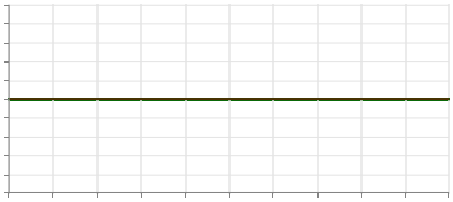


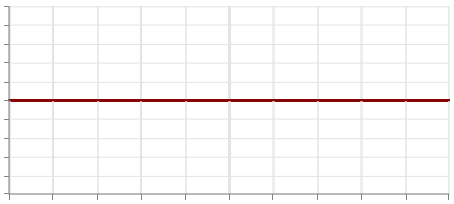
y Shear Force (kips)

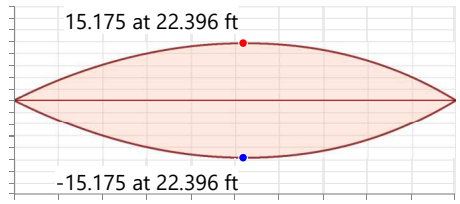

z Shear Force (kips)


Torsion (kip-ft)

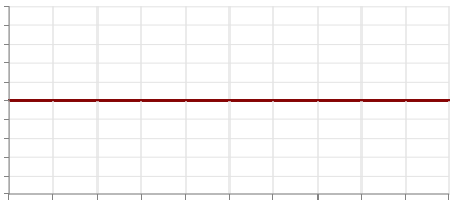
z-z Moment (kip-ft)


y-y Moment (kip-ft)

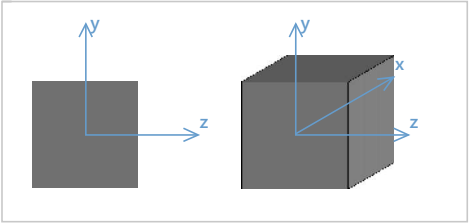

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M60 **Unity Check:** No Calc **Load Combination:** Envelope

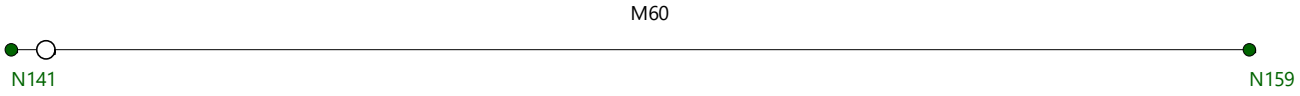


Input Data:

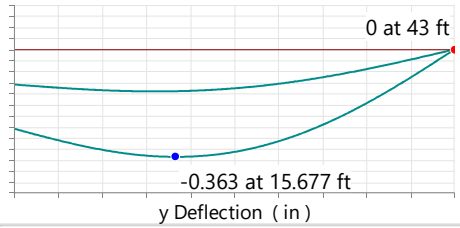
Shape:	RE4X4	I Node:	N141
Member Type:	Beam	J Node:	N159
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

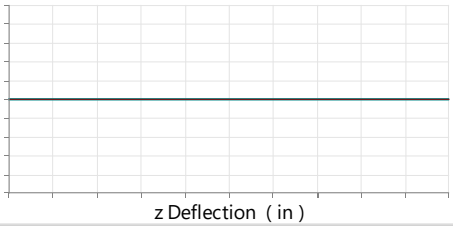
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

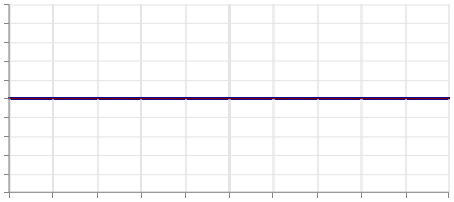


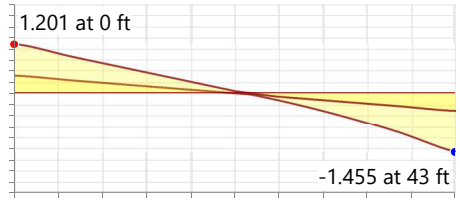
Diagrams:



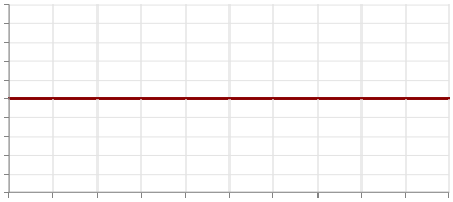
y Deflection (in)

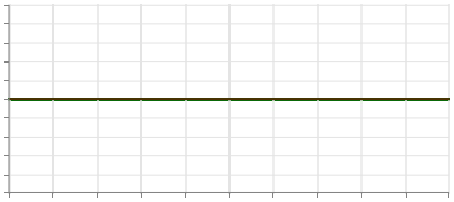

z Deflection (in)


Axial Force (kips)

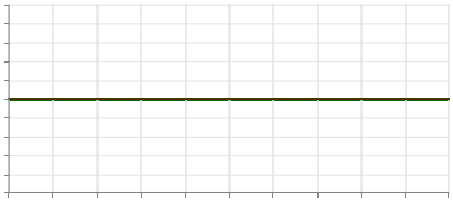


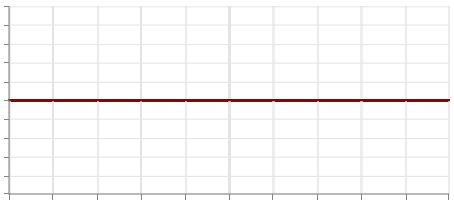
y Shear Force (kips)

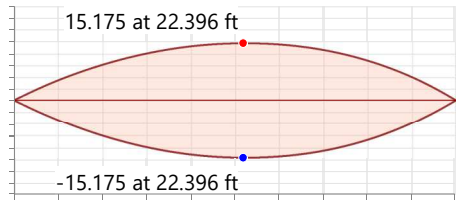

z Shear Force (kips)


Torsion (kip-ft)

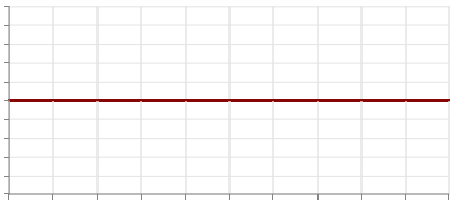
z-z Moment (kip-ft)


y-y Moment (kip-ft)

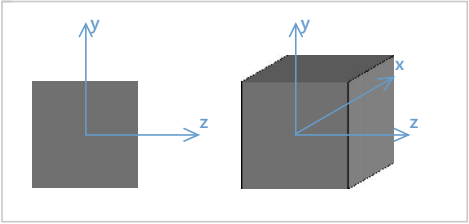

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M61 **Unity Check:** No Calc **Load Combination:** Envelope

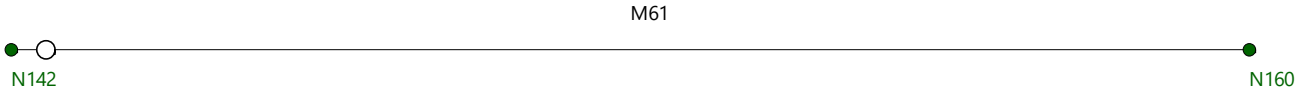


Input Data:

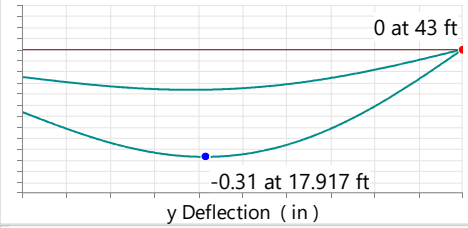
Shape:	RE4X4	I Node:	N142
Member Type:	Beam	J Node:	N160
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

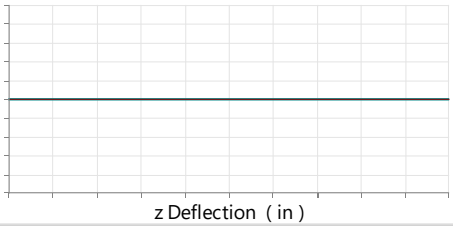
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

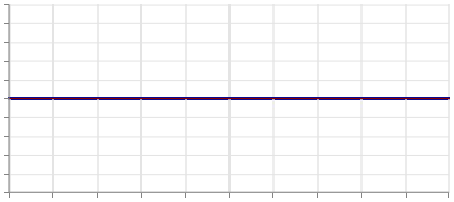


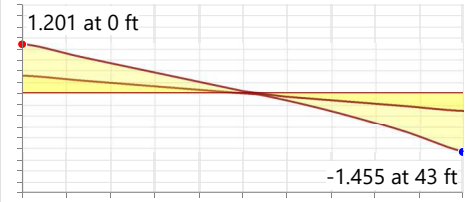
Diagrams:



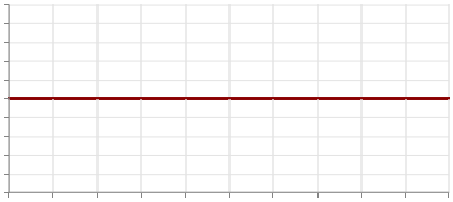
y Deflection (in)

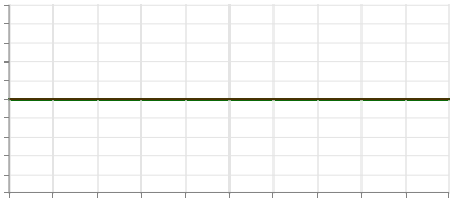

z Deflection (in)

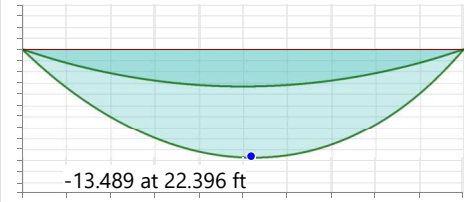

Axial Force (kips)



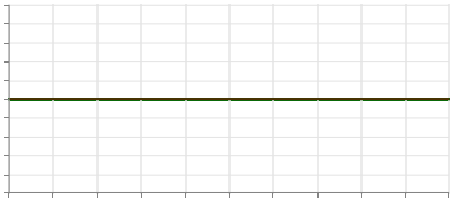
y Shear Force (kips)

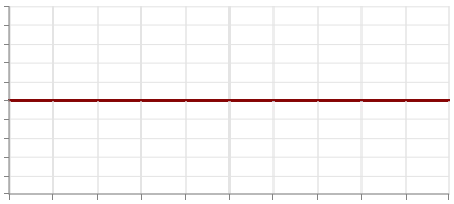

z Shear Force (kips)

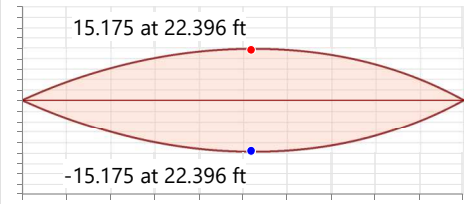

Torsion (kip-ft)



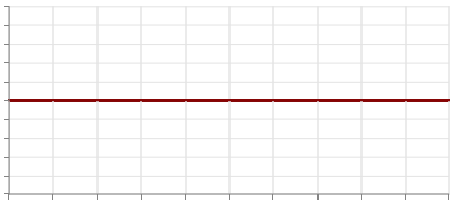
z-z Moment (kip-ft)


y-y Moment (kip-ft)

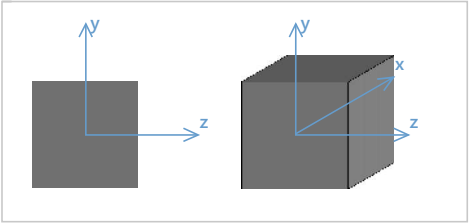

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M62 **Unity Check:** No Calc **Load Combination:** Envelope

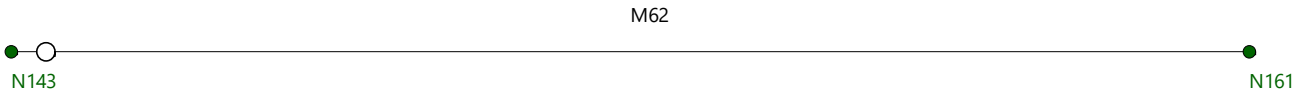


Input Data:

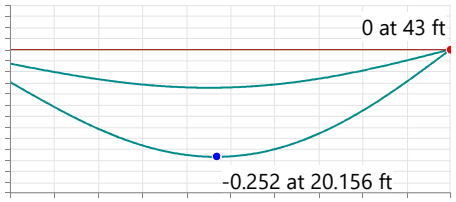
Shape:	RE4X4	I Node:	N143
Member Type:	Beam	J Node:	N161
Length (ft):	43	I Release:	BenPIN
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

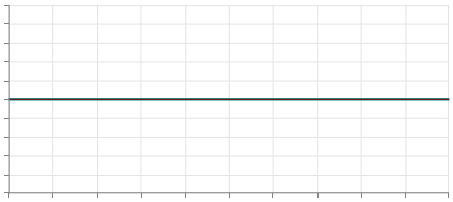
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

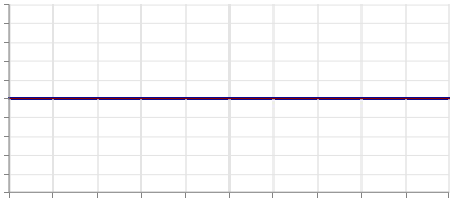


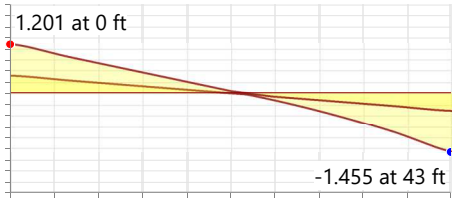
Diagrams:



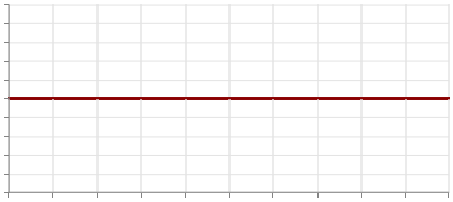
y Deflection (in)

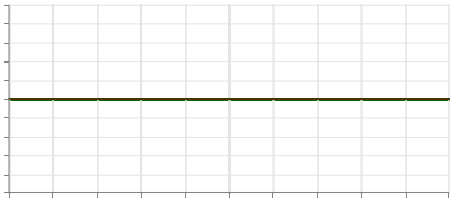

z Deflection (in)

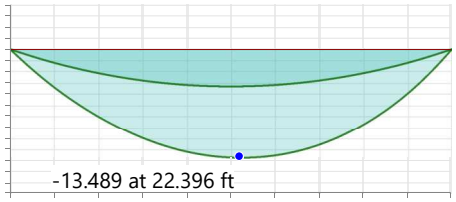

Axial Force (kips)



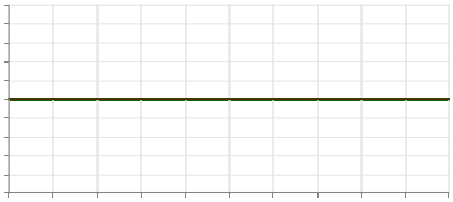
y Shear Force (kips)

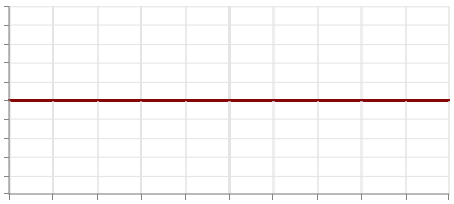

z Shear Force (kips)

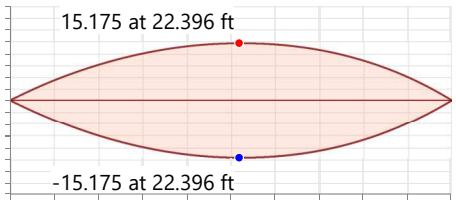

Torsion (kip-ft)



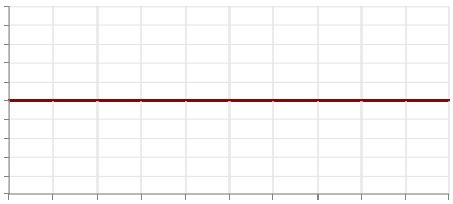
z-z Moment (kip-ft)


y-y Moment (kip-ft)

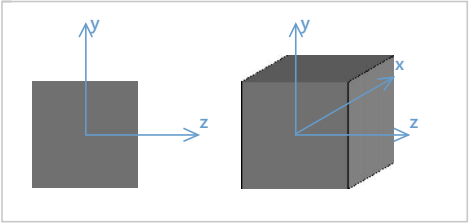

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M63 **Unity Check:** No Calc **Load Combination:** Envelope



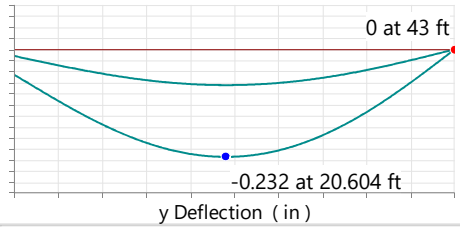
Input Data:

Shape:	RE4X4	I Node:	N129
Member Type:	Beam	J Node:	N168
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

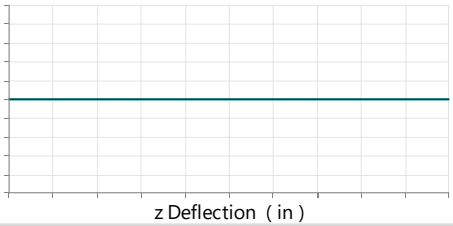
Material Properties:

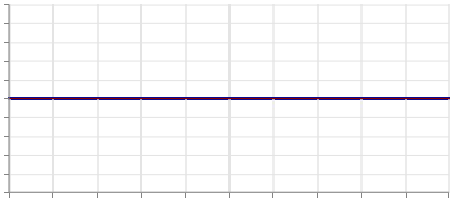
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

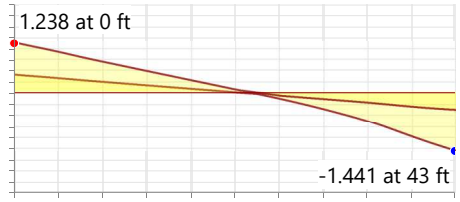
Diagrams:



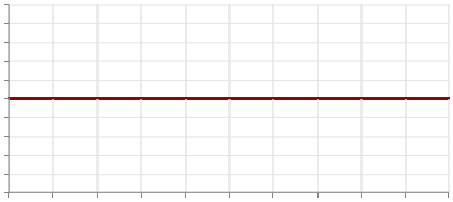
y Deflection (in)

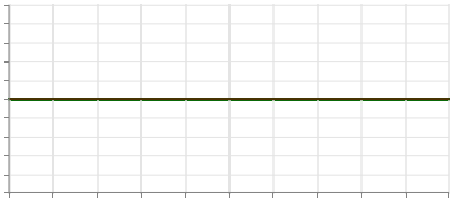

z Deflection (in)

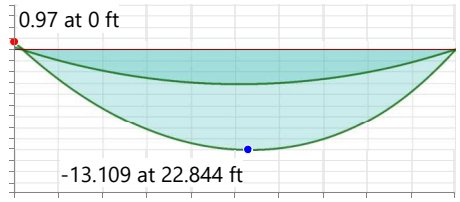

Axial Force (kips)



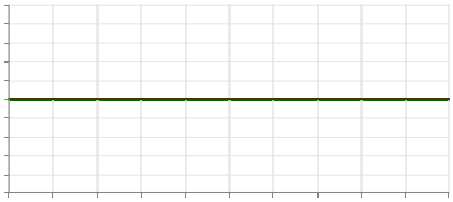
y Shear Force (kips)

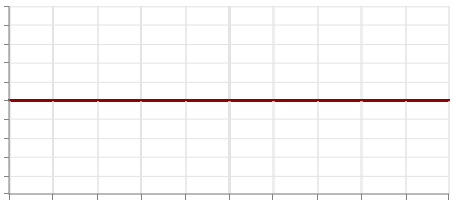

z Shear Force (kips)

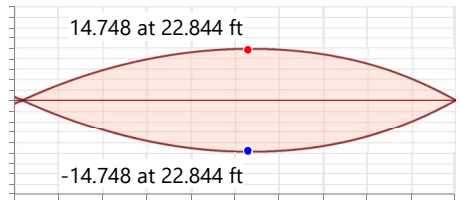

Torsion (kip-ft)



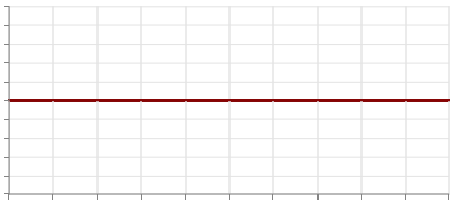
z-z Moment (kip-ft)


y-y Moment (kip-ft)

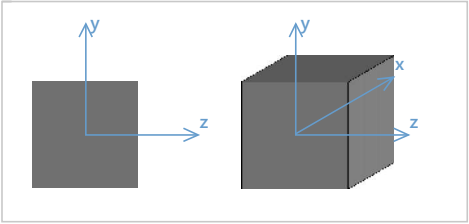

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M64 **Unity Check:** No Calc **Load Combination:** Envelope



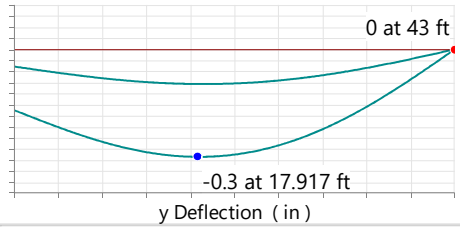
Input Data:

Shape:	RE4X4	I Node:	N128
Member Type:	Beam	J Node:	N167
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

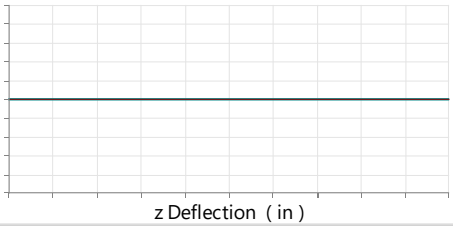
Material Properties:

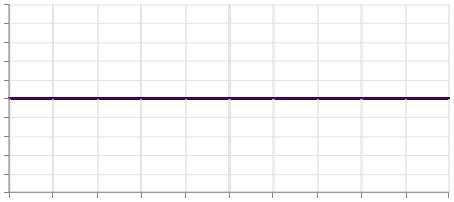
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

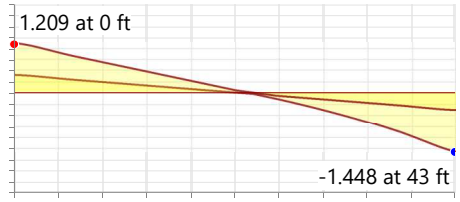
Diagrams:



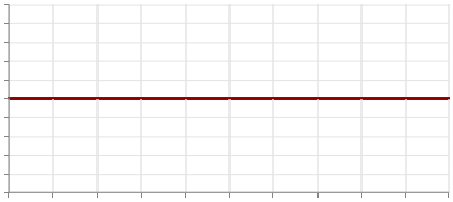
y Deflection (in)

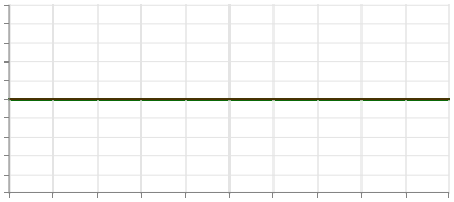

z Deflection (in)


Axial Force (kips)

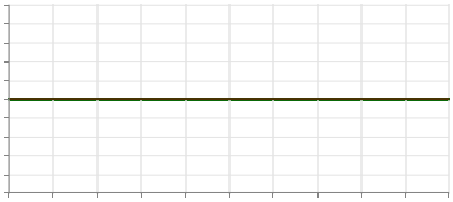


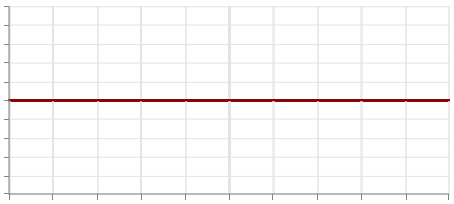
y Shear Force (kips)

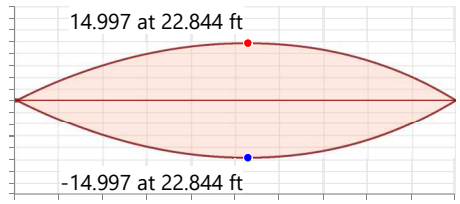

z Shear Force (kips)


Torsion (kip-ft)

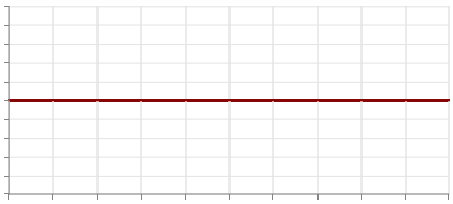
z-z Moment (kip-ft)


y-y Moment (kip-ft)

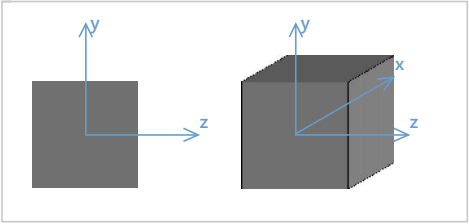

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M65 **Unity Check:** No Calc **Load Combination:** Envelope



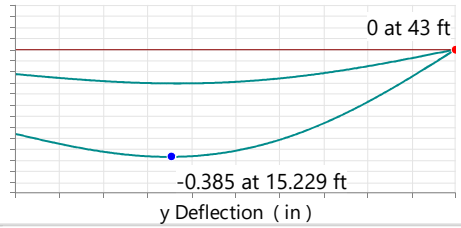
Input Data:

Shape:	RE4X4	I Node:	N127
Member Type:	Beam	J Node:	N163
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

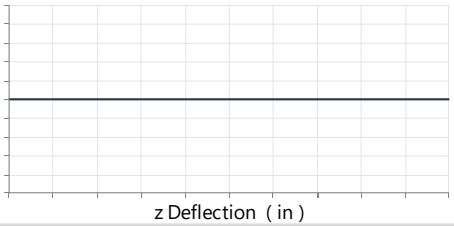
Material Properties:

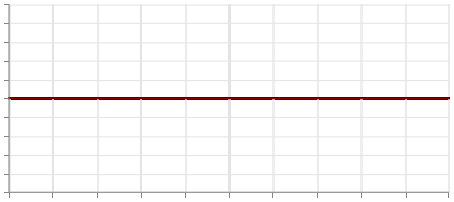
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

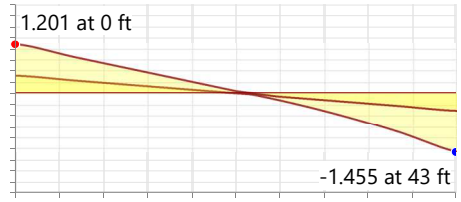
Diagrams:



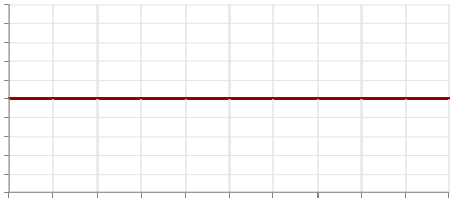
y Deflection (in)

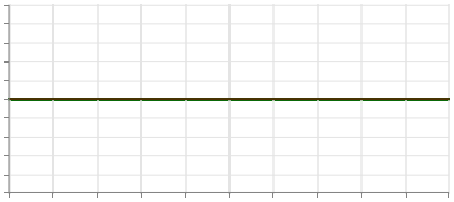

z Deflection (in)

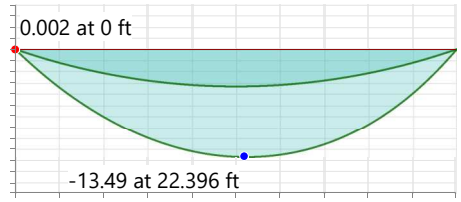

Axial Force (kips)



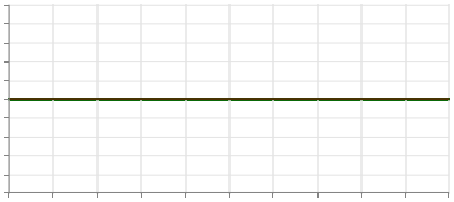
y Shear Force (kips)

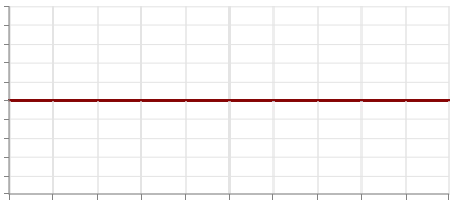

z Shear Force (kips)

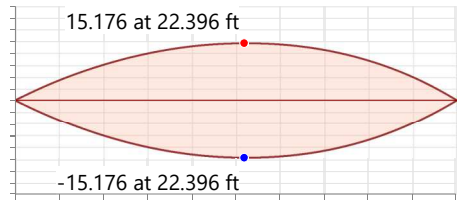

Torsion (kip-ft)



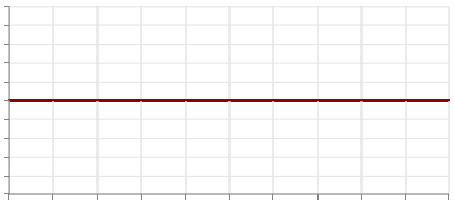
z-z Moment (kip-ft)


y-y Moment (kip-ft)

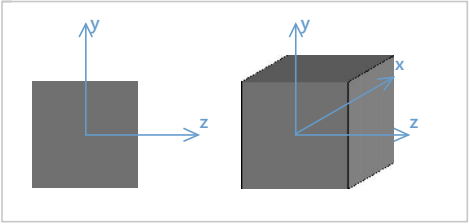

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M70 **Unity Check:** No Calc **Load Combination:** Envelope



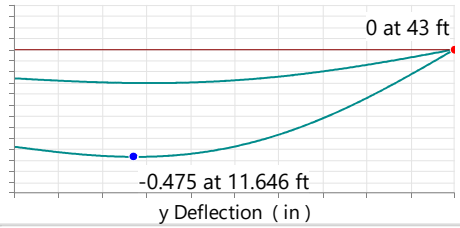
Input Data:

Shape:	RE4X4	I Node:	N126
Member Type:	Beam	J Node:	N166
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

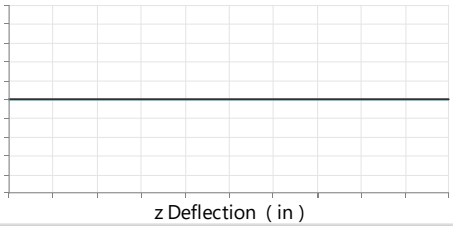
Material Properties:

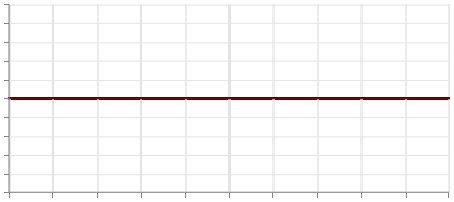
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

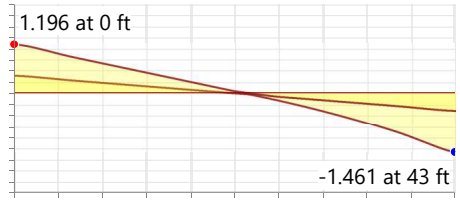
Diagrams:



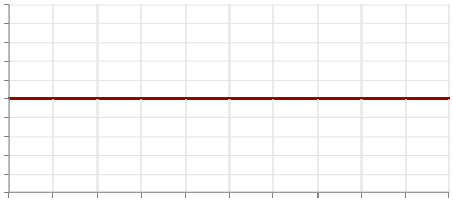
y Deflection (in)

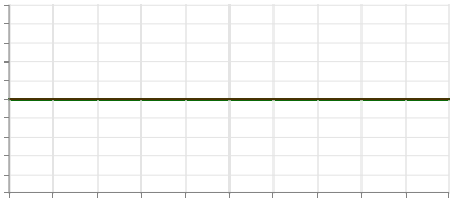

z Deflection (in)


Axial Force (kips)

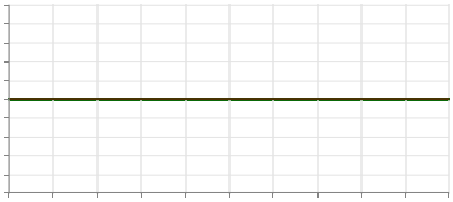


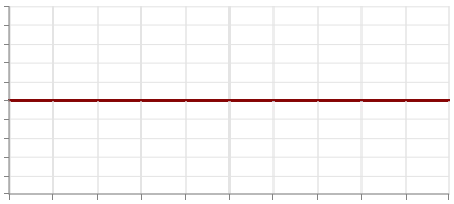
y Shear Force (kips)

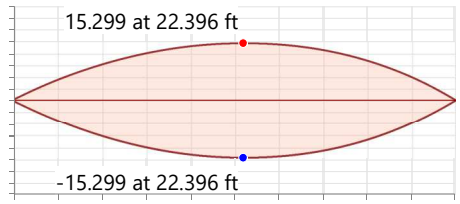

z Shear Force (kips)


Torsion (kip-ft)

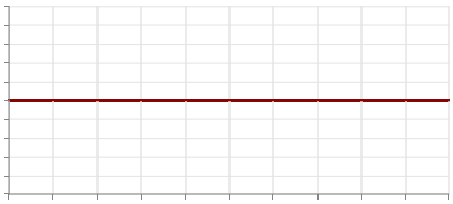
z-z Moment (kip-ft)


y-y Moment (kip-ft)

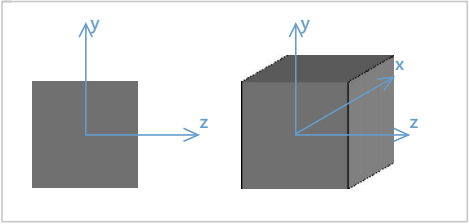

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M71 **Unity Check:** No Calc **Load Combination:** Envelope

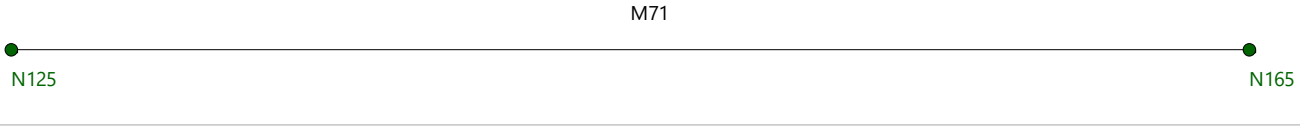


Input Data:

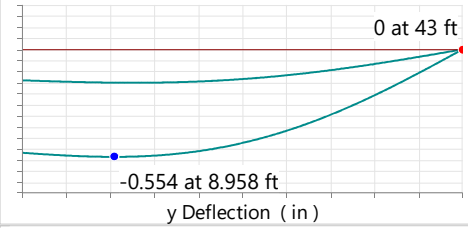
Shape:	RE4X4	I Node:	N125
Member Type:	Beam	J Node:	N165
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

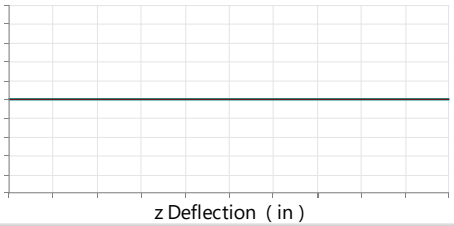
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

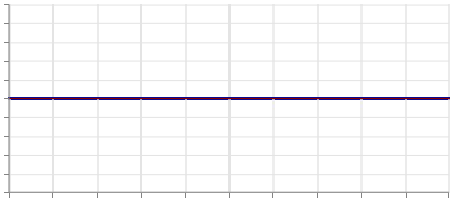


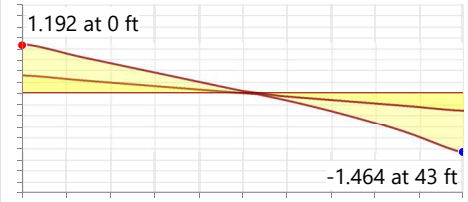
Diagrams:



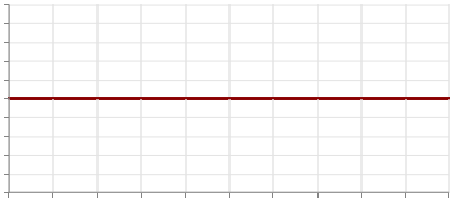
y Deflection (in)

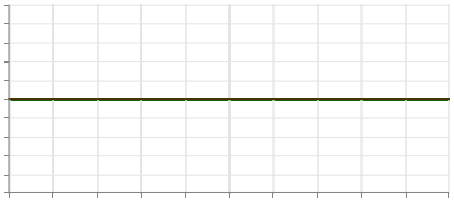

z Deflection (in)


Axial Force (kips)

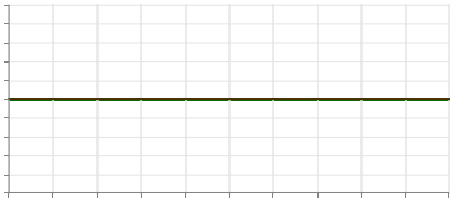


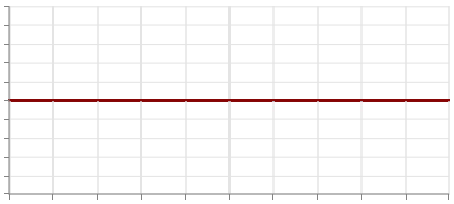
y Shear Force (kips)

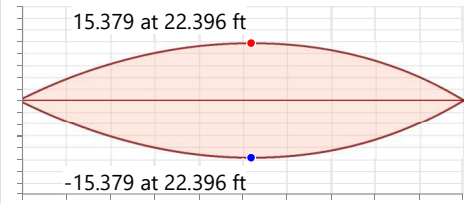

z Shear Force (kips)


Torsion (kip-ft)

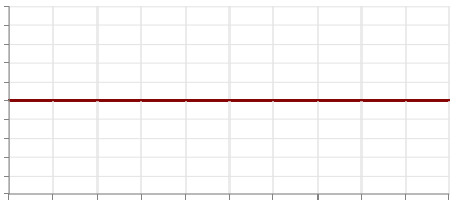
z-z Moment (kip-ft)


y-y Moment (kip-ft)

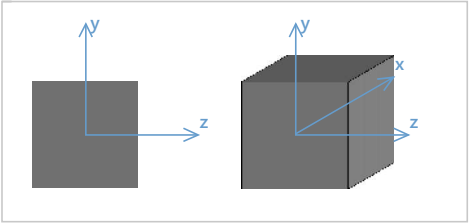

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M72 **Unity Check:** No Calc **Load Combination:** Envelope



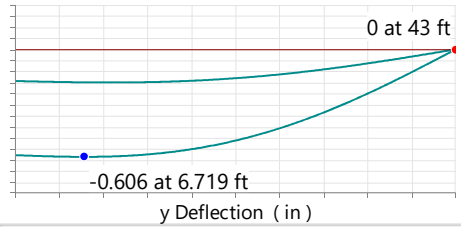
Input Data:

Shape:	RE4X4	I Node:	N124
Member Type:	Beam	J Node:	N164
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

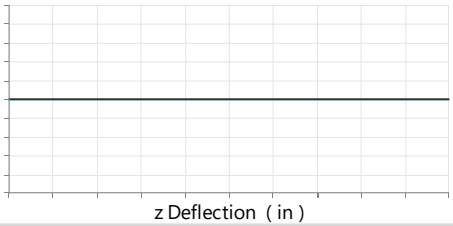
Material Properties:

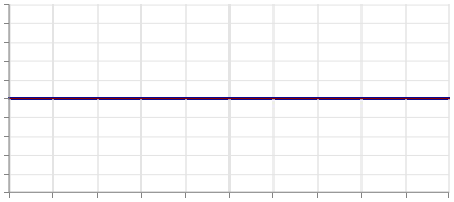
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

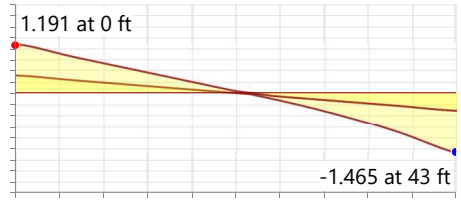
Diagrams:



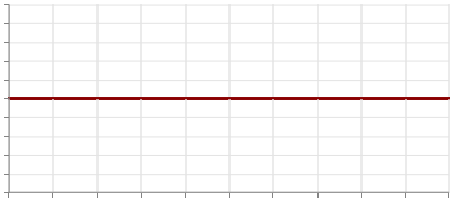
y Deflection (in)

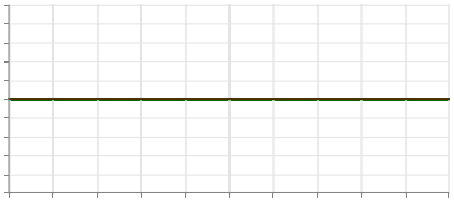

z Deflection (in)


Axial Force (kips)

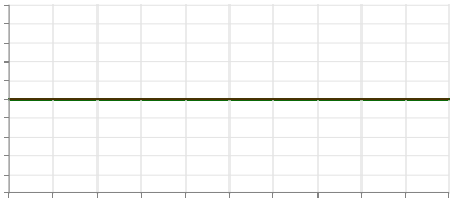


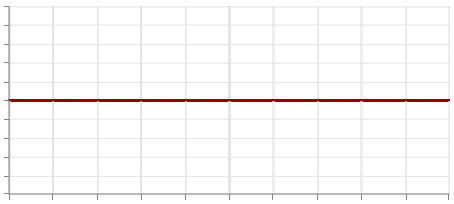
y Shear Force (kips)

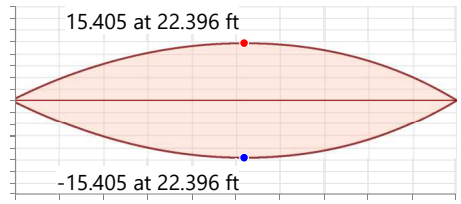

z Shear Force (kips)


Torsion (kip-ft)

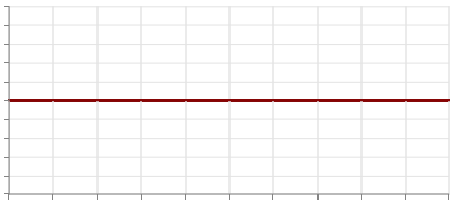
z-z Moment (kip-ft)


y-y Moment (kip-ft)

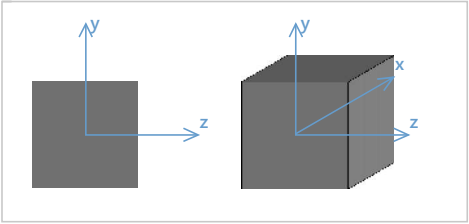

Axial Stress (ksi)



Bending Strong Stress (ksi)


Bending Weak Stress (ksi)

Detail Report: M73 **Unity Check:** No Calc **Load Combination:** Envelope



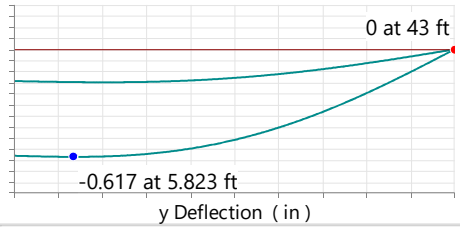
Input Data:

Shape:	RE4X4	I Node:	N123
Member Type:	Beam	J Node:	N162
Length (ft):	43	I Release:	Fixed
Material Type:	General	J Release:	Fixed
		I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

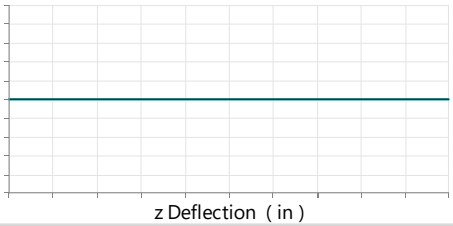
Material Properties:

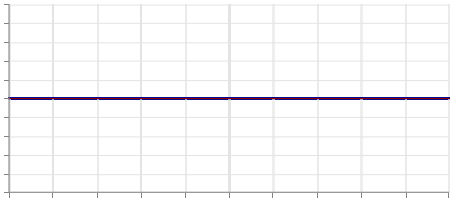
Material:	RIGID	G (ksi):	3.846e+5	Therm. Coeff. ($1e^{5}°F^{-1}$):	0
E (ksi):	1e+6	Nu:	0.3	Density (k/ft^{3}):	0

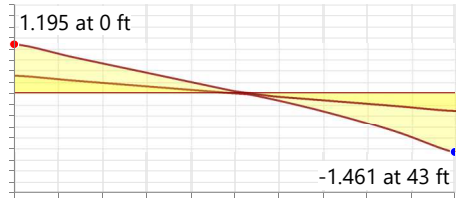
Diagrams:



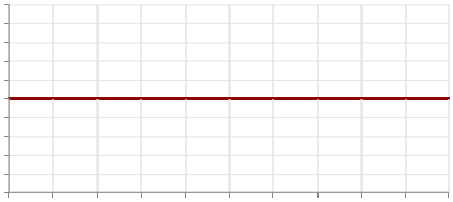
y Deflection (in)

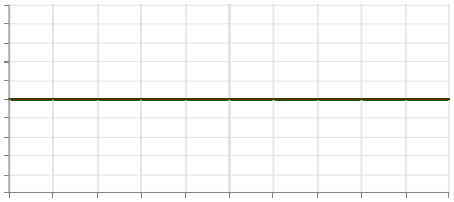

z Deflection (in)


Axial Force (kips)

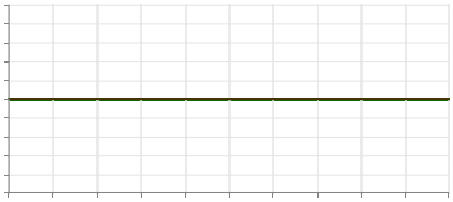


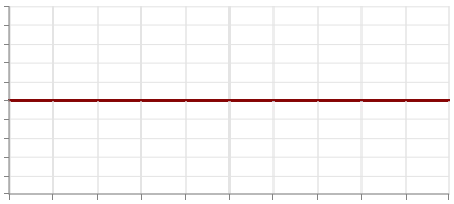
y Shear Force (kips)

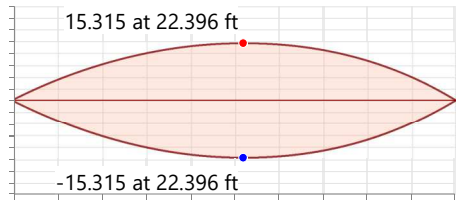

z Shear Force (kips)


Torsion (kip-ft)

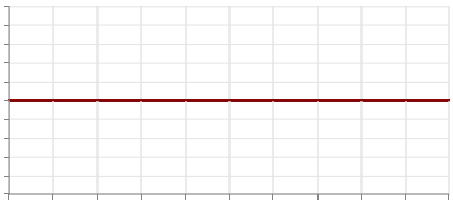
z-z Moment (kip-ft)


y-y Moment (kip-ft)


Axial Stress (ksi)

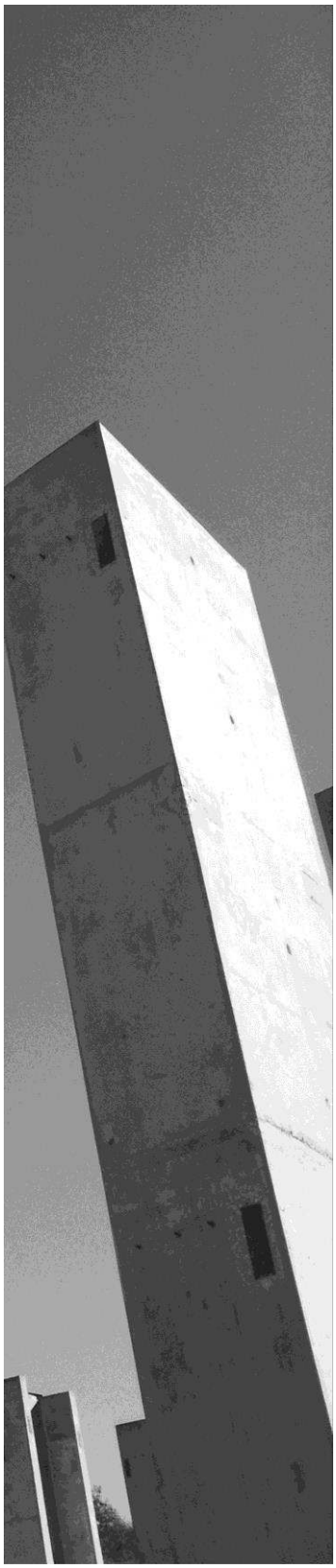


Bending Strong Stress (ksi)

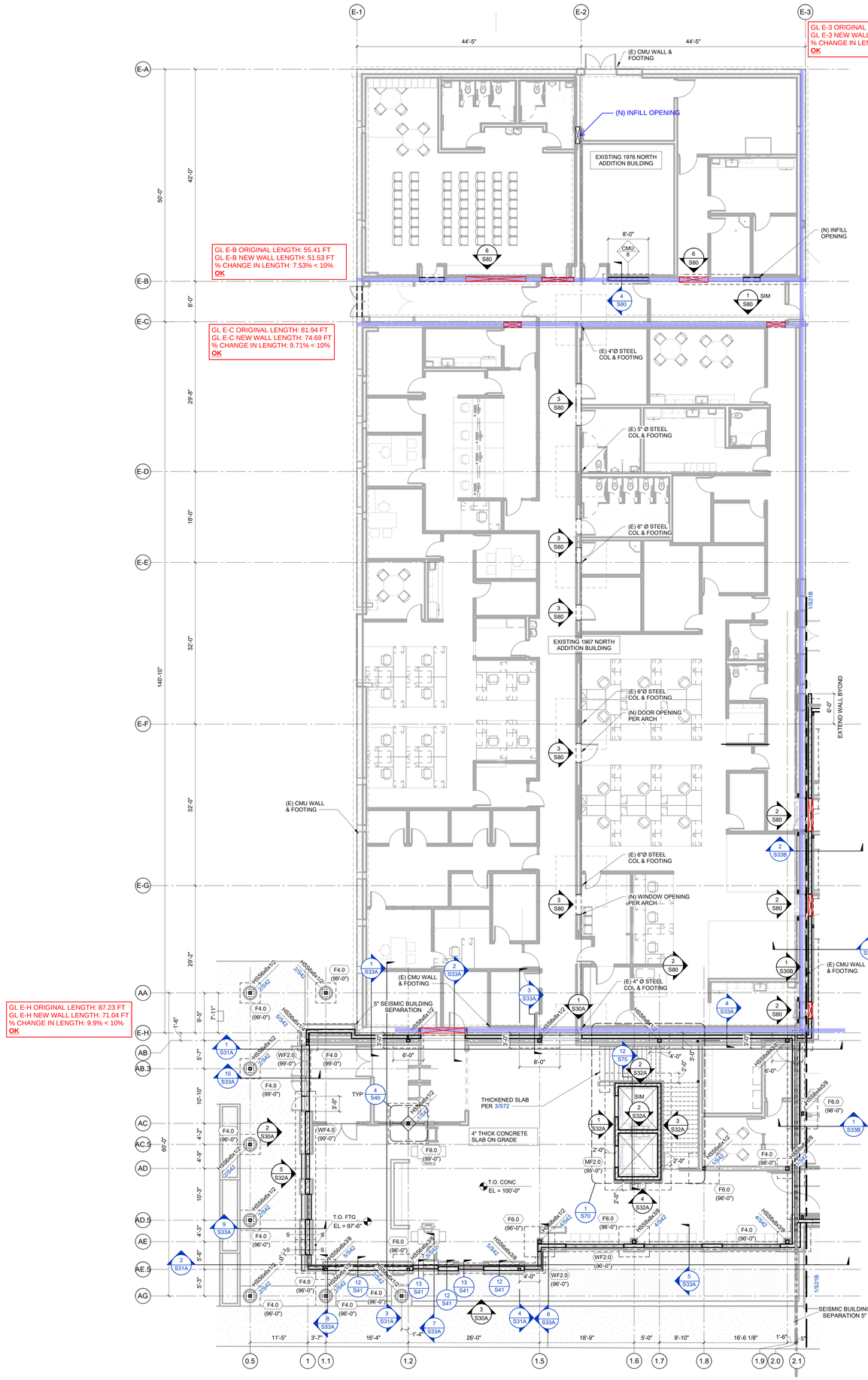

Bending Weak Stress (ksi)

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

1967 BUILDING ROOF LATERAL ALTERATION CHECK



KPFF JOB # 10212200038



1 S21A
FIRST FLOOR PLAN - AREA A
1/8" = 1'-0"

PLAN NORTH

AREA A EXISTING STRUCTURE
LATERAL SHEAR WALL ANALYSIS

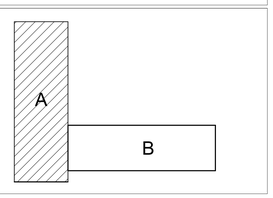
REPRESENTS AN OPENING THAT DID NOT EXIST BEFORE

REPRESENTS AN (E) SHEAR LINE THAT HAS WALL REMOVED

SHEAR WALL ALTERATIONS BASED ON IEBC 2018 SECTION 806.3

ANY EXISTING LATERAL LOAD CARRYING STRUCTURAL ELEMENT WHOSE DEMAND-CAPACITY RATIO WITH THE ALTERATION CONSIDERED IS NOT MORE THAN 10% GREATER THAN ITS DEMAND-CAPCITY RATIO WITH THE ALTERATION IGNORED SHALL BE PERMITTED TO REMAIN UNALTERED.

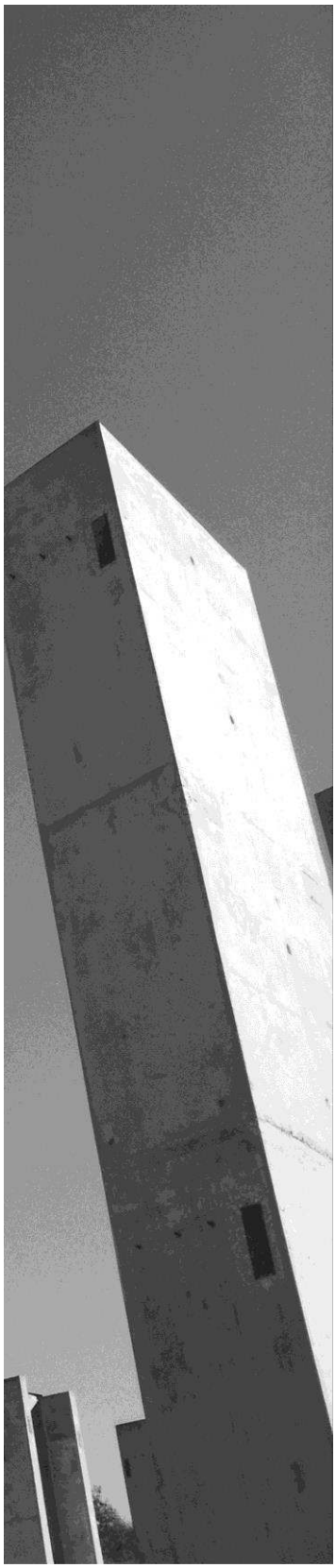
KEY PLAN



1/10/2023 5:07:23 PM

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

1967 BUILDING NEW WALL OPENING CALCS



KPFF JOB # 10212200038

kpff
Salt Lake City, Utah
(801) 441-2204

project TWIN FALLS JUDICIAL BLDG	by KH
location TWIN FALLS, ID	date
client CSHQA	job no. 102122.00038
(E) WALL CHECK FOR JAMB COLUMNS	

WALL ANCHORAGE FORCE (12.11.2.1)

$F_p = 0.4 S_{ds} k_a I_e W_p$

$k_a = 1 + \frac{L_f}{100} = 1 + \frac{2.67}{100} = 1.0267$

$F_p = 0.4(0.167)(1.0267)(1.25)(49\ psf + 36\ psf) = 5.83\ psf$

49 psf ↑ CMU WEIGHT

36 psf ↑ BRICK VENEER

(E) MASONRY WALL REINFORCING

GL E-3 → #5 @ 24" O.C. F_p (GL E-3) = 5.83 psf

GL E-B → #4 @ 32" O.C. F_p (GL EB) = 5.56 psf

kpff
Salt Lake City, Utah
(801) 441-2204

project TWIN FALLS JUDICIAL BLDG.	by KH	sheet no.
location TWIN FALLS, ID	date	
client CSHQA	job no.	
LOADS ON (N) LINTELS	102122000038	

(E) CMU WALL ROOF WEIGHT: 8" CMU block w/ grout @ 24 in. O.C. (49 psf) - CMU WEIGHT

BRICK VENEER WEIGHT: (39 psf)

(E) ROOF DEAD LOAD: 1200 lb / 2'-8" = 449.44 plf

(E) ROOF SNOW LOAD: 2100 lb / 2'-8" = 787 plf

WALL SELF WEIGHT: (49 psf + 39 psf) * 10.33 ft = 909.04 plf

EXISTING MASONRY WALL IS STACK BOND, ARCHING ACTION NOT ALLOWED.

ALLOWABLE DEFLECTION: L/600.

Project Title:
Engineer:
Project ID:
Project Descr:

INSITU MASONRY LINTEL CHECK - IDEALIZED AS A MASONRY BEAM

Masonry Beam

Project File: (E) CMU JAMB CHECK.ec6

LIC# : KW-06013369, Build:20.22.8.17 KPFF Mountain West (c) ENERCALC INC 1983-2022

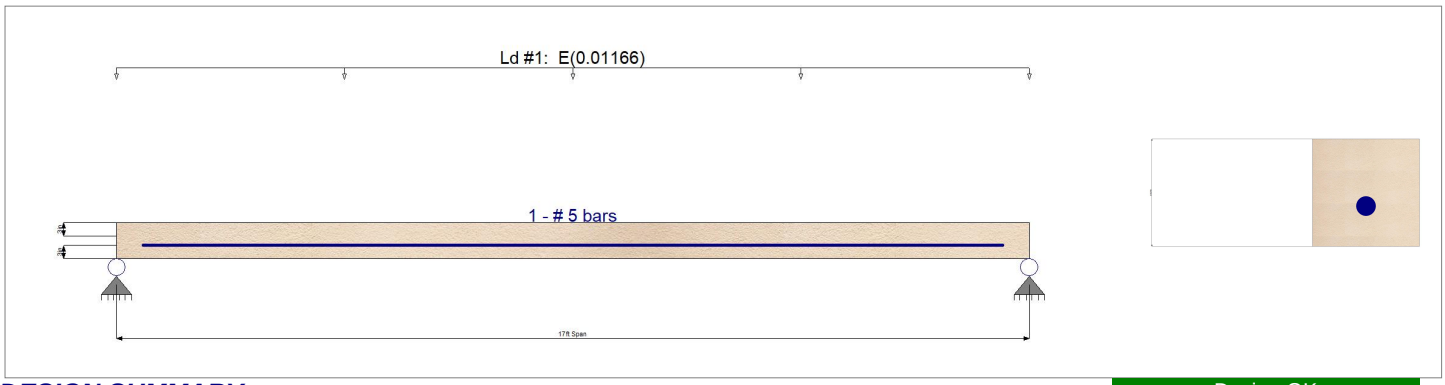
DESCRIPTION: in-situ lintel check

Code References

Calculations per TMS 402-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

f'm	1,500.0	psi	Clear Span	17.0	ft	Rebar Size	5
Fs	24,000.0	psi	Beam Depth	0.6670	ft	# Bars @ Locations	1
Em = f'm *	900.0		Thickness	8	in	Top Clear	3.0 in
Wall Wt Mult.	1.0		End Fixity	Pin-Pin		Btm Clear	3.0 in
Block Type	Normal Wt		Equiv. Solid Thick	7.60	in	# Bar Sets	1
Lateral Wind Load	5.0	psf	Wall Weight	86.0	psf	Bar Spacing	5.0 in
Beam is Fully Braced ?	No		E	1,350.0	ksi		
Lateral Wall Weight Seismic Factor	0.330		n	21.481			
Calculate vertical beam weight ?	No						



DESIGN SUMMARY

Design OK

Maximum Stress Ratios...

	Vertical	Lateral	SRSS Combination
fb/Fb	0.1458	0.3642	**0.3923** : 1.00
fv/Fv	0.02609	0.09530	**0.09881** : 1.00

Minimum Mn = 1.3 * Fcr * S = 0.8820 k-ft

Maximum Moment

	Actual	Allowable
Vertical Loads for Load Combination E Only * 0.70	0.2949 k-ft	2.022 k-ft
Lateral Loads for Load Combination E Only * 0.70	0.4785 k-ft	1.314

Maximum Shear

	Actual	Allowable
Vertical Loads for Load Combination E Only * 0.70	1.137 psi	43.571 psi
Lateral Loads for Load Combination E Only * 0.70	3.691 psi	38.730 psi

Vertical Strength

As	0.310 in^2
rho	0.008125
np	0.1745
k : ((np)^2+2np)^.5-np	0.4415
j = 1 - k/3	0.8528
M:mas=Fb k j b d^2/2	2.022 k-ft
M:Stl = Fs As j d	2.646 k-ft

Lateral Strength (Checking lateral bending for span)

As	0.310 in^2
rho	0.01016
np	0.2182
k : (np^2+2np)^.5-np	0.4775
j = 1 - k/3	0.8408
M:mas=Fb k j b d^2/2	1.314 k-ft
M:Stl = Fs As j d	1.988 k-ft

Detailed Load Combination Results

Load Combinatic	Vertical				Lateral			
	Mmax k-ft	Mallow k-ft	fv : Vert psi	Fv : Vert psi	Mactual k-ft	Mallow k-ft	fv psi	Fv psi
	0.00	2.02	0.00	77.46	0.00	1.31	0.00	38.73
+0.60W	0.00	2.02	0.00	77.46	0.07	1.31	0.56	38.73
E Only * 0.70	0.29	2.02	1.14	43.57	0.48	1.31	3.69	38.73

INSITU MASONRY LINTEL CHECK - IDEALIZED AS A MASONRY BEAM

Masonry Beam

DESCRIPTION: in-situ lintel check

Detailed Load Combination Results

Load Combinatic	Vertical				Lateral			
	Mmax k-ft	Mallow k-ft	fv : Vert psi	Fv : Vert psi	Mactual k-ft	Mallow k-ft	fv psi	Fv psi
+0.450W	0.00	2.02	0.00	77.46	0.05	1.31	0.42	38.73
E Only * 0.5250	0.22	2.02	0.85	43.57	0.36	1.31	2.77	38.73

Project Title:
Engineer:
Project ID:
Project Descr:

(N) 6'-8" OPENING IN (E) WALL ALONG GL E-3 CHECK, IDEALIZED AS A BEAM

Masonry Beam

Project File: (E) CMU JAMB CHECK.ec6

LIC# : KW-06013369, Build:20.22.8.17 KPFF Mountain West (c) ENERCALC INC 1983-2022

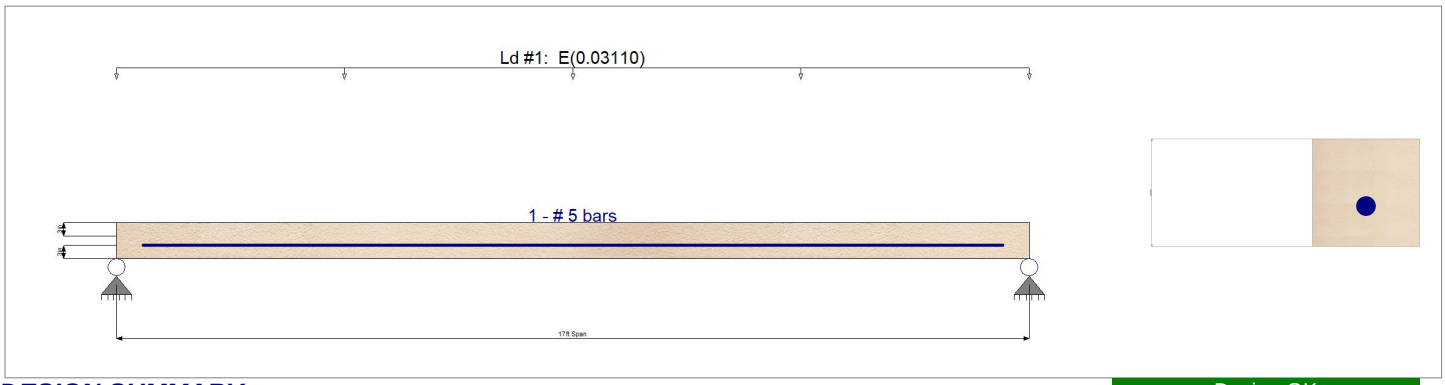
DESCRIPTION: GL E-3 6'-8" OPENING CHECK

Code References

Calculations per TMS 402-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

f'm	1,500.0	psi	Clear Span	17.0	ft	Rebar Size	5
Fs	24,000.0	psi	Beam Depth	0.6670	ft	# Bars @ Locations	1
Em = f'm *	900.0		Thickness	8	in	Top Clear	3.0 in
Wall Wt Mult.	1.0		End Fixity	Pin-Pin		Btm Clear	3.0 in
Block Type	Normal Wt		Equiv. Solid Thick	7.60	in	# Bar Sets	1
Lateral Wind Load	5.0	psf	Wall Weight	86.0	psf	Bar Spacing	5.0 in
Beam is Fully Braced ?	No		E	1,350.0	ksi		
Lateral Wall Weight Seismic Factor	0.330		n	21.481			
Calculate vertical beam weight ?	No						



DESIGN SUMMARY

Design OK

Maximum Stress Ratios...

	Vertical	Lateral	SRSS Combination
fb/Fb	0.3889	0.3642	**0.5328** : 1.00
fv/Fv	0.06959	0.09530	**0.1180** : 1.00

Minimum Mn = 1.3 * Fcr * S = 0.8820 k-ft

Maximum Moment

	Actual	Allowable
Vertical Loads for Load Combination E Only * 0.70	0.7864 k-ft	2.022 k-ft
Lateral Loads for Load Combination E Only * 0.70	0.4785 k-ft	1.314

Maximum Shear

	Actual	Allowable
Vertical Loads for Load Combination E Only * 0.70	3.032 psi	43.571 psi
Lateral Loads for Load Combination E Only * 0.70	3.691 psi	38.730 psi

Vertical Strength

As	0.310 in^2
rho	0.008125
np	0.1745
k : ((np)^2+2np)^.5-np	0.4415
j = 1 - k/3	0.8528
M:mas=Fb k j b d^2/2	2.022 k-ft
M:Stl = Fs As j d	2.646 k-ft

Lateral Strength (Checking lateral bending for span)

As	0.310 in^2
rho	0.01016
np	0.2182
k : (np^2+2np)^.5-np	0.4775
j = 1 - k/3	0.8408
M:mas=Fb k j b d^2/2	1.314 k-ft
M:Stl = Fs As j d	1.988 k-ft

Detailed Load Combination Results

Load Combinatic	Vertical				Lateral			
	Mmax k-ft	Mallow k-ft	fv : Vert psi	Fv : Vert psi	Mactual k-ft	Mallow k-ft	fv psi	Fv psi
	0.00	2.02	0.00	77.46	0.00	1.31	0.00	38.73
+0.60W	0.00	2.02	0.00	77.46	0.07	1.31	0.56	38.73
E Only * 0.70	0.79	2.02	3.03	43.57	0.48	1.31	3.69	38.73

(N) 6'-8" OPENING IN (E) WALL ALONG GL E-3 CHECK, IDEALIZED AS A BEAM

Masonry Beam

DESCRIPTION: GL E-3 6'-8" OPENING CHECK

Detailed Load Combination Results

Load Combinatic	Vertical				Lateral			
	Mmax k-ft	Mallow k-ft	fv : Vert psi	Fv : Vert psi	Mactual k-ft	Mallow k-ft	fv psi	Fv psi
+0.450W	0.00	2.02	0.00	77.46	0.05	1.31	0.42	38.73
E Only * 0.5250	0.59	2.02	2.27	43.57	0.36	1.31	2.77	38.73

Project Title:
Engineer:
Project ID:
Project Descr:

(N) 9'-0" OPENING IN (E) WALL ALONG GL
E-B CHECK, IDEALIZED AS A BEAM

Masonry Beam

Project File: (E) CMU JAMB CHECK.ec6

LIC# : KW-06013369, Build:20.22.8.17 KPFF Mountain West (c) ENERCALC INC 1983-2022

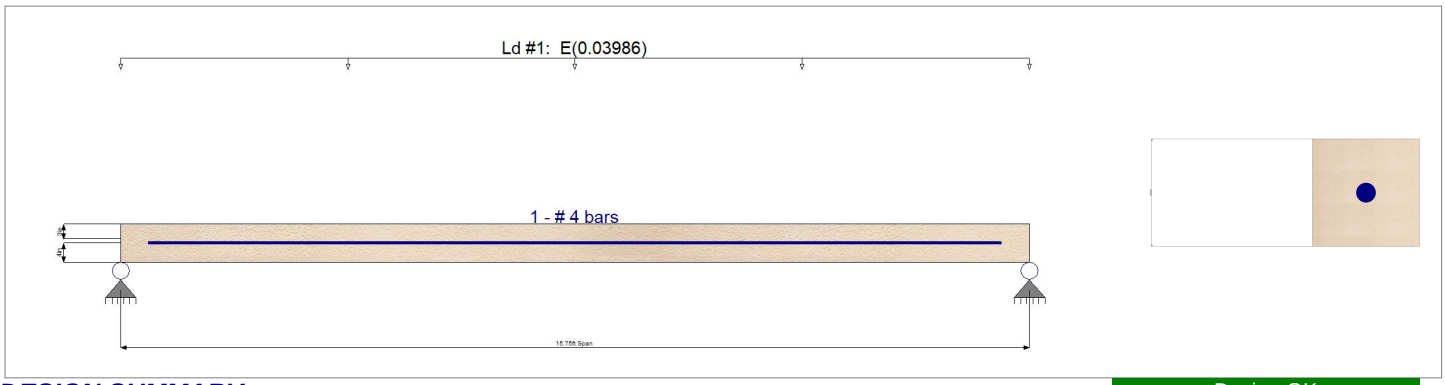
DESCRIPTION: GL E-B 9'-0" OPENING CHECK

Code References

Calculations per TMS 402-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

f'm	1,500.0 psi	Clear Span	15.750 ft	Rebar Size	4.0
Fs	24,000.0 psi	Beam Depth	0.6670 ft	# Bars @ Locations	1
Em = f'm *	900.0	Thickness	8 in	Top Clear	3.0 in
Wall Wt Mult.	1.0	End Fixity	Pin-Pin	Btm Clear	4.0 in
Block Type	Normal Wt	Equiv. Solid Thick	7.60 in	# Bar Sets	1
Lateral Wind Load	5.0 psf	Wall Weight	86.0 psf	Bar Spacing	5.0 in
Beam is Fully Braced ?	No	E	1,350.0 ksi		
Lateral Wall Weight Seismic Factor	0.330	n	21.481		
Calculate vertical beam weight ?	Yes				
Note! Shear calculated at "d/2" from edge of beai					



DESIGN SUMMARY

Design OK

Maximum Stress Ratios...

	Vertical	Lateral	SRSS Combination
fb/Fb	0.7137	0.3559	**0.7975** : 1.00
fv/Fv	0.08121	0.08829	**0.120** : 1.00

Minimum Mn = 1.3 * Fcr * S = 0.8820 k-ft

Maximum Moment

	Actual	Allowable
Vertical Loads for Load Combination E Only * 0.70	0.8652 k-ft	1.212 k-ft
Lateral Loads for Load Combination E Only * 0.70	0.4107 k-ft	1.154

Maximum Shear

	Actual	Allowable
Vertical Loads for Load Combination E Only * 0.70	3.538 psi	43.571 psi
Lateral Loads for Load Combination E Only * 0.70	3.420 psi	38.730 psi

Vertical Strength

As	0.20 in^2
rho	0.006551
np	0.1407
k : ((np)^2+2np)^.5-np	0.4081
j = 1 - k/3	0.8640
M:mas=Fb k j b d^2/2	1.212 k-ft
M:Stl = Fs As j d	1.384 k-ft

Lateral Strength

(Checking lateral bending for span)

As	0.20 in^2
rho	0.006554
np	0.1408
k : (np^2+2np)^.5-np	0.4082
j = 1 - k/3	0.8639
M:mas=Fb k j b d^2/2	1.154 k-ft
M:Stl = Fs As j d	1.317 k-ft

Detailed Load Combination Results

Load Combinatic	Vertical				Lateral			
	Mmax k-ft	Mallow k-ft	fv : Vert psi	Fv : Vert psi	Mactual k-ft	Mallow k-ft	fv psi	Fv psi
	0.00	1.21	0.00	77.46	0.00	1.15	0.00	38.73
+0.60W	0.00	1.21	0.00	77.46	0.06	1.15	0.52	38.73
E Only * 0.70	0.87	1.21	3.54	43.57	0.41	1.15	3.42	38.73

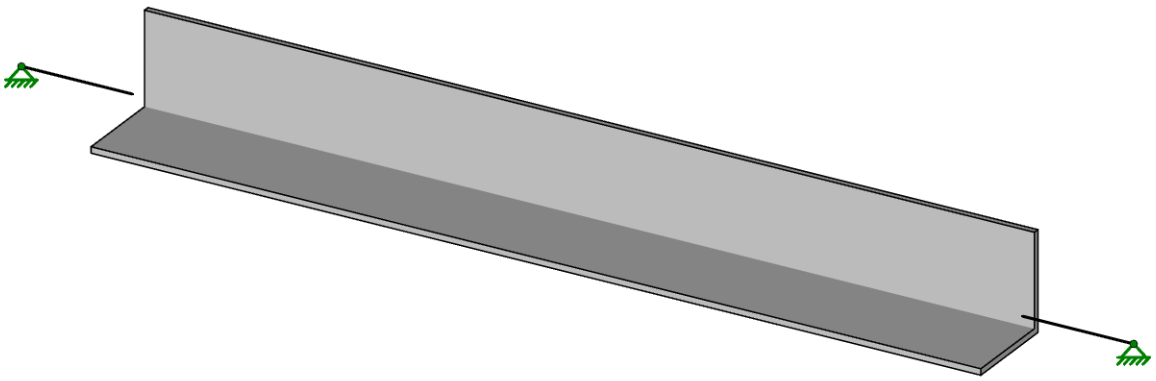
(N) 9'-0" OPENING IN (E) WALL ALONG GL
E-B CHECK, IDEALIZED AS A BEAM

Masonry Beam

DESCRIPTION: GL E-B 9'-0" OPENING CHECK

Detailed Load Combination Results

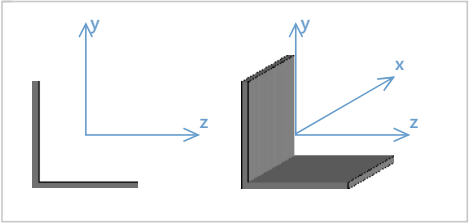
Load Combinatic	Vertical				Lateral			
	Mmax k-ft	Mallow k-ft	fv : Vert psi	Fv : Vert psi	Mactual k-ft	Mallow k-ft	fv psi	Fv psi
+0.450W	0.00	1.21	0.00	77.46	0.05	1.15	0.39	38.73
E Only * 0.5250	0.65	1.21	2.65	43.57	0.31	1.15	2.56	38.73



<Licensed Company>	LOOSE LINTEL FOR MAX OPENING ON GL - E3	SK-1
kaden.harris		Jan 20, 2023
		(N) LINTEL CALCS.r3d

STRENGTH CHECK

Detail Report: M2 **Unity Check:** 0.695 (LC 7) **Load Combination:** Envelope



Input Data:

Shape:	L8X8X8	I Node:	N3
Member Type:	Beam	J Node:	N4
Length (ft):	7.5	I Release:	Fixed
Material Type:	Hot Rolled Steel	J Release:	Fixed
Design Rule:	Typical	I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

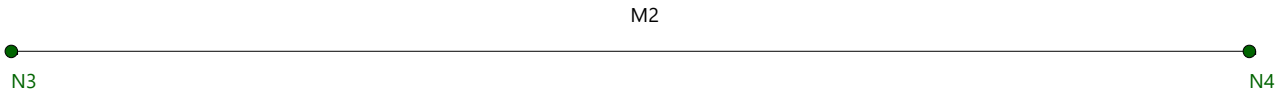
Material:	A36 Gr.36	Therm. Coeff. ($1e^5°F^{-1}$):	0.65	R_y:	1.5
E (ksi):	29000	Density (k/ft^3):	0.49	F_u (ksi):	58
G (ksi):	11154	F_y (ksi):	36	R_t:	1.2
Nu:	0.3				

Shape Properties:

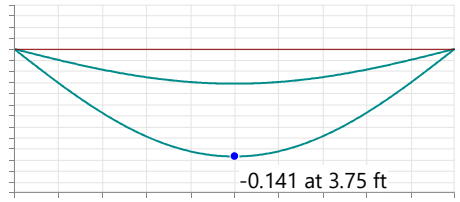
d (in):	8	Area (in^2):	7.84	J (in^4):	0.683
b_f (in):	8	I_{yy} (in^4):	48.8	r_Z (in):	1.59
t (in):	0.5	I_{zz} (in^4):	48.8	k* (in):	1.13

Design Properties:

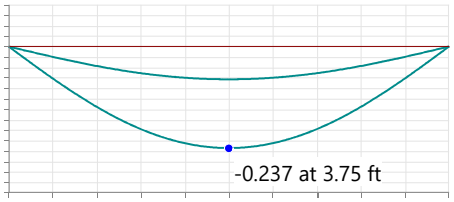
$L_{b\ y-y}$ (ft):	N/A	K_{y-y}:	1	Max Defl Ratio:	L/640
$L_{b\ z-z}$ (ft):	N/A	K_{z-z}:	1	Max Defl Location:	3.75
$L_{comp\ top}$ (ft):	Lbyy	y sway:	No	Span:	1
$L_{comp\ bot}$ (ft):	N/A	z sway:	No		
L_{torque} (ft):	N/A	Function:	Lateral		
		Seismic DR:	None		



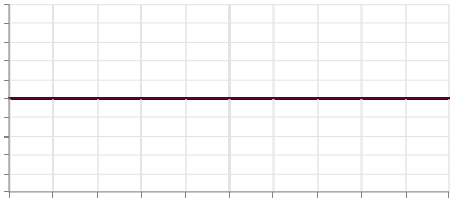
Diagrams:

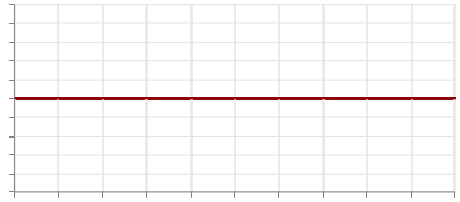


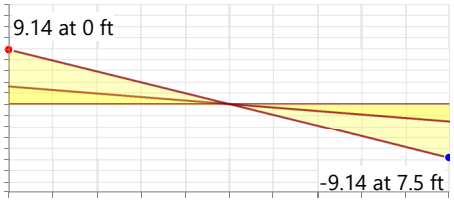
y Deflection (in)



z Deflection (in)

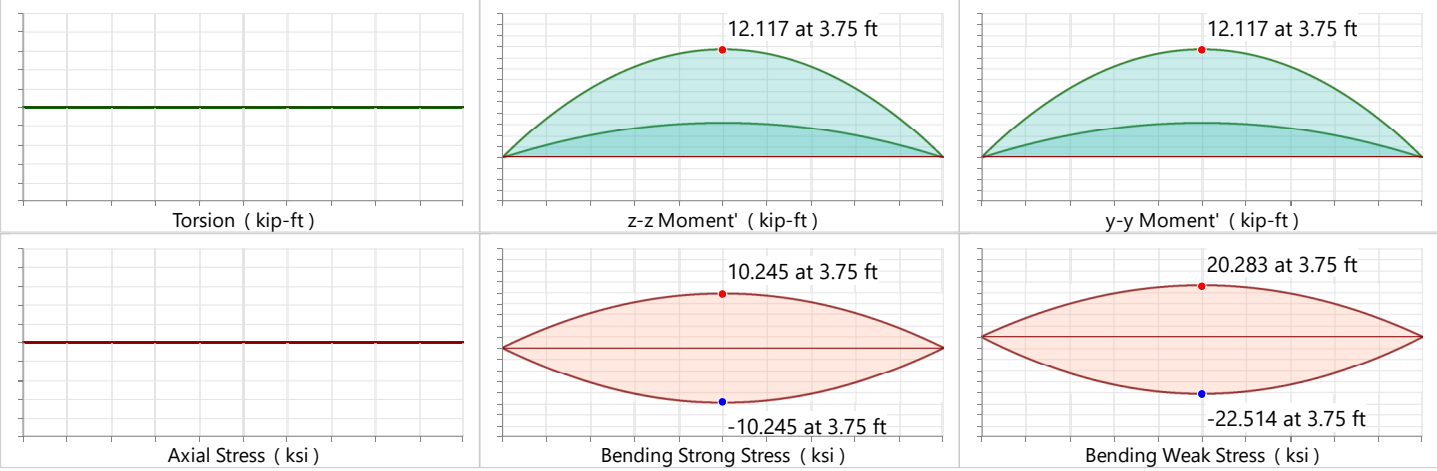

Axial Force (kips)


y Shear Force (kips)



z Shear Force (kips)

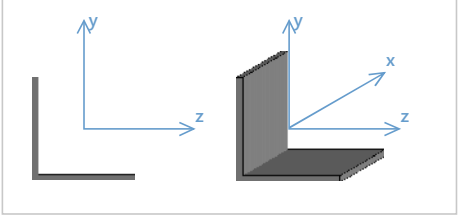
STRENGTH CHECK



AISC 15th (360-16): LRFD Code Check

Limit State	Gov. LC	Required	Available	Unity Check	Result
Applied Loading - Bending/Axial	7	-	-	-	-
Applied Loading - Shear + Torsion	7	-	-	-	-
Axial Tension Analysis	7	0.000 k	254.016 k	-	-
Axial Compression Analysis	7	0.000 k	189.606 k	-	-
Flexural Analysis (Strong Axis)	7	12.117 k-ft	52.207 k-ft	-	-
Flexural Analysis (Weak Axis)		12.117 k-ft	26.157 k-ft	-	-
Shear Analysis (Major Axis y)	7	0.000 k	77.76 k	0.000	Pass
Shear Analysis (Minor Axis z)	7	9.14 k	77.76 k	0.118	Pass
Bending & Axial Interaction Check (UC Bending Max)	7	-	-	0.695	Pass

Detail Report: M2 **Unity Check:** 0.657 (axial/bending) **Load Combination:** LC 3: Total Deflection



Input Data:

Shape:	L8X8X8	I Node:	N3
Member Type:	Beam	J Node:	N4
Length (ft):	7.5	I Release:	Fixed
Material Type:	Hot Rolled Steel	J Release:	Fixed
Design Rule:	Typical	I Offset (in):	N/A
Number of Internal Sections:	97	J Offset (in):	N/A

Material Properties:

Material:	A36 Gr.36	Therm. Coeff. ($1e^5°F^{-1}$):	0.65	R_y:	1.5
E (ksi):	29000	Density (k/ft^3):	0.49	F_u (ksi):	58
G (ksi):	11154	F_y (ksi):	36	R_t:	1.2
Nu:	0.3				

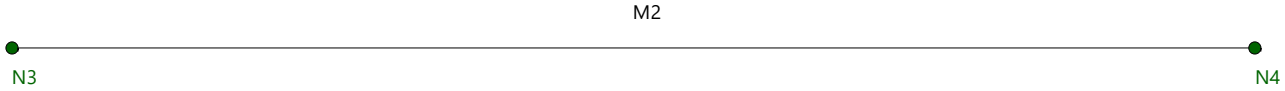
DEFLECTION GREATER THAN L/600 **OKAY**

Shape Properties:

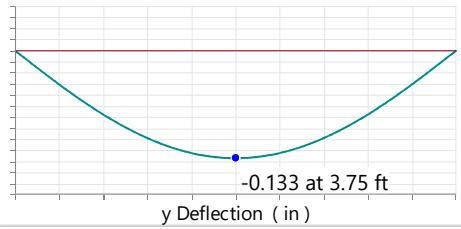
d (in):	8	Area (in^2):	7.84	J (in^4):	0.683
b_f (in):	8	I_{yy} (in^4):	48.8	r_z (in):	1.59
t (in):	0.5	I_{zz} (in^4):	48.8	k* (in):	1.13

Design Properties:

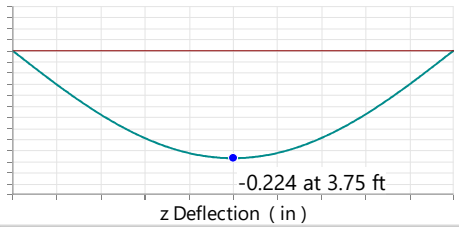
$L_{b\ y\text{-}y}$ (ft):	N/A	$K_{y\text{-}y}$:	1	Max Defl Ratio:	L/678
$L_{b\ z\text{-}z}$ (ft):	N/A	$K_{z\text{-}z}$:	1	Max Defl Location:	3.75
$L_{comp\ top}$ (ft):	Lbyy	y sway:	No	Span:	1
$L_{comp\ bot}$ (ft):	N/A	z sway:	No		
L_{torque} (ft):	N/A	Function:	Lateral		
		Seismic DR:	None		



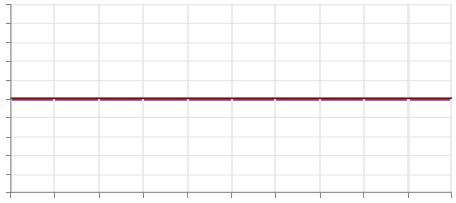
Diagrams:

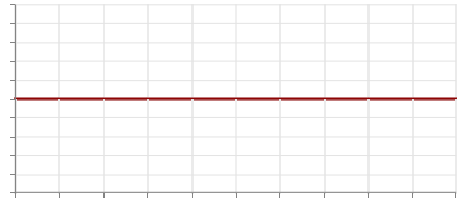


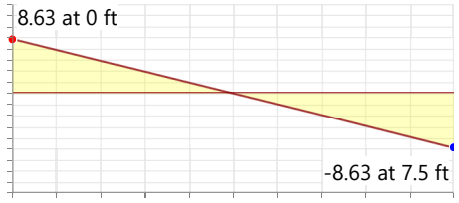
y Deflection (in)



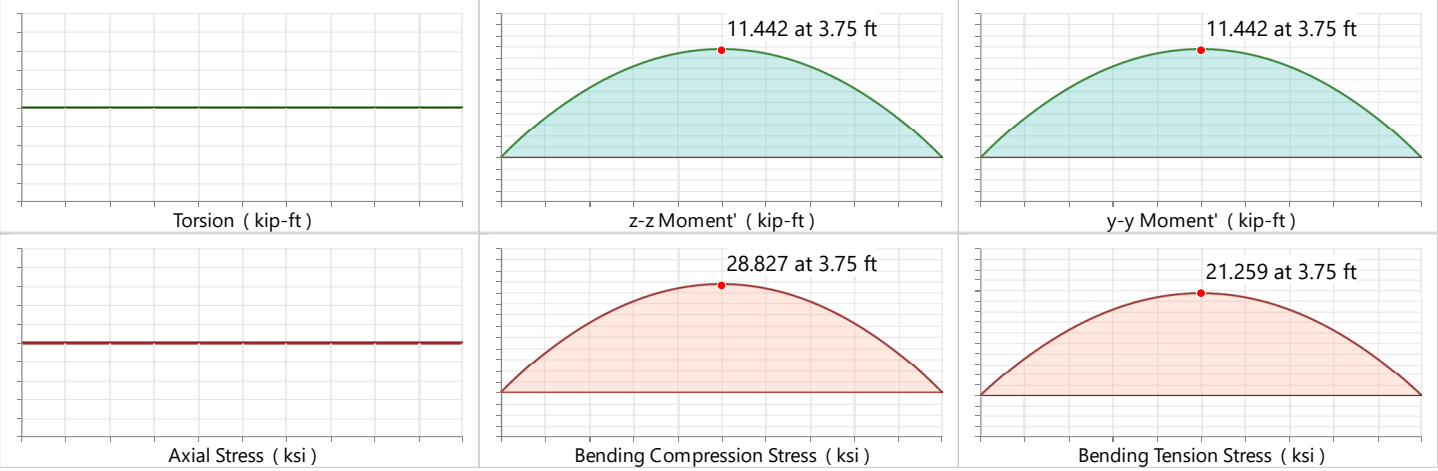
z Deflection (in)


Axial Force (kips)


y Shear Force (kips)



z Shear Force (kips)



AISC 15th (360-16): LRFD Code Check

Limit State	Required	Available	Unity Check	Result
Applied Loading - Bending/Axial				
Applied Loading - Shear + Torsion	-	-	-	-
Axial Tension Analysis	0.000 k	254.016 k	-	-
Axial Compression Analysis	0.000 k	189.606 k	-	-
Flexural Analysis (Strong Axis)	11.442 k-ft	52.207 k-ft	-	-
Flexural Analysis (Weak Axis)	11.442 k-ft	26.157 k-ft	-	-
Shear Analysis (Major Axis y)	0.000 k	77.76 k	0.000	Pass
Shear Analysis (Minor Axis z)	8.63 k	77.76 k	0.111	Pass
Bending & Axial Interaction Check (UC Bending Max)	-	-	0.657	Pass

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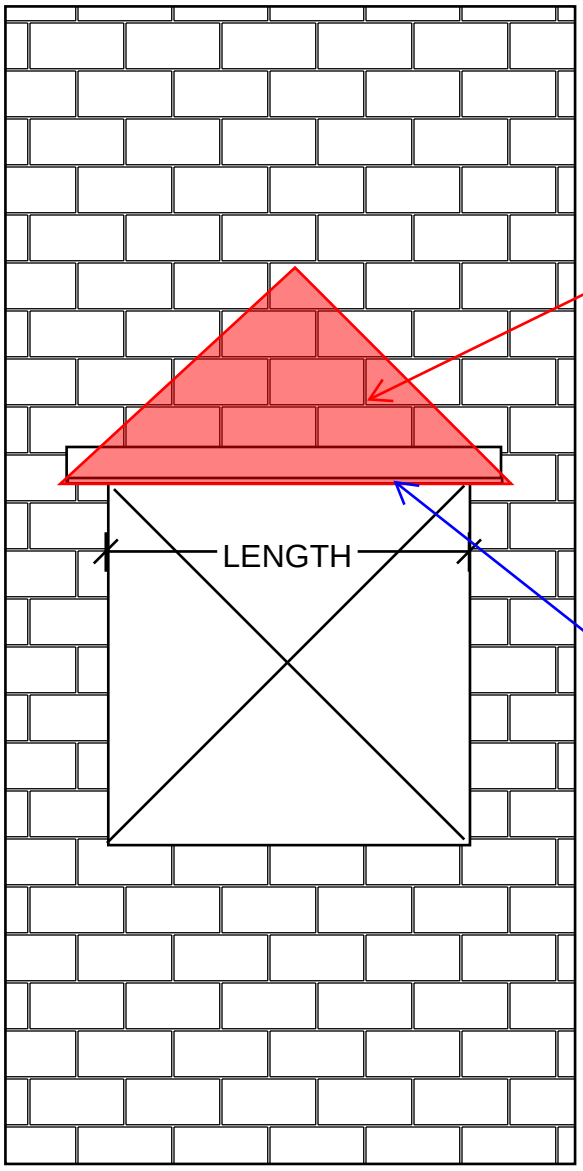
412 E. Park Center Blvd, Suite 200
Boise, ID 83706
O:208.336.6985
www.kpff.com

project	Twin Falls Judicial Building	by MG, NP	sheet no.
location	Twin Falls, Idaho	date 1-5-2022	
client	CSHQA	job no. 10212200038	
Loose Lintel Calculations GL E-B			

EXAMPLE WALL SECTION:



ARCHING ACTION ASSUMED

BRICK=59 PSF
LOAD IN LB/FT=59 PSF*(LENGTH/2)*2/3

MAX MEMBER THICKNESS 3/8" FOR CONSTRUCTIBILITY (GROUTING)

CASE 1: 7-0" FT LENGTH, CASE 2: 10'-0" FT LENGTH, CASE 3: 11'-6" FT LENGTH

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Beam

Project File: TFJB Loose Lintel Design.ec6

LIC# : KW-06013369, Build:20.22.10.25 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: 10'-0" MAX

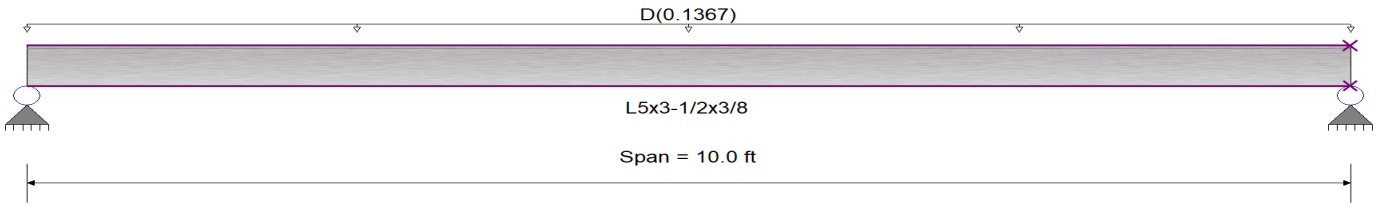
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		

Vertical Leg Up



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Uniform Load : D = 0.0410 ksf, Tributary Width = 3.333 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.279 : 1	Maximum Shear Stress Ratio =	0.028 : 1
Section used for this span	L5x3-1/2x3/8	Section used for this span	L5x3-1/2x3/8
Mu : Applied	2.573 k-ft	Vu : Applied	1.029 k
Mn * Phi : Allowable	9.232 k-ft	Vn * Phi : Allowable	36.450 k
Load Combination	+1.40D	Load Combination	+1.40D
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.000 in	Ratio =	0	<360
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360
Max Downward Total Deflection	0.148 in	Ratio =	811	>=600. Span: 1 : D Only
Max Upward Total Deflection	0.000 in	Ratio =	0	<600.0

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 10.00 ft	1	0.279	0.028	2.57		2.57	10.26	9.23	1.00	1.00	1.03	40.50	36.45
+1.20D													
Dsgn. L = 10.00 ft	1	0.239	0.024	2.21		2.21	10.26	9.23	1.00	1.00	0.88	40.50	36.45
+0.90D													
Dsgn. L = 10.00 ft	1	0.179	0.018	1.65		1.65	10.26	9.23	1.00	1.00	0.66	40.50	36.45

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D Only	1	0.1479	5.029		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.735	0.735
Max Upward from Load Combinations	0.441	0.441
Max Upward from Load Cases	0.735	0.735
D Only	0.735	0.735
+0.60D	0.441	0.441

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Beam

Project File: TFJB Loose Lintel Design.ec6

LIC# : KW-06013369, Build:20.22.10.25 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: 11'-6" MAX

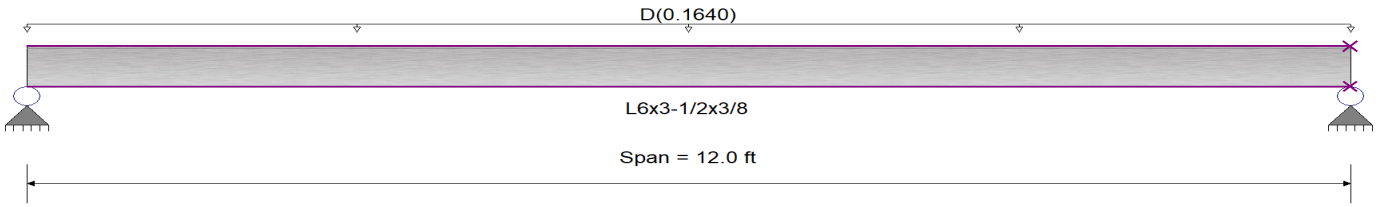
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		

Vertical Leg Up



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Uniform Load : D = 0.0410 ksf, Tributary Width = 4.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.346 : 1	Maximum Shear Stress Ratio =	0.034 : 1
Section used for this span	L6x3-1/2x3/8	Section used for this span	L6x3-1/2x3/8
Mu : Applied	4.428 k-ft	Vu : Applied	1.476 k
Mn * Phi : Allowable	12.780 k-ft	Vn * Phi : Allowable	43.740 k
Load Combination	+1.40D	Load Combination	+1.40D
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.000 in	Ratio =	0	<360
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360
Max Downward Total Deflection	0.220 in	Ratio =	654	>=600. Span: 1 : D Only
Max Upward Total Deflection	0.000 in	Ratio =	0	<600.0

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 12.00 ft	1	0.346	0.034	4.43		4.43	14.20	12.78	1.00	1.00	1.48	48.60	43.74
+1.20D													
Dsgn. L = 12.00 ft	1	0.297	0.029	3.80		3.80	14.20	12.78	1.00	1.00	1.27	48.60	43.74
+0.90D													
Dsgn. L = 12.00 ft	1	0.223	0.022	2.85		2.85	14.20	12.78	1.00	1.00	0.95	48.60	43.74

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D Only	1	0.2201	6.034		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	1.054	1.054
Max Upward from Load Combinations	0.633	0.633
Max Upward from Load Cases	1.054	1.054
D Only	1.054	1.054
+0.60D	0.633	0.633

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Beam

Project File: TFJB Loose Lintel Design.ec6

DESCRIPTION: 7'-0" MAX

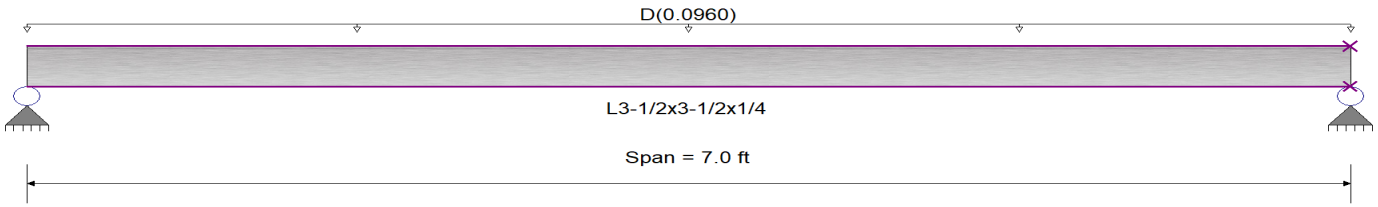
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		

Vertical Leg Up



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Uniform Load : D = 0.0960 k/ft, Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.274 : 1	Maximum Shear Stress Ratio =	0.029 : 1
Section used for this span	L3-1/2x3-1/2x1/4	Section used for this span	L3-1/2x3-1/2x1/4
Mu : Applied	0.873 k-ft	Vu : Applied	0.4988 k
Mn * Phi : Allowable	3.181 k-ft	Vn * Phi : Allowable	17.010 k
Load Combination	+1.40D	Load Combination	+1.40D
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.000 in	Ratio =	0	<360
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360
Max Downward Total Deflection	0.095 in	Ratio =	882	>=600. Span: 1 : D Only
Max Upward Total Deflection	0.000 in	Ratio =	0	<600.0

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 7.00 ft	1	0.274	0.029	0.87		0.87	3.53	3.18	1.00	1.00	0.50	18.90	17.01
+1.20D													
Dsgn. L = 7.00 ft	1	0.235	0.025	0.75		0.75	3.53	3.18	1.00	1.00	0.43	18.90	17.01
+0.90D													
Dsgn. L = 7.00 ft	1	0.176	0.019	0.56		0.56	3.53	3.18	1.00	1.00	0.32	18.90	17.01

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D Only	1	0.0953	3.520		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.356	0.356
Max Upward from Load Combinations	0.214	0.214
Max Upward from Load Cases	0.356	0.356
D Only	0.356	0.356
+0.60D	0.214	0.214

Twin Falls Judicial – Twin Falls, ID

Permit Submittal Structural Calculations

KPFF JOB # 10212200038

STAIR AND ELEVATOR DESIGN

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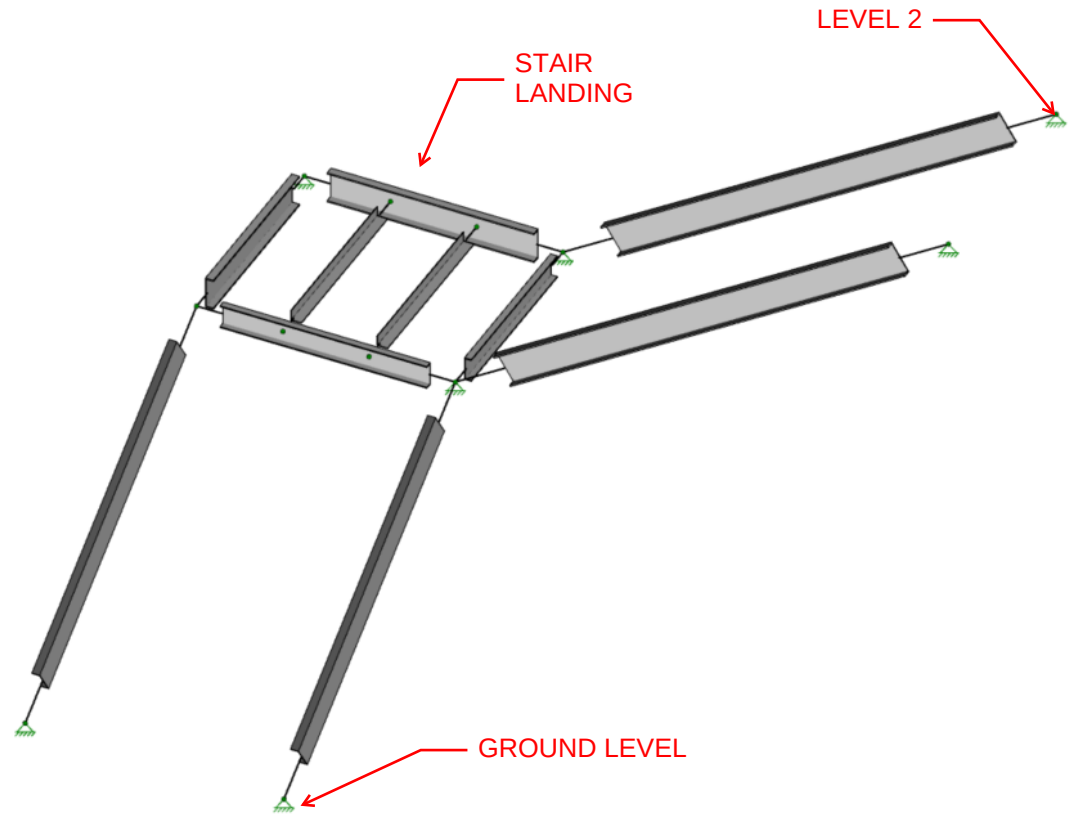
Boise, ID 83706
O:208.336.6985
www.kpff.com

project	TFJB	by CW	sheet no. -
location	Twin Falls, ID	date 01-23-23	
client	CSHQA	job no. 10212200038	
RISA-3D Area A Stairs			

RISA-3D Area A Stair Model:



AREA A STAIR DESIGN

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	N3	Reaction	Reaction	Reaction
2	N4	Reaction	Reaction	Reaction
3	N2	Reaction	Reaction	Reaction
4	N5	Reaction	Reaction	Reaction
5	N6	Reaction	Reaction	Reaction
6	N7	Reaction	Reaction	Reaction
7	N8	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Stair Stringer	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369
2	Landing Beam	C9X15	Beam	Channel	A36 Gr.36	Typical	4.4	1.91	51	0.208
3	Perimeter Beam	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369
4	Landing Support	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N2	Perimeter Beam	Beam	Channel	A36 Gr.36	Typical
2	M2	N1	N3	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
3	M3	N1	N4	Landing Beam	Beam	Channel	A36 Gr.36	Typical
4	M4	N2	N5	Perimeter Beam	Beam	Channel	A36 Gr.36	Typical
5	M5	N5	N6	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
6	M6	N4	N7	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
7	M7	N4	N8	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
8	M8	N4	N5	Landing Beam	Beam	Channel	A36 Gr.36	Typical
9	M9	N11	N9	Landing Support	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N12	N10	Landing Support	Beam	Single Angle	A36 Gr.36	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	M1	Perimeter Beam	6.75	Lbyy	N/A	N/A	Lateral
2	M2	Stair Stringer	12.966	Lbyy	N/A	N/A	Lateral
3	M3	Landing Beam	8	Lbyy	N/A	N/A	Lateral
4	M4	Perimeter Beam	8	Lbyy	N/A	N/A	Lateral
5	M5	Stair Stringer	18.1	Lbyy	N/A	N/A	Lateral
6	M6	Stair Stringer	18.1	Lbyy	N/A	N/A	Lateral

AREA A STAIR DESIGN

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
7	M7	Stair Stringer	12.966	Lbyy	N/A	N/A	Lateral
8	M8	Landing Beam	6.75	Lbyy	N/A	N/A	Lateral
9	M9	Landing Support	6.75	Lbyy	N/A	N/A	Lateral
10	M10	Landing Support	6.75	Lbyy	N/A	N/A	Lateral

Design Size and Code Check Parameters

	Label	Max Axial/Bending Chk	Max Shear Chk
1	Typical	1	1

Deflection Design

	Label	LC	Ratio	LC	Ratio	LC	Ratio
1	Typical	1	240	2	360	3	240

Member Distributed Loads (BLC 3 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M2	Y	-220	-220	1.332e-15	12.966
2	M7	Y	-220	-220	0	12.966
3	M1	Y	-66.667	-66.667	3.331e-16	6.75
4	M8	Y	-66.667	-66.667	1.11e-16	6.75
5	M9	Y	-133.333	-133.333	3.331e-16	6.75
6	M10	Y	-133.333	-133.333	1.11e-16	6.75
7	M5	Y	-185.625	-185.625	0	18.1
8	M6	Y	-185.625	-185.625	1.332e-15	18.1

Member Distributed Loads (BLC 4 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M2	Y	-400	-400	1.332e-15	12.966
2	M7	Y	-400	-400	0	12.966
3	M1	Y	-133.333	-133.333	3.331e-16	6.75
4	M8	Y	-133.333	-133.333	1.11e-16	6.75
5	M9	Y	-266.667	-266.667	3.331e-16	6.75
6	M10	Y	-266.667	-266.667	1.11e-16	6.75
7	M5	Y	-337.5	-337.5	0	18.1
8	M6	Y	-337.5	-337.5	1.332e-15	18.1

Member Area Loads (BLC 1 : DEAD)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N3	N8	N4	N1	Y	A-B	-55
2	N1	N4	N5	N2	Y	A-B	-50
3	N5	N4	N7	N6	Y	A-B	-55

Member Area Loads (BLC 2 : LIVE)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N3	N8	N4	N1	Y	A-B	-100
2	N1	N4	N5	N2	Y	A-B	-100
3	N5	N4	N7	N6	Y	A-B	-100

AREA A STAIR DESIGN

Basic Load Cases

	BLC Description	Category	Y Gravity	Distributed	Area(Member)
1	DEAD	DL	-1		3
2	LIVE	LL			3
3	BLC 1 Transient Area Loads	None		8	
4	BLC 2 Transient Area Loads	None		8	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Deflection 1		Y	DL	1						
2	Deflection 2		Y	LL	1						
3	Deflection 3		Y	DL	1	LL	1				
4	IBC 16-1	Yes	Y	DL	1.4						
5	IBC 16-2 (a)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6	RLL	0.5
6	IBC 16-2 (b)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6		
7	IBC 16-3 (a)	Yes	Y	DL	1.2	RLL	1.6	LL	0.5	LLS	1

Load Combination Design

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-1		Yes	Yes		Yes	Yes	Yes	Yes	Yes
5	IBC 16-2 (a)		Yes	Yes		Yes	Yes	Yes	Yes	Yes
6	IBC 16-2 (b)		Yes	Yes		Yes	Yes	Yes	Yes	Yes
7	IBC 16-3 (a)		Yes	Yes		Yes	Yes	Yes	Yes	Yes

Node Reactions

	LC	Node Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	4	N3	4.991	5.257	-0.001	0	0	0
2	4	N4	-0.212	7.564	-0.181	0	0	0
3	4	N2	-4.981	-0.206	-0.007	0	0	0
4	4	N5	0.075	4.618	-0.216	0	0	0
5	4	N6	-0.001	2.268	0.221	0	0	0
6	4	N7	0.002	2.337	0.177	0	0	0
7	4	N8	0.126	1.997	0.007	0	0	0
8	4	Totals:	0	23.835	0			
9	4	COG (ft):	X: 0.176	Y: 8.06	Z: 9.091			
10	5	N3	13.716	14.46	-0.003	0	0	0
11	5	N4	-0.602	20.774	-0.498	0	0	0
12	5	N2	-13.687	-0.647	-0.018	0	0	0
13	5	N5	0.223	12.57	-0.589	0	0	0
14	5	N6	-0.003	6.183	0.604	0	0	0
15	5	N7	0.005	6.368	0.486	0	0	0
16	5	N8	0.348	5.506	0.019	0	0	0
17	5	Totals:	0	65.215	0			
18	5	COG (ft):	X: 0.146	Y: 8.042	Z: 9.079			
19	6	N3	13.716	14.46	-0.003	0	0	0
20	6	N4	-0.602	20.774	-0.498	0	0	0
21	6	N2	-13.687	-0.647	-0.018	0	0	0
22	6	N5	0.223	12.57	-0.589	0	0	0
23	6	N6	-0.003	6.183	0.604	0	0	0
24	6	N7	0.005	6.368	0.486	0	0	0

AREA A STAIR DESIGN

Node Reactions (Continued)

	LC	Node Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
25	6	N8	0.348	5.506	0.019	0	0	0
26	6	Totals:	0	65.215	0			
27	6	COG (ft):	X: 0.146	Y: 8.042	Z: 9.079			
28	7	N3	7.225	7.616	-0.001	0	0	0
29	7	N4	-0.313	10.949	-0.262	0	0	0
30	7	N2	-7.211	-0.323	-0.01	0	0	0
31	7	N5	0.114	6.649	-0.311	0	0	0
32	7	N6	-0.001	3.269	0.319	0	0	0
33	7	N7	0.002	3.367	0.256	0	0	0
34	7	N8	0.183	2.898	0.01	0	0	0
35	7	Totals:	0	34.426	0			
36	7	COG (ft):	X: 0.158	Y: 8.049	Z: 9.084			

Node Reactions - Overstrength or Capacity Limit

No Data to Print...

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N3	max	13.716	6	14.46	6	-0.001	4	0	7	0	7	0	7
2		min	4.991	4	5.257	4	-0.003	5	0	4	0	4	0	4
3	N4	max	-0.212	4	20.774	6	-0.181	4	0	7	0	7	0	7
4		min	-0.602	5	7.564	4	-0.498	5	0	4	0	4	0	4
5	N2	max	-4.981	4	-0.206	4	-0.007	4	0	7	0	7	0	7
6		min	-13.687	5	-0.647	5	-0.018	5	0	4	0	4	0	4
7	N5	max	0.223	6	12.57	6	-0.216	4	0	7	0	7	0	7
8		min	0.075	4	4.618	4	-0.589	5	0	4	0	4	0	4
9	N6	max	-0.001	4	6.183	6	0.604	6	0	7	0	7	0	7
10		min	-0.003	5	2.268	4	0.221	4	0	4	0	4	0	4
11	N7	max	0.005	6	6.368	6	0.486	6	0	7	0	7	0	7
12		min	0.002	4	2.337	4	0.177	4	0	4	0	4	0	4
13	N8	max	0.348	6	5.506	6	0.019	6	0	7	0	7	0	7
14		min	0.126	4	1.997	4	0.007	4	0	4	0	4	0	4
15	Totals:	max	0	7	65.215	6	0	6						
16		min	0	5	23.835	4	0	7						

Envelope Node Reactions - Overstrength or Capacity Limit

No Data to Print...

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0.008	6	-0.016	4	0	4	-4.661e-4	4	-1.895e-4	4	1.283e-3	6
2		min	0.003	4	-0.043	5	0	5	-1.222e-3	5	-5.444e-4	5	4.636e-4	4
3	N2	max	0	6	0	6	0	6	-1.887e-4	4	3.364e-4	6	3.471e-4	6
4		min	0	4	0	4	0	4	-5.012e-4	5	1.13e-4	4	1.29e-4	4
5	N3	max	0	4	0	4	0	6	-3.794e-4	4	-3.181e-4	4	-9.949e-4	4
6		min	0	5	0	5	0	4	-1.028e-3	5	-8.327e-4	5	-2.743e-3	5
7	N4	max	0	6	0	4	0	6	3.122e-3	6	9.238e-5	6	1.667e-3	6
8		min	0	4	0	5	0	4	1.158e-3	4	4.69e-5	4	6.052e-4	4
9	N5	max	0	4	0	4	0	6	1.964e-3	6	2.654e-4	6	-1.605e-4	4
10		min	0	5	0	5	0	4	7.241e-4	4	8.745e-5	4	-4.38e-4	5
11	N6	max	0	6	0	4	0	4	-1.828e-3	4	-1.149e-4	4	-3.116e-5	4
12		min	0	4	0	5	0	5	-4.98e-3	5	-3.153e-4	5	-6.678e-5	5

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Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
13	N7	max	0	4	0	4	0	4	-2.041e-3	4	1.129e-3	6	1.005e-3	6
14		min	0	5	0	5	0	5	-5.548e-3	5	4.089e-4	4	3.738e-4	4
15	N8	max	0	4	0	4	0	4	1.722e-3	6	2.167e-3	6	-9.238e-4	4
16		min	0	5	0	5	0	5	6.477e-4	4	8.033e-4	4	-2.546e-3	5
17	N9	max	0.001	6	0.016	6	0	6	-1.594e-4	4	-2.031e-4	4	1.442e-2	6
18		min	0	4	0.006	4	0	4	-4.275e-4	5	-6.117e-4	5	4.752e-3	4
19	N10	max	-0.001	4	0.025	6	0	4	1.549e-4	6	-1.91e-4	4	1.41e-2	6
20		min	-0.002	5	0.009	4	0	5	5.964e-5	4	-5.809e-4	5	4.635e-3	4
21	N11	max	0.001	6	-0.001	4	0	4	-4.611e-4	4	9.539e-4	6	-4.794e-3	4
22		min	0	4	-0.004	5	0	5	-1.235e-3	5	3.105e-4	4	-1.457e-2	5
23	N12	max	-0.001	4	0.029	6	0	4	-1.242e-4	4	9.822e-4	6	-4.89e-3	4
24		min	-0.001	5	0.011	4	0	5	-3.724e-4	5	3.204e-4	4	-1.484e-2	5

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	y Shear[k]	Loc[ft]	LC	z Shear[k]	Loc[ft]	LC	Torque[k-ft]	Loc[ft]	LC	y-y Moment[k-ft]	Loc[ft]	LC	z-z Moment[k-ft]	Loc[ft]	LC
1	M1	max	13.504	6.75	6	2.384	0	6	0.017	6.75	6	-0.003	6.75	4	-0.007	6.75	4	8.511	0	6
2		min	4.92	0	4	0.063	6.75	4	0.006	0	4	-0.008	0	5	-0.138	0	5	-0.334	6.75	5
3	M2	max	19.457	12.966	6	5.661	0	6	-0.001	12.966	4	0	12.966	7	0.033	0	6	8.672	0	6
4		min	4.634	0	4	-4.324	12.966	5	-0.003	0	5	0	0	4	0	12.966	4	-12.137	7.294	5
5	M3	max	-0.007	2.583	4	0.026	0	6	-0.071	2.583	4	0.161	2.667	6	0.697	2.667	6	16.184	8	6
6		min	-0.022	2.667	5	-4.079	8	5	-0.525	2.667	5	-0.167	5.333	5	-0.704	5.333	5	-0.045	1.417	5
7	M4	max	0.001	5.333	6	-0.143	0	4	0.497	5.25	6	0.345	8	6	0.655	5.333	6	20.292	8	6
8		min	-0.001	0	5	-4.667	8	5	0.06	0	4	-0.334	0	5	-0.67	2.667	5	0.003	0	4
9	M5	max	3.839	0	6	7.126	0	6	-0.001	18.1	4	0	18.1	7	0.047	0	6	20.287	0	6
10		min	-3.839	18.1	5	-4.884	18.1	5	-0.003	0	5	0	0	4	0	18.1	4	-17.978	10.747	5
11	M6	max	3.839	0	6	6.907	0	6	0.005	18.1	6	0	18.1	7	0	18.1	7	16.323	0	6
12		min	-3.839	18.1	5	-5.103	18.1	5	0.002	0	4	0	0	4	-0.085	0	5	-19.625	10.37	5
13	M7	max	3.367	12.966	6	5.615	0	6	0.019	12.966	6	0	12.966	7	0	12.966	7	8.072	0	6
14		min	-3.367	0	5	-4.37	12.966	5	0.007	0	4	0	0	4	-0.24	0	5	-12.399	7.294	5
15	M8	max	0	6.75	7	2.27	0	6	-0.005	6.75	4	0.005	6.75	6	0.041	0	6	7.859	0	6
16		min	0	0	4	0.055	6.75	4	-0.014	0	5	0.002	0	4	-0.057	6.75	5	-0.37	6.75	5
17	M9	max	-0.102	6.75	4	1.979	0	6	0.003	6.258	6	0	6.75	4	1.408	3.305	6	-0.185	6.75	4
18		min	-0.313	0	5	-2.034	6.75	5	0.001	4.289	4	0	0	5	-1.045	6.75	5	-3.028	3.305	5
19	M10	max	0.276	6.75	6	1.982	0	6	0	5.695	4	0	6.75	4	1.407	3.305	6	-0.189	6.75	4
20		min	0.088	0	4	-2.031	6.75	5	-0.001	5.906	5	0	0	5	-1.049	6.75	5	-3.023	3.305	5

Envelope Member End Reactions

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M1	I	max	13.504	6	2.384	6	0.017	6	-0.003	4	-0.049	4	8.511	6
2			min	4.92	4	0.888	4	0.006	4	-0.008	5	-0.138	5	3.099	4
3		J	max	13.504	6	0.237	6	0.017	6	-0.003	4	-0.007	4	-0.11	4
4			min	4.92	4	0.063	4	0.006	4	-0.008	5	-0.024	5	-0.334	5
5	M2	I	max	12.723	6	5.661	6	-0.001	4	0	7	0.033	6	8.672	6
6			min	4.634	4	2.054	4	-0.003	5	0	4	0.015	4	3.152	4
7		J	max	19.457	6	-1.568	4	-0.001	4	0	7	0	7	0	7
8			min	7.077	4	-4.324	5	-0.003	5	0	4	0	4	0	4
9	M3	I	max	-0.007	4	0.026	6	-0.071	4	0.161	6	0.11	6	-0.011	4
10			min	-0.019	5	-0.002	4	-0.213	5	0.053	4	0.036	4	-0.027	5
11		J	max	-0.008	4	-1.474	4	-0.084	4	-0.056	4	-0.081	4	16.184	6
12			min	-0.021	5	-4.079	5	-0.249	5	-0.167	5	-0.229	5	5.891	4
13	M4	I	max	-0.001	4	-0.143	4	0.184	6	-0.11	4	-0.007	4	0.008	6
14			min	-0.001	5	-0.403	5	0.06	4	-0.334	5	-0.024	5	0.003	4
15		J	max	0	4	-1.713	4	0.22	6	0.345	6	0.097	6	20.292	6

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Envelope Member End Reactions (Continued)

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
16			min	0	5	-4.667	5	0.074	4	0.114	4	0.034	4	7.429	4
17	M5	I	max	3.839	6	7.126	6	-0.001	4	0	7	0.047	6	20.287	6
18			min	1.408	4	2.613	4	-0.003	5	0	4	0.017	4	7.427	4
19		J	max	-1.408	4	-1.792	4	-0.001	4	0	7	0	7	0	7
20			min	-3.839	5	-4.884	5	-0.003	5	0	4	0	4	0	4
21	M6	I	max	3.839	6	6.907	6	0.005	6	0	7	-0.03	4	16.323	6
22			min	1.408	4	2.531	4	0.002	4	0	4	-0.085	5	5.942	4
23		J	max	-1.408	4	-1.874	4	0.005	6	0	7	0	7	0	7
24			min	-3.839	5	-5.103	5	0.002	4	0	4	0	4	0	4
25	M7	I	max	-1.221	4	5.615	6	0.019	6	0	7	-0.088	4	8.072	6
26			min	-3.367	5	2.037	4	0.007	4	0	4	-0.24	5	2.926	4
27		J	max	3.367	6	-1.585	4	0.019	6	0	7	0	7	0	7
28			min	1.221	4	-4.37	5	0.007	4	0	4	0	4	0	4
29	M8	I	max	0	7	2.27	6	-0.005	4	0.005	6	0.041	6	7.859	6
30			min	0	4	0.827	4	-0.014	5	0.002	4	0.016	4	2.855	4
31		J	max	0	7	0.169	6	-0.005	4	0.005	6	-0.02	4	-0.123	4
32			min	0	4	0.055	4	-0.014	5	0.002	4	-0.057	5	-0.37	5
33	M9	I	max	-0.102	4	1.979	6	0.003	6	0	4	-0.306	4	-0.232	4
34			min	-0.313	5	0.652	4	0.001	4	0	5	-0.928	5	-0.704	5
35		J	max	-0.102	4	-0.67	4	0.003	6	0	4	-0.344	4	-0.185	4
36			min	-0.313	5	-2.034	5	0.001	4	0	5	-1.045	5	-0.562	5
37	M10	I	max	0.276	6	1.982	6	0	4	0	4	-0.305	4	-0.225	4
38			min	0.088	4	0.653	4	-0.001	5	0	5	-0.925	5	-0.685	5
39		J	max	0.276	6	-0.669	4	0	4	0	4	-0.345	4	-0.189	4
40			min	0.088	4	-2.031	5	-0.001	5	0	5	-1.049	5	-0.572	5

Envelope Member Torsion Stresses

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	LC	z-z Warp Shear[ksi]	LC	z-Top Warp Bend[ksi]	LC	z-Bot Warp Bend[ksi]	LC
1	M1	1	max	-0.003	4	0	7	0.005	6	-0.003	4	-0.086	4	-0.048	4
2			min	-0.008	5	0	4	0.002	4	-0.008	5	-0.222	5	-0.126	5
3		2	max	-0.003	4	-0.022	4	0.003	6	-0.002	4	-0.034	4	-0.019	4
4			min	-0.008	5	-0.056	5	0.001	4	-0.005	5	-0.087	5	-0.049	5
5		3	max	-0.003	4	-0.028	4	0.002	6	-0.001	4	0	7	0	7
6			min	-0.008	5	-0.072	5	0.001	4	-0.004	5	0	4	0	4
7		4	max	-0.003	4	-0.022	4	0.003	6	-0.002	4	0.087	6	0.049	6
8			min	-0.008	5	-0.056	5	0.001	4	-0.005	5	0.034	4	0.019	4
9		5	max	-0.003	4	0	7	0.005	6	-0.003	4	0.222	6	0.126	6
10			min	-0.008	5	0	4	0.002	4	-0.008	5	0.086	4	0.048	4
11	M2	1	max	0	7	0	7	0	7	0	7	0	7	0	7
12			min	0	4	0	4	0	4	0	4	0	4	0	4
13		2	max	0	7	0	7	0	7	0	7	0	7	0	7
14			min	0	4	0	4	0	4	0	4	0	4	0	4
15		3	max	0	7	0	7	0	7	0	7	0	7	0	7
16			min	0	4	0	4	0	4	0	4	0	4	0	4
17		4	max	0	7	0	7	0	7	0	7	0	7	0	7
18			min	0	4	0	4	0	4	0	4	0	4	0	4
19		5	max	0	7	0	7	0	7	0	7	0	7	0	7
20			min	0	4	0	4	0	4	0	4	0	4	0	4
21	M3	1	max	0.161	6	0	7	-0.051	4	0.31	6	7.891	6	4.264	6
22			min	0.053	4	0	4	-0.154	5	0.103	4	2.617	4	1.414	4
23		2	max	0.161	6	2.608	6	-0.016	4	0.099	6	2.144	6	1.159	6
24			min	0.053	4	0.865	4	-0.049	5	0.033	4	0.711	4	0.384	4
25		3	max	0.003	6	0.053	6	0	4	0.001	6	0	7	0	7
26			min	0.001	4	0.019	4	0	5	0	4	0	4	0	4
27		4	max	-0.056	4	-0.904	4	0.051	6	-0.034	4	2.232	6	1.206	6

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Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	LC	z-z Warp Shear[ksi]	LC	z-Top Warp Bend[ksi]	LC	z-Bot Warp Bend[ksi]	LC
28			min	-0.167	5	-2.715	5	0.017	4	-0.103	5	0.743	4	0.402	4
29		5	max	-0.056	4	0	7	0.16	6	-0.107	4	8.214	6	4.439	6
30			min	-0.167	5	0	4	0.053	4	-0.323	5	2.735	4	1.478	4
31	M4	1	max	-0.11	4	0	7	0.2	6	-0.108	4	-3.177	4	-1.797	4
32			min	-0.334	5	0	4	0.066	4	-0.329	5	-9.669	5	-5.467	5
33		2	max	-0.11	4	-0.917	4	0.097	6	-0.053	4	-1.145	4	-0.647	4
34			min	-0.334	5	-2.791	5	0.032	4	-0.16	5	-3.484	5	-1.97	5
35		3	max	0.008	6	0.081	6	-0.001	4	0.003	6	0	7	0	7
36			min	0.003	4	0.029	4	-0.002	5	0.001	4	0	4	0	4
37		4	max	0.345	6	2.883	6	-0.033	4	0.165	6	-1.187	4	-0.671	4
38			min	0.114	4	0.951	4	-0.101	5	0.055	4	-3.599	5	-2.035	5
39		5	max	0.345	6	0	7	-0.068	4	0.339	6	-3.296	4	-1.864	4
40			min	0.114	4	0	4	-0.207	5	0.112	4	-9.988	5	-5.647	5
41	M5	1	max	0	7	0	7	0	7	0	7	0	7	0	7
42			min	0	4	0	4	0	4	0	4	0	4	0	4
43		2	max	0	7	0	7	0	7	0	7	0	7	0	7
44			min	0	4	0	4	0	4	0	4	0	4	0	4
45		3	max	0	7	0	7	0	7	0	7	0	7	0	7
46			min	0	4	0	4	0	4	0	4	0	4	0	4
47		4	max	0	7	0	7	0	7	0	7	0	7	0	7
48			min	0	4	0	4	0	4	0	4	0	4	0	4
49		5	max	0	7	0	7	0	7	0	7	0	7	0	7
50			min	0	4	0	4	0	4	0	4	0	4	0	4
51	M6	1	max	0	7	0	7	0	7	0	7	0	7	0	7
52			min	0	4	0	4	0	4	0	4	0	4	0	4
53		2	max	0	7	0	7	0	7	0	7	0	7	0	7
54			min	0	4	0	4	0	4	0	4	0	4	0	4
55		3	max	0	7	0	7	0	7	0	7	0	7	0	7
56			min	0	4	0	4	0	4	0	4	0	4	0	4
57		4	max	0	7	0	7	0	7	0	7	0	7	0	7
58			min	0	4	0	4	0	4	0	4	0	4	0	4
59		5	max	0	7	0	7	0	7	0	7	0	7	0	7
60			min	0	4	0	4	0	4	0	4	0	4	0	4
61	M7	1	max	0	7	0	7	0	7	0	7	0	7	0	7
62			min	0	4	0	4	0	4	0	4	0	4	0	4
63		2	max	0	7	0	7	0	7	0	7	0	7	0	7
64			min	0	4	0	4	0	4	0	4	0	4	0	4
65		3	max	0	7	0	7	0	7	0	7	0	7	0	7
66			min	0	4	0	4	0	4	0	4	0	4	0	4
67		4	max	0	7	0	7	0	7	0	7	0	7	0	7
68			min	0	4	0	4	0	4	0	4	0	4	0	4
69		5	max	0	7	0	7	0	7	0	7	0	7	0	7
70			min	0	4	0	4	0	4	0	4	0	4	0	4
71	M8	1	max	0.005	6	0	7	-0.002	4	0.01	6	0.252	6	0.136	6
72			min	0.002	4	0	4	-0.005	5	0.004	4	0.094	4	0.051	4
73		2	max	0.005	6	0.075	6	-0.001	4	0.004	6	0.08	6	0.043	6
74			min	0.002	4	0.028	4	-0.002	5	0.001	4	0.03	4	0.016	4
75		3	max	0.005	6	0.093	6	0	4	0.003	6	0	7	0	7
76			min	0.002	4	0.035	4	-0.001	5	0.001	4	0	4	0	4
77		4	max	0.005	6	0.075	6	-0.001	4	0.004	6	-0.03	4	-0.016	4
78			min	0.002	4	0.028	4	-0.002	5	0.001	4	-0.08	5	-0.043	5
79		5	max	0.005	6	0	7	-0.002	4	0.01	6	-0.094	4	-0.051	4
80			min	0.002	4	0	4	-0.005	5	0.004	4	-0.252	5	-0.136	5
81	M9	1	max	0	4	-0.01	4	NC		NC		NC		NC	
82			min	0	5	-0.028	5	NC		NC		NC		NC	

AREA A STAIR DESIGN

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	LC	z-z Warp Shear[ksi]	LC	z-Top Warp Bend[ksi]	LC	z-Bot Warp Bend[ksi]	LC
83		2	max	0	4	-0.01	4	NC		NC		NC		NC	
84			min	0	5	-0.028	5	NC		NC		NC		NC	
85		3	max	0	4	-0.01	4	NC		NC		NC		NC	
86			min	0	5	-0.028	5	NC		NC		NC		NC	
87		4	max	0	4	-0.01	4	NC		NC		NC		NC	
88			min	0	5	-0.028	5	NC		NC		NC		NC	
89		5	max	0	4	-0.01	4	NC		NC		NC		NC	
90			min	0	5	-0.028	5	NC		NC		NC		NC	
91	M10	1	max	0	4	-0.006	4	NC		NC		NC		NC	
92			min	0	5	-0.018	5	NC		NC		NC		NC	
93		2	max	0	4	-0.006	4	NC		NC		NC		NC	
94			min	0	5	-0.018	5	NC		NC		NC		NC	
95		3	max	0	4	-0.006	4	NC		NC		NC		NC	
96			min	0	5	-0.018	5	NC		NC		NC		NC	
97		4	max	0	4	-0.006	4	NC		NC		NC		NC	
98			min	0	5	-0.018	5	NC		NC		NC		NC	
99		5	max	0	4	-0.006	4	NC		NC		NC		NC	
100			min	0	5	-0.018	5	NC		NC		NC		NC	

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	2.221	6	0.705	6	0.006	6	-1.73	4	4.75	6	-0.34	4	0.3	6
2			min	0.809	4	0.262	4	0.002	4	-4.75	5	1.73	4	-0.963	5	0.106	4
3		2	max	2.221	6	0.546	6	0.006	6	-0.99	4	2.758	6	-0.267	4	0.238	6
4			min	0.809	4	0.201	4	0.002	4	-2.758	5	0.99	4	-0.764	5	0.083	4
5		3	max	2.221	6	0.387	6	0.006	6	-0.446	4	1.271	6	-0.194	4	0.176	6
6			min	0.809	4	0.14	4	0.002	4	-1.271	5	0.446	4	-0.566	5	0.06	4
7		4	max	2.221	6	0.229	6	0.006	6	-0.095	4	0.289	6	-0.121	4	0.114	6
8			min	0.809	4	0.079	4	0.002	4	-0.289	5	0.095	4	-0.367	5	0.038	4
9		5	max	2.221	6	0.07	6	0.006	6	0.186	6	-0.061	4	-0.048	4	0.052	6
10			min	0.809	4	0.019	4	0.002	4	0.061	4	-0.186	5	-0.168	5	0.015	4
11	M2	1	max	2.093	6	1.673	6	0	4	-1.759	4	4.84	6	0.233	6	-0.032	4
12			min	0.762	4	0.607	4	-0.001	5	-4.84	5	1.759	4	0.104	4	-0.072	5
13		2	max	2.369	6	0.935	6	0	4	3.144	6	-1.138	4	0.174	6	-0.024	4
14			min	0.863	4	0.339	4	-0.001	5	1.138	4	-3.144	5	0.078	4	-0.054	5
15		3	max	2.646	6	0.198	6	0	4	6.613	6	-2.397	4	0.116	6	-0.016	4
16			min	0.963	4	0.072	4	-0.001	5	2.397	4	-6.613	5	0.052	4	-0.036	5
17		4	max	2.923	6	-0.196	4	0	4	5.564	6	-2.018	4	0.058	6	-0.008	4
18			min	1.064	4	-0.54	5	-0.001	5	2.018	4	-5.564	5	0.026	4	-0.018	5
19		5	max	3.2	6	-0.463	4	0	4	0	7	0	7	0	7	0	7
20			min	1.164	4	-1.278	5	-0.001	5	0	4	0	4	0	4	0	4
21	M3	1	max	-0.002	4	0.01	6	-0.034	4	0.028	6	-0.012	4	1.322	6	-0.134	4
22			min	-0.004	5	-0.001	4	-0.103	5	0.012	4	-0.028	5	0.437	4	-0.407	5
23		2	max	-0.002	4	-0.004	6	-0.034	4	0.045	6	0.036	4	-1.254	4	1.158	6
24			min	-0.004	5	-0.017	4	-0.103	5	-0.036	4	-0.045	5	-3.763	5	0.386	4
25		3	max	-0.002	4	-0.288	4	-0.084	4	-1.093	4	2.809	6	-0.014	4	0.012	6
26			min	-0.005	5	-0.79	5	-0.256	5	-2.809	5	1.093	4	-0.039	5	0.004	4
27		4	max	-0.002	4	-0.558	4	-0.041	4	-3.16	4	8.535	6	3.214	6	-0.323	4
28			min	-0.005	5	-1.576	5	-0.121	5	-8.535	5	3.16	4	1.051	4	-0.989	5
29		5	max	-0.002	4	-0.575	4	-0.041	4	-6.238	4	17.135	6	-0.969	4	0.844	6
30			min	-0.005	5	-1.59	5	-0.121	5	-17.135	5	6.238	4	-2.744	5	0.298	4
31	M4	1	max	0	4	-0.042	4	0.062	6	-0.002	4	0.004	6	-0.048	4	0.052	6
32			min	0	5	-0.119	5	0.021	4	-0.004	5	0.002	4	-0.168	5	0.015	4
33		2	max	0	4	-0.059	4	0.062	6	-0.193	4	0.482	6	2.396	6	-0.247	4
34			min	0	5	-0.134	5	0.021	4	-0.482	5	0.193	4	0.795	4	-0.746	5

AREA A STAIR DESIGN

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
35		3	max	0	6	-0.274	4	0.169	6	-0.948	4	2.529	6	-0.02	4	0.016	6
36			min	0	4	-0.749	5	0.055	4	-2.529	5	0.948	4	-0.05	5	0.006	4
37		4	max	0	4	-0.489	4	0.075	6	-2.266	4	6.144	6	-0.798	4	0.747	6
38			min	0	5	-1.364	5	0.025	4	-6.144	5	2.266	4	-2.4	5	0.248	4
39		5	max	0	4	-0.506	4	0.075	6	-4.146	4	11.326	6	0.673	6	-0.074	4
40			min	0	5	-1.379	5	0.025	4	-11.326	5	4.146	4	0.237	4	-0.209	5
41	M5	1	max	0.631	6	2.106	6	0	4	-4.145	4	11.323	6	0.33	6	-0.036	4
42			min	0.232	4	0.772	4	-0.001	5	-11.323	5	4.145	4	0.115	4	-0.103	5
43		2	max	0.316	6	1.219	6	0	4	2.883	6	-1.063	4	0.248	6	-0.027	4
44			min	0.116	4	0.447	4	-0.001	5	1.063	4	-2.883	5	0.086	4	-0.077	5
45		3	max	0	7	0.331	6	0	4	9.506	6	-3.49	4	0.165	6	-0.018	4
46			min	0	4	0.121	4	-0.001	5	3.49	4	-9.506	5	0.058	4	-0.051	5
47		4	max	-0.116	4	-0.204	4	0	4	8.545	6	-3.136	4	0.083	6	-0.009	4
48			min	-0.316	5	-0.556	5	-0.001	5	3.136	4	-8.545	5	0.029	4	-0.026	5
49		5	max	-0.232	4	-0.53	4	0	4	0	7	0	7	0	7	0	7
50			min	-0.631	5	-1.443	5	-0.001	5	0	4	0	4	0	4	0	4
51	M6	1	max	0.631	6	2.041	6	0.002	6	-3.316	4	9.11	6	-0.206	4	0.183	6
52			min	0.232	4	0.748	4	0.001	4	-9.11	5	3.316	4	-0.589	5	0.064	4
53		2	max	0.316	6	1.154	6	0.002	6	4.543	6	-1.685	4	-0.154	4	0.138	6
54			min	0.116	4	0.422	4	0.001	4	1.685	4	-4.543	5	-0.442	5	0.048	4
55		3	max	0	7	0.266	6	0.002	6	10.612	6	-3.904	4	-0.103	4	0.092	6
56			min	0	4	0.097	4	0.001	4	3.904	4	-10.612	5	-0.295	5	0.032	4
57		4	max	-0.116	4	-0.228	4	0.002	6	9.098	6	-3.343	4	-0.051	4	0.046	6
58			min	-0.316	5	-0.621	5	0.001	4	3.343	4	-9.098	5	-0.147	5	0.016	4
59		5	max	-0.232	4	-0.554	4	0.002	6	0	7	0	7	0	7	0	7
60			min	-0.631	5	-1.508	5	0.001	4	0	4	0	4	0	4	0	4
61	M7	1	max	-0.201	4	1.659	6	0.006	6	-1.633	4	4.505	6	-0.61	4	0.521	6
62			min	-0.554	5	0.602	4	0.002	4	-4.505	5	1.633	4	-1.673	5	0.19	4
63		2	max	-0.1	4	0.922	6	0.006	6	3.395	6	-1.233	4	-0.457	4	0.391	6
64			min	-0.277	5	0.334	4	0.002	4	1.233	4	-3.395	5	-1.255	5	0.142	4
65		3	max	0	7	0.184	6	0.006	6	6.78	6	-2.46	4	-0.305	4	0.26	6
66			min	0	4	0.067	4	0.002	4	2.46	4	-6.78	5	-0.836	5	0.095	4
67		4	max	0.277	6	-0.201	4	0.006	6	5.648	6	-2.049	4	-0.152	4	0.13	6
68			min	0.1	4	-0.554	5	0.002	4	2.049	4	-5.648	5	-0.418	5	0.047	4
69		5	max	0.554	6	-0.469	4	0.006	6	0	7	0	7	0	7	0	7
70			min	0.201	4	-1.291	5	0.002	4	0	4	0	4	0	4	0	4
71	M8	1	max	0	7	0.885	6	-0.003	4	-3.023	4	8.321	6	0.489	6	-0.061	4
72			min	0	4	0.322	4	-0.007	5	-8.321	5	3.023	4	0.197	4	-0.15	5
73		2	max	0	7	0.68	6	-0.003	4	-1.718	4	4.735	6	0.197	6	-0.027	4
74			min	0	4	0.247	4	-0.007	5	-4.735	5	1.718	4	0.087	4	-0.061	5
75		3	max	0	7	0.475	6	-0.003	4	-0.757	4	2.088	6	-0.022	4	0.029	6
76			min	0	4	0.172	4	-0.007	5	-2.088	5	0.757	4	-0.094	5	0.007	4
77		4	max	0	7	0.271	6	-0.003	4	-0.141	4	0.378	6	-0.132	4	0.119	6
78			min	0	4	0.097	4	-0.007	5	-0.378	5	0.141	4	-0.386	5	0.04	4
79		5	max	0	7	0.066	6	-0.003	4	0.392	6	-0.13	4	-0.241	4	0.208	6
80			min	0	4	0.022	4	-0.007	5	0.13	4	-0.392	5	-0.677	5	0.074	4
81	M9	1	max	-0.053	4	2.375	6	0.003	6	4.806	6	-1.585	4	-4.315	4	14.367	6
82			min	-0.162	5	0.783	4	0.001	4	1.585	4	-4.806	5	-13.07	5	4.743	4
83		2	max	-0.053	4	1.171	6	0.003	6	16.822	6	-5.542	4	11.822	6	-4.275	4
84			min	-0.162	5	0.386	4	0.001	4	5.542	4	-16.822	5	3.889	4	-12.995	5
85		3	max	-0.053	4	-0.011	4	0.003	6	20.666	6	-6.807	4	19.844	6	-7.184	4
86			min	-0.162	5	-0.033	5	0.001	4	6.807	4	-20.666	5	6.536	4	-21.814	5
87		4	max	-0.053	4	-0.407	4	0.003	6	16.337	6	-5.38	4	10.997	6	-3.985	4
88			min	-0.162	5	-1.237	5	0.001	4	5.38	4	-16.337	5	3.625	4	-12.088	5
89		5	max	-0.053	4	-0.804	4	0.003	6	3.836	6	-1.261	4	-4.843	4	16.181	6

AREA A STAIR DESIGN

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
90			min	-0.162	5	-2.441	5	0.001	4	1.261	4	-3.836	5	-14.72	5	5.324	4
91	M10	1	max	0.143	6	2.378	6	0	4	4.676	6	-1.538	4	-4.303	4	14.333	6
92			min	0.046	4	0.784	4	-0.001	5	1.538	4	-4.676	5	-13.039	5	4.731	4
93		2	max	0.143	6	1.174	6	0	4	16.742	6	-5.513	4	11.829	6	-4.278	4
94			min	0.046	4	0.387	4	-0.001	5	5.513	4	-16.742	5	3.892	4	-13.003	5
95		3	max	0.143	6	-0.01	4	0	4	20.636	6	-6.797	4	19.828	6	-7.177	4
96			min	0.046	4	-0.03	5	-0.001	5	6.797	4	-20.636	5	6.529	4	-21.796	5
97		4	max	0.143	6	-0.406	4	0	4	16.358	6	-5.388	4	10.957	6	-3.968	4
98			min	0.046	4	-1.234	5	-0.001	5	5.388	4	-16.358	5	3.61	4	-12.045	5
99		5	max	0.143	6	-0.803	4	0	4	3.908	6	-1.287	4	-4.868	4	16.251	6
100			min	0.046	4	-2.438	5	-0.001	5	1.287	4	-3.908	5	-14.783	5	5.351	4

Envelope Member Section Deflections - Service

No Data to Print...

Envelope Member Section Deflections - Strength

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
1	M1	1	max	0.008	6	-0.016	4	0	4	0	4	5145.668	4	NC	7
2			min	0.003	4	-0.043	5	0	5	-0.001	5	1873.257	5	NC	4
3		2	max	0.006	6	-0.009	4	0.007	6	0	4	9183.594	4	NC	7
4			min	0.002	4	-0.024	5	0.003	4	-0.001	5	3365.648	5	NC	4
5		3	max	0.004	6	-0.005	4	0.009	6	0	4	NC	7	NC	7
6			min	0.001	4	-0.013	5	0.003	4	-0.001	5	6164.02	5	9092.523	5
7		4	max	0.002	6	-0.002	4	0.006	6	0	4	NC	7	NC	7
8			min	0.001	4	-0.006	5	0.002	4	-0.001	5	NC	4	NC	4
9		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
10			min	0	4	0	4	0	4	-0.001	5	NC	4	NC	4
11	M2	1	max	0.018	6	-0.015	4	0	6	0.001	6	NC	4	NC	7
12			min	0.006	4	-0.04	5	0	4	0	4	3871.985	5	NC	4
13		2	max	0.013	6	-0.037	4	-0.003	4	0.001	6	4258.587	4	NC	7
14			min	0.005	4	-0.101	5	-0.006	5	0	4	1545.144	5	NC	4
15		3	max	0.009	6	-0.048	4	-0.003	4	0.001	6	3271.8	4	NC	7
16			min	0.003	4	-0.131	5	-0.007	5	0	4	1186.626	5	NC	4
17		4	max	0.004	6	-0.034	4	-0.002	4	0.001	6	4575.928	4	NC	7
18			min	0.002	4	-0.094	5	-0.004	5	0	4	1659.511	5	NC	4
19		5	max	0	7	0	7	0	7	0.001	6	NC	7	NC	7
20			min	0	4	0	4	0	4	0	4	NC	4	NC	4
21	M3	1	max	0	4	-0.016	4	-0.003	4	0.001	6	6098.569	4	NC	7
22			min	0	5	-0.043	5	-0.008	5	0	4	2220.156	5	NC	4
23		2	max	0	4	-0.005	4	0.003	6	-0.003	4	NC	7	NC	7
24			min	0	5	-0.014	5	0.001	4	-0.011	5	6957.739	5	NC	4
25		3	max	0	4	0.016	6	0	6	-0.005	4	NC	7	NC	7
26			min	0	5	0.007	4	0	4	-0.015	5	5971.842	5	NC	4
27		4	max	0	4	0.031	6	-0.001	4	-0.004	4	8017.042	4	NC	7
28			min	0	5	0.012	4	-0.003	5	-0.011	5	3048.48	5	NC	4
29		5	max	0	7	0	7	0	7	0.002	6	NC	7	NC	7
30			min	0	4	0	4	0	4	0.001	4	NC	4	NC	4
31	M4	1	max	0	7	0	7	0	7	0	6	NC	7	NC	7
32			min	0	4	0	4	0	4	0	4	NC	4	NC	4
33		2	max	0	6	0.012	6	-0.001	4	0.011	6	NC	7	NC	7
34			min	0	4	0.005	4	-0.004	5	0.004	4	7977.686	5	NC	4
35		3	max	0	6	0.023	6	0	6	0.014	6	NC	4	NC	7
36			min	0	4	0.008	4	0	4	0.005	4	4237.119	5	NC	4
37		4	max	0	7	0.024	6	0.005	6	0.01	6	NC	4	NC	7

AREA A STAIR DESIGN

Envelope Member Section Deflections - Strength (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
38			min	0	4	0.009	4	0.002	4	0.003	4	4042.492	5	NC	4
39		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
40			min	0	4	0	4	0	4	0	5	NC	4	NC	4
41	M5	1	max	0	7	0	7	0	7	0	4	NC	7	NC	7
42			min	0	4	0	4	0	4	0	5	NC	4	NC	4
43		2	max	0	7	-0.063	4	-0.006	4	0	4	3442.809	4	NC	7
44			min	0	4	-0.172	5	-0.016	5	0	5	1265.374	5	NC	4
45		3	max	0	7	-0.109	4	-0.007	4	0	4	2000.547	4	NC	7
46			min	0	4	-0.296	5	-0.019	5	0	5	734.748	5	NC	4
47		4	max	0	7	-0.085	4	-0.004	4	0	4	2554.114	4	NC	7
48			min	0	4	-0.232	5	-0.012	5	0	5	937.785	5	NC	4
49		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
50			min	0	4	0	4	0	4	0	5	NC	4	NC	4
51	M6	1	max	0	7	0	7	0	7	0.001	6	NC	7	NC	7
52			min	0	4	0	4	0	4	0.001	4	NC	4	NC	4
53		2	max	0	7	-0.078	4	0.029	6	0.001	6	2768.661	4	NC	7
54			min	0	4	-0.213	5	0.01	4	0.001	4	1021.374	5	7433.437	5
55		3	max	0	7	-0.126	4	0.033	6	0.001	6	1722.084	4	NC	7
56			min	0	4	-0.342	5	0.012	4	0.001	4	634.206	5	6504.258	5
57		4	max	0	7	-0.096	4	0.021	6	0.001	6	2262.224	4	NC	7
58			min	0	4	-0.261	5	0.007	4	0.001	4	832.504	5	NC	4
59		5	max	0	7	0	7	0	7	0.001	6	NC	7	NC	7
60			min	0	4	0	4	0	4	0.001	4	NC	4	NC	4
61	M7	1	max	0	7	0	7	0	7	-0.001	4	NC	7	NC	7
62			min	0	4	0	4	0	4	-0.003	5	NC	4	NC	4
63		2	max	0	7	-0.027	4	0.043	6	-0.001	4	5813.672	4	NC	4
64			min	0	4	-0.074	5	0.016	4	-0.003	5	2109.945	5	3653.928	5
65		3	max	0	7	-0.042	4	0.049	6	-0.001	4	3739.16	4	8768.436	4
66			min	0	4	-0.115	5	0.018	4	-0.003	5	1356.905	5	3197.187	5
67		4	max	0	7	-0.031	4	0.03	6	-0.001	4	4986.655	4	NC	4
68			min	0	4	-0.086	5	0.011	4	-0.003	5	1809.521	5	5115.5	5
69		5	max	0	7	0	7	0	7	-0.001	4	NC	7	NC	7
70			min	0	4	0	4	0	4	-0.003	5	NC	4	NC	4
71	M8	1	max	0	7	0	7	0	7	0.003	6	NC	7	NC	7
72			min	0	4	0	4	0	4	0.001	4	NC	4	NC	4
73		2	max	0	7	0.019	6	0	6	0.003	6	NC	4	NC	7
74			min	0	4	0.007	4	0	4	0.001	4	4289.975	5	NC	4
75		3	max	0	7	0.019	6	0.002	6	0.003	6	NC	4	NC	7
76			min	0	4	0.007	4	0	4	0.001	4	4295.622	5	NC	4
77		4	max	0	7	0.01	6	0.003	6	0.002	6	NC	7	NC	7
78			min	0	4	0.004	4	0.001	4	0.001	4	7844.989	5	NC	4
79		5	max	0	7	0	7	0	7	0.002	6	NC	7	NC	7
80			min	0	4	0	4	0	4	0.001	4	NC	4	NC	4
81	M9	1	max	0.001	6	-0.001	4	0	4	0	4	NC	7	NC	7
82			min	0	4	-0.004	5	0	5	-0.001	5	NC	4	NC	4
83		2	max	0.001	6	-0.096	4	-0.018	4	0	4	838.325	4	4390.932	4
84			min	0	4	-0.292	5	-0.056	5	-0.001	5	276.057	5	1443.601	5
85		3	max	0.001	6	-0.136	4	-0.03	4	0	4	586.244	4	2670.293	4
86			min	0	4	-0.414	5	-0.092	5	-0.001	5	193.08	5	879.013	5
87		4	max	0.001	6	-0.091	4	-0.018	4	0	4	852.065	4	4596.062	4
88			min	0	4	-0.278	5	-0.054	5	-0.001	5	280.665	5	1514.295	5
89		5	max	0.001	6	0.016	6	0	6	0	4	NC	7	NC	7
90			min	0	4	0.006	4	0	4	0	5	NC	4	NC	4
91	M10	1	max	-0.001	4	0.029	6	0	4	0	4	NC	7	NC	7
92			min	-0.001	5	0.011	4	0	5	0	5	NC	4	NC	4

AREA A STAIR DESIGN

Envelope Member Section Deflections - Strength (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
93		2	max	-0.001	4	-0.086	4	-0.019	4	0	4	839.749	4	4374.968	4
94			min	-0.002	5	-0.265	5	-0.056	5	0	5	276.464	5	1438.335	5
95		3	max	-0.001	4	-0.128	4	-0.03	4	0	4	587.163	4	2671.959	4
96			min	-0.002	5	-0.392	5	-0.092	5	0	5	193.34	5	879.182	5
97		4	max	-0.001	4	-0.085	4	-0.018	4	0	6	853.504	4	4620.79	4
98			min	-0.002	5	-0.262	5	-0.053	5	0	4	281.068	5	1520.789	5
99		5	max	-0.001	4	0.025	6	0	4	0	6	NC	7	NC	7
100			min	-0.002	5	0.009	4	0	5	0	4	NC	4	NC	4

Envelope Beam Deflections

	Member Label	Span		Location [ft]	y' [in]	(n) L'/y' Ratio	LC
1	M1	1	max	4.922	0.001	NC	6
2		1	min	1.688	-0.001	NC	4
3	M2	1	max	11.751	0.001	NC	6
4		1	min	0	0.387	804	5
5	M3	1	max	7.583	-0.001	NC	4
6		1	min	0	-0.343	560	5
7	M4	1	max	0.167	0.001	NC	6
8		1	min	5.167	0.025	3833	5
9	M5	1	max	0.189	-0.002	NC	4
10		1	min	9.993	-0.299	725	5
11	M6	1	max	0.189	-0.003	NC	4
12		1	min	9.616	-0.345	630	5
13	M7	1	max	0.135	-0.001	NC	4
14		1	min	6.888	-0.115	1351	5
15	M8	1	max	6.258	0.001	NC	4
16		1	min	2.461	0.021	3950	5
17	M9	1	max	6.68	-0.004	NC	4
18		1	min	3.375	-0.42	193	5
19	M10	1	max	6.68	-0.004	NC	4
20		1	min	3.375	-0.419	193	5

Envelope Beam Deflection Checks

No Data to Print...

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M1	C12X20.7	0.205	0	6	0.036	0	y	6	114.333	196.992	7.438	69.12	2.275	H1-1b
2	M2	C12X20.7	0.705	8.239	6	0.086	0	y	6	36.019	196.992	7.438	45.532	1.218	H1-1a
3	M3	C9X15	0.652	8	6	0.236	5.333	y	6	46.82	142.56	4.334	36.72	2.684	H1-1b
4	M4	C12X20.7	0.499	8	6	0.245	5.333	y	6	91.74	196.992	7.438	69.12	2.428	H1-1b
5	M5	C12X20.7	0.723	0	6	0.108	0	y	6	18.484	196.992	7.438	35.367	1.407	H1-1a
6	M6	C12X20.7	0.685	0	6	0.105	0	y	6	18.484	196.992	7.438	31.081	1.236	H1-1a
7	M7	C12X20.7	0.295	7.564	6	0.085	0	y	6	36.019	196.992	7.438	45.191	1.209	H1-1b
8	M8	C9X15	0.228	0	6	0.045	0	y	6	64.333	142.56	4.334	36.72	2.338	H1-1b
9	M9	L4X4X4	0.997	3.305	6	0.106	6.75	y	6	35.598	62.532	3.138	5.58	1.105	H2-1
10	M10	L4X4X4	0.998	3.305	6	0.105	6.75	y	6	35.598	62.532	3.138	5.58	1.105	H2-1

AREA A STAIR DESIGN

Envelope AISI S100-16: ASD Member Cold Formed Steel Code Checks

No Data to Print...

Envelope AWC NDS-18: ASD Member Wood Code Checks

No Data to Print...

Envelope Concrete Beam Design Results

No Data to Print...

Envelope Concrete Column Design Results

No Data to Print...

Envelope AA ADM1-15: ASD - BUILDING Member Aluminum Code Checks

No Data to Print...

Envelope AISC 14TH (360-10): ASD Member Stainless Steel Code Checks

No Data to Print...

Frequencies and Participation

No Data to Print...

AISC 15TH (360-16): LRFD Member Steel Code Checks

	LC	Member	Shape	UC Max	Loc[ft]	Shear UC	Loc[ft]	Dir	phi*Pnc[k]	phi*Pnt[k]	phi*Mnyy[k-ft]	phi*Mnzz[k-ft]	Cb	Eqn
1	4	M1	C12X20.7	0.075	0	0.014	0	y	114.333	196.992	7.438	69.12	2.309	H1-1b
2	4	M2	C12X20.7	0.196	12.966	0.031	0	y	36.019	196.992	7.438	45.543	1.218	H1-1b*
3	4	M3	C9X15	0.232	8	0.08	5.333	y	46.82	142.56	4.334	36.72	2.639	H1-1b
4	4	M4	C12X20.7	0.176	8	0.083	5.333	y	91.74	196.992	7.438	69.12	2.407	H1-1b
5	4	M5	C12X20.7	0.251	0	0.04	0	y	18.484	196.992	7.438	35.286	1.404	H1-1b
6	4	M6	C12X20.7	0.235	10.37	0.038	0	y	18.484	196.992	7.438	31.048	1.235	H1-1b
7	4	M7	C12X20.7	0.107	7.564	0.031	0	y	36.019	196.992	7.438	45.188	1.209	H1-1b
8	4	M8	C9X15	0.083	0	0.016	0	y	64.333	142.56	4.334	36.72	2.338	H1-1b
9	4	M9	L4X4X4	0.328	3.305	0.035	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
10	4	M10	L4X4X4	0.329	3.305	0.035	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
11	5	M1	C12X20.7	0.205	0	0.036	0	y	114.333	196.992	7.438	69.12	2.275	H1-1b
12	5	M2	C12X20.7	0.705	8.239	0.086	0	y	36.019	196.992	7.438	45.532	1.218	H1-1a
13	5	M3	C9X15	0.652	8	0.236	5.333	y	46.82	142.56	4.334	36.72	2.684	H1-1b
14	5	M4	C12X20.7	0.499	8	0.245	5.333	y	91.74	196.992	7.438	69.12	2.428	H1-1b
15	5	M5	C12X20.7	0.723	0	0.108	0	y	18.484	196.992	7.438	35.367	1.407	H1-1a
16	5	M6	C12X20.7	0.685	0	0.105	0	y	18.484	196.992	7.438	31.081	1.236	H1-1a
17	5	M7	C12X20.7	0.295	7.564	0.085	0	y	36.019	196.992	7.438	45.191	1.209	H1-1b
18	5	M8	C9X15	0.228	0	0.045	0	y	64.333	142.56	4.334	36.72	2.338	H1-1b
19	5	M9	L4X4X4	0.997	3.305	0.106	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
20	5	M10	L4X4X4	0.998	3.305	0.105	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
21	6	M1	C12X20.7	0.205	0	0.036	0	y	114.333	196.992	7.438	69.12	2.275	H1-1b
22	6	M2	C12X20.7	0.705	8.239	0.086	0	y	36.019	196.992	7.438	45.532	1.218	H1-1a
23	6	M3	C9X15	0.652	8	0.236	5.333	y	46.82	142.56	4.334	36.72	2.684	H1-1b
24	6	M4	C12X20.7	0.499	8	0.245	5.333	y	91.74	196.992	7.438	69.12	2.428	H1-1b
25	6	M5	C12X20.7	0.723	0	0.108	0	y	18.484	196.992	7.438	35.367	1.407	H1-1a
26	6	M6	C12X20.7	0.685	0	0.105	0	y	18.484	196.992	7.438	31.081	1.236	H1-1a
27	6	M7	C12X20.7	0.295	7.564	0.085	0	y	36.019	196.992	7.438	45.191	1.209	H1-1b
28	6	M8	C9X15	0.228	0	0.045	0	y	64.333	142.56	4.334	36.72	2.338	H1-1b
29	6	M9	L4X4X4	0.997	3.305	0.106	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
30	6	M10	L4X4X4	0.998	3.305	0.105	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
31	7	M1	C12X20.7	0.108	0	0.019	0	y	114.333	196.992	7.438	69.12	2.289	H1-1b

AREA A STAIR DESIGN

AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	LC	Member	Shape	UC Max	Loc[ft]	Shear UC	Loc[ft]	Dir	phi*Pnc[k]	phi*Pnt[k]	phi*Mnyy[k-ft]	phi*Mnzz[k-ft]	Cb	Eqn
32	7	M2	C12X20.7	0.371	8.239	0.045	0	y	36.019	196.992	7.438	45.537	1.218	H1-1a
33	7	M3	C9X15	0.34	8	0.121	5.333	y	46.82	142.56	4.334	36.72	2.67	H1-1b
34	7	M4	C12X20.7	0.26	8	0.125	5.333	y	91.74	196.992	7.438	69.12	2.419	H1-1b
35	7	M5	C12X20.7	0.361	0	0.057	0	y	18.484	196.992	7.438	35.334	1.405	H1-1b
36	7	M6	C12X20.7	0.338	0	0.055	0	y	18.484	196.992	7.438	31.068	1.236	H1-1b
37	7	M7	C12X20.7	0.155	7.564	0.045	0	y	36.019	196.992	7.438	45.19	1.209	H1-1b
38	7	M8	C9X15	0.12	0	0.024	0	y	64.333	142.56	4.334	36.72	2.338	H1-1b
39	7	M9	L4X4X4	0.505	3.305	0.054	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1
40	7	M10	L4X4X4	0.506	3.305	0.053	6.75	y	35.598	62.532	3.138	5.58	1.105	H2-1

Maximum Member Section Forces

	LC	Member	Label		Axial[k]	Loc[ft]	y Shear[k]	Loc[ft]	z Shear[k]	Loc[ft]	Torque[k-ft]	Loc[ft]	y-y Moment[k-ft]	Loc[ft]	z-z Moment[k-ft]	Loc[ft]
1	4	M1		max	4.92	6.75	0.888	0	0.006	6.75	-0.003	6.75	-0.007	6.75	3.099	0
2				min	4.92	0	0.063	6.75	0.006	0	-0.003	0	-0.049	0	-0.11	6.75
3	4	M2		max	7.077	12.966	2.054	0	-0.001	12.966	0	12.966	0.015	0	3.152	0
4				min	4.634	0	-1.568	12.966	-0.001	0	0	0	0	12.966	-4.4	7.294
5	4	M3		max	-0.007	2.583	-0.002	0	-0.071	2.583	0.053	2.667	0.229	2.667	5.891	8
6				min	-0.008	2.667	-1.474	8	-0.172	2.667	-0.056	5.333	-0.231	5.333	-0.011	0
7	4	M4		max	0	5.333	-0.143	0	0.162	5.25	0.114	8	0.214	5.333	7.429	8
8				min	-0.001	0	-1.713	8	0.06	0	-0.11	0	-0.219	2.667	0.003	0
9	4	M5		max	1.408	0	2.613	0	-0.001	18.1	0	18.1	0.017	0	7.427	0
10				min	-1.408	18.1	-1.792	18.1	-0.001	0	0	0	0	18.1	-6.599	10.747
11	4	M6		max	1.408	0	2.531	0	0.002	18.1	0	18.1	0	18.1	5.942	0
12				min	-1.408	18.1	-1.874	18.1	0.002	0	0	0	-0.03	0	-7.216	10.37
13	4	M7		max	1.221	12.966	2.037	0	0.007	12.966	0	12.966	0	12.966	2.926	0
14				min	-1.221	0	-1.585	12.966	0.007	0	0	0	-0.088	0	-4.499	7.294
15	4	M8		max	0	6.75	0.827	0	-0.005	6.75	0.002	6.75	0.016	0	2.855	0
16				min	0	0	0.055	6.75	-0.005	0	0.002	0	-0.02	6.75	-0.123	6.75
17	4	M9		max	-0.102	6.75	0.652	0	0.001	5.695	0	6.75	0.464	3.305	-0.185	6.75
18				min	-0.102	0	-0.67	6.75	0.001	4.289	0	0	-0.344	6.75	-0.997	3.305
19	4	M10		max	0.088	6.75	0.653	0	0	5.695	0	6.75	0.463	3.305	-0.189	6.75
20				min	0.088	0	-0.669	6.75	0	4.289	0	0	-0.345	6.75	-0.996	3.305
21	5	M1		max	13.504	6.75	2.384	0	0.017	6.75	-0.008	6.75	-0.024	6.75	8.511	0
22				min	13.504	0	0.237	6.75	0.017	0	-0.008	0	-0.138	0	-0.334	6.75
23	5	M2		max	19.457	12.966	5.661	0	-0.003	12.966	0	12.966	0.033	0	8.672	0
24				min	12.723	0	-4.324	12.966	-0.003	0	0	0	0	12.966	-12.137	7.294
25	5	M3		max	-0.019	2.583	0.026	0	-0.213	2.583	0.161	2.667	0.697	2.667	16.184	8
26				min	-0.022	2.667	-4.079	8	-0.525	2.667	-0.167	5.333	-0.704	5.333	-0.045	1.417
27	5	M4		max	0.001	5.333	-0.403	0	0.497	5.25	0.345	8	0.655	5.333	20.292	8
28				min	-0.001	0	-4.667	8	0.184	0	-0.334	0	-0.67	2.667	0.008	0
29	5	M5		max	3.839	0	7.126	0	-0.003	18.1	0	18.1	0.047	0	20.287	0
30				min	-3.839	18.1	-4.884	18.1	-0.003	0	0	0	0	18.1	-17.978	10.747
31	5	M6		max	3.839	0	6.907	0	0.005	18.1	0	18.1	0	18.1	16.323	0
32				min	-3.839	18.1	-5.103	18.1	0.005	0	0	0	-0.085	0	-19.625	10.37
33	5	M7		max	3.367	12.966	5.615	0	0.019	12.966	0	12.966	0	12.966	8.072	0
34				min	-3.367	0	-4.37	12.966	0.019	0	0	0	-0.24	0	-12.399	7.294
35	5	M8		max	0	6.75	2.27	0	-0.014	6.75	0.005	6.75	0.041	0	7.859	0
36				min	0	0	0.169	6.75	-0.014	0	0.005	0	-0.057	6.75	-0.37	6.75
37	5	M9		max	-0.313	6.75	1.979	0	0.003	6.258	0	6.75	1.408	3.305	-0.562	6.75
38				min	-0.313	0	-2.034	6.75	0.003	5.906	0	0	-1.045	6.75	-3.028	3.305
39	5	M10		max	0.276	6.75	1.982	0	-0.001	6.258	0	6.75	1.407	3.305	-0.572	6.75
40				min	0.276	0	-2.031	6.75	-0.001	5.906	0	0	-1.049	6.75	-3.023	3.305
41	6	M1		max	13.504	6.75	2.384	0	0.017	6.75	-0.008	6.75	-0.024	6.75	8.511	0
42				min	13.504	0	0.237	6.75	0.017	0	-0.008	0	-0.138	0	-0.334	6.75
43	6	M2		max	19.457	12.966	5.661	0	-0.003	12.966	0	12.966	0.033	0	8.672	0

AREA A STAIR DESIGN

Maximum Member Section Forces (Continued)

	LC	Member Label		Axial[k]	Loc[ft]	y Shear[k]	Loc[ft]	z Shear[k]	Loc[ft]	Torque[k-ft]	Loc[ft]	y-y Moment[k-ft]	Loc[ft]	z-z Moment[k-ft]	Loc[ft]
44			min	12.723	0	-4.324	12.966	-0.003	0	0	0	0	12.966	-12.137	7.294
45	6	M3	max	-0.019	2.583	0.026	0	-0.213	2.583	0.161	2.667	0.697	2.667	16.184	8
46			min	-0.022	2.667	-4.079	8	-0.525	2.667	-0.167	5.333	-0.704	5.333	-0.045	1.417
47	6	M4	max	0.001	5.333	-0.403	0	0.497	5.25	0.345	8	0.655	5.333	20.292	8
48			min	-0.001	0	-4.667	8	0.184	0	-0.334	0	-0.67	2.667	0.008	0
49	6	M5	max	3.839	0	7.126	0	-0.003	18.1	0	18.1	0.047	0	20.287	0
50			min	-3.839	18.1	-4.884	18.1	-0.003	0	0	0	0	18.1	-17.978	10.747
51	6	M6	max	3.839	0	6.907	0	0.005	18.1	0	18.1	0	18.1	16.323	0
52			min	-3.839	18.1	-5.103	18.1	0.005	0	0	0	-0.085	0	-19.625	10.37
53	6	M7	max	3.367	12.966	5.615	0	0.019	12.966	0	12.966	0	12.966	8.072	0
54			min	-3.367	0	-4.37	12.966	0.019	0	0	0	-0.24	0	-12.399	7.294
55	6	M8	max	0	6.75	2.27	0	-0.014	6.75	0.005	6.75	0.041	0	7.859	0
56			min	0	0	0.169	6.75	-0.014	0	0.005	0	-0.057	6.75	-0.37	6.75
57	6	M9	max	-0.313	6.75	1.979	0	0.003	6.258	0	6.75	1.408	3.305	-0.562	6.75
58			min	-0.313	0	-2.034	6.75	0.003	5.906	0	0	-1.045	6.75	-3.028	3.305
59	6	M10	max	0.276	6.75	1.982	0	-0.001	6.258	0	6.75	1.407	3.305	-0.572	6.75
60			min	0.276	0	-2.031	6.75	-0.001	5.906	0	0	-1.049	6.75	-3.023	3.305
61	7	M1	max	7.117	6.75	1.268	0	0.009	6.75	-0.004	6.75	-0.012	6.75	4.486	0
62			min	7.117	0	0.111	6.75	0.009	0	-0.004	0	-0.072	0	-0.169	6.75
63	7	M2	max	10.249	12.966	2.98	0	-0.001	12.966	0	12.966	0.019	0	4.568	0
64			min	6.705	0	-2.275	12.966	-0.001	0	0	0	0	12.966	-6.386	7.294
65	7	M3	max	-0.01	2.583	0.007	0	-0.108	2.583	0.082	2.667	0.353	2.667	8.529	8
66			min	-0.012	2.667	-2.144	8	-0.266	2.667	-0.085	5.333	-0.356	5.333	-0.016	0.417
67	7	M4	max	0.001	5.333	-0.21	0	0.251	5.25	0.175	8	0.331	5.333	10.719	8
68			min	-0.001	0	-2.468	8	0.093	0	-0.169	0	-0.338	2.667	0.004	0
69	7	M5	max	2.03	0	3.767	0	-0.001	18.1	0	18.1	0.025	0	10.716	0
70			min	-2.03	18.1	-2.582	18.1	-0.001	0	0	0	0	18.1	-9.506	10.747
71	7	M6	max	2.03	0	3.65	0	0.002	18.1	0	18.1	0	18.1	8.602	0
72			min	-2.03	18.1	-2.699	18.1	0.002	0	0	0	-0.044	0	-10.385	10.37
73	7	M7	max	1.772	12.966	2.955	0	0.01	12.966	0	12.966	0	12.966	4.247	0
74			min	-1.772	0	-2.3	12.966	0.01	0	0	0	-0.127	0	-6.526	7.294
75	7	M8	max	0	6.75	1.197	0	-0.008	6.75	0.003	6.75	0.022	0	4.138	0
76			min	0	0	0.085	6.75	-0.008	0	0.003	0	-0.03	6.75	-0.188	6.75
77	7	M9	max	-0.158	6.75	1.003	0	0.001	4.852	0	6.75	0.713	3.305	-0.284	6.75
78			min	-0.158	0	-1.03	6.75	0.001	6.539	0	0	-0.529	6.75	-1.534	3.305
79	7	M10	max	0.138	6.75	1.004	0	-0.001	4.852	0	6.75	0.713	3.305	-0.29	6.75
80			min	0.138	0	-1.029	6.75	-0.001	5.414	0	0	-0.531	6.75	-1.532	3.305

Project Title: **TFJB**
Engineer: **CW**
Project ID: **10212200038**
Project Descr:

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Beam

Project File: CD- TFJB Stair Design.ec6

DESCRIPTION: Stair Stringer - AREA B EAST

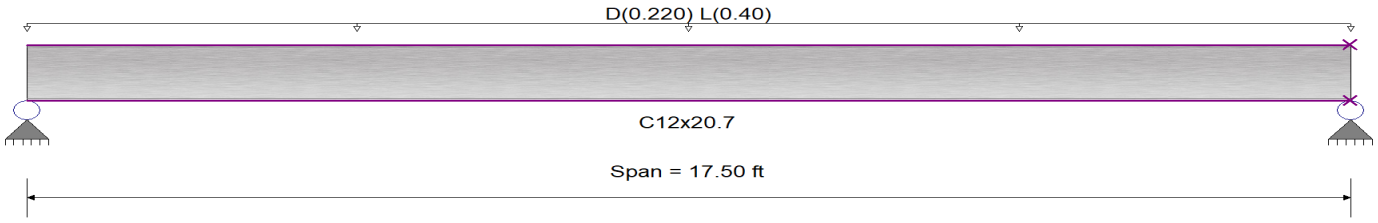
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		

Vertical Leg Up



Applied Loads

Service loads entered. Load Factors will be applied for calculations

Beam self weight NOT internally calculated and added
Uniform Load : D = 0.0550, L = 0.10 ksf, Tributary Width = 4.0 ft, (Typical Stairs w/ 4 ft Trib)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.501 : 1	Maximum Shear Stress Ratio =	0.120 : 1
Section used for this span	C12x20.7	Section used for this span	C12x20.7
Mu : Applied	34.606 k-ft	Vu : Applied	7.910 k
Mn * Phi : Allowable	69.120 k-ft	Vn * Phi : Allowable	65.785 k
Load Combination	+1.20D+1.60L	Load Combination	+1.20D+1.60L
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.227 in	Ratio =	926	>=360
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360 Span: 1 : L Only
Max Downward Total Deflection	0.351 in	Ratio =	598	>=180 Span: 1 : +D+L
Max Upward Total Deflection	0.000 in	Ratio =	0	<180

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 17.50 ft	1	0.171	0.041	11.79		11.79	76.80	69.12	1.00	1.00	2.70	73.09	65.78
+1.20D+1.60L													
Dsgn. L = 17.50 ft	1	0.501	0.120	34.61		34.61	76.80	69.12	1.00	1.00	7.91	73.09	65.78
+1.20D+0.50L													
Dsgn. L = 17.50 ft	1	0.257	0.062	17.76		17.76	76.80	69.12	1.00	1.00	4.06	73.09	65.78
+1.20D													
Dsgn. L = 17.50 ft	1	0.146	0.035	10.11		10.11	76.80	69.12	1.00	1.00	2.31	73.09	65.78
+0.90D													
Dsgn. L = 17.50 ft	1	0.110	0.026	7.58		7.58	76.80	69.12	1.00	1.00	1.73	73.09	65.78

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+L	1	0.3513	8.800		0.0000	0.000

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	5.425	5.425
Overall MINimum	1.155	1.155
D Only	1.925	1.925
+D+L	5.425	5.425
+D+0.750L	4.550	4.550

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Beam

DESCRIPTION: Stair Stringer - AREA B EAST

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
+0.60D	1.155	1.155
L Only	3.500	3.500

Project Title: **TFJB**
Engineer: **CW**
Project ID: **10212200038**
Project Descr:

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Column

Project File: CD- TFJB Stair Design.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: HSS Stair Post - AREA B EAST

Code References

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Steel Section Name : **HSS3x3x1/4**

Analysis Method :	Allowable Strength
Steel Stress Grade	
Fy : Steel Yield	36.0 ksi
E : Elastic Bending Modulus	29,000.0 ksi

Overall Column Height	8 ft
Top & Bottom Fixity	Top & Bottom Pinned

Brace condition for deflection (buckling) along columns :
X-X (width) axis :
Fully braced against buckling ABOUT Y-Y Axis
Y-Y (depth) axis :
Unbraced Length for buckling ABOUT X-X Axis = 8 ft, K = 1.0

Applied Loads

Service loads entered. Load Factors will be applied for calculations

Column self weight included : 70.480 lbs * Dead Load Factor
AXIAL LOADS . . .
Loads onto Column (RISA): Axial Load at 8.0 ft, Xecc = 2.0 in, D = 4.0, L = 7.0 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = 0.6778 : 1

Load Combination	+D+L
Location of max.above base	8.0 ft
At maximum location values are . . .	
Pa : Axial	11.070 k
Pn / Omega : Allowable	35.478 k
Ma-x : Applied	0.0 k-ft
Mn-x / Omega : Allowable	4.455 k-ft
Ma-y : Applied	-1.833 k-ft
Mn-y / Omega : Allowable	4.455 k-ft

PASS Maximum Shear Stress Ratio 0.01652 : 1

Load Combination	+D+L
Location of max.above base	0.0 ft
At maximum location values are . . .	
Va : Applied	0.2292 k
Vn / Omega : Allowable	13.869 k

Maximum Load Reactions . .

Top along X-X	0.2292 k
Bottom along X-X	0.2292 k
Top along Y-Y	0.0 k
Bottom along Y-Y	0.0 k

Maximum Load Deflections . . .

Along Y-Y 0.0 in at 0.0 ft above base
for load combination :

Along X-X -0.1498 in at 4.671 ft above base
for load combination :+D+L

Load Combination Results

Load Combination	Maximum Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Cbx	Cby	KxLx/Ry	KyLy/Rx	Maximum Shear Ratios: Stress Ratio	Status	Location

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base	X-X Axis Reaction @ Base	X-X Axis Reaction @ Top	k	Y-Y Axis Reaction @ Base	Y-Y Axis Reaction @ Top	Mx - End Moments @ Base k-ft	Mx - End Moments @ Top k-ft	My - End Moments @ Base	My - End Moments @ Top

Extreme Reactions

Item	Extreme Value	Axial Reaction @ Base	X-X Axis Reaction @ Base	X-X Axis Reaction @ Top	k	Y-Y Axis Reaction @ Base	Y-Y Axis Reaction @ Top	Mx - End Moments @ Base k-ft	Mx - End Moments @ Top k-ft	My - End Moments @ Base	My - End Moments @ Top

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance

Steel Section Properties : HSS3x3x1/4

Steel Section Properties : HSS3x3x1/4

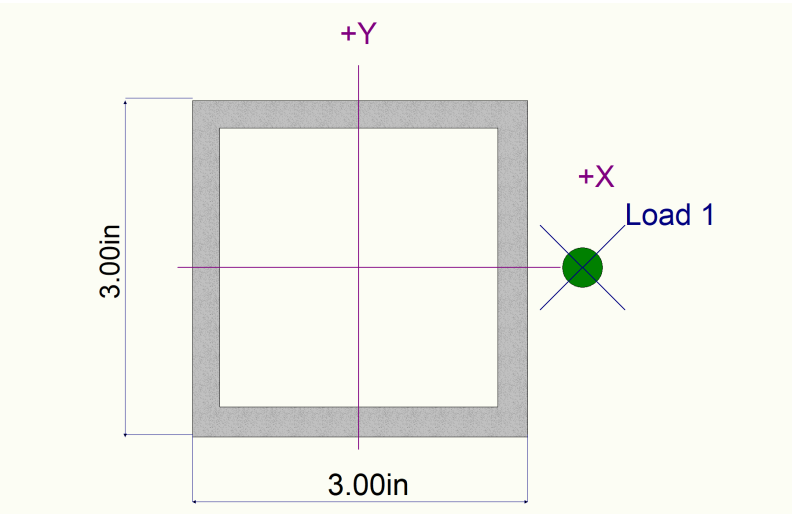
AREA B NORTHEAST AND EAST STAIR DESIGN

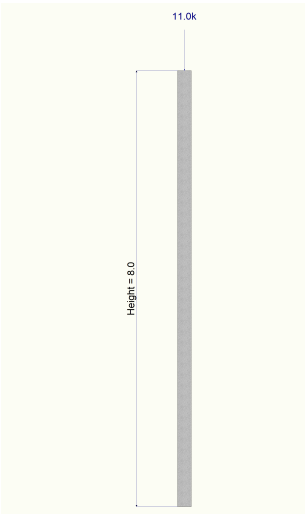
Steel Column

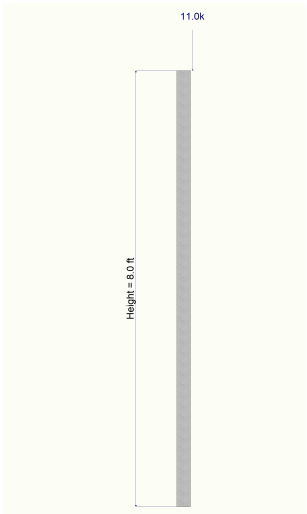
DESCRIPTION: HSS Stair Post - AREA B EAST

Depth	=	3.000	in	I xx	=	3.02	in^4	J	=	5.080 in^4
Design Thick	=	0.233	in	S xx	=	2.01	in^3			
Width	=	3.000	in	R xx	=	1.110	in			
Wall Thick	=	0.250	in	Zx	=	2.480	in^3			
Area	=	2.440	in^2	I yy	=	3.020	in^4	C	=	3.520 in^3
Weight	=	8.810	plf	S yy	=	2.010	in^3			
				R yy	=	1.110	in			
Ycg	=	0.000	in							

Sketches







Project Title: **TFJB**
Engineer: **CW**
Project ID: **10212200038**
Project Descr:

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Beam

Project File: CD- TFJB Stair Design.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: Landing Support - Typ, Angle

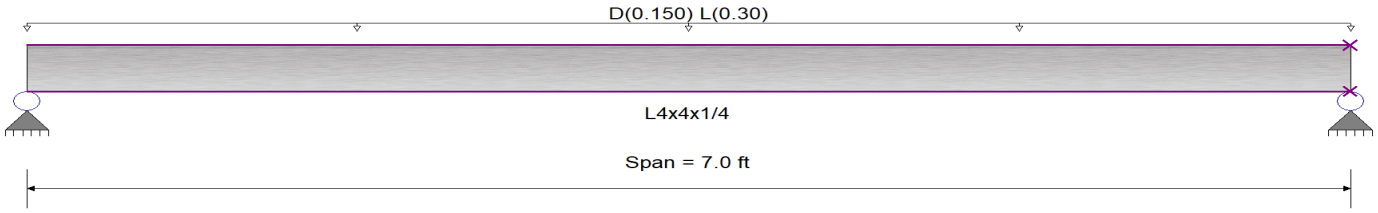
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		

Vertical Leg Up



Applied Loads

Service loads entered. Load Factors will be applied for calculations

Beam self weight NOT internally calculated and added
Uniform Load : D = 0.050, L = 0.10 ksf, Tributary Width = 3.0 ft, (Typical 3" Conc Landing)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	**0.998** : 1	Maximum Shear Stress Ratio =	**0.119** : 1
Section used for this span	**L4x4x1/4**	Section used for this span	**L4x4x1/4**
Mu : Applied	4.043 k-ft	Vu : Applied	2.310 k
Mn * Phi : Allowable	4.051 k-ft	Vn * Phi : Allowable	19.440 k
Load Combination	+1.20D+1.60L	Load Combination	+1.20D+1.60L
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.187 in	Ratio =	448	>=360	
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360	Span: 1 : L Only
Max Downward Total Deflection	0.281 in	Ratio =	299	>=180	Span: 1 : +D+L
Max Upward Total Deflection	0.000 in	Ratio =	0	<180	

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 7.00 ft	1	0.318	0.038	1.29		1.29	4.50	4.05	1.00	1.00	0.74	21.60	19.44
+1.20D+1.60L													
Dsgn. L = 7.00 ft	1	0.998	0.119	4.04		4.04	4.50	4.05	1.00	1.00	2.31	21.60	19.44
+1.20D+0.50L													
Dsgn. L = 7.00 ft	1	0.499	0.059	2.02		2.02	4.50	4.05	1.00	1.00	1.16	21.60	19.44
+1.20D													
Dsgn. L = 7.00 ft	1	0.272	0.032	1.10		1.10	4.50	4.05	1.00	1.00	0.63	21.60	19.44
+0.90D													
Dsgn. L = 7.00 ft	1	0.204	0.024	0.83		0.83	4.50	4.05	1.00	1.00	0.47	21.60	19.44

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+L	1	0.2807	3.520		0.0000	0.000

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	1.575	1.575
Overall MINimum	0.315	0.315
D Only	0.525	0.525
+D+L	1.575	1.575
+D+0.750L	1.313	1.313

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Beam

DESCRIPTION: Landing Support - Typ, Angle

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
+0.60D	0.315	0.315
L Only	1.050	1.050

AREA B NORTHEAST AND EAST STAIR DESIGN

Project Title: **TFJB**
Engineer: **CW**
Project ID: **10212200038**
Project Descr:

AREA B - NORTHEAST

Steel Beam

Project File: CD- TFJB Stair Design.ec6

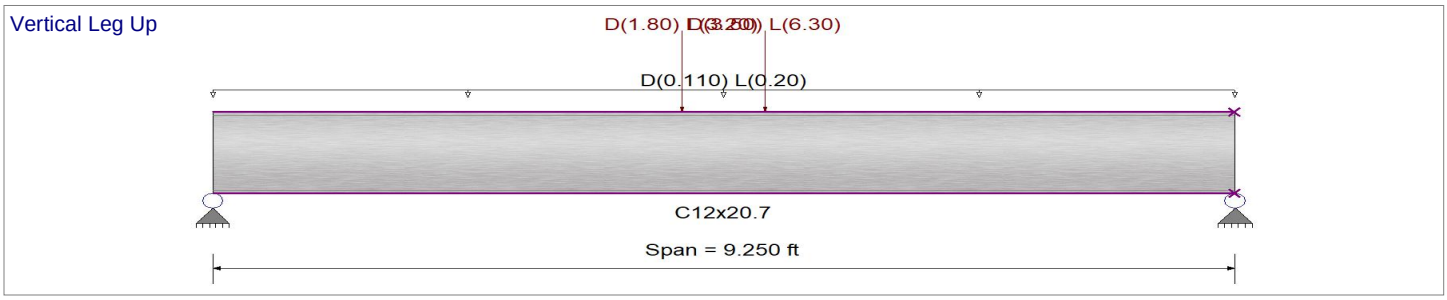
DESCRIPTION: Landing Beam - C12X20.7

CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		



Applied Loads

Service loads entered. Load Factors will be applied for calculations

Beam self weight calculated and added to loading
Load(s) for Span Number 1
Point Load : D = 1.80, L = 3.20 k @ 4.250 ft, (Stair Stringer Loads (Down Stringer))

Point Load : D = 3.50, L = 6.30 k @ 5.0 ft, (Stair Stringer (Up Stringer))

Uniform Load : D = 0.0550, L = 0.10 ksf, Tributary Width = 2.0 ft, (Land Loads)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.753 : 1	Maximum Shear Stress Ratio =	0.202 : 1
Section used for this span	C12x20.7	Section used for this span	C12x20.7
Mu : Applied	52.072 k-ft	Vu : Applied	13.269 k
Mn * Phi : Allowable	69.120 k-ft	Vn * Phi : Allowable	65.785 k
Load Combination	+1.20D+1.60L	Load Combination	+1.20D+1.60L
		Location of maximum on span	9.250 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.081 in	Ratio =	1,373	>=360	
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360	Span: 1 : L Only
Max Downward Total Deflection	0.127 in	Ratio =	876	>=180	Span: 1 : +D+L
Max Upward Total Deflection	0.000 in	Ratio =	0	<180	

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 9.25 ft	1	0.262	0.071	18.12		18.12	76.80	69.12	1.00	1.00	4.65	73.09	65.78
+1.20D+1.60L													
Dsgn. L = 9.25 ft	1	0.753	0.202	52.07		52.07	76.80	69.12	1.00	1.00	13.27	73.09	65.78
+1.20D+0.50L													
Dsgn. L = 9.25 ft	1	0.390	0.105	26.95		26.95	76.80	69.12	1.00	1.00	6.89	73.09	65.78
+1.20D													
Dsgn. L = 9.25 ft	1	0.225	0.061	15.53		15.53	76.80	69.12	1.00	1.00	3.99	73.09	65.78
+0.90D													
Dsgn. L = 9.25 ft	1	0.168	0.045	11.65		11.65	76.80	69.12	1.00	1.00	2.99	73.09	65.78

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+L	1	0.1268	4.678		0.0000	0.000

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Beam

DESCRIPTION: Landing Beam - C12X20.7

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	8.735	9.124
Overall MINimum	1.911	1.994
D Only	3.186	3.323
+D+L	8.735	9.124
+D+0.750L	7.348	7.674
+0.60D	1.911	1.994
L Only	5.549	5.801

AREA B NORTHEAST AND EAST STAIR DESIGN

Project Title: **TFJB**
Engineer: **CW**
Project ID: **10212200038**
Project Descr:

AREA B - NORTHEAST

Steel Beam

Project File: CD- TFJB Stair Design.ec6

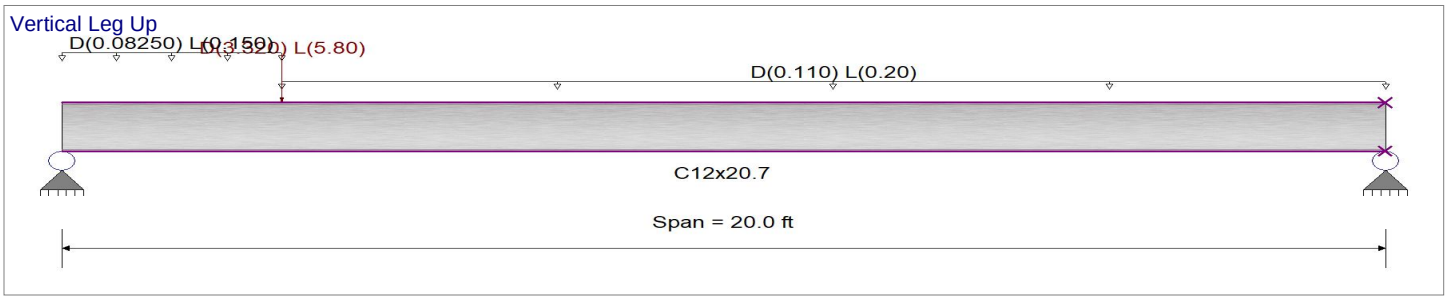
DESCRIPTION: Stringer - C12X20.7, TYP

CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method :	Load Resistance Factor Design	Fy : Steel Yield :	36.0 ksi
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling	E: Modulus :	29,000.0 ksi
Bending Axis :	Major Axis Bending		



Applied Loads

Service loads entered. Load Factors will be applied for calculations

Beam self weight calculated and added to loading
Load for Span Number 1
Uniform Load : D = 0.0550, L = 0.10 ksf, Extent = 3.330 -->> 20.0 ft, Tributary Width = 2.0 ft, (Stair Loads)

Uniform Load : D = 0.0550, L = 0.10 ksf, Extent = 0.0 -->> 3.330 ft, Tributary Width = 1.50 ft, (Landing Loads)

Point Load : D = 3.320, L = 5.80 k @ 3.330 ft, (Point Load from Landing Beam)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.732 : 1	Maximum Shear Stress Ratio =	0.235 : 1
Section used for this span	C12x20.7	Section used for this span	C12x20.7
Mu : Applied	50.583 k-ft	Vu : Applied	15.479 k
Mn * Phi : Allowable	69.120 k-ft	Vn * Phi : Allowable	65.785 k
Load Combination	+1.20D+1.60L	Load Combination	+1.20D+1.60L
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.408 in	Ratio =	587	>=360	
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360	Span: 1 : L Only
Max Downward Total Deflection	0.658 in	Ratio =	365	>=240.	Span: 1 : +D+L
Max Upward Total Deflection	0.000 in	Ratio =	0	<240.0	

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 20.00 ft	1	0.266	0.085	18.37		18.37	76.80	69.12	1.00	1.00	5.59	73.09	65.78
+1.20D+1.60L													
Dsgn. L = 20.00 ft	1	0.732	0.235	50.58		50.58	76.80	69.12	1.00	1.00	15.48	73.09	65.78
+1.20D+0.50L													
Dsgn. L = 20.00 ft	1	0.385	0.124	26.63		26.63	76.80	69.12	1.00	1.00	8.13	73.09	65.78
+1.20D													
Dsgn. L = 20.00 ft	1	0.228	0.073	15.75		15.75	76.80	69.12	1.00	1.00	4.79	73.09	65.78
+0.90D													
Dsgn. L = 20.00 ft	1	0.171	0.055	11.81		11.81	76.80	69.12	1.00	1.00	3.59	73.09	65.78

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+L	1	0.6581	9.314		0.0000	0.000

AREA B NORTHEAST AND EAST STAIR DESIGN

Steel Beam

DESCRIPTION: Stringer - C12X20.7, TYP

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	10.672	4.804
Overall MINimum	2.394	1.111
D Only	3.990	1.852
+D+L	10.672	4.804
+D+0.750L	9.002	4.066
+0.60D	2.394	1.111
L Only	6.682	2.952

AREA B NORTHEAST AND EAST STAIR DESIGN

Project Title: TFJB
Engineer: CW
Project ID: 10212200038
Project Descr:

AREA B - NORTHEAST: STRINGERS TO ROOF LEVEL

Steel Beam

Project File: CD- TFJB Stair Design.ec6

LIC# : KW-06013369, Build:20.22.3.31 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: Stringer - C12X30

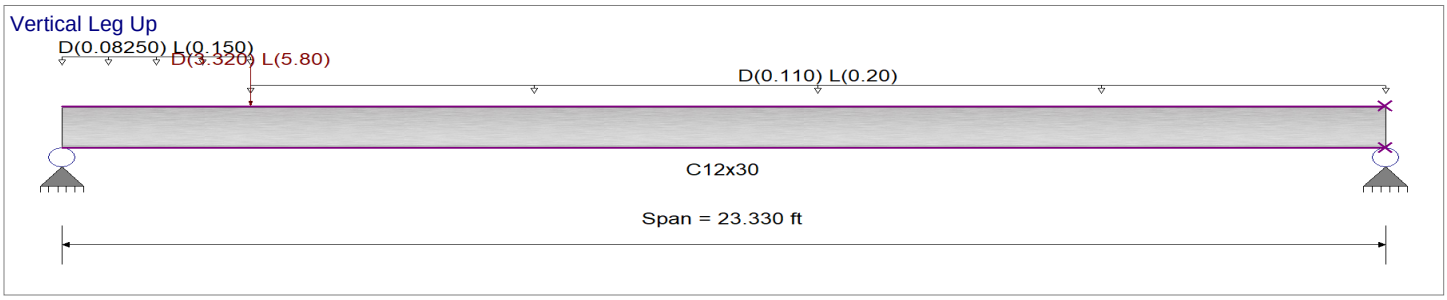
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method : Load Resistance Factor Design
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling
Bending Axis : Major Axis Bending

Fy : Steel Yield : 36.0 ksi
E: Modulus : 29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations

Beam self weight calculated and added to loading
Load for Span Number 1
Uniform Load : D = 0.0550, L = 0.10 ksf, Extent = 3.330 -->> 23.330 ft, Tributary Width = 2.0 ft, (Stair Loads)

Uniform Load : D = 0.0550, L = 0.10 ksf, Extent = 0.0 -->> 3.330 ft, Tributary Width = 1.50 ft, (Landing Loads)

Point Load : D = 3.320, L = 5.80 k @ 3.330 ft, (Point Load from Landing Beam)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.641 : 1	Maximum Shear Stress Ratio =	0.140 : 1
Section used for this span	C12x30	Section used for this span	C12x30
Mu : Applied	58.542 k-ft	Vu : Applied	16.714 k
Mn * Phi : Allowable	91.260 k-ft	Vn * Phi : Allowable	118.973 k
Load Combination	+1.20D+1.60L	Load Combination	+1.20D+1.60L
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.520 in	Ratio =	537	>=360	
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360	Span: 1 : L Only
Max Downward Total Deflection	0.855 in	Ratio =	328	>=240.	Span: 1 : +D+L
Max Upward Total Deflection	0.000 in	Ratio =	0	<240.0	

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 23.33 ft	1	0.242	0.052	22.06		22.06	101.40	91.26	1.00	1.00	6.15	132.19	118.97
+1.20D+1.60L													
Dsgn. L = 23.33 ft	1	0.641	0.140	58.54		58.54	101.40	91.26	1.00	1.00	16.71	132.19	118.97
+1.20D+0.50L													
Dsgn. L = 23.33 ft	1	0.343	0.074	31.29		31.29	101.40	91.26	1.00	1.00	8.85	132.19	118.97
+1.20D													
Dsgn. L = 23.33 ft	1	0.207	0.044	18.91		18.91	101.40	91.26	1.00	1.00	5.27	132.19	118.97
+0.90D													
Dsgn. L = 23.33 ft	1	0.155	0.033	14.18		14.18	101.40	91.26	1.00	1.00	3.95	132.19	118.97

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+L	1	0.8547	10.998		0.0000	0.000

Steel Beam

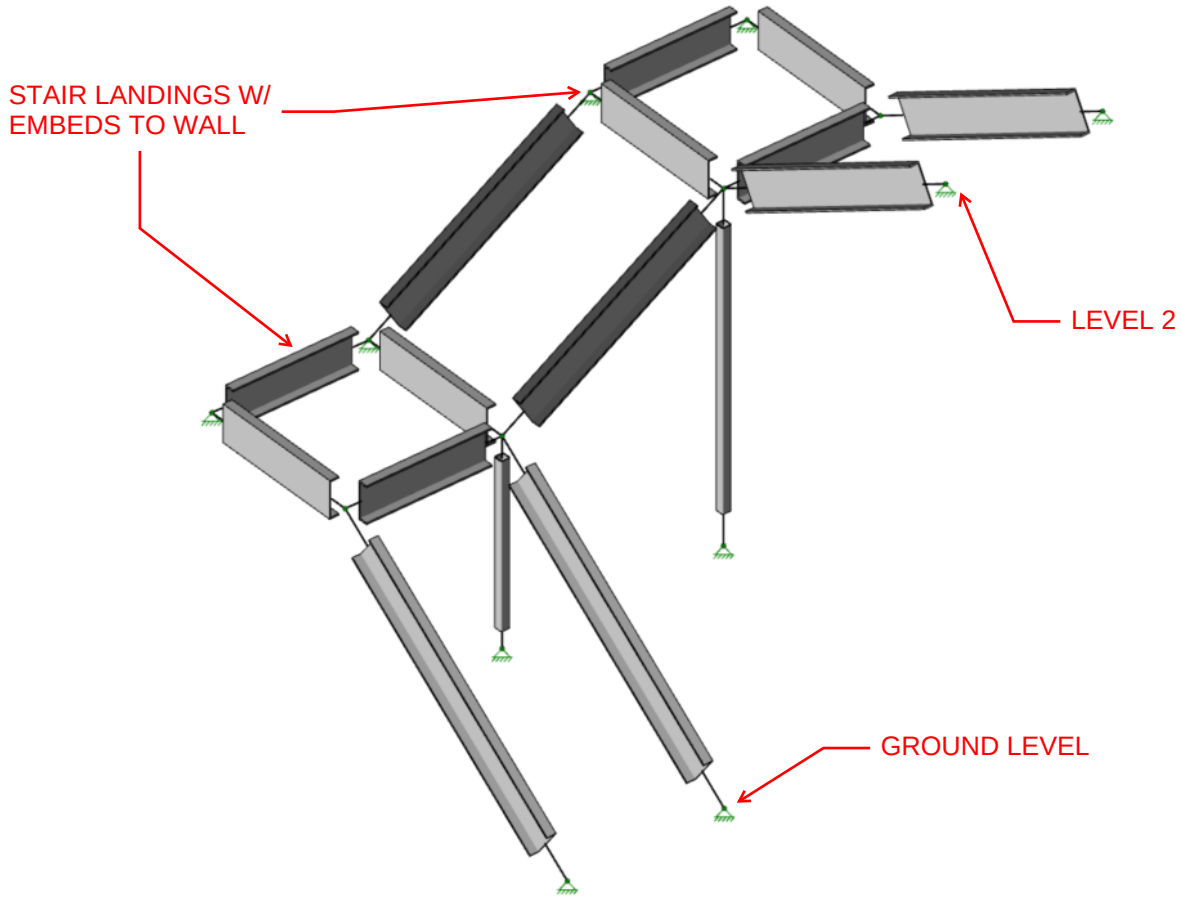
DESCRIPTION: Stringer - C12X30

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	11.545	5.249
Overall MINimum	2.637	1.260
D Only	4.394	2.100
+D+L	11.545	5.249
+D+0.750L	9.757	4.462
+0.60D	2.637	1.260
L Only	7.151	3.149

RISA-3D Area B Northwest Stair Model:



Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	N6	Reaction	Reaction	Reaction
2	N5	Reaction	Reaction	Reaction
3	N3	Reaction	Reaction	Reaction
4	N2	Reaction	Reaction	Reaction
5	N8	Reaction	Reaction	Reaction
6	N9	Reaction	Reaction	Reaction
7	N11	Reaction	Reaction	Reaction
8	N12	Reaction	Reaction	Reaction
9	N13	Reaction	Reaction	Reaction
10	N14	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Stair Stringer	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369
2	Landing Beam	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369
3	Perimeter Beam	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369
4	HSS3x3	HSS3X3X4	Column	Tube	A500 Gr.B RECT	Typical	2.44	3.02	3.02	5.08

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N2	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
2	M2	N1	N3	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
3	M3	N1	N4	Landing Beam	Beam	Channel	A36 Gr.36	Typical
4	M4	N2	N5	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
5	M5	N5	N6	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
6	M6	N4	N7	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
7	M7	N4	N8	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
8	M8	N6	N9	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
9	M9	N7	N10	Landing Beam	Beam	Channel	A36 Gr.36	Typical
10	M10	N4	N5	Landing Beam	Beam	Channel	A36 Gr.36	Typical
11	M11	N7	N6	Landing Beam	Beam	Channel	A36 Gr.36	Typical
12	M12	N10	N9	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
13	M13	N7	N11	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
14	M14	N10	N12	Stair Stringer	Beam	Channel	A36 Gr.36	Typical
15	M15	N13	N7	HSS3x3	Column	Tube	A500 Gr.B RECT	Typical
16	M16	N14	N4	HSS3x3	Column	Tube	A500 Gr.B RECT	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	M1	Stair Stringer	4.5	Lbyy	N/A	N/A	Lateral
2	M2	Stair Stringer	9.301	Lbyy	N/A	N/A	Lateral
3	M3	Landing Beam	4.25	Lbyy	N/A	N/A	Lateral
4	M4	Stair Stringer	4.25	Lbyy	N/A	N/A	Lateral
5	M5	Stair Stringer	7.075	Lbyy	N/A	N/A	Lateral
6	M6	Stair Stringer	7.075	Lbyy	N/A	N/A	Lateral
7	M7	Stair Stringer	9.301	Lbyy	N/A	N/A	Lateral
8	M8	Stair Stringer	4.25	Lbyy	N/A	N/A	Lateral
9	M9	Landing Beam	4.25	Lbyy	N/A	N/A	Lateral
10	M10	Landing Beam	4.5	Lbyy	N/A	N/A	Lateral
11	M11	Landing Beam	4.5	Lbyy	N/A	N/A	Lateral
12	M12	Stair Stringer	4.5	Lbyy	N/A	N/A	Lateral
13	M13	Stair Stringer	8.62	Lbyy	N/A	N/A	Lateral
14	M14	Stair Stringer	8.62	Lbyy	N/A	N/A	Lateral
15	M15	HSS3x3	9.25	Lbyy	N/A	N/A	Lateral
16	M16	HSS3x3	5.5	Lbyy	N/A	N/A	Lateral

Design Size and Code Check Parameters

	Label	Max Axial/Bending Chk	Max Shear Chk
1	Typical	1	1

Deflection Design

	Label	LC	Ratio	LC	Ratio	LC	Ratio
1	Typical	1	240	2	360	3	240

Member Distributed Loads (BLC 3 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M2	Y	-106.25	-106.25	0	9.301
2	M7	Y	-106.25	-106.25	0	9.301
3	M5	Y	-112.5	-112.5	1.943e-15	7.075
4	M6	Y	-112.5	-112.5	1.277e-15	7.075
5	M13	Y	-106.25	-106.25	7.772e-16	8.62
6	M14	Y	-106.25	-106.25	3.331e-15	8.62
7	M3	Y	-112.5	-112.5	0	4.25
8	M4	Y	-112.5	-112.5	0	4.25
9	M8	Y	-112.5	-112.5	0	4.25
10	M9	Y	-112.5	-112.5	0	4.25

Member Distributed Loads (BLC 4 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M2	Y	-212.5	-212.5	0	9.301
2	M7	Y	-212.5	-212.5	0	9.301
3	M5	Y	-225	-225	1.943e-15	7.075
4	M6	Y	-225	-225	1.277e-15	7.075
5	M13	Y	-212.5	-212.5	7.772e-16	8.62
6	M14	Y	-212.5	-212.5	3.331e-15	8.62
7	M3	Y	-225	-225	0	4.25
8	M4	Y	-225	-225	0	4.25
9	M8	Y	-225	-225	0	4.25

Member Distributed Loads (BLC 4 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
10	M9	Y	-225	-225	0	4.25

Member Area Loads (BLC 1 : DEAD)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N3	N8	N4	N1	Y	A-B	-50
2	N4	N5	N6	N7	Y	A-B	-50
3	N7	N10	N12	N11	Y	A-B	-50
4	N1	N2	N5	N4	Y	A-B	-50
5	N7	N6	N9	N10	Y	A-B	-50

Member Area Loads (BLC 2 : LIVE)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N3	N8	N4	N1	Y	A-B	-100
2	N4	N5	N6	N7	Y	A-B	-100
3	N7	N10	N12	N11	Y	A-B	-100
4	N1	N2	N5	N4	Y	A-B	-100
5	N7	N6	N9	N10	Y	A-B	-100

Basic Load Cases

	BLC Description	Category	Y Gravity	Distributed	Area(Member)
1	DEAD	DL	-1		5
2	LIVE	LL			5
3	BLC 1 Transient Area Loads	None		10	
4	BLC 2 Transient Area Loads	None		10	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Deflection 1		Y	DL	1						
2	Deflection 2		Y	LL	1						
3	Deflection 3		Y	DL	1	LL	1				
4	IBC 16-1	Yes	Y	DL	1.4						
5	IBC 16-2 (a)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6	RLL	0.5
6	IBC 16-2 (b)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6		
7	IBC 16-3 (a)	Yes	Y	DL	1.2	RLL	1.6	LL	0.5	LLS	1

Load Combination Design

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	Deflection 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Deflection 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Deflection 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-1		Yes	Yes		Yes	Yes	Yes	Yes	Yes
5	IBC 16-2 (a)		Yes	Yes		Yes	Yes	Yes	Yes	Yes
6	IBC 16-2 (b)		Yes	Yes		Yes	Yes	Yes	Yes	Yes
7	IBC 16-3 (a)		Yes	Yes		Yes	Yes	Yes	Yes	Yes

Node Reactions

	LC	Node Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	4	N6	1.294	1.138	0.001	0	0	0
2	4	N5	-0.982	1.087	0.003	0	0	0
3	4	N3	1.779	2.053	0	0	0	0
4	4	N2	-1.777	0.198	0	0	0	0
5	4	N8	0.978	1.437	0	0	0	0
6	4	N9	2.081	0.26	-0.003	0	0	0
7	4	N11	-1.28	1.418	-0.001	0	0	0
8	4	N12	-2.086	1.908	0	0	0	0
9	4	N13	-0.002	1.591	0	0	0	0
10	4	N14	-0.005	1.793	0	0	0	0
11	4	Totals:	0	12.884	0			
12	4	COG (ft):	X: -0.749	Y: 7.09	Z: 7.165			
13	5	N6	3.463	3.052	0.002	0	0	0
14	5	N5	-2.645	2.913	0.008	0	0	0
15	5	N3	4.772	5.574	0	0	0	0
16	5	N2	-4.767	0.429	-0.001	0	0	0
17	5	N8	2.635	3.931	0	0	0	0
18	5	N9	5.562	0.598	-0.007	0	0	0
19	5	N11	-3.425	3.861	-0.001	0	0	0
20	5	N12	-5.577	5.169	-0.001	0	0	0
21	5	N13	-0.004	4.15	0.001	0	0	0
22	5	N14	-0.013	4.765	0	0	0	0
23	5	Totals:	0	34.444	0			
24	5	COG (ft):	X: -0.834	Y: 7.115	Z: 7.154			
25	6	N6	3.463	3.052	0.002	0	0	0
26	6	N5	-2.645	2.913	0.008	0	0	0
27	6	N3	4.772	5.574	0	0	0	0
28	6	N2	-4.767	0.429	-0.001	0	0	0
29	6	N8	2.635	3.931	0	0	0	0
30	6	N9	5.562	0.598	-0.007	0	0	0
31	6	N11	-3.425	3.861	-0.001	0	0	0
32	6	N12	-5.577	5.169	-0.001	0	0	0
33	6	N13	-0.004	4.15	0.001	0	0	0
34	6	N14	-0.013	4.765	0	0	0	0
35	6	Totals:	0	34.444	0			
36	6	COG (ft):	X: -0.834	Y: 7.115	Z: 7.154			
37	7	N6	1.845	1.625	0.001	0	0	0
38	7	N5	-1.405	1.551	0.004	0	0	0
39	7	N3	2.539	2.952	0	0	0	0
40	7	N2	-2.537	0.251	-0.001	0	0	0
41	7	N8	1.4	2.076	0	0	0	0
42	7	N9	2.965	0.34	-0.004	0	0	0
43	7	N11	-1.825	2.042	-0.001	0	0	0
44	7	N12	-2.973	2.74	0	0	0	0
45	7	N13	-0.002	2.234	0	0	0	0
46	7	N14	-0.007	2.545	0	0	0	0
47	7	Totals:	0	18.356	0			
48	7	COG (ft):	X: -0.799	Y: 7.105	Z: 7.158			

Node Reactions - Overstrength or Capacity Limit

No Data to Print...

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N6	max	3.463	6	3.052	6	0.002	6	0	7	0	7	0	7
2		min	1.294	4	1.138	4	0.001	4	0	4	0	4	0	4
3	N5	max	-0.982	4	2.913	6	0.008	6	0	7	0	7	0	7
4		min	-2.645	5	1.087	4	0.003	4	0	4	0	4	0	4
5	N3	max	4.772	6	5.574	6	0	4	0	7	0	7	0	7
6		min	1.779	4	2.053	4	0	5	0	4	0	4	0	4
7	N2	max	-1.777	4	0.429	6	0	4	0	7	0	7	0	7
8		min	-4.767	5	0.198	4	-0.001	5	0	4	0	4	0	4
9	N8	max	2.635	6	3.931	6	0	4	0	7	0	7	0	7
10		min	0.978	4	1.437	4	0	5	0	4	0	4	0	4
11	N9	max	5.562	6	0.598	6	-0.003	4	0	7	0	7	0	7
12		min	2.081	4	0.26	4	-0.007	5	0	4	0	4	0	4
13	N11	max	-1.28	4	3.861	6	-0.001	4	0	7	0	7	0	7
14		min	-3.425	5	1.418	4	-0.001	5	0	4	0	4	0	4
15	N12	max	-2.086	4	5.169	6	0	4	0	7	0	7	0	7
16		min	-5.577	5	1.908	4	-0.001	5	0	4	0	4	0	4
17	N13	max	-0.002	4	4.15	6	0.001	6	0	7	0	7	0	7
18		min	-0.004	5	1.591	4	0	4	0	4	0	4	0	4
19	N14	max	-0.005	4	4.765	6	0	6	0	7	0	7	0	7
20		min	-0.013	5	1.793	4	0	4	0	4	0	4	0	4
21	Totals:	max	0	6	34.444	6	0	6						
22		min	0	4	12.884	4	0	4						

Envelope Node Reactions - Overstrength or Capacity Limit

No Data to Print...

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0.002	6	-0.004	4	0	4	-2.721e-5	4	-1.02e-5	4	3.12e-4	6
2		min	0.001	4	-0.01	5	-0.001	5	-7.088e-5	5	-2.774e-5	5	1.114e-4	4
3	N2	max	0	6	0	4	0	6	3.728e-5	6	-9.985e-7	4	1.473e-4	6
4		min	0	4	0	5	0	4	1.337e-5	4	-1.891e-6	5	5.906e-5	4
5	N3	max	0	4	0	4	0	6	-2.219e-5	4	-1.705e-5	4	-2.21e-4	4
6		min	0	5	0	5	0	4	-5.87e-5	5	-4.435e-5	5	-6.099e-4	5
7	N4	max	0.001	6	-0.002	4	0	4	-2.591e-6	4	2.067e-5	6	2.627e-4	6
8		min	0	4	-0.006	5	-0.001	5	-5.382e-6	5	6.765e-6	4	9.3e-5	4
9	N5	max	0	6	0	4	0	4	4.09e-5	6	5.743e-7	4	4.602e-5	6
10		min	0	4	0	5	0	5	1.467e-5	4	-5.88e-7	5	2.1e-5	4
11	N6	max	0	4	0	4	0	4	-1.466e-5	4	1.749e-5	6	1.105e-4	6
12		min	0	5	0	5	0	5	-4.086e-5	5	7.412e-6	4	4.532e-5	4
13	N7	max	0	4	-0.003	4	0.001	6	4.637e-5	6	2.595e-5	6	2.602e-4	6
14		min	-0.001	5	-0.008	5	0	4	1.812e-5	4	8.827e-6	4	9.25e-5	4
15	N8	max	0	4	0	4	0	6	7.075e-6	6	3.685e-6	6	-1.913e-4	4
16		min	0	5	0	5	0	4	1.653e-6	4	9.779e-7	4	-5.306e-4	5
17	N9	max	0	4	0	4	0	6	-1.338e-5	4	1.103e-5	6	2.242e-4	6
18		min	0	5	0	5	0	4	-3.73e-5	5	3.917e-6	4	8.8e-5	4
19	N10	max	-0.001	4	-0.005	4	0.001	6	6.854e-5	6	-5.162e-6	4	3.077e-4	6
20		min	-0.002	5	-0.013	5	0	4	2.626e-5	4	-1.443e-5	5	1.102e-4	4
21	N11	max	0	6	0	4	0	6	6.41e-6	6	-1.712e-5	4	-1.9e-4	4
22		min	0	4	0	5	0	4	3.422e-6	4	-4.457e-5	5	-5.244e-4	5
23	N12	max	0	6	0	4	0	6	4.648e-5	6	-2.045e-5	4	-2.242e-4	4
24		min	0	4	0	5	0	4	1.759e-5	4	-5.336e-5	5	-6.156e-4	5
25	N13	max	0	6	0	4	0	4	-4.442e-6	4	2.595e-5	6	-3.941e-5	4

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
26		min	0	4	0	5	0	5	-1.102e-5	5	8.827e-6	4	-1.118e-4	5
27	N14	max	0	6	0	4	0	4	-4.277e-6	4	2.067e-5	6	-5.449e-5	4
28		min	0	4	0	5	0	5	-1.199e-5	5	6.765e-6	4	-1.528e-4	5

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	y Shear[k]	Loc[ft]	LC	z Shear[k]	Loc[ft]	LC	Torque[k-ft]	Loc[ft]	LC	y-y Moment[k-ft]	Loc[ft]	LC	z-z Moment[k-ft]	Loc[ft]	LC
1	M1	max	4.767	4.5	6	0.411	0	6	0.001	4.5	6	-0.001	4.5	4	0	4.5	4	1.602	0	6
2		min	1.777	0	4	0.063	4.5	4	0	0	4	-0.003	0	5	-0.006	0	5	0.001	4.5	4
3	M2	max	7.144	9.301	6	2.019	0	6	0	9.301	4	0	9.301	7	0.003	0	6	1.603	0	6
4		min	1.671	0	4	-1.674	9.301	5	0	0	5	0	0	4	0	9.301	4	-3.528	5.038	5
5	M3	max	-0.001	4.25	4	0.583	0	6	-0.002	4.25	4	0.002	4.25	6	0.004	0	6	2.21	4.25	6
6		min	-0.001	0	5	-1.626	4.25	5	-0.005	0	5	0.001	0	4	-0.018	4.25	5	-0.332	1.107	5
7	M4	max	0	4.25	7	0.73	0	6	0.001	4.25	6	0.003	4.25	6	0.001	4.25	6	1.597	4.25	6
8		min	0	0	4	-1.48	4.25	5	0	0	4	0.001	0	4	-0.001	0	5	-0.509	1.417	5
9	M5	max	0.975	0	6	1.559	0	6	0.005	7.075	6	0	7.075	4	0.02	7.075	6	1.599	7.075	6
10		min	-0.975	7.075	5	-1.56	7.075	5	0.002	0	4	-0.001	0	5	-0.016	0	5	-1.16	3.538	5
11	M6	max	1.021	0	6	1.621	0	6	0.014	7.075	6	0	7.075	7	0.047	7.075	6	2.208	0	6
12		min	-0.929	7.075	5	-1.498	7.075	5	0.005	0	4	0	0	4	-0.048	0	5	-0.772	3.685	5
13	M7	max	4.45	9.301	6	2.08	0	6	0	9.301	4	0	9.301	7	0.003	0	6	2.178	0	6
14		min	0.661	0	4	-1.612	9.301	5	0	0	5	0	0	4	0	9.301	4	-3.273	5.232	5
15	M8	max	0	4.25	7	1.48	0	6	-0.002	4.25	4	-0.001	4.25	4	0.013	0	6	1.597	0	6
16		min	0	0	4	-0.73	4.25	5	-0.006	0	5	-0.004	0	5	-0.011	4.25	5	-0.509	2.833	5
17	M9	max	0.008	4.25	6	1.527	0	6	-0.003	4.25	4	-0.001	4.25	4	0.025	0	6	1.788	0	6
18		min	0.003	0	4	-0.682	4.25	5	-0.009	0	5	-0.002	0	5	-0.013	4.25	5	-0.454	2.922	5
19	M10	max	2.641	4.5	6	0.517	0	6	-0.003	4.5	4	0	4.5	4	0.021	0	6	2.081	0	6
20		min	0.98	0	4	0.103	4.5	4	-0.008	0	5	-0.001	0	5	-0.015	4.5	5	0.002	4.5	4
21	M11	max	-1.29	4.5	4	0.378	0	6	-0.001	4.5	4	0.002	4.5	6	0.005	0	6	1.459	0	6
22		min	-3.452	0	5	0.052	4.5	4	-0.002	0	5	0.001	0	4	-0.003	4.5	5	0.003	4.5	4
23	M12	max	-2.083	4.5	4	0.244	0	6	0.007	4.5	6	0.003	4.5	6	0.011	4.5	6	0.851	0	6
24		min	-5.568	0	5	0.002	4.5	4	0.003	0	4	0.001	0	4	-0.018	0	5	0.001	4.5	4
25	M13	max	-1.057	0	4	2.023	0	6	0	8.62	4	0	8.62	7	0.012	0	6	1.522	0	6
26		min	-4.884	8.62	5	-1.67	8.62	5	-0.001	0	5	0	0	4	0	8.62	4	-3.254	4.759	5
27	M14	max	-2.001	0	4	1.945	0	6	0	8.62	4	0	8.62	7	0.006	0	6	0.853	0	6
28		min	-7.401	8.62	5	-1.747	8.62	5	-0.001	0	5	0	0	4	0	8.62	4	-3.563	4.58	5
29	M15	max	4.15	0	6	0.004	9.25	6	0.001	9.25	6	0	9.25	7	0.006	9.25	6	0	0	7
30		min	1.475	9.25	4	0.002	0	4	0	0	4	0	0	4	0	0	4	-0.039	9.25	5
31	M16	max	4.765	0	6	0.013	5.5	6	0	5.5	6	0	5.5	7	0.001	5.5	6	0	0	7
32		min	1.724	5.5	4	0.005	0	4	0	0	4	0	0	4	0	0	4	-0.074	5.5	5

Envelope Member End Reactions

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M1	I	max	4.767	6	0.411	6	0.001	6	-0.001	4	-0.002	4	1.602	6
2			min	1.777	4	0.194	4	0	4	-0.003	5	-0.006	5	0.58	4
3		J	max	4.767	6	0.299	6	0.001	6	-0.001	4	0	4	0.003	6
4			min	1.777	4	0.063	4	0	4	-0.003	5	-0.001	5	0.001	4
5	M2	I	max	4.437	6	2.019	6	0	4	0	7	0.003	6	1.603	6
6			min	1.671	4	0.729	4	0	5	0	4	0.001	4	0.58	4
7		J	max	7.144	6	-0.604	4	0	4	0	7	0	7	0	7
8			min	2.649	4	-1.674	5	0	5	0	4	0	4	0	4
9	M3	I	max	-0.001	4	0.583	6	-0.002	4	0.002	6	0.004	6	-0.002	4
10			min	-0.001	5	0.207	4	-0.005	5	0.001	4	0.001	4	-0.005	5
11		J	max	-0.001	4	-0.586	4	-0.002	4	0.002	6	-0.006	4	2.21	6
12			min	-0.001	5	-1.626	5	-0.005	5	0.001	4	-0.018	5	0.804	4

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
13	M4	I	max	0	7	0.73	6	0.001	6	0.003	6	0	4	0.003	6
14			min	0	4	0.262	4	0	4	0.001	4	-0.001	5	0.001	4
15		J	max	0	7	-0.531	4	0.001	6	0.003	6	0.001	6	1.597	6
16			min	0	4	-1.48	5	0	4	0.001	4	0	4	0.573	4
17	M5	I	max	0.975	6	1.559	6	0.005	6	0	4	-0.007	4	1.599	6
18			min	0.35	4	0.559	4	0.002	4	-0.001	5	-0.016	5	0.573	4
19		J	max	-0.35	4	-0.559	4	0.005	6	0	4	0.02	6	1.599	6
20			min	-0.975	5	-1.56	5	0.002	4	-0.001	5	0.008	4	0.574	4
21	M6	I	max	1.021	6	1.621	6	0.014	6	0	7	-0.017	4	2.208	6
22			min	0.367	4	0.583	4	0.005	4	0	4	-0.048	5	0.803	4
23		J	max	-0.332	4	-0.536	4	0.014	6	0	7	0.047	6	1.774	6
24			min	-0.929	5	-1.498	5	0.005	4	0	4	0.017	4	0.638	4
25	M7	I	max	1.742	6	2.08	6	0	4	0	7	0.003	6	2.178	6
26			min	0.661	4	0.752	4	0	5	0	4	0.001	4	0.795	4
27		J	max	4.45	6	-0.581	4	0	4	0	7	0	7	0	7
28			min	1.639	4	-1.612	5	0	5	0	4	0	4	0	4
29	M8	I	max	0	7	1.48	6	-0.002	4	-0.001	4	0.013	6	1.597	6
30			min	0	4	0.531	4	-0.006	5	-0.004	5	0.005	4	0.573	4
31		J	max	0	7	-0.262	4	-0.002	4	-0.001	4	-0.004	4	0.003	6
32			min	0	4	-0.73	5	-0.006	5	-0.004	5	-0.011	5	0.001	4
33	M9	I	max	0.008	6	1.527	6	-0.003	4	-0.001	4	0.025	6	1.788	6
34			min	0.003	4	0.548	4	-0.009	5	-0.002	5	0.009	4	0.643	4
35		J	max	0.008	6	-0.244	4	-0.003	4	-0.001	4	-0.005	4	-0.002	4
36			min	0.003	4	-0.682	5	-0.009	5	-0.002	5	-0.013	5	-0.006	5
37	M10	I	max	2.641	6	0.517	6	-0.003	4	0	4	0.021	6	2.081	6
38			min	0.98	4	0.234	4	-0.008	5	-0.001	5	0.008	4	0.761	4
39		J	max	2.641	6	0.405	6	-0.003	4	0	4	-0.006	4	0.005	6
40			min	0.98	4	0.103	4	-0.008	5	-0.001	5	-0.015	5	0.002	4
41	M11	I	max	-1.29	4	0.378	6	-0.001	4	0.002	6	0.005	6	1.459	6
42			min	-3.452	5	0.182	4	-0.002	5	0.001	4	0.002	4	0.53	4
43		J	max	-1.29	4	0.267	6	-0.001	4	0.002	6	-0.001	4	0.007	6
44			min	-3.452	5	0.052	4	-0.002	5	0.001	4	-0.003	5	0.003	4
45	M12	I	max	-2.083	4	0.244	6	0.007	6	0.003	6	-0.007	4	0.851	6
46			min	-5.568	5	0.132	4	0.003	4	0.001	4	-0.018	5	0.302	4
47		J	max	-2.083	4	0.133	6	0.007	6	0.003	6	0.011	6	0.004	6
48			min	-5.568	5	0.002	4	0.003	4	0.001	4	0.004	4	0.001	4
49	M13	I	max	-1.057	4	2.023	6	0	4	0	7	0.012	6	1.522	6
50			min	-2.791	5	0.731	4	-0.001	5	0	4	0.004	4	0.553	4
51		J	max	-1.813	4	-0.602	4	0	4	0	7	0	7	0	7
52			min	-4.884	5	-1.67	5	-0.001	5	0	4	0	4	0	4
53	M14	I	max	-2.001	4	1.945	6	0	4	0	7	0.006	6	0.853	6
54			min	-5.308	5	0.702	4	-0.001	5	0	4	0.003	4	0.302	4
55		J	max	-2.756	4	-0.631	4	0	4	0	7	0	7	0	7
56			min	-7.401	5	-1.747	5	-0.001	5	0	4	0	4	0	4
57	M15	I	max	4.15	6	0.004	6	0.001	6	0	7	0	7	0	7
58			min	1.591	4	0.002	4	0	4	0	4	0	4	0	4
59		J	max	4.051	6	0.004	6	0.001	6	0	7	0.006	6	-0.014	4
60			min	1.475	4	0.002	4	0	4	0	4	0.002	4	-0.039	5
61	M16	I	max	4.765	6	0.013	6	0	6	0	7	0	7	0	7
62			min	1.793	4	0.005	4	0	4	0	4	0	4	0	4
63		J	max	4.706	6	0.013	6	0	6	0	7	0.001	6	-0.026	4
64			min	1.724	4	0.005	4	0	4	0	4	0	4	-0.074	5

Envelope Member Torsion Stresses

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	LC	z-z Warp Shear[ksi]	LC	z-Top Warp Bend[ksi]	LC	z-Bot Warp Bend[ksi]	LC
1	M1	1	max	-0.001	4	0	7	0.002	6	-0.001	4	-0.026	4	-0.015	4
2			min	-0.003	5	0	4	0.001	4	-0.003	5	-0.07	5	-0.04	5
3		2	max	-0.001	4	-0.005	4	0.001	6	-0.001	4	-0.012	4	-0.007	4
4			min	-0.003	5	-0.013	5	0.001	4	-0.002	5	-0.031	5	-0.018	5
5		3	max	-0.001	4	-0.006	4	0.001	6	-0.001	4	0	7	0	7
6			min	-0.003	5	-0.017	5	0	4	-0.002	5	0	4	0	4
7		4	max	-0.001	4	-0.005	4	0.001	6	-0.001	4	0.031	6	0.018	6
8			min	-0.003	5	-0.013	5	0.001	4	-0.002	5	0.012	4	0.007	4
9		5	max	-0.001	4	0	7	0.002	6	-0.001	4	0.07	6	0.04	6
10			min	-0.003	5	0	4	0.001	4	-0.003	5	0.026	4	0.015	4
11	M2	1	max	0	7	0	7	0	7	0	7	0	7	0	7
12			min	0	4	0	4	0	4	0	4	0	4	0	4
13		2	max	0	7	0	7	0	7	0	7	0	7	0	7
14			min	0	4	0	4	0	4	0	4	0	4	0	4
15		3	max	0	7	0	7	0	7	0	7	0	7	0	7
16			min	0	4	0	4	0	4	0	4	0	4	0	4
17		4	max	0	7	0	7	0	7	0	7	0	7	0	7
18			min	0	4	0	4	0	4	0	4	0	4	0	4
19		5	max	0	7	0	7	0	7	0	7	0	7	0	7
20			min	0	4	0	4	0	4	0	4	0	4	0	4
21	M3	1	max	0.002	6	0	7	0	4	0.002	6	0.036	6	0.02	6
22			min	0.001	4	0	4	-0.001	5	0.001	4	0.013	4	0.008	4
23		2	max	0.002	6	0.006	6	0	4	0.001	6	0.016	6	0.009	6
24			min	0.001	4	0.002	4	-0.001	5	0	4	0.006	4	0.003	4
25		3	max	0.002	6	0.008	6	0	4	0.001	6	0	7	0	7
26			min	0.001	4	0.003	4	-0.001	5	0	4	0	4	0	4
27		4	max	0.002	6	0.006	6	0	4	0.001	6	-0.006	4	-0.003	4
28			min	0.001	4	0.002	4	-0.001	5	0	4	-0.016	5	-0.009	5
29		5	max	0.002	6	0	7	0	4	0.002	6	-0.013	4	-0.008	4
30			min	0.001	4	0	4	-0.001	5	0.001	4	-0.036	5	-0.02	5
31	M4	1	max	0.003	6	0	7	-0.001	4	0.003	6	0.073	6	0.042	6
32			min	0.001	4	0	4	-0.002	5	0.001	4	0.028	4	0.016	4
33		2	max	0.003	6	0.013	6	-0.001	4	0.002	6	0.033	6	0.019	6
34			min	0.001	4	0.005	4	-0.002	5	0.001	4	0.012	4	0.007	4
35		3	max	0.003	6	0.016	6	-0.001	4	0.002	6	0	7	0	7
36			min	0.001	4	0.006	4	-0.001	5	0.001	4	0	4	0	4
37		4	max	0.003	6	0.013	6	-0.001	4	0.002	6	-0.012	4	-0.007	4
38			min	0.001	4	0.005	4	-0.002	5	0.001	4	-0.033	5	-0.019	5
39		5	max	0.003	6	0	7	-0.001	4	0.003	6	-0.028	4	-0.016	4
40			min	0.001	4	0	4	-0.002	5	0.001	4	-0.073	5	-0.042	5
41	M5	1	max	0	4	0	7	0	6	0	4	-0.007	4	-0.004	4
42			min	-0.001	5	0	4	0	4	-0.001	5	-0.018	5	-0.01	5
43		2	max	0	4	-0.002	4	0	6	0	4	-0.003	4	-0.001	4
44			min	-0.001	5	-0.005	5	0	4	0	5	-0.007	5	-0.004	5
45		3	max	0	4	-0.002	4	0	6	0	4	0	7	0	7
46			min	-0.001	5	-0.006	5	0	4	0	5	0	4	0	4
47		4	max	0	4	-0.002	4	0	6	0	4	0.007	6	0.004	6
48			min	-0.001	5	-0.005	5	0	4	0	5	0.003	4	0.001	4
49		5	max	0	4	0	7	0	6	0	4	0.018	6	0.01	6
50			min	-0.001	5	0	4	0	4	-0.001	5	0.007	4	0.004	4
51	M6	1	max	0	7	0	7	0	4	0	7	0	7	0	7
52			min	0	4	0	4	0	7	0	4	0	4	0	4
53		2	max	0	7	0	7	0	4	0	7	0	7	0	7
54			min	0	4	0	4	0	7	0	4	0	4	0	4
55		3	max	0	7	0	7	0	4	0	7	0	7	0	7

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	LC	z-z Warp Shear[ksi]	LC	z-Top Warp Bend[ksi]	LC	z-Bot Warp Bend[ksi]	LC
56			min	0	4	0	4	0	7	0	4	0	4	0	4
57		4	max	0	7	0	7	0	4	0	7	0	4	0	4
58			min	0	4	0	4	0	7	0	4	0	7	0	7
59		5	max	0	7	0	7	0	4	0	7	0	4	0	4
60			min	0	4	0	4	0	7	0	4	0	7	0	7
61	M7	1	max	0	7	0	7	0	7	0	7	0	7	0	7
62			min	0	4	0	4	0	4	0	4	0	4	0	4
63		2	max	0	7	0	7	0	7	0	7	0	7	0	7
64			min	0	4	0	4	0	4	0	4	0	4	0	4
65		3	max	0	7	0	7	0	7	0	7	0	7	0	7
66			min	0	4	0	4	0	4	0	4	0	4	0	4
67		4	max	0	7	0	7	0	7	0	7	0	7	0	7
68			min	0	4	0	4	0	4	0	4	0	4	0	4
69		5	max	0	7	0	7	0	7	0	7	0	7	0	7
70			min	0	4	0	4	0	4	0	4	0	4	0	4
71	M8	1	max	-0.001	4	0	7	0.002	6	-0.001	4	-0.031	4	-0.017	4
72			min	-0.004	5	0	4	0.001	4	-0.004	5	-0.082	5	-0.047	5
73		2	max	-0.001	4	-0.005	4	0.002	6	-0.001	4	-0.014	4	-0.008	4
74			min	-0.004	5	-0.014	5	0.001	4	-0.003	5	-0.037	5	-0.021	5
75		3	max	-0.001	4	-0.007	4	0.002	6	-0.001	4	0	7	0	7
76			min	-0.004	5	-0.018	5	0.001	4	-0.003	5	0	4	0	4
77		4	max	-0.001	4	-0.005	4	0.002	6	-0.001	4	0.037	6	0.021	6
78			min	-0.004	5	-0.014	5	0.001	4	-0.003	5	0.014	4	0.008	4
79		5	max	-0.001	4	0	7	0.002	6	-0.001	4	0.082	6	0.047	6
80			min	-0.004	5	0	4	0.001	4	-0.004	5	0.031	4	0.017	4
81	M9	1	max	-0.001	4	0	7	0.001	6	-0.001	4	-0.013	4	-0.007	4
82			min	-0.002	5	0	4	0	4	-0.002	5	-0.034	5	-0.019	5
83		2	max	-0.001	4	-0.002	4	0.001	6	0	4	-0.006	4	-0.003	4
84			min	-0.002	5	-0.006	5	0	4	-0.001	5	-0.016	5	-0.009	5
85		3	max	-0.001	4	-0.003	4	0.001	6	0	4	0	7	0	7
86			min	-0.002	5	-0.008	5	0	4	-0.001	5	0	4	0	4
87		4	max	-0.001	4	-0.002	4	0.001	6	0	4	0.016	6	0.009	6
88			min	-0.002	5	-0.006	5	0	4	-0.001	5	0.006	4	0.003	4
89		5	max	-0.001	4	0	7	0.001	6	-0.001	4	0.034	6	0.019	6
90			min	-0.002	5	0	4	0	4	-0.002	5	0.013	4	0.007	4
91	M10	1	max	0	4	0	7	0.001	6	0	4	-0.011	4	-0.006	4
92			min	-0.001	5	0	4	0	4	-0.001	5	-0.03	5	-0.017	5
93		2	max	0	4	-0.002	4	0.001	6	0	4	-0.005	4	-0.003	4
94			min	-0.001	5	-0.005	5	0	4	-0.001	5	-0.013	5	-0.008	5
95		3	max	0	4	-0.003	4	0.001	6	0	4	0	7	0	7
96			min	-0.001	5	-0.007	5	0	4	-0.001	5	0	4	0	4
97		4	max	0	4	-0.002	4	0.001	6	0	4	0.013	6	0.008	6
98			min	-0.001	5	-0.005	5	0	4	-0.001	5	0.005	4	0.003	4
99		5	max	0	4	0	7	0.001	6	0	4	0.03	6	0.017	6
100			min	-0.001	5	0	4	0	4	-0.001	5	0.011	4	0.006	4
101	M11	1	max	0.002	6	0	7	-0.001	4	0.002	6	0.057	6	0.032	6
102			min	0.001	4	0	4	-0.001	5	0.001	4	0.021	4	0.012	4
103		2	max	0.002	6	0.01	6	0	4	0.002	6	0.025	6	0.014	6
104			min	0.001	4	0.004	4	-0.001	5	0.001	4	0.01	4	0.005	4
105		3	max	0.002	6	0.013	6	0	4	0.002	6	0	7	0	7
106			min	0.001	4	0.005	4	-0.001	5	0.001	4	0	4	0	4
107		4	max	0.002	6	0.01	6	0	4	0.002	6	-0.01	4	-0.005	4
108			min	0.001	4	0.004	4	-0.001	5	0.001	4	-0.025	5	-0.014	5
109		5	max	0.002	6	0	7	-0.001	4	0.002	6	-0.021	4	-0.012	4
110			min	0.001	4	0	4	-0.001	5	0.001	4	-0.057	5	-0.032	5

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	LC	z-z Warp Shear[ksi]	LC	z-Top Warp Bend[ksi]	LC	z-Bot Warp Bend[ksi]	LC
111	M12	1	max	0.003	6	0	7	-0.001	4	0.003	6	0.069	6	0.039	6
112			min	0.001	4	0	4	-0.002	5	0.001	4	0.026	4	0.015	4
113		2	max	0.003	6	0.012	6	-0.001	4	0.002	6	0.031	6	0.017	6
114			min	0.001	4	0.005	4	-0.001	5	0.001	4	0.012	4	0.007	4
115		3	max	0.003	6	0.016	6	0	4	0.002	6	0	7	0	7
116			min	0.001	4	0.006	4	-0.001	5	0.001	4	0	4	0	4
117		4	max	0.003	6	0.012	6	-0.001	4	0.002	6	-0.012	4	-0.007	4
118			min	0.001	4	0.005	4	-0.001	5	0.001	4	-0.031	5	-0.017	5
119		5	max	0.003	6	0	7	-0.001	4	0.003	6	-0.026	4	-0.015	4
120			min	0.001	4	0	4	-0.002	5	0.001	4	-0.069	5	-0.039	5
121	M13	1	max	0	7	0	7	0	7	0	7	0	7	0	7
122			min	0	4	0	4	0	4	0	4	0	4	0	4
123		2	max	0	7	0	7	0	7	0	7	0	7	0	7
124			min	0	4	0	4	0	4	0	4	0	4	0	4
125		3	max	0	7	0	7	0	7	0	7	0	7	0	7
126			min	0	4	0	4	0	4	0	4	0	4	0	4
127		4	max	0	7	0	7	0	7	0	7	0	7	0	7
128			min	0	4	0	4	0	4	0	4	0	4	0	4
129		5	max	0	7	0	7	0	7	0	7	0	7	0	7
130			min	0	4	0	4	0	4	0	4	0	4	0	4
131	M14	1	max	0	7	0	7	0	7	0	7	0	7	0	7
132			min	0	4	0	4	0	4	0	4	0	4	0	4
133		2	max	0	7	0	7	0	7	0	7	0	7	0	7
134			min	0	4	0	4	0	4	0	4	0	4	0	4
135		3	max	0	7	0	7	0	7	0	7	0	7	0	7
136			min	0	4	0	4	0	4	0	4	0	4	0	4
137		4	max	0	7	0	7	0	7	0	7	0	7	0	7
138			min	0	4	0	4	0	4	0	4	0	4	0	4
139		5	max	0	7	0	7	0	7	0	7	0	7	0	7
140			min	0	4	0	4	0	4	0	4	0	4	0	4
141	M15	1	max	0	7	0	7	NC		NC		NC		NC	
142			min	0	4	0	4	NC		NC		NC		NC	
143		2	max	0	7	0	7	NC		NC		NC		NC	
144			min	0	4	0	4	NC		NC		NC		NC	
145		3	max	0	7	0	7	NC		NC		NC		NC	
146			min	0	4	0	4	NC		NC		NC		NC	
147		4	max	0	7	0	7	NC		NC		NC		NC	
148			min	0	4	0	4	NC		NC		NC		NC	
149		5	max	0	7	0	7	NC		NC		NC		NC	
150			min	0	4	0	4	NC		NC		NC		NC	
151	M16	1	max	0	7	0	7	NC		NC		NC		NC	
152			min	0	4	0	4	NC		NC		NC		NC	
153		2	max	0	7	0	7	NC		NC		NC		NC	
154			min	0	4	0	4	NC		NC		NC		NC	
155		3	max	0	7	0	7	NC		NC		NC		NC	
156			min	0	4	0	4	NC		NC		NC		NC	
157		4	max	0	7	0	7	NC		NC		NC		NC	
158			min	0	4	0	4	NC		NC		NC		NC	
159		5	max	0	7	0	7	NC		NC		NC		NC	
160			min	0	4	0	4	NC		NC		NC		NC	

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	0.784	6	0.121	6	0	6	-0.324	4	0.894	6	-0.015	4	0.013	6
2			min	0.292	4	0.057	4	0	4	-0.894	5	0.324	4	-0.041	5	0.005	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
3		2	max	0.784	6	0.113	6	0	6	-0.212	4	0.645	6	-0.012	4	0.01	6
4			min	0.292	4	0.048	4	0	4	-0.645	5	0.212	4	-0.033	5	0.004	4
5		3	max	0.784	6	0.105	6	0	6	-0.121	4	0.413	6	-0.009	4	0.008	6
6			min	0.292	4	0.038	4	0	4	-0.413	5	0.121	4	-0.025	5	0.003	4
7		4	max	0.784	6	0.097	6	0	6	-0.051	4	0.199	6	-0.006	4	0.005	6
8			min	0.292	4	0.028	4	0	4	-0.199	5	0.051	4	-0.017	5	0.002	4
9		5	max	0.784	6	0.088	6	0	6	-0.001	4	0.002	6	-0.003	4	0.003	6
10			min	0.292	4	0.019	4	0	4	-0.002	5	0.001	4	-0.009	5	0.001	4
11	M2	1	max	0.73	6	0.597	6	0	4	-0.324	4	0.895	6	0.019	6	-0.002	4
12			min	0.275	4	0.215	4	0	5	-0.895	5	0.324	4	0.008	4	-0.006	5
13		2	max	0.841	6	0.324	6	0	4	1.126	6	-0.406	4	0.014	6	-0.002	4
14			min	0.315	4	0.117	4	0	5	0.406	4	-1.126	5	0.006	4	-0.004	5
15		3	max	0.952	6	0.051	6	0	4	1.948	6	-0.703	4	0.01	6	-0.001	4
16			min	0.355	4	0.018	4	0	5	0.703	4	-1.948	5	0.004	4	-0.003	5
17		4	max	1.064	6	-0.08	4	0	4	1.573	6	-0.568	4	0.005	6	-0.001	4
18			min	0.395	4	-0.222	5	0	5	0.568	4	-1.573	5	0.002	4	-0.001	5
19		5	max	1.175	6	-0.178	4	0	4	0	7	0	7	0	7	0	7
20			min	0.436	4	-0.495	5	0	5	0	4	0	4	0	4	0	4
21	M3	1	max	0	4	0.172	6	-0.001	4	0.003	6	-0.001	4	0.026	6	-0.003	4
22			min	0	5	0.061	4	-0.002	5	0.001	4	-0.003	5	0.008	4	-0.008	5
23		2	max	0	4	0.009	6	-0.001	4	0.185	6	-0.065	4	-0.004	4	0.004	6
24			min	0	5	0.003	4	-0.002	5	0.065	4	-0.185	5	-0.012	5	0.001	4
25		3	max	0	4	-0.056	4	-0.001	4	0.04	6	-0.011	4	-0.017	4	0.015	6
26			min	0	5	-0.154	5	-0.002	5	0.011	4	-0.04	5	-0.049	5	0.005	4
27		4	max	0	4	-0.115	4	-0.001	4	-0.16	4	0.433	6	-0.03	4	0.027	6
28			min	0	5	-0.317	5	-0.002	5	-0.433	5	0.16	4	-0.087	5	0.009	4
29		5	max	0	4	-0.173	4	-0.001	4	-0.449	4	1.234	6	-0.043	4	0.039	6
30			min	0	5	-0.48	5	-0.002	5	-1.234	5	0.449	4	-0.124	5	0.013	4
31	M4	1	max	0	7	0.216	6	0	6	-0.001	4	0.002	6	-0.003	4	0.003	6
32			min	0	4	0.077	4	0	4	-0.002	5	0.001	4	-0.009	5	0.001	4
33		2	max	0	7	0.052	6	0	6	0.267	6	-0.096	4	-0.002	4	0.002	6
34			min	0	4	0.019	4	0	4	0.096	4	-0.267	5	-0.005	5	0.001	4
35		3	max	0	7	-0.04	4	0	6	0.208	6	-0.075	4	-0.001	6	0	4
36			min	0	4	-0.111	5	0	4	0.075	4	-0.208	5	-0.002	4	0	5
37		4	max	0	7	-0.098	4	0	6	-0.064	4	0.178	6	0.002	6	0	4
38			min	0	4	-0.274	5	0	4	-0.178	5	0.064	4	-0.001	4	-0.001	5
39		5	max	0	7	-0.157	4	0	6	-0.32	4	0.891	6	0.006	6	0	4
40			min	0	4	-0.437	5	0	4	-0.891	5	0.32	4	0	4	-0.002	5
41	M5	1	max	0.16	6	0.461	6	0.002	6	-0.32	4	0.892	6	-0.048	4	0.035	6
42			min	0.058	4	0.165	4	0.001	4	-0.892	5	0.32	4	-0.114	5	0.015	4
43		2	max	0.08	6	0.23	6	0.002	6	0.262	6	-0.094	4	-0.022	4	0.016	6
44			min	0.029	4	0.083	4	0.001	4	0.094	4	-0.262	5	-0.051	5	0.007	4
45		3	max	0	7	0	4	0.002	6	0.647	6	-0.232	4	0.012	6	-0.001	4
46			min	0	4	0	5	0.001	4	0.232	4	-0.647	5	0.004	4	-0.004	5
47		4	max	-0.029	4	-0.083	4	0.002	6	0.262	6	-0.094	4	0.074	6	-0.009	4
48			min	-0.08	5	-0.23	5	0.001	4	0.094	4	-0.262	5	0.03	4	-0.023	5
49		5	max	-0.058	4	-0.165	4	0.002	6	-0.32	4	0.893	6	0.137	6	-0.018	4
50			min	-0.16	5	-0.461	5	0.001	4	-0.893	5	0.32	4	0.056	4	-0.043	5
51	M6	1	max	0.168	6	0.479	6	0.005	6	-0.448	4	1.233	6	-0.119	4	0.105	6
52			min	0.06	4	0.172	4	0.002	4	-1.233	5	0.448	4	-0.337	5	0.037	4
53		2	max	0.088	6	0.249	6	0.005	6	-0.011	4	0.017	6	-0.06	4	0.053	6
54			min	0.032	4	0.09	4	0.002	4	-0.017	5	0.011	4	-0.171	5	0.019	4
55		3	max	0.008	6	0.018	6	0.005	6	0.428	6	-0.15	4	-0.001	4	0.001	6
56			min	0.003	4	0.007	4	0.002	4	0.15	4	-0.428	5	-0.004	5	0	4
57		4	max	-0.026	4	-0.076	4	0.005	6	0.104	6	-0.035	4	0.163	6	-0.018	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
58			min	-0.073	5	-0.212	5	0.002	4	0.035	4	-0.104	5	0.058	4	-0.051	5
59		5	max	-0.055	4	-0.158	4	0.005	6	-0.356	4	0.99	6	0.33	6	-0.036	4
60			min	-0.153	5	-0.443	5	0.002	4	-0.99	5	0.356	4	0.117	4	-0.103	5
61	M7	1	max	0.287	6	0.615	6	0	4	-0.444	4	1.216	6	0.02	6	-0.002	4
62			min	0.109	4	0.222	4	0	5	-1.216	5	0.444	4	0.007	4	-0.006	5
63		2	max	0.398	6	0.342	6	0	4	0.885	6	-0.316	4	0.015	6	-0.002	4
64			min	0.149	4	0.124	4	0	5	0.316	4	-0.885	5	0.005	4	-0.005	5
65		3	max	0.509	6	0.069	6	0	4	1.788	6	-0.643	4	0.01	6	-0.001	4
66			min	0.189	4	0.025	4	0	5	0.643	4	-1.788	5	0.003	4	-0.003	5
67		4	max	0.621	6	-0.073	4	0	4	1.493	6	-0.538	4	0.005	6	-0.001	4
68			min	0.229	4	-0.204	5	0	5	0.538	4	-1.493	5	0.002	4	-0.002	5
69		5	max	0.732	6	-0.172	4	0	4	0	7	0	7	0	7	0	7
70			min	0.269	4	-0.476	5	0	5	0	4	0	4	0	4	0	4
71	M8	1	max	0	7	0.437	6	-0.001	4	-0.32	4	0.891	6	0.093	6	-0.012	4
72			min	0	4	0.157	4	-0.002	5	-0.891	5	0.32	4	0.038	4	-0.029	5
73		2	max	0	7	0.274	6	-0.001	4	-0.064	4	0.178	6	0.05	6	-0.006	4
74			min	0	4	0.098	4	-0.002	5	-0.178	5	0.064	4	0.021	4	-0.015	5
75		3	max	0	7	0.111	6	-0.001	4	0.209	6	-0.075	4	0.007	6	-0.001	4
76			min	0	4	0.04	4	-0.002	5	0.075	4	-0.209	5	0.004	4	-0.002	5
77		4	max	0	7	-0.019	4	-0.001	4	0.267	6	-0.096	4	-0.014	4	0.011	6
78			min	0	4	-0.052	5	-0.002	5	0.096	4	-0.267	5	-0.036	5	0.004	4
79		5	max	0	7	-0.077	4	-0.001	4	-0.001	4	0.002	6	-0.031	4	0.025	6
80			min	0	4	-0.216	5	-0.002	5	-0.002	5	0.001	4	-0.079	5	0.01	4
81	M9	1	max	0.001	6	0.451	6	-0.001	4	-0.359	4	0.998	6	0.172	6	-0.019	4
82			min	0	4	0.162	4	-0.003	5	-0.998	5	0.359	4	0.061	4	-0.053	5
83		2	max	0.001	6	0.288	6	-0.001	4	-0.093	4	0.256	6	0.106	6	-0.012	4
84			min	0	4	0.103	4	-0.003	5	-0.256	5	0.093	4	0.038	4	-0.033	5
85		3	max	0.001	6	0.125	6	-0.001	4	0.158	6	-0.056	4	0.041	6	-0.004	4
86			min	0	4	0.045	4	-0.003	5	0.056	4	-0.158	5	0.014	4	-0.013	5
87		4	max	0.001	6	-0.014	4	-0.001	4	0.244	6	-0.087	4	-0.009	4	0.007	6
88			min	0	4	-0.038	5	-0.003	5	0.087	4	-0.244	5	-0.024	5	0.003	4
89		5	max	0.001	6	-0.072	4	-0.001	4	0.003	6	-0.001	4	-0.033	4	0.028	6
90			min	0	4	-0.202	5	-0.003	5	0.001	4	-0.003	5	-0.089	5	0.01	4
91	M10	1	max	0.434	6	0.153	6	-0.001	4	-0.425	4	1.161	6	0.146	6	-0.016	4
92			min	0.161	4	0.069	4	-0.003	5	-1.161	5	0.425	4	0.053	4	-0.045	5
93		2	max	0.434	6	0.145	6	-0.001	4	-0.288	4	0.845	6	0.083	6	-0.009	4
94			min	0.161	4	0.059	4	-0.003	5	-0.845	5	0.288	4	0.029	4	-0.026	5
95		3	max	0.434	6	0.136	6	-0.001	4	-0.172	4	0.547	6	0.02	6	-0.002	4
96			min	0.161	4	0.05	4	-0.003	5	-0.547	5	0.172	4	0.006	4	-0.006	5
97		4	max	0.434	6	0.128	6	-0.001	4	-0.076	4	0.266	6	-0.017	4	0.013	6
98			min	0.161	4	0.04	4	-0.003	5	-0.266	5	0.076	4	-0.042	5	0.005	4
99		5	max	0.434	6	0.12	6	-0.001	4	-0.001	4	0.003	6	-0.041	4	0.033	6
100			min	0.161	4	0.031	4	-0.003	5	-0.003	5	0.001	4	-0.105	5	0.013	4
101	M11	1	max	-0.212	4	0.112	6	0	4	-0.296	4	0.814	6	0.038	6	-0.004	4
102			min	-0.568	5	0.054	4	-0.001	5	-0.814	5	0.296	4	0.012	4	-0.012	5
103		2	max	-0.212	4	0.104	6	0	4	-0.192	4	0.585	6	0.023	6	-0.002	4
104			min	-0.568	5	0.044	4	-0.001	5	-0.585	5	0.192	4	0.007	4	-0.007	5
105		3	max	-0.212	4	0.095	6	0	4	-0.108	4	0.374	6	0.008	6	0	4
106			min	-0.568	5	0.035	4	-0.001	5	-0.374	5	0.108	4	0.001	4	-0.003	5
107		4	max	-0.212	4	0.087	6	0	4	-0.045	4	0.18	6	-0.004	4	0.002	6
108			min	-0.568	5	0.025	4	-0.001	5	-0.18	5	0.045	4	-0.007	5	0.001	4
109		5	max	-0.212	4	0.079	6	0	4	-0.002	4	0.004	6	-0.009	4	0.007	6
110			min	-0.568	5	0.015	4	-0.001	5	-0.004	5	0.002	4	-0.021	5	0.003	4
111	M12	1	max	-0.343	4	0.072	6	0.002	6	-0.168	4	0.475	6	-0.048	4	0.04	6
112			min	-0.916	5	0.039	4	0.001	4	-0.475	5	0.168	4	-0.128	5	0.015	4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
113		2	max	-0.343	4	0.064	6	0.002	6	-0.096	4	0.331	6	-0.028	4	0.024	6
114			min	-0.916	5	0.029	4	0.001	4	-0.331	5	0.096	4	-0.076	5	0.009	4
115		3	max	-0.343	4	0.056	6	0.002	6	-0.044	4	0.204	6	-0.009	4	0.008	6
116			min	-0.916	5	0.02	4	0.001	4	-0.204	5	0.044	4	-0.025	5	0.003	4
117		4	max	-0.343	4	0.047	6	0.002	6	-0.012	4	0.094	6	0.027	6	-0.003	4
118			min	-0.916	5	0.01	4	0.001	4	-0.094	5	0.012	4	0.011	4	-0.009	5
119		5	max	-0.343	4	0.039	6	0.002	6	-0.001	4	0.002	6	0.079	6	-0.01	4
120			min	-0.916	5	0	4	0.001	4	-0.002	5	0.001	4	0.031	4	-0.025	5
121	M13	1	max	-0.174	4	0.598	6	0	4	-0.308	4	0.849	6	0.082	6	-0.009	4
122			min	-0.459	5	0.216	4	0	5	-0.849	5	0.308	4	0.03	4	-0.025	5
123		2	max	-0.205	4	0.325	6	0	4	1.029	6	-0.37	4	0.061	6	-0.007	4
124			min	-0.545	5	0.117	4	0	5	0.37	4	-1.029	5	0.022	4	-0.019	5
125		3	max	-0.236	4	0.052	6	0	4	1.796	6	-0.647	4	0.041	6	-0.005	4
126			min	-0.631	5	0.019	4	0	5	0.647	4	-1.796	5	0.015	4	-0.013	5
127		4	max	-0.267	4	-0.08	4	0	4	1.453	6	-0.524	4	0.02	6	-0.002	4
128			min	-0.717	5	-0.221	5	0	5	0.524	4	-1.453	5	0.007	4	-0.006	5
129		5	max	-0.298	4	-0.178	4	0	4	0	7	0	7	0	7	0	7
130			min	-0.803	5	-0.493	5	0	5	0	4	0	4	0	4	0	4
131	M14	1	max	-0.329	4	0.575	6	0	4	-0.169	4	0.476	6	0.045	6	-0.006	4
132			min	-0.873	5	0.207	4	0	5	-0.476	5	0.169	4	0.018	4	-0.014	5
133		2	max	-0.36	4	0.302	6	0	4	1.309	6	-0.475	4	0.034	6	-0.004	4
134			min	-0.959	5	0.109	4	0	5	0.475	4	-1.309	5	0.013	4	-0.011	5
135		3	max	-0.391	4	0.029	6	0	4	1.983	6	-0.717	4	0.022	6	-0.003	4
136			min	-1.045	5	0.01	4	0	5	0.717	4	-1.983	5	0.009	4	-0.007	5
137		4	max	-0.422	4	-0.088	4	0	4	1.547	6	-0.559	4	0.011	6	-0.001	4
138			min	-1.131	5	-0.244	5	0	5	0.559	4	-1.547	5	0.004	4	-0.004	5
139		5	max	-0.453	4	-0.187	4	0	4	0	7	0	7	0	7	0	7
140			min	-1.217	5	-0.516	5	0	5	0	4	0	4	0	4	0	4
141	M15	1	max	1.701	6	0.004	6	0.001	6	0	7	0	7	0	7	0	7
142			min	0.652	4	0.001	4	0	4	0	4	0	4	0	4	0	4
143		2	max	1.691	6	0.004	6	0.001	6	0.058	6	-0.021	4	0.009	6	-0.004	4
144			min	0.64	4	0.001	4	0	4	0.021	4	-0.058	5	0.004	4	-0.009	5
145		3	max	1.68	6	0.004	6	0.001	6	0.117	6	-0.041	4	0.018	6	-0.007	4
146			min	0.628	4	0.001	4	0	4	0.041	4	-0.117	5	0.007	4	-0.018	5
147		4	max	1.67	6	0.004	6	0.001	6	0.175	6	-0.062	4	0.027	6	-0.011	4
148			min	0.616	4	0.001	4	0	4	0.062	4	-0.175	5	0.011	4	-0.027	5
149		5	max	1.66	6	0.004	6	0.001	6	0.233	6	-0.083	4	0.036	6	-0.014	4
150			min	0.605	4	0.001	4	0	4	0.083	4	-0.233	5	0.014	4	-0.036	5
151	M16	1	max	1.953	6	0.012	6	0	6	0	7	0	7	0	7	0	7
152			min	0.735	4	0.004	4	0	4	0	4	0	4	0	4	0	4
153		2	max	1.947	6	0.012	6	0	6	0.11	6	-0.039	4	0.002	6	0	4
154			min	0.728	4	0.004	4	0	4	0.039	4	-0.11	5	0	4	-0.002	5
155		3	max	1.941	6	0.012	6	0	6	0.219	6	-0.078	4	0.003	6	-0.001	4
156			min	0.721	4	0.004	4	0	4	0.078	4	-0.219	5	0.001	4	-0.003	5
157		4	max	1.935	6	0.012	6	0	6	0.329	6	-0.117	4	0.005	6	-0.001	4
158			min	0.713	4	0.004	4	0	4	0.117	4	-0.329	5	0.001	4	-0.005	5
159		5	max	1.929	6	0.012	6	0	6	0.438	6	-0.156	4	0.007	6	-0.002	4
160			min	0.706	4	0.004	4	0	4	0.156	4	-0.438	5	0.002	4	-0.007	5

Envelope Member Section Deflections - Service

No Data to Print...

Envelope Member Section Deflections - Strength

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
1	M1	1	max	0.002	6	-0.004	4	0	4	0	4	NC	4	NC	7
2			min	0.001	4	-0.01	5	-0.001	5	0	5	5275.508	5	NC	4
3		2	max	0.001	6	-0.003	4	0	4	0	4	NC	7	NC	7
4			min	0.001	4	-0.007	5	0	5	0	5	8052.747	5	NC	4
5		3	max	0.001	6	-0.002	4	0	4	0	4	NC	7	NC	7
6			min	0	4	-0.004	5	0	5	0	5	NC	4	NC	4
7		4	max	0	6	-0.001	4	0	4	0	6	NC	7	NC	7
8			min	0	4	-0.002	5	0	5	0	4	NC	4	NC	4
9		5	max	0	7	0	7	0	7	0	6	NC	7	NC	7
10			min	0	4	0	4	0	4	0	4	NC	4	NC	4
11	M2	1	max	0.005	6	-0.003	4	0.001	6	0	6	NC	7	NC	7
12			min	0.002	4	-0.009	5	0	4	0	4	NC	4	NC	4
13		2	max	0.003	6	-0.007	4	0	6	0	6	NC	7	NC	7
14			min	0.001	4	-0.019	5	0	4	0	4	6022.113	5	NC	4
15		3	max	0.002	6	-0.008	4	0	6	0	6	NC	4	NC	7
16			min	0.001	4	-0.022	5	0	4	0	4	5074.301	5	NC	4
17		4	max	0.001	6	-0.005	4	0	4	0	6	NC	7	NC	7
18			min	0	4	-0.015	5	0	5	0	4	7382.693	5	NC	4
19		5	max	0	7	0	7	0	7	0	6	NC	7	NC	7
20			min	0	4	0	4	0	4	0	4	NC	4	NC	4
21	M3	1	max	0	4	-0.004	4	-0.001	4	0	6	NC	7	NC	7
22			min	-0.001	5	-0.01	5	-0.002	5	0	4	NC	4	NC	4
23		2	max	0	4	-0.003	4	-0.001	4	0	6	NC	7	NC	7
24			min	-0.001	5	-0.009	5	-0.001	5	0	4	NC	4	NC	4
25		3	max	0	4	-0.003	4	0	4	0	6	NC	7	NC	7
26			min	-0.001	5	-0.008	5	-0.001	5	0	4	NC	4	NC	4
27		4	max	0	4	-0.002	4	0	4	0	6	NC	7	NC	7
28			min	-0.001	5	-0.006	5	-0.001	5	0	4	NC	4	NC	4
29		5	max	0	4	-0.002	4	0	4	0	6	NC	7	NC	7
30			min	-0.001	5	-0.006	5	-0.001	5	0	4	NC	4	NC	4
31	M4	1	max	0	7	0	7	0	7	0	6	NC	7	NC	7
32			min	0	4	0	4	0	4	0	4	NC	4	NC	4
33		2	max	0	7	0	4	0	6	0	6	NC	7	NC	7
34			min	0	4	0	5	0	4	0	4	NC	4	NC	4
35		3	max	0	7	0	4	0	4	0	6	NC	7	NC	7
36			min	0	4	0	5	0	5	0	4	NC	4	NC	4
37		4	max	0	7	0	6	0	4	0	6	NC	7	NC	7
38			min	0	4	0	4	0	5	0	4	NC	4	NC	4
39		5	max	0	7	0	7	0	7	0	6	NC	7	NC	7
40			min	0	4	0	4	0	4	0	4	NC	4	NC	4
41	M5	1	max	0	7	0	7	0	7	0	6	NC	7	NC	7
42			min	0	4	0	4	0	4	0	4	NC	4	NC	4
43		2	max	0	7	-0.001	4	0	6	0	6	NC	7	NC	7
44			min	0	4	-0.002	5	0	4	0	4	NC	4	NC	4
45		3	max	0	7	-0.001	4	0	4	0	6	NC	7	NC	7
46			min	0	4	-0.003	5	0	5	0	4	NC	4	NC	4
47		4	max	0	7	-0.001	4	0	4	0	6	NC	7	NC	7
48			min	0	4	-0.002	5	0	5	0	4	NC	4	NC	4
49		5	max	0	7	0	7	0	7	0	6	NC	7	NC	7
50			min	0	4	0	4	0	4	0	4	NC	4	NC	4
51	M6	1	max	-0.001	4	-0.002	4	0	4	0	6	NC	7	NC	7
52			min	-0.003	5	-0.004	5	-0.001	5	0	4	NC	4	NC	4
53		2	max	-0.001	4	-0.002	4	0	6	0	6	NC	7	NC	7
54			min	-0.003	5	-0.006	5	0	4	0	4	NC	4	NC	4
55		3	max	-0.001	4	-0.003	4	0	6	0	6	NC	7	NC	7

Envelope Member Section Deflections - Strength (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
56			min	-0.003	5	-0.007	5	0	4	0	4	NC	4	NC	4
57		4	max	-0.001	4	-0.003	4	0	6	0	6	NC	7	NC	7
58			min	-0.003	5	-0.007	5	0	4	0	4	NC	4	NC	4
59		5	max	-0.001	4	-0.003	4	0.001	6	0	6	NC	7	NC	7
60			min	-0.004	5	-0.007	5	0	4	0	4	NC	4	NC	4
61	M7	1	max	0.002	6	-0.002	4	0.001	6	0	4	NC	7	NC	7
62			min	0.001	4	-0.005	5	0	4	0	5	NC	4	NC	4
63		2	max	0.002	6	-0.005	4	0	6	0	4	NC	7	NC	7
64			min	0.001	4	-0.014	5	0	4	0	5	NC	4	NC	4
65		3	max	0.001	6	-0.007	4	0	6	0	4	NC	7	NC	7
66			min	0	4	-0.018	5	0	7	0	5	7184.879	5	NC	4
67		4	max	0.001	6	-0.005	4	0	4	0	4	NC	7	NC	7
68			min	0	4	-0.013	5	0	5	0	5	9569.626	5	NC	4
69		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
70			min	0	4	0	4	0	4	0	5	NC	4	NC	4
71	M8	1	max	0	7	0	7	0	7	0	6	NC	7	NC	7
72			min	0	4	0	4	0	4	0	4	NC	4	NC	4
73		2	max	0	7	0	6	0	4	0	6	NC	7	NC	7
74			min	0	4	0	4	0	5	0	4	NC	4	NC	4
75		3	max	0	7	0	4	0	4	0	6	NC	7	NC	7
76			min	0	4	0	5	0	5	0	4	NC	4	NC	4
77		4	max	0	7	0	4	0	6	0	6	NC	7	NC	7
78			min	0	4	0	5	0	4	0	4	NC	4	NC	4
79		5	max	0	7	0	7	0	7	0	6	NC	7	NC	7
80			min	0	4	0	4	0	4	0	4	NC	4	NC	4
81	M9	1	max	0.001	6	-0.003	4	0.001	6	0	6	NC	7	NC	7
82			min	0	4	-0.008	5	0	4	0	4	NC	4	NC	4
83		2	max	0.001	6	-0.003	4	0.001	6	0	6	NC	7	NC	7
84			min	0	4	-0.009	5	0	4	0	4	NC	4	NC	4
85		3	max	0.001	6	-0.004	4	0.001	6	0	6	NC	7	NC	7
86			min	0	4	-0.011	5	0.001	4	0	4	NC	4	NC	4
87		4	max	0.001	6	-0.005	4	0.002	6	0	6	NC	7	NC	7
88			min	0	4	-0.012	5	0.001	4	0	4	NC	4	NC	4
89		5	max	0.001	6	-0.005	4	0.002	6	0	6	NC	7	NC	7
90			min	0	4	-0.013	5	0.001	4	0	4	9857.248	5	NC	4
91	M10	1	max	0.001	6	-0.002	4	0	4	0	4	NC	7	NC	7
92			min	0	4	-0.006	5	-0.001	5	0	5	NC	4	NC	4
93		2	max	0.001	6	-0.001	4	0	4	0	6	NC	7	NC	7
94			min	0	4	-0.003	5	-0.001	5	0	4	NC	4	NC	4
95		3	max	0.001	6	-0.001	4	0	4	0	6	NC	7	NC	7
96			min	0	4	-0.001	5	0	5	0	4	NC	4	NC	4
97		4	max	0	6	0	4	0	4	0	6	NC	7	NC	7
98			min	0	4	0	5	0	5	0	4	NC	4	NC	4
99		5	max	0	7	0	7	0	7	0	6	NC	7	NC	7
100			min	0	4	0	4	0	4	0	4	NC	4	NC	4
101	M11	1	max	0	4	-0.003	4	0.001	6	0	6	NC	7	NC	7
102			min	-0.001	5	-0.008	5	0	4	0	4	NC	4	NC	4
103		2	max	0	4	-0.002	4	0.001	6	0	6	NC	7	NC	7
104			min	-0.001	5	-0.005	5	0	4	0	4	NC	4	NC	4
105		3	max	0	4	-0.001	4	0	6	0	6	NC	7	NC	7
106			min	-0.001	5	-0.003	5	0	4	0	4	NC	4	NC	4
107		4	max	0	4	-0.001	4	0	6	0	4	NC	7	NC	7
108			min	0	5	-0.001	5	0	4	0	5	NC	4	NC	4
109		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
110			min	0	4	0	4	0	4	0	5	NC	4	NC	4

Envelope Member Section Deflections - Strength (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
111	M12	1	max	-0.001	4	-0.005	4	0.001	6	0	6	NC	4	NC	7
112			min	-0.002	5	-0.013	5	0	4	0	4	4086.549	5	NC	4
113		2	max	-0.001	4	-0.004	4	0.001	6	0	6	NC	7	NC	7
114			min	-0.002	5	-0.009	5	0	4	0	4	5733.087	5	NC	4
115		3	max	0	4	-0.002	4	0.001	6	0	6	NC	7	NC	7
116			min	-0.001	5	-0.006	5	0	4	0	4	8912.792	5	NC	4
117		4	max	0	4	-0.001	4	0	6	0	4	NC	7	NC	7
118			min	-0.001	5	-0.003	5	0	4	0	5	NC	4	NC	4
119		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
120			min	0	4	0	4	0	4	0	5	NC	4	NC	4
121	M13	1	max	-0.001	4	-0.003	4	0	4	0	4	NC	7	NC	7
122			min	-0.003	5	-0.008	5	-0.001	5	0	5	NC	4	NC	4
123		2	max	-0.001	4	-0.005	4	-0.001	4	0	4	NC	7	NC	7
124			min	-0.002	5	-0.015	5	-0.002	5	0	5	NC	4	NC	4
125		3	max	-0.001	4	-0.006	4	-0.001	4	0	4	NC	7	NC	7
126			min	-0.001	5	-0.018	5	-0.001	5	0	5	7549.443	5	NC	4
127		4	max	0	4	-0.004	4	0	4	0	4	NC	7	NC	7
128			min	-0.001	5	-0.012	5	-0.001	5	0	5	NC	4	NC	4
129		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
130			min	0	4	0	4	0	4	0	5	NC	4	NC	4
131	M14	1	max	-0.002	4	-0.005	4	0	4	0	4	NC	7	NC	7
132			min	-0.005	5	-0.013	5	-0.001	5	0	5	8244.346	5	NC	4
133		2	max	-0.001	4	-0.007	4	0	4	0	4	NC	4	NC	7
134			min	-0.003	5	-0.02	5	-0.001	5	0	5	5151.736	5	NC	4
135		3	max	-0.001	4	-0.008	4	0	4	0	4	NC	4	NC	7
136			min	-0.002	5	-0.022	5	-0.001	5	0	5	4751.823	5	NC	4
137		4	max	0	4	-0.005	4	0	4	0	4	NC	7	NC	7
138			min	-0.001	5	-0.014	5	-0.001	5	0	5	7194.783	5	NC	4
139		5	max	0	7	0	7	0	7	0	4	NC	7	NC	7
140			min	0	4	0	4	0	4	0	5	NC	4	NC	4
141	M15	1	max	0	7	0	7	0	7	0	6	NC	7	NC	7
142			min	0	4	0	4	0	4	0	4	NC	4	NC	4
143		2	max	-0.001	4	-0.001	4	0	4	0	6	NC	7	NC	7
144			min	-0.002	5	-0.003	5	0	5	0	4	NC	4	NC	4
145		3	max	-0.002	4	-0.002	4	0	4	0	6	NC	7	NC	7
146			min	-0.004	5	-0.004	5	0	5	0	4	NC	4	NC	4
147		4	max	-0.002	4	-0.001	4	0	7	0	6	NC	7	NC	7
148			min	-0.006	5	-0.004	5	0	5	0	4	NC	4	NC	4
149		5	max	-0.003	4	0.001	6	0.001	6	0	6	NC	7	NC	7
150			min	-0.008	5	0	4	0	4	0	4	NC	4	NC	4
151	M16	1	max	0	7	0	7	0	7	0	6	NC	7	NC	7
152			min	0	4	0	4	0	4	0	4	NC	4	NC	4
153		2	max	-0.001	4	-0.001	4	0	4	0	6	NC	7	NC	7
154			min	-0.001	5	-0.002	5	0	5	0	4	NC	4	NC	4
155		3	max	-0.001	4	-0.001	4	0	4	0	6	NC	7	NC	7
156			min	-0.003	5	-0.004	5	0	5	0	4	NC	4	NC	4
157		4	max	-0.002	4	-0.001	4	0	4	0	6	NC	7	NC	7
158			min	-0.004	5	-0.004	5	-0.001	5	0	4	NC	4	NC	4
159		5	max	-0.002	4	0	4	0	4	0	6	NC	7	NC	7
160			min	-0.006	5	-0.001	5	-0.001	5	0	4	NC	4	NC	4

Envelope Beam Deflections

	Member Label	Span		Location [ft]	y' [in]	(n) L'/y' Ratio	LC
1	M1	1	max	0.844	-0.001	NC	6
2		1	min	0	-0.001	NC	4

Envelope Beam Deflections (Continued)

	Member Label	Span		Location [ft]	y' [in]	(n) L'/y' Ratio	LC
3	M2	1	max	7.46	0.001	NC	6
4		1	min	0	0.059	3800	5
5	M3	1	max	2.966	-0.001	NC	6
6		1	min	1.594	-0.001	NC	4
7	M4	1	max	4.25	0	NC	7
8		1	min	0	0	NC	4
9	M5	1	max	4.938	-0.001	NC	7
10		1	min	0	0	NC	4
11	M6	1	max	4.422	-0.001	NC	6
12		1	min	0	0	NC	4
13	M7	1	max	0.484	-0.001	NC	7
14		1	min	4.941	-0.016	7155	5
15	M8	1	max	4.25	0	NC	7
16		1	min	0	0	NC	4
17	M9	1	max	2.612	-0.001	NC	7
18		1	min	0	0	NC	4
19	M10	1	max	3.188	0.001	NC	6
20		1	min	0	0	NC	4
21	M11	1	max	2.203	0.001	NC	6
22		1	min	0	0	NC	4
23	M12	1	max	0.094	-0.001	NC	6
24		1	min	0	0	NC	4
25	M13	1	max	8.261	-0.001	NC	7
26		1	min	4.49	-0.014	7534	5
27	M14	1	max	6.286	0.001	NC	7
28		1	min	0	0.051	4046	5

Envelope Beam Deflection Checks

No Data to Print...

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M1	C12X20.7	0.041	0	6	0.007	1.031	y	6	154.681	196.992	7.438	69.12	1.742	H1-1b
2	M2	C12X20.7	0.103	5.425	6	0.031	0	y	6	70.008	196.992	7.438	58.895	1.183	H1-1b
3	M3	C12X20.7	0.035	4.25	6	0.025	4.25	y	6	158.774	196.992	7.438	69.12	3	H1-1b
4	M4	C12X20.7	0.025	4.25	6	0.023	4.25	y	6	158.774	196.992	7.438	69.12	2.534	H1-1b
5	M5	C12X20.7	0.03	0	6	0.024	0	y	6	108.351	196.992	7.438	69.12	1.745	H1-1b
6	M6	C12X20.7	0.043	0	6	0.025	0	y	6	108.351	196.992	7.438	69.12	2.987	H1-1b
7	M7	C12X20.7	0.078	5.522	6	0.032	0	y	6	70.008	196.992	7.438	60.313	1.211	H1-1b
8	M8	C12X20.7	0.026	0	6	0.023	0	y	6	158.774	196.992	7.438	69.12	2.534	H1-1b
9	M9	C12X20.7	0.03	0	6	0.023	0	y	6	158.774	196.992	7.438	69.12	2.695	H1-1b
10	M10	C12X20.7	0.042	0	6	0.008	0	y	6	154.681	196.992	7.438	69.12	1.723	H1-1b
11	M11	C12X20.7	0.032	0	6	0.006	0.891	y	6	154.681	196.992	7.438	69.12	1.746	H1-1b
12	M12	C12X20.7	0.03	0	6	0.004	1.125	y	6	154.681	196.992	7.438	69.12	1.813	H1-1b
13	M13	C12X20.7	0.064	4.759	6	0.031	0	y	6	81.111	196.992	7.438	61.578	1.184	H1-1b
14	M14	C12X20.7	0.076	4.58	6	0.03	0	y	6	81.111	196.992	7.438	60.215	1.158	H1-1b
15	M15	HSS3X3X4	0.08	0	6	0	9.25	y	6	51.71	101.016	8.556	8.556	1.667	H1-1b*
16	M16	HSS3X3X4	0.06	0	6	0.001	5.5	y	6	79.721	101.016	8.556	8.556	1.667	H1-1b*

Envelope AISI S100-16: ASD Member Cold Formed Steel Code Checks

No Data to Print...

Envelope AWC NDS-18: ASD Member Wood Code Checks

No Data to Print...

Envelope Concrete Beam Design Results

No Data to Print...

Envelope Concrete Column Design Results

No Data to Print...

Envelope AA ADM1-15: ASD - BUILDING Member Aluminum Code Checks

No Data to Print...

Envelope AISC 14TH (360-10): ASD Member Stainless Steel Code Checks

No Data to Print...

Frequencies and Participation

No Data to Print...

AISC 15TH (360-16): LRFD Member Steel Code Checks

	LC	Member	Shape	UC Max	Loc[ft]	Shear UC	Loc[ft]	Dir	phi*Pnc[k]	phi*Pnt[k]	phi*Mnyy[k-ft]	phi*Mnzz[k-ft]	Cb	Eqn
1	4	M1	C12X20.7	0.015	0	0.003	0	y	154.681	196.992	7.438	69.12	1.942	H1-1b
2	4	M2	C12X20.7	0.038	9.301	0.011	0	y	70.008	196.992	7.438	58.904	1.183	H1-1b*
3	4	M3	C12X20.7	0.013	4.25	0.009	4.25	y	158.774	196.992	7.438	69.12	3	H1-1b
4	4	M4	C12X20.7	0.009	4.25	0.008	4.25	y	158.774	196.992	7.438	69.12	2.534	H1-1b
5	4	M5	C12X20.7	0.011	0	0.009	0	y	108.351	196.992	7.438	69.12	1.745	H1-1b
6	4	M6	C12X20.7	0.016	0	0.009	0	y	108.351	196.992	7.438	69.12	3	H1-1b
7	4	M7	C12X20.7	0.028	5.522	0.011	0	y	70.008	196.992	7.438	60.383	1.212	H1-1b
8	4	M8	C12X20.7	0.01	0	0.008	0	y	158.774	196.992	7.438	69.12	2.534	H1-1b
9	4	M9	C12X20.7	0.011	0	0.008	0	y	158.774	196.992	7.438	69.12	2.699	H1-1b
10	4	M10	C12X20.7	0.015	0	0.004	0	y	154.681	196.992	7.438	69.12	1.867	H1-1b
11	4	M11	C12X20.7	0.012	0	0.003	0	y	154.681	196.992	7.438	69.12	1.967	H1-1b
12	4	M12	C12X20.7	0.011	4.5	0.002	0	y	154.681	196.992	7.438	69.12	2.29	H1-1b*
13	4	M13	C12X20.7	0.023	4.759	0.011	0	y	81.111	196.992	7.438	61.601	1.185	H1-1b
14	4	M14	C12X20.7	0.028	4.58	0.011	0	y	81.111	196.992	7.438	60.189	1.158	H1-1b
15	4	M15	HSS3X3X4	0.031	0	0	9.25	y	51.71	101.016	8.556	8.556	1.667	H1-1b*
16	4	M16	HSS3X3X4	0.022	0	0	5.5	y	79.721	101.016	8.556	8.556	1.667	H1-1b*
17	5	M1	C12X20.7	0.041	0	0.007	1.031	y	154.681	196.992	7.438	69.12	1.742	H1-1b
18	5	M2	C12X20.7	0.103	5.425	0.031	0	y	70.008	196.992	7.438	58.895	1.183	H1-1b
19	5	M3	C12X20.7	0.035	4.25	0.025	4.25	y	158.774	196.992	7.438	69.12	3	H1-1b
20	5	M4	C12X20.7	0.025	4.25	0.023	4.25	y	158.774	196.992	7.438	69.12	2.534	H1-1b
21	5	M5	C12X20.7	0.03	0	0.024	0	y	108.351	196.992	7.438	69.12	1.745	H1-1b
22	5	M6	C12X20.7	0.043	0	0.025	0	y	108.351	196.992	7.438	69.12	2.987	H1-1b
23	5	M7	C12X20.7	0.078	5.522	0.032	0	y	70.008	196.992	7.438	60.313	1.211	H1-1b
24	5	M8	C12X20.7	0.026	0	0.023	0	y	158.774	196.992	7.438	69.12	2.534	H1-1b
25	5	M9	C12X20.7	0.03	0	0.023	0	y	158.774	196.992	7.438	69.12	2.695	H1-1b
26	5	M10	C12X20.7	0.042	0	0.008	0	y	154.681	196.992	7.438	69.12	1.723	H1-1b
27	5	M11	C12X20.7	0.032	0	0.006	0.891	y	154.681	196.992	7.438	69.12	1.746	H1-1b
28	5	M12	C12X20.7	0.03	0	0.004	1.125	y	154.681	196.992	7.438	69.12	1.813	H1-1b
29	5	M13	C12X20.7	0.064	4.759	0.031	0	y	81.111	196.992	7.438	61.578	1.184	H1-1b
30	5	M14	C12X20.7	0.076	4.58	0.03	0	y	81.111	196.992	7.438	60.215	1.158	H1-1b
31	5	M15	HSS3X3X4	0.08	0	0	9.25	y	51.71	101.016	8.556	8.556	1.667	H1-1b*
32	5	M16	HSS3X3X4	0.06	0	0.001	5.5	y	79.721	101.016	8.556	8.556	1.667	H1-1b*
33	6	M1	C12X20.7	0.041	0	0.007	1.031	y	154.681	196.992	7.438	69.12	1.742	H1-1b
34	6	M2	C12X20.7	0.103	5.425	0.031	0	y	70.008	196.992	7.438	58.895	1.183	H1-1b

AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	LC	Member	Shape	UC Max	Loc[ft]	Shear UC	Loc[ft]	Dir	phi*Pnc[k]	phi*Pnt[k]	phi*Mnyy[k-ft]	phi*Mnzz[k-ft]	Cb	Eqn
35	6	M3	C12X20.7	0.035	4.25	0.025	4.25	y	158.774	196.992	7.438	69.12	3	H1-1b
36	6	M4	C12X20.7	0.025	4.25	0.023	4.25	y	158.774	196.992	7.438	69.12	2.534	H1-1b
37	6	M5	C12X20.7	0.03	0	0.024	0	y	108.351	196.992	7.438	69.12	1.745	H1-1b
38	6	M6	C12X20.7	0.043	0	0.025	0	y	108.351	196.992	7.438	69.12	2.987	H1-1b
39	6	M7	C12X20.7	0.078	5.522	0.032	0	y	70.008	196.992	7.438	60.313	1.211	H1-1b
40	6	M8	C12X20.7	0.026	0	0.023	0	y	158.774	196.992	7.438	69.12	2.534	H1-1b
41	6	M9	C12X20.7	0.03	0	0.023	0	y	158.774	196.992	7.438	69.12	2.695	H1-1b
42	6	M10	C12X20.7	0.042	0	0.008	0	y	154.681	196.992	7.438	69.12	1.723	H1-1b
43	6	M11	C12X20.7	0.032	0	0.006	0.891	y	154.681	196.992	7.438	69.12	1.746	H1-1b
44	6	M12	C12X20.7	0.03	0	0.004	1.125	y	154.681	196.992	7.438	69.12	1.813	H1-1b
45	6	M13	C12X20.7	0.064	4.759	0.031	0	y	81.111	196.992	7.438	61.578	1.184	H1-1b
46	6	M14	C12X20.7	0.076	4.58	0.03	0	y	81.111	196.992	7.438	60.215	1.158	H1-1b
47	6	M15	HSS3X3X4	0.08	0	0	9.25	y	51.71	101.016	8.556	8.556	1.667	H1-1b*
48	6	M16	HSS3X3X4	0.06	0	0.001	5.5	y	79.721	101.016	8.556	8.556	1.667	H1-1b*
49	7	M1	C12X20.7	0.022	0	0.004	0.188	y	154.681	196.992	7.438	69.12	1.818	H1-1b
50	7	M2	C12X20.7	0.054	5.425	0.016	0	y	70.008	196.992	7.438	58.899	1.183	H1-1b
51	7	M3	C12X20.7	0.018	4.25	0.013	4.25	y	158.774	196.992	7.438	69.12	3	H1-1b
52	7	M4	C12X20.7	0.013	4.25	0.012	4.25	y	158.774	196.992	7.438	69.12	2.534	H1-1b
53	7	M5	C12X20.7	0.016	0	0.012	0	y	108.351	196.992	7.438	69.12	1.745	H1-1b
54	7	M6	C12X20.7	0.023	0	0.013	0	y	108.351	196.992	7.438	69.12	2.997	H1-1b
55	7	M7	C12X20.7	0.041	5.522	0.017	0	y	70.008	196.992	7.438	60.341	1.212	H1-1b
56	7	M8	C12X20.7	0.014	0	0.012	0	y	158.774	196.992	7.438	69.12	2.534	H1-1b
57	7	M9	C12X20.7	0.016	0	0.012	0	y	158.774	196.992	7.438	69.12	2.697	H1-1b
58	7	M10	C12X20.7	0.022	0	0.005	0	y	154.681	196.992	7.438	69.12	1.779	H1-1b
59	7	M11	C12X20.7	0.017	0	0.003	0	y	154.681	196.992	7.438	69.12	1.83	H1-1b
60	7	M12	C12X20.7	0.015	4.5	0.002	0.281	y	154.681	196.992	7.438	69.12	1.978	H1-1b*
61	7	M13	C12X20.7	0.033	4.759	0.016	0	y	81.111	196.992	7.438	61.588	1.184	H1-1b
62	7	M14	C12X20.7	0.04	4.58	0.016	0	y	81.111	196.992	7.438	60.204	1.158	H1-1b
63	7	M15	HSS3X3X4	0.043	0	0	9.25	y	51.71	101.016	8.556	8.556	1.667	H1-1b*
64	7	M16	HSS3X3X4	0.032	0	0	5.5	y	79.721	101.016	8.556	8.556	1.667	H1-1b*

Maximum Member Section Forces

	LC	Member Label		Axial[k]	Loc[ft]	y Shear[k]	Loc[ft]	z Shear[k]	Loc[ft]	Torque[k-ft]	Loc[ft]	y-y Moment[k-ft]	Loc[ft]	z-z Moment[k-ft]	Loc[ft]
1	4	M1	max	1.777	4.5	0.194	0	0	4.5	-0.001	4.5	0	4.5	0.58	0
2			min	1.777	0	0.063	4.5	0	0	-0.001	0	-0.002	0	0.001	4.5
3	4	M2	max	2.649	9.301	0.729	0	0	9.301	0	9.301	0.001	0	0.58	0
4			min	1.671	0	-0.604	9.301	0	0	0	0	0	9.301	-1.273	5.038
5	4	M3	max	-0.001	4.25	0.207	0	-0.002	4.25	0.001	4.25	0.001	0	0.804	4.25
6			min	-0.001	0	-0.586	4.25	-0.002	0	0.001	0	-0.006	4.25	-0.116	1.107
7	4	M4	max	0	4.25	0.262	0	0	4.25	0.001	4.25	0	4.25	0.573	4.25
8			min	0	0	-0.531	4.25	0	0	0.001	0	0	0	-0.182	1.417
9	4	M5	max	0.35	0	0.559	0	0.002	7.075	0	7.075	0.008	7.075	0.574	7.075
10			min	-0.35	7.075	-0.559	7.075	0.002	0	0	0	-0.007	0	-0.416	3.538
11	4	M6	max	0.367	0	0.583	0	0.005	7.075	0	7.075	0.017	7.075	0.803	0
12			min	-0.332	7.075	-0.536	7.075	0.005	0	0	0	-0.017	0	-0.271	3.685
13	4	M7	max	1.639	9.301	0.752	0	0	9.301	0	9.301	0.001	0	0.795	0
14			min	0.661	0	-0.581	9.301	0	0	0	0	0	9.301	-1.177	5.232
15	4	M8	max	0	4.25	0.531	0	-0.002	4.25	-0.001	4.25	0.005	0	0.573	0
16			min	0	0	-0.262	4.25	-0.002	0	-0.001	0	-0.004	4.25	-0.183	2.833
17	4	M9	max	0.003	4.25	0.548	0	-0.003	4.25	-0.001	4.25	0.009	0	0.643	0
18			min	0.003	0	-0.244	4.25	-0.003	0	-0.001	0	-0.005	4.25	-0.162	2.922
19	4	M10	max	0.98	4.5	0.234	0	-0.003	4.5	0	4.5	0.008	0	0.761	0
20			min	0.98	0	0.103	4.5	-0.003	0	0	0	-0.006	4.5	0.002	4.5
21	4	M11	max	-1.29	4.5	0.182	0	-0.001	4.5	0.001	4.5	0.002	0	0.53	0
22			min	-1.29	0	0.052	4.5	-0.001	0	0.001	0	-0.001	4.5	0.003	4.5

Maximum Member Section Forces (Continued)

	LC	Member Label		Axial[k]	Loc[ft]	y Shear[k]	Loc[ft]	z Shear[k]	Loc[ft]	Torque[k-ft]	Loc[ft]	y-y Moment[k-ft]	Loc[ft]	z-z Moment[k-ft]	Loc[ft]
23	4	M12	max	-2.083	4.5	0.132	0	0.003	4.5	0.001	4.5	0.004	4.5	0.302	0
24			min	-2.083	0	0.002	4.5	0.003	0	0.001	0	-0.007	0	0.001	4.5
25	4	M13	max	-1.057	0	0.731	0	0	8.62	0	8.62	0.004	0	0.553	0
26			min	-1.813	8.62	-0.602	8.62	0	0	0	0	0	8.62	-1.173	4.759
27	4	M14	max	-2.001	0	0.702	0	0	8.62	0	8.62	0.003	0	0.302	0
28			min	-2.756	8.62	-0.631	8.62	0	0	0	0	0	8.62	-1.289	4.58
29	4	M15	max	1.591	0	0.002	9.25	0	9.25	0	9.25	0.002	9.25	0	0
30			min	1.475	9.25	0.002	0	0	0	0	0	0	0	-0.014	9.25
31	4	M16	max	1.793	0	0.005	5.5	0	5.5	0	5.5	0	5.5	0	0
32			min	1.724	5.5	0.005	0	0	0	0	0	0	0	-0.026	5.5
33	5	M1	max	4.767	4.5	0.411	0	0.001	4.5	-0.003	4.5	-0.001	4.5	1.602	0
34			min	4.767	0	0.299	4.5	0.001	0	-0.003	0	-0.006	0	0.003	4.5
35	5	M2	max	7.144	9.301	2.019	0	0	9.301	0	9.301	0.003	0	1.603	0
36			min	4.437	0	-1.674	9.301	0	0	0	0	0	9.301	-3.528	5.038
37	5	M3	max	-0.001	4.25	0.583	0	-0.005	4.25	0.002	4.25	0.004	0	2.21	4.25
38			min	-0.001	0	-1.626	4.25	-0.005	0	0.002	0	-0.018	4.25	-0.332	1.107
39	5	M4	max	0	4.25	0.73	0	0.001	4.25	0.003	4.25	0.001	4.25	1.597	4.25
40			min	0	0	-1.48	4.25	0.001	0	0.003	0	-0.001	0	-0.509	1.417
41	5	M5	max	0.975	0	1.559	0	0.005	7.075	-0.001	7.075	0.02	7.075	1.599	7.075
42			min	-0.975	7.075	-1.56	7.075	0.005	0	-0.001	0	-0.016	0	-1.16	3.538
43	5	M6	max	1.021	0	1.621	0	0.014	7.075	0	7.075	0.047	7.075	2.208	0
44			min	-0.929	7.075	-1.498	7.075	0.014	0	0	0	-0.048	0	-0.772	3.685
45	5	M7	max	4.45	9.301	2.08	0	0	9.301	0	9.301	0.003	0	2.178	0
46			min	1.742	0	-1.612	9.301	0	0	0	0	0	9.301	-3.273	5.232
47	5	M8	max	0	4.25	1.48	0	-0.006	4.25	-0.004	4.25	0.013	0	1.597	0
48			min	0	0	-0.73	4.25	-0.006	0	-0.004	0	-0.011	4.25	-0.509	2.833
49	5	M9	max	0.008	4.25	1.527	0	-0.009	4.25	-0.002	4.25	0.025	0	1.788	0
50			min	0.008	0	-0.682	4.25	-0.009	0	-0.002	0	-0.013	4.25	-0.454	2.922
51	5	M10	max	2.641	4.5	0.517	0	-0.008	4.5	-0.001	4.5	0.021	0	2.081	0
52			min	2.641	0	0.405	4.5	-0.008	0	-0.001	0	-0.015	4.5	0.005	4.5
53	5	M11	max	-3.452	4.5	0.378	0	-0.002	4.5	0.002	4.5	0.005	0	1.459	0
54			min	-3.452	0	0.267	4.5	-0.002	0	0.002	0	-0.003	4.5	0.007	4.5
55	5	M12	max	-5.568	4.5	0.244	0	0.007	4.5	0.003	4.5	0.011	4.5	0.851	0
56			min	-5.568	0	0.133	4.5	0.007	0	0.003	0	-0.018	0	0.004	4.5
57	5	M13	max	-2.791	0	2.023	0	-0.001	8.62	0	8.62	0.012	0	1.522	0
58			min	-4.884	8.62	-1.67	8.62	-0.001	0	0	0	0	8.62	-3.254	4.759
59	5	M14	max	-5.308	0	1.945	0	-0.001	8.62	0	8.62	0.006	0	0.853	0
60			min	-7.401	8.62	-1.747	8.62	-0.001	0	0	0	0	8.62	-3.563	4.58
61	5	M15	max	4.15	0	0.004	9.25	0.001	9.25	0	9.25	0.006	9.25	0	0
62			min	4.051	9.25	0.004	0	0.001	0	0	0	0	0	-0.039	9.25
63	5	M16	max	4.765	0	0.013	5.5	0	5.5	0	5.5	0.001	5.5	0	0
64			min	4.706	5.5	0.013	0	0	0	0	0	0	0	-0.074	5.5
65	6	M1	max	4.767	4.5	0.411	0	0.001	4.5	-0.003	4.5	-0.001	4.5	1.602	0
66			min	4.767	0	0.299	4.5	0.001	0	-0.003	0	-0.006	0	0.003	4.5
67	6	M2	max	7.144	9.301	2.019	0	0	9.301	0	9.301	0.003	0	1.603	0
68			min	4.437	0	-1.674	9.301	0	0	0	0	0	9.301	-3.528	5.038
69	6	M3	max	-0.001	4.25	0.583	0	-0.005	4.25	0.002	4.25	0.004	0	2.21	4.25
70			min	-0.001	0	-1.626	4.25	-0.005	0	0.002	0	-0.018	4.25	-0.332	1.107
71	6	M4	max	0	4.25	0.73	0	0.001	4.25	0.003	4.25	0.001	4.25	1.597	4.25
72			min	0	0	-1.48	4.25	0.001	0	0.003	0	-0.001	0	-0.509	1.417
73	6	M5	max	0.975	0	1.559	0	0.005	7.075	-0.001	7.075	0.02	7.075	1.599	7.075
74			min	-0.975	7.075	-1.56	7.075	0.005	0	-0.001	0	-0.016	0	-1.16	3.538
75	6	M6	max	1.021	0	1.621	0	0.014	7.075	0	7.075	0.047	7.075	2.208	0
76			min	-0.929	7.075	-1.498	7.075	0.014	0	0	0	-0.048	0	-0.772	3.685
77	6	M7	max	4.45	9.301	2.08	0	0	9.301	0	9.301	0.003	0	2.178	0

Maximum Member Section Forces (Continued)

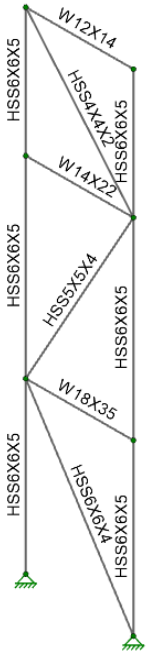
	LC	Member Label		Axial[k]	Loc[ft]	y Shear[k]	Loc[ft]	z Shear[k]	Loc[ft]	Torque[k-ft]	Loc[ft]	y-y Moment[k-ft]	Loc[ft]	z-z Moment[k-ft]	Loc[ft]
78			min	1.742	0	-1.612	9.301	0	0	0	0	0	9.301	-3.273	5.232
79	6	M8	max	0	4.25	1.48	0	-0.006	4.25	-0.004	4.25	0.013	0	1.597	0
80			min	0	0	-0.73	4.25	-0.006	0	-0.004	0	-0.011	4.25	-0.509	2.833
81	6	M9	max	0.008	4.25	1.527	0	-0.009	4.25	-0.002	4.25	0.025	0	1.788	0
82			min	0.008	0	-0.682	4.25	-0.009	0	-0.002	0	-0.013	4.25	-0.454	2.922
83	6	M10	max	2.641	4.5	0.517	0	-0.008	4.5	-0.001	4.5	0.021	0	2.081	0
84			min	2.641	0	0.405	4.5	-0.008	0	-0.001	0	-0.015	4.5	0.005	4.5
85	6	M11	max	-3.452	4.5	0.378	0	-0.002	4.5	0.002	4.5	0.005	0	1.459	0
86			min	-3.452	0	0.267	4.5	-0.002	0	0.002	0	-0.003	4.5	0.007	4.5
87	6	M12	max	-5.568	4.5	0.244	0	0.007	4.5	0.003	4.5	0.011	4.5	0.851	0
88			min	-5.568	0	0.133	4.5	0.007	0	0.003	0	-0.018	0	0.004	4.5
89	6	M13	max	-2.791	0	2.023	0	-0.001	8.62	0	8.62	0.012	0	1.522	0
90			min	-4.884	8.62	-1.67	8.62	-0.001	0	0	0	0	8.62	-3.254	4.759
91	6	M14	max	-5.308	0	1.945	0	-0.001	8.62	0	8.62	0.006	0	0.853	0
92			min	-7.401	8.62	-1.747	8.62	-0.001	0	0	0	0	8.62	-3.563	4.58
93	6	M15	max	4.15	0	0.004	9.25	0.001	9.25	0	9.25	0.006	9.25	0	0
94			min	4.051	9.25	0.004	0	0.001	0	0	0	0	0	-0.039	9.25
95	6	M16	max	4.765	0	0.013	5.5	0	5.5	0	5.5	0.001	5.5	0	0
96			min	4.706	5.5	0.013	0	0	0	0	0	0	0	-0.074	5.5
97	7	M1	max	2.537	4.5	0.243	0	0.001	4.5	-0.002	4.5	-0.001	4.5	0.842	0
98			min	2.537	0	0.131	4.5	0.001	0	-0.002	0	-0.003	0	0.002	4.5
99	7	M2	max	3.793	9.301	1.06	0	0	9.301	0	9.301	0.002	0	0.843	0
100			min	2.371	0	-0.879	9.301	0	0	0	0	0	9.301	-1.852	5.038
101	7	M3	max	-0.001	4.25	0.304	0	-0.003	4.25	0.001	4.25	0.002	0	1.164	4.25
102			min	-0.001	0	-0.853	4.25	-0.003	0	0.001	0	-0.009	4.25	-0.172	1.107
103	7	M4	max	0	4.25	0.382	0	0	4.25	0.002	4.25	0	4.25	0.837	4.25
104			min	0	0	-0.775	4.25	0	0	0.002	0	-0.001	0	-0.267	1.417
105	7	M5	max	0.511	0	0.817	0	0.003	7.075	0	7.075	0.011	7.075	0.838	7.075
106			min	-0.511	7.075	-0.817	7.075	0.003	0	0	0	-0.009	0	-0.608	3.538
107	7	M6	max	0.535	0	0.85	0	0.007	7.075	0	7.075	0.025	7.075	1.163	0
108			min	-0.486	7.075	-0.784	7.075	0.007	0	0	0	-0.025	0	-0.401	3.685
109	7	M7	max	2.356	9.301	1.093	0	0	9.301	0	9.301	0.001	0	1.149	0
110			min	0.934	0	-0.846	9.301	0	0	0	0	0	9.301	-1.717	5.232
111	7	M8	max	0	4.25	0.775	0	-0.003	4.25	-0.002	4.25	0.007	0	0.836	0
112			min	0	0	-0.382	4.25	-0.003	0	-0.002	0	-0.006	4.25	-0.267	2.833
113	7	M9	max	0.004	4.25	0.8	0	-0.005	4.25	-0.001	4.25	0.013	0	0.938	0
114			min	0.004	0	-0.357	4.25	-0.005	0	-0.001	0	-0.007	4.25	-0.238	2.922
115	7	M10	max	1.402	4.5	0.299	0	-0.004	4.5	-0.001	4.5	0.011	0	1.098	0
116			min	1.402	0	0.188	4.5	-0.004	0	-0.001	0	-0.008	4.5	0.003	4.5
117	7	M11	max	-1.839	4.5	0.226	0	-0.001	4.5	0.001	4.5	0.003	0	0.769	0
118			min	-1.839	0	0.114	4.5	-0.001	0	0.001	0	-0.002	4.5	0.004	4.5
119	7	M12	max	-2.968	4.5	0.154	0	0.004	4.5	0.002	4.5	0.006	4.5	0.444	0
120			min	-2.968	0	0.042	4.5	0.004	0	0.002	0	-0.01	0	0.002	4.5
121	7	M13	max	-1.495	0	1.063	0	-0.001	8.62	0	8.62	0.006	0	0.801	0
122			min	-2.594	8.62	-0.877	8.62	-0.001	0	0	0	0	8.62	-1.708	4.759
123	7	M14	max	-2.838	0	1.021	0	0	8.62	0	8.62	0.004	0	0.445	0
124			min	-3.937	8.62	-0.918	8.62	0	0	0	0	0	8.62	-1.873	4.58
125	7	M15	max	2.234	0	0.002	9.25	0	9.25	0	9.25	0.003	9.25	0	0
126			min	2.135	9.25	0.002	0	0	0	0	0	0	0	-0.02	9.25
127	7	M16	max	2.545	0	0.007	5.5	0	5.5	0	5.5	0.001	5.5	0	0
128			min	2.486	5.5	0.007	0	0	0	0	0	0	0	-0.038	5.5

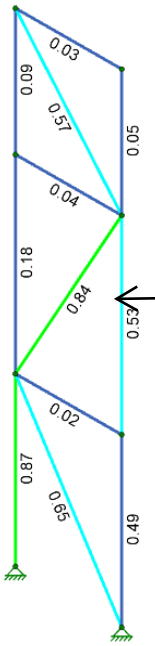
NE CORNER STAIR TOWER BRACE DESIGN

North Elevation:

BF Beam Span	10	ft		**Stair**		**Roof**	
grav. Trib width	5	ft		dl	50	dl	37
Wind (wall)	28.8	psf		ll	100	ll	25 (use S conservatively)
Wind (Parapet+)	78	psf					
Wind (Parapet-)	52.3	psf					
Wind trib WIDTH (GL12)	16	ft					
Wind trib WIDTH (GL10.9)	4	ft					
Pop up (parapet portion)	2.5		2.5	3.643			
Roof	12		6	3.456			
Lvl 3	18		15	8.64			
Lvl 2	15.8		16.9	9.7344			
Lvl 1	0		7.9	4.5504			

Forces to apply (k):		
W	**COL DL**	**COL LL**
7.10	**1.85**	**1.25**
8.64	**2.50**	**5.00**
9.73	**2.50**	**5.00**



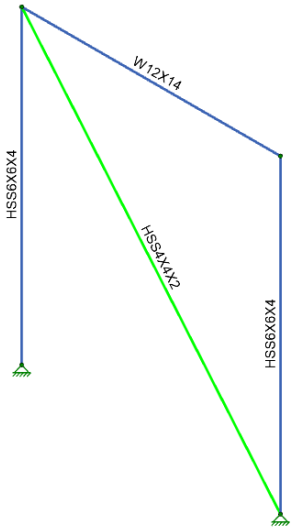


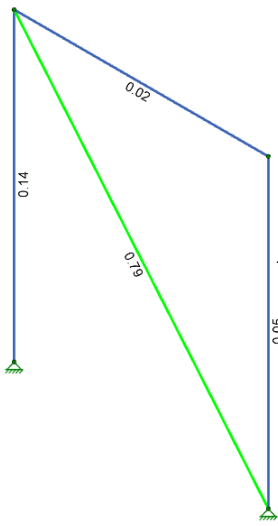
all DCRs<1.0 (OK)
(Checked in
RISA3D)

South Elevation (controlling case of all the 1-story braces)

BF Beam Span	10	ft		**Stair**		**Roof**	
grav. Trib width	5	ft		dl	50	dl	37
Wind (wall)	28.8	psf		ll	100	ll	25 (use S conservatively)
Wind (Parapet+)	78	psf					
Wind (Parapet-)	52.3	psf					
Wind trib WIDTH (GL12)	16	ft					
Wind trib WIDTH (GL10.9)	11.5	ft					
Pop up (parapet portion)	2.5		2.5	4.623625			
Roof				4.752			

Forces to apply (k):		
W	**COL DL**	**COL LL**
9.38	**1.85**	**1.25**





all DCRs<1.0 (OK)
(Checked in
RISA3D)

Project Title: **ELEVATOR GUIDE TUBE**
Engineer:
Project ID:
Project Descr:

Steel Beam

Project File: TFJB Elevator guide rail tube.ec6

DESCRIPTION: updated Longest guide Tube along GL5 with kicker at 12' from bottom (1/8" deflection limit)

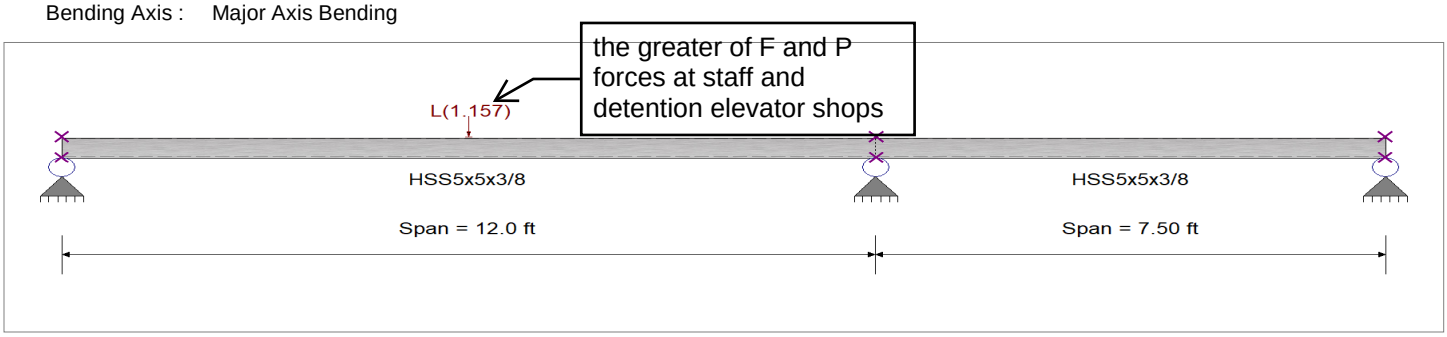
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Load Resistance Factor Design
Beam Bracing : Completely Unbraced
Bending Axis : Major Axis Bending

Fy : Steel Yield : 42.0 ksi
E: Modulus : 29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations

Beam self weight NOT internally calculated and added
Load(s) for Span Number 1
Point Load : L = 1.157 k @ 6.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	**0.080** : 1	Maximum Shear Stress Ratio =	**0.011** : 1
Section used for this span	**HSS5x5x3/8**	Section used for this span	**HSS5x5x3/8**
Mu : Applied	2.670 k-ft	Vu : Applied	0.7120 k
Mn * Phi : Allowable	33.390 k-ft	Vn * Phi : Allowable	62.579 k
Load Combination	L Only	Load Combination	L Only
		Location of maximum on span	6.048 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.076 in	Ratio =	1,904	>=600.	Span: 2 : L Only
Max Upward Transient Deflection	-0.016 in	Ratio =	5,611	>=600.	Span: 2 : L Only
Max Downward Total Deflection	0.000 in	Ratio =	0	<180	
Max Upward Total Deflection	0.000 in	Ratio =	0	<180	

less than 1/8" deflection criteria

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
L Only													
Dsgn. L = 12.00 ft	1	0.080	0.011	2.67	-1.60	2.67	37.10	33.39	1.46	1.00	0.71	69.53	62.58
Dsgn. L = 7.50 ft	2	0.048	0.003		-1.60	1.60	37.10	33.39	1.66	1.00	0.21	69.53	62.58

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
L Only	1	0.0756	5.712		0.0000	0.000
	2	0.0000	5.712	L Only	-0.0160	3.180

Vertical Reactions

Support notation : Far left is #: Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions	0.445	0.926	
Max Upward from Load Cases	0.445	0.926	
Max Downward from all Load Conditions (Resi			-0.214
Max Downward from Load Cases (Resisting U			-0.214
L Only	0.445	0.926	-0.214

Twin Falls Judicial – Twin Falls, ID

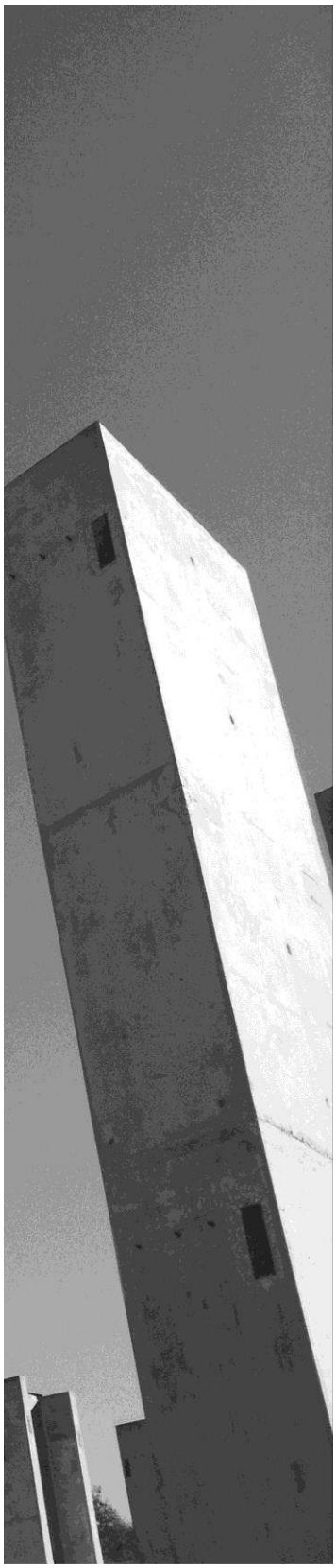
Permit Submittal Structural Calculations

KPFF JOB # 10212200038

MISCELLENEOUS CALCULATIONS

420 E. South Temple, Suite 485 Salt Lake City, UT 84111 801.441.2204

BREEZEWAY
CALCULATION PACKAGE



KPFF JOB # 10212200038

KPFF JOB #10212200038

SECTION A:

DESIGN CRITERIA

412 E. Park Center Blvd, Suite 200
Boise, ID 83706
O:208.336.6985
www.kpff.com

project	Twin Falls Judicial Building	by MG	sheet no. 1
location	Twin Falls, Idaho	date 12-22-22	
client	CSHQA	job no. 10212200038	
Design Criteria - Gravity			

GRAVITY

DEAD

METAL DECK (3 PSF) + WATERPROOFING (2 PSF) + MISC (5PSF)

SUPERIMPOSED DEAD LOAD: 7 PSF
TOTAL DEAD: 10 PSF

CHANNEL BEAMS: 2 PSF
HSS COLUMNS: 3 PSF

WEIGHT FOR SEISMIC MASS: 15 PSF

LIVE

20 PSF STANDARD ROOF LIVE LOAD

TOTAL LIVE: 20 PSF

SNOW

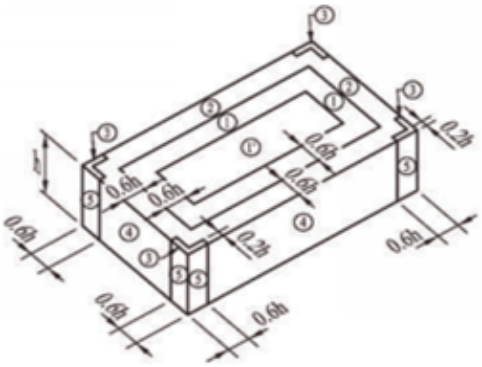
JURISDICTION MINIMUM: 25 PSF
SNOW DRIFT LOAD: 15 PSF
W: 3.8 FT
Pf+ Pd=26.5 PSF

LATERAL

WIND

Effective Wind Area (ft^2)	Roof Pressures								Wall Pressures			
	1+	1-	1'+	1'-	2+	2-	3+	3-	4+	4-	5+	5-
10	11.2	-44.2	11.2	-25.4	11.2	-58.2	11.2	-79.4	27.7	-30.1	27.7	-37.1
20	10.6	-41.2	10.6	-25.4	10.6	-54.5	10.6	-71.9	26.4	-28.8	26.4	-34.7
50	9.6	-37.3	9.6	-25.4	9.6	-49.5	9.6	-62.0	24.8	-27.2	24.8	-31.4
100	8.9	-34.5	8.9	-25.4	8.9	-45.8	8.9	-54.5	23.5	-25.9	23.5	-28.8

Effective Wind	Overhangs			Parapets per Fig 30.9-1			
	1/1'o	2o	3o	4+	4-	5+	5-
10	-39.9	-54.0	-75.1	85.9	-57.8	107.1	-64.8
20	-39.3	-49.0	-66.4	80.9	-55.2	98.3	-61.1
50	-38.3	-42.5	-54.9	74.4	-52.0	86.8	-56.2
100	-37.6	-37.5	-46.1	69.3	-49.4	78.0	-52.3



Flat/Hip/Gable ($0° \le \Theta \le 7°$)

SEISMIC FORCE

AREA: 225 SQ FT
WEIGHT: 15 PSF
NORMALIZED MASS: 3.375 KIPS
SESIMIC CS: 0.06

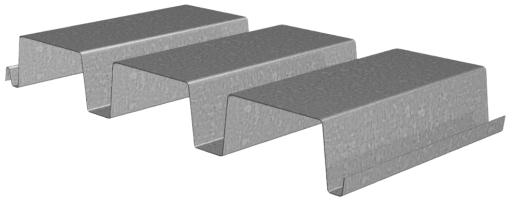
ELF BASE SHEAR: 202.5 LBS

SECTION B:

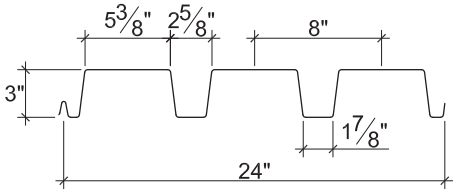
DECK DESIGN

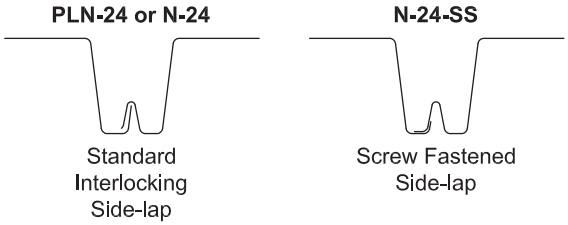
N-24 ROOF DECKS

- **PLN-24 Deck used with PunchLok® II System**
- **N-24 Deck used with TSWs or BPs**
- **N-24-SS Deck used with Side-lap Screws**



Nominal Dimensions





Section Properties

Deck Gage	Deck Weight w_{dd} (psf)	Base Metal Thickness t (in.)	Yield Strength F_y (ksi)	Effective Moment of Inertia at Service Load $I_d = (2I_e+I_g)/3$ I_d+ (in⁴/ft)	I_d- (in⁴/ft)	Effective Section Modulus at F_y = 50 ksi S_e+ (in³/ft)	S_e- (in³/ft)	Vertical Web Shear øV_n (lb/ft)
22	2.2	0.0299	50	0.733	0.857	0.344	0.429	4024
20	2.6	0.0359	50	0.907	1.031	0.443	0.531	6097
18	3.5	0.0478	50	1.267	1.369	0.652	0.735	10772
16	4.2	0.0598	50	1.642	1.706	0.837	0.914	13429

Design Reactions at Supports Based on Web Crippling, øR_n (lb/ft)

Deck Gage	Bearing Length of Webs: One-Flange Loading, End Bearing 1½"	2"	3"	4"	Interior Bearing 4"	8"	Two-Flange Loading, End Bearing 1½"	2"	3"	4"	Interior Bearing 4"	8"
22	911	1001	1152	1279	1933	2257	880	948	1062	1158	2275	2683
20	1286	1409	1615	1789	2711	3360	1327	1424	1588	1726	3244	4077
18	2197	2395	2728	3008	4587	5740	2477	2646	2928	3166	5607	7128
16	3334	3621	4102	4507	6912	8563	3991	4246	4672	5032	8559	10780

Standard Features

- ASTM A653 SS GR50 Min., with G60 or G90, white or gray primer optional
- ASTM A1008 SS GR50 Min. with gray primer
- Standard lengths – 6'-0" to 40'-0"
- IAPMO UES ER-2018, UL, and FM Listed
- Tables conform to ANSI/SDI RD-2017

Optional Features

- Inquire regarding cost and lead times for:
  - -Short cuts < 6'-0"
  - -Sheet Lengths > 40'-0"
  - -Alternative metallic and painted finishes
- Web and Fully Perforated Acoustical Versions

Inward Uniform Design Loads, LRFD (psf)

Deck Gage	Spans	Criteria	Span (ft-in.) 4'-0"	6'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
22	Single	øW$_n$	645	287	161	127	103	85	72	53	40	32	26
		L/240	751	222	94	66	48	36	28	18	12	8	6
	Double	øW$_n$	720	339	195	155	126	105	88	65	50	39	32
		L/240	2115	627	264	186	135	102	78	49	33	23	17
	Triple	øW$_n$	862	415	241	192	156	130	110	81			
		L/240	1418	420	177	124	91	68	53	33			
20	Single	øW$_n$	831	369	208	164	133	110	92	68	52	41	33
		L/240	929	275	116	82	59	45	34	22	15	10	7
	Double	øW$_n$	922	427	244	194	157	130	110	81	62	49	40
		L/240	2544	754	318	223	163	122	94	59	40	28	20
	Triple	øW$_n$	1118	526	302	240	195	162	137	101			
		L/240	1754	520	219	154	112	84	65	41			
18	Single	øW$_n$	1223	543	306	242	196	162	136	100	76	60	49
		L/240	1298	385	162	114	83	62	48	30	20	14	10
	Double	øW$_n$	1313	599	340	270	219	181	152	112	86	68	55
		L/240	3378	1001	422	297	216	162	125	79	53	37	27
	Triple	øW$_n$	1608	742	423	335	272	226	190	140			
		L/240	2450	726	306	215	157	118	91	57			
16	Single	øW$_n$	1570	698	392	310	251	208	174	128	98	78	63
		L/240	1682	498	210	148	108	81	62	39	26	18	13
	Double	øW$_n$	1633	745	423	335	272	225	189	139	107	84	68
		L/240	4209	1247	526	370	269	202	156	98	66	46	34
	Triple	øW$_n$	2000	922	526	417	339	281	236	174			
		L/240	3175	941	397	279	203	153	118	74			

Note:

1. Table does not account for web crippling. Required bearing should be determined based on specific span conditions.

LOADING

MAX LOAD COMBINATION: 1.2D+1.0W+0.5(Lr OR S)
ZONE 3 WIND (WORST CASE)

MAX LOAD: 1.2(7 PSF)+1.0(54.5 PSF)+0.5(26.5 PSF)=76 PSF

SECTION C:

STRUCTURAL MEMBERS AND POLE FOOTING

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Beam

Project File: tfjb breezeway calculations.ec6

DESCRIPTION: C-Channel Beams

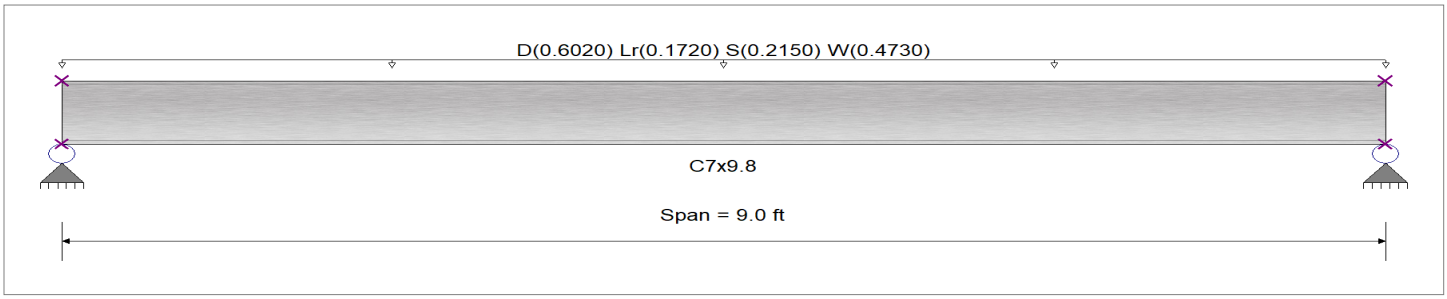
CODE REFERENCES

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method : Load Resistance Factor Design
Beam Bracing : Completely Unbraced
Bending Axis : Major Axis Bending

Fy : Steel Yield : 36.0 ksi
E: Modulus : 29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Uniform Load : D = 0.070, Lr = 0.020, S = 0.0250, W = 0.0550 ksf, Tributary Width = 8.60 ft, (Roof Loads)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.939 : 1	Maximum Shear Stress Ratio =	0.207 : 1
Section used for this span	C7x9.8	Section used for this span	C7x9.8
Mu : Applied	13.311 k-ft	Vu : Applied	5.916 k
Mn * Phi : Allowable	14.183 k-ft	Vn * Phi : Allowable	28.577 k
Load Combination	+1.20D+1.60S+0.50W	Load Combination	+1.20D+1.60S+0.50W
		Location of maximum on span	0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.114 in	Ratio =	946	>=360	
Max Upward Transient Deflection	0.000 in	Ratio =	0	<360	Span: 1 : W Only
Max Downward Total Deflection	0.238 in	Ratio =	454	>=180	Span: 1 : +D+0.750S+0.450W
Max Upward Total Deflection	0.000 in	Ratio =	0	<180	

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	Summary of Moment Values max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	Summary of Shear Values VuMax	Vnx	Phi*Vnx
+1.40D													
Dsgn. L = 9.00 ft	1	0.611	0.135	8.67		8.67	15.76	14.18	1.14	1.00	3.85	31.75	28.58
+1.20D+0.50Lr													
Dsgn. L = 9.00 ft	1	0.586	0.129	8.30		8.30	15.76	14.18	1.14	1.00	3.69	31.75	28.58
+1.20D+0.50S													
Dsgn. L = 9.00 ft	1	0.601	0.133	8.52		8.52	15.76	14.18	1.14	1.00	3.79	31.75	28.58
+1.20D+1.60Lr													
Dsgn. L = 9.00 ft	1	0.721	0.159	10.22		10.22	15.76	14.18	1.14	1.00	4.54	31.75	28.58
+1.20D+1.60Lr+0.50W													
Dsgn. L = 9.00 ft	1	0.889	0.196	12.61		12.61	15.76	14.18	1.14	1.00	5.61	31.75	28.58
+1.20D+1.60S													
Dsgn. L = 9.00 ft	1	0.770	0.170	10.92		10.92	15.76	14.18	1.14	1.00	4.85	31.75	28.58
+1.20D+1.60S+0.50W													
Dsgn. L = 9.00 ft	1	0.939	0.207	13.31		13.31	15.76	14.18	1.14	1.00	5.92	31.75	28.58
+1.20D+0.50Lr+W													
Dsgn. L = 9.00 ft	1	0.923	0.204	13.09		13.09	15.76	14.18	1.14	1.00	5.82	31.75	28.58
+1.20D+0.50S+W													
Dsgn. L = 9.00 ft	1	0.939	0.207	13.31		13.31	15.76	14.18	1.14	1.00	5.92	31.75	28.58
+1.20D+0.70S													
Dsgn. L = 9.00 ft	1	0.632	0.139	8.96		8.96	15.76	14.18	1.14	1.00	3.98	31.75	28.58
+0.90D+W													
Dsgn. L = 9.00 ft	1	0.731	0.161	10.36		10.36	15.76	14.18	1.14	1.00	4.61	31.75	28.58

Steel Beam

DESCRIPTION: C-Channel Beams

Maximum Forces & Stresses for Load Combinations

Load Combination			Max Stress Ratios		Summary of Moment Values							Summary of Shear Values		
Segment Length		Span #	M	V	max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	VuMax	Vnx	Phi*Vnx
+0.90D														
Dsgn. L =	9.00 ft	1	0.393	0.087	5.58		5.58	15.76	14.18	1.14	1.00	2.48	31.75	28.58

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750S+0.450W	1	0.2378	4.526		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	4.437	4.437
Max Upward from Load Combinations	4.437	4.437
Max Upward from Load Cases	2.753	2.753
D Only	2.753	2.753
+D+Lr	3.527	3.527
+D+S	3.721	3.721
+D+0.750Lr	3.334	3.334
+D+0.750S	3.479	3.479
+D+0.60W	4.030	4.030
+D+0.750Lr+0.450W	4.291	4.291
+D+0.750S+0.450W	4.437	4.437
+0.60D+0.60W	2.929	2.929
+0.60D	1.652	1.652
Lr Only	0.774	0.774
S Only	0.968	0.968
W Only	2.129	2.129

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Column

Project File: tfjb breezeway calculations.ec6

DESCRIPTION: HSS Columns

Code References

Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Steel Section Name : **HSS4x4x1/4**

Analysis Method :	Load Resistance Factor
Steel Stress Grade	
Fy : Steel Yield	36.0 ksi
E : Elastic Bending Modulus	29,000.0 ksi

Overall Column Height	13.0 ft
Top & Bottom Fixity	Top Free, Bottom Fixed

Brace condition for deflection (buckling) along columns :
X-X (width) axis :
Fully braced against buckling ABOUT Y-Y Axis
Y-Y (depth) axis :
Fully braced against buckling ABOUT X-X Axis

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included : 158.730 lbs * Dead Load Factor
AXIAL LOADS . . .
Axial Load at 13.0 ft, D = 0.3710, LR = 1.060, S = 1.325, W = 2.915 k
BENDING LOADS . . .
Lat. Point Load at 5.0 ft creating Mx-x, L = 1.0 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = **0.6377** : 1

Load Combination	+1.20D+1.60L+0.50S	
Location of max.above base	0.0	ft
At maximum location values are . . .		
Pu	1.298	k
0.9 * Pn	109.188	k
Mu-x	-8.0	k-ft
0.9 * Mn-x :	12.663	k-ft
Mu-y	0.0	k-ft
0.9 * Mn-y :	12.663	k-ft

PASS Maximum Shear Stress Ratio **0.0** : 1

Load Combination	0.0	
Location of max.above base	0.0	ft
At maximum location values are . . .		
Vu : Applied	0.0	k
Vn * Phi : Allowable	0.0	k

Maximum Load Reactions . .

Top along X-X	0.0 k
Bottom along X-X	0.0 k
Top along Y-Y	0.0 k
Bottom along Y-Y	1.0 k

Maximum Load Deflections . . .

Along Y-Y 1.078 in at 13.0 ft above base
for load combination : +D+L

Along X-X 0.0 in at 0.0 ft above base
for load combination :

Load Combination Results

Load Combination	Maximum Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Cbx	Cby	KxLx/Ry	KyLy/Rx	Maximum Shear Ratios: Stress Ratio	Status	Location
+1.40D	0.007	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+0.50Lr+1.60L	0.637	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+1.60L+0.50S	0.638	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+1.60Lr+0.50L	0.208	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+1.60Lr+0.50W	0.035	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+0.50L+1.60S	0.210	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+1.60S+0.50W	0.039	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+0.50Lr+0.50L+W	0.216	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+0.50L+0.50S+W	0.217	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+1.20D+0.50L+0.70S	0.205	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+0.90D+W	0.031	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft
+0.90D	0.004	PASS	0.00 ft	1.00	1.00	0.00	0.00	0.000	PASS	0.00 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base (k)	X-X Axis Reaction @ Base (k)	X-X Axis Reaction @ Top (k)	Y-Y Axis Reaction @ Base (k)	Y-Y Axis Reaction @ Top (k)	Mx - End Moments @ Base (k-ft)	Mx - End Moments @ Top (k-ft)	My - End Moments @ Base (k-ft)	My - End Moments @ Top (k-ft)
D Only	0.530								

Steel Column

DESCRIPTION: HSS Columns

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
+D+L	0.530				1.000		-5.000			
+D+Lr	1.590									
+D+S	1.855									
+D+0.750Lr+0.750L	1.325				0.750		-3.750			
+D+0.750L+0.750S	1.523				0.750		-3.750			
+D+0.60W	2.279									
+D+0.750Lr+0.750L+0.450W	2.636				0.750		-3.750			
+D+0.750L+0.750S+0.450W	2.835				0.750		-3.750			
+0.60D+0.60W	2.067									
+0.60D	0.318									
Lr Only	1.060									
L Only					1.000		-5.000			
S Only	1.325									
W Only	2.915									

Extreme Reactions

Item	Extreme Value	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
Axial @ Base	Maximum	2.915									
"	Minimum					1.000		-5.000			
Reaction, X-X Axis Base	Maximum	0.530									
"	Minimum	0.530									
Reaction, Y-Y Axis Base	Maximum	0.530				1.000		-5.000			
"	Minimum	0.530									
Reaction, X-X Axis Top	Maximum	0.530									
"	Minimum	0.530									
Reaction, Y-Y Axis Top	Maximum	0.530									
"	Minimum	0.530									
Moment, X-X Axis Base	Maximum	0.530									
"	Minimum	0.530	-5.000			1.000		-5.000			
Moment, Y-Y Axis Base	Maximum	0.530									
"	Minimum	0.530									
Moment, X-X Axis Top	Maximum	0.530									
"	Minimum	0.530									
Moment, Y-Y Axis Top	Maximum	0.530									
"	Minimum	0.530									

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+L	0.0000 in	0.000 ft	1.078 in	13.000 ft
+D+Lr	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+S	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.750Lr+0.750L	0.0000 in	0.000 ft	0.809 in	13.000 ft
+D+0.750L+0.750S	0.0000 in	0.000 ft	0.809 in	13.000 ft
+D+0.60W	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.750Lr+0.750L+0.450W	0.0000 in	0.000 ft	0.809 in	13.000 ft
+D+0.750L+0.750S+0.450W	0.0000 in	0.000 ft	0.809 in	13.000 ft
+0.60D+0.60W	0.0000 in	0.000 ft	0.000 in	0.000 ft
+0.60D	0.0000 in	0.000 ft	0.000 in	0.000 ft
Lr Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
L Only	0.0000 in	0.000 ft	1.078 in	13.000 ft
S Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
W Only	0.0000 in	0.000 ft	0.000 in	0.000 ft

Steel Section Properties : HSS4x4x1/4

Steel Section Properties : HSS4x4x1/4

Project Title:
Engineer:
Project ID:
Project Descr:

Steel Column

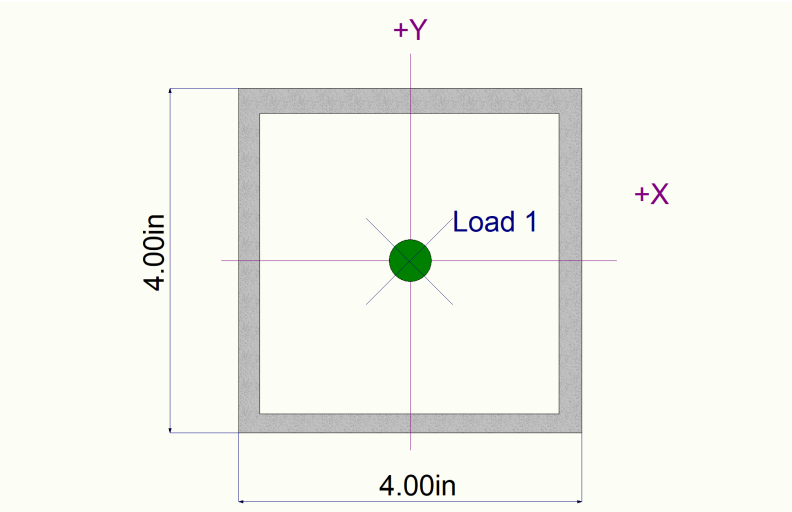
Project File: tfjb breezeway calculations.ec6

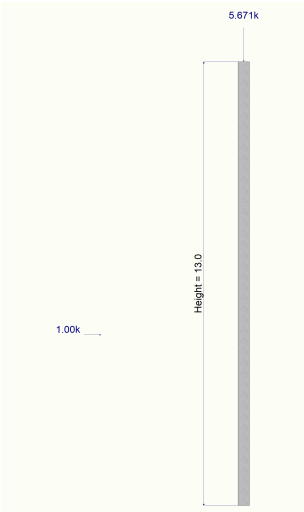
DESCRIPTION: HSS Columns

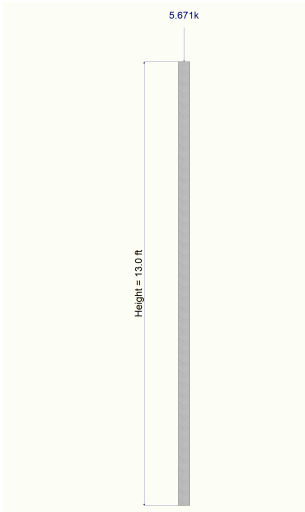
Depth	=	4.000 in	I xx	=	7.80 in^4	J	=	12.800 in^4
Design Thick	=	0.233 in	S xx	=	3.90 in^3			
Width	=	4.000 in	R xx	=	1.520 in			
Wall Thick	=	0.250 in	Zx	=	4.690 in^3			
Area	=	3.370 in^2	I yy	=	7.800 in^4	C	=	6.560 in^3
Weight	=	12.210 plf	S yy	=	3.900 in^3			
			R yy	=	1.520 in			

Ycg = 0.000 in

Sketches







Project Title:
Engineer:
Project ID:
Project Descr:

Pole Footing Embedded in Soil

Project File: tfjb breezeway calculations.ec6

LIC# : KW-06013369, Build:20.22.10.25 KPFF Mountain West (c) ENERCALC INC 1983-2022

DESCRIPTION: HSS Column Footing

Code References

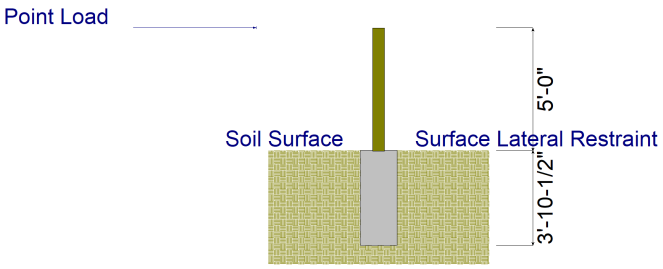
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	18.0 in
Calculate Min. Depth for Allowable Pressures	
Lateral Restraint at Ground Surface	
Allow Passive	250.0 pcf
Max Passive	3,000.0 psf

Controlling Values

Governing Load Combination	+D+L
Lateral Load	1.0 k
Moment	5.0 k-ft
Restraint @ Ground Surface	
Pressure at Depth	
Actual	**943.46** psf
Allowable	**968.75** psf
Surface Retraint Force	3,741.94 lbs
Minimum Required Depth	**3.875 ft**
Footing Base Area	1.767 ft^2
Maximum Soil Pressure	1.515 ksf



Applied Loads

Lateral Concentrated Load (k)		Lateral Distributed Loads (k		Applied Moment (kft)	Vertical Load (k)
D : Dead Load	k		k/ft	k-ft	0.3710 k
Lr : Roof Live	k		k/ft	k-ft	1.060 k
L : Live	1.0 k		k/ft	k-ft	k
S : Snow	k		k/ft	k-ft	1.325 k
W : Wind	k		k/ft	k-ft	2.915 k
E : Earthquake	k		k/ft	k-ft	k
H : Lateral Earth	k		k/ft	k-ft	k
Load distance above ground surface	5.0 ft	TOP of Load above ground surface	ft		
		BOTTOM of Load above ground surface	ft		

Load Combination Results

	Forces @ Ground Surface		Required	Pressure at Depth		Soil Increase
Load Combination	Loads - (k)	Moments - (ft-k)	Depth - (ft)	Actual - (psf)	Allow - (psf)	Factor
D Only	0.000	0.000	0.13	0.0	31.3	1.000
+D+L	1.000	5.000	3.88	943.5	968.8	1.000
+D+Lr	0.000	0.000	0.13	0.0	31.3	1.000
+D+S	0.000	0.000	0.13	0.0	31.3	1.000
+D+0.750Lr+0.750L	0.750	3.750	3.50	867.3	875.0	1.000
+D+0.750L+0.750S	0.750	3.750	3.50	867.3	875.0	1.000
+D+0.60W	0.000	0.000	0.13	0.0	31.3	1.000
+D+0.750Lr+0.750L+0.450W	0.750	3.750	3.50	867.3	875.0	1.000
+D+0.750L+0.750S+0.450W	0.750	3.750	3.50	867.3	875.0	1.000

Pole Footing Embedded in Soil

DESCRIPTION: HSS Column Footing

+0.60D+0.60W	0.000	0.000	0.13	0.0	31.3	1.000
+0.60D	0.000	0.000	0.13	0.0	31.3	1.000