

RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column Reactions (k)					Anc. Bolt Qty Dia	Base Plate (in)			Base EL. (in)		
		Load ID	Hmax	Vmax	Load ID	Hmin		Vmin	Width	Length		Thick	
1	K	6	4.5	2.3	10	-3.8	-2.4	4	0.750	6.000	12.000	0.375	0.0
		15	0.5	10.9	5	-3.1	-4.1						
1	A	7	2.6	-0.9	3	-1.8	8.3	4	0.750	6.000	10.000	0.375	0.0
		2	-0.6	12.4	9	-0.6	-2.9						
1	J	6	0.0	-6.4	6	0.0	-6.4	4	0.750	6.000	8.500	0.375	0.0
		11	0.0	25.9	0	0.0	0.0						
1	H	5	0.0	-5.1	5	0.0	-5.4	4	0.750	6.000	8.500	0.375	0.0
		12	0.0	23.7	0	0.0	0.0						
1	E	8	0.0	-4.8	8	0.0	-4.8	4	0.750	6.000	8.500	0.375	0.0
		13	0.0	23.9	0	0.0	0.0						
1	C	5	0.0	-5.9	5	0.0	-5.9	4	0.750	6.000	8.500	0.375	0.0
		14	0.0	25.1	0	0.0	0.0						

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		Load ID	Hmax	Vmax	Load ID	Hmin		Vmin	Width	Length		Thick	
2*	K	4	5.9	16.9	5	-3.4	-4.7	4	0.750	8.000	12.000	0.375	0.0
		16	3.1	22.3	8	0.0	-5.1						
2*	A	6	2.2	-2.0	1	-4.4	22.9	4	0.750	8.000	10.000	0.375	0.0
		17	-3.8	23.4	9	0.3	-4.5						
2*	Ø52.0	8	0.0	-11.6	8	0.0	-11.6	4	0.750	8.000	14.000	0.750	-6.0
		2	0.0	58.4	0	0.0	0.0						

RIGID FRAME: BASIC COLUMN REACTIONS (k)

Frame Line	Column Line	Dead		Collateral		Live		Snow		Wind Left1		Wind Right1	
		Horiz	Vert	Horiz	Vert	Horiz	Vert	Horiz	Vert	Horiz	Vert	Horiz	Vert
1	K	0.0	1.3	0.0	0.6	0.2	3.7	0.5	8.5	-3.1	-4.9	4.5	1.5
1	A	0.0	2.3	0.0	0.5	-0.2	3.9	-0.5	9.6	-1.7	-2.3	2.2	-3.6
1	J	0.0	2.9	0.0	1.3	0.0	9.0	0.0	20.7	0.0	-4.4	0.0	-8.1
1	H	0.0	2.6	0.0	1.2	0.0	8.1	0.0	18.7	0.0	-6.7	0.0	-3.1
1	E	0.0	2.7	0.0	1.2	0.0	8.2	0.0	18.9	0.0	-5.9	0.0	-4.5
1	C	0.0	2.7	0.0	1.3	0.0	8.7	0.0	20.0	0.0	-7.5	0.0	-2.4

ENDWALL COLUMN: BASIC COLUMN REACTIONS (k)

Frm Line	Col Line	Wind Press		Wind Suct		-MIN_SNOW		EIPAT_SL_1		EIPAT_SL_2		EIPAT_SL_3		EIPAT_SL_4	
		Horz	Vert	Horz	Vert	Horz	Vert	Horz	Vert	Horz	Vert	Horz	Vert	Horz	Vert
1	J	-1.8	2.0	0.0	4.7	0.0	2.8	0.0	0.0	0.0	0.0	5.2	0.0	2.1	0.0
1	H	-2.0	2.1	0.0	4.1	0.0	-0.4	0.0	0.1	0.0	0.1	2.1	0.0	2.0	0.0
1	E	-2.1	2.2	0.0	4.1	0.0	0.1	0.0	0.0	-0.4	0.0	-0.3	0.0	2.1	0.0
1	C	-2.1	2.3	0.0	4.5	0.0	0.0	0.0	0.0	2.6	0.0	0.1	0.0	-0.3	0.0

ENDWALL COLUMN: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column Reactions (k)					Anc. Bolt Qty Dia	Base Plate (in)			Base EL. (in)		
		Load ID	Hmax	Vmax	Load ID	Hmin		Vmin	Width	Length		Thick	
1	J *	18	2.0	-3.5	19	-1.8	-2.3						
		2	0.0	11.9	18	2.0	-3.5						
1	H *	18	2.1	-3.1	19	-2.0	-2.0						
		2	0.0	10.6	18	2.1	-3.1						
1	E *	18	2.2	-3.0	19	-2.1	-2.0						
		2	0.0	10.7	18	2.2	-3.0						
1	C *	18	2.3	-3.6	19	-2.1	-2.3						
		2	0.0	11.7	18	2.3	-3.6						
4	A	20	1.0	-0.7	19	-0.9	-0.4	4	0.750	6.000	8.500	0.375	0.0
		2	0.0	5.0	20	1.0	-0.7						
4	B	20	1.8	-3.3	19	-1.7	-1.6	4	0.750	6.000	8.000	0.375	0.0
		1	-0.1	13.7	20	1.8	-3.3						
4	D	21	1.6	-3.2	19	-1.5	-1.7	4	0.750	6.000	8.000	0.375	0.0

WIND BENT REACTIONS

Wall Loc	Col Line	± Reactions (k)		± Reactions Seismic (k)		Anc. Bolt Qty Dia	Base Plate (in)			
		Horz	Vert	Horz	Vert		Width	Length	Thick	
F-SW A	2	3.5	7.6	4.1	8.9	4	0.750	6.000	16.000	0.375
F-SW A	3	3.5	7.6	4.1	8.9	4	0.750	6.000	16.000	0.375
B-SW K	3	3.0	5.2	7.9	13.4	4	0.750	6.000	18.000	0.375
B-SW K	2	3.0	5.2	7.9	13.4	4	0.750	6.000	18.000	0.375

BUILDING BRACING REACTIONS

Wall Loc	Col Line	± Reactions (k)		Panel Shear (lb/ft)	Note	Qty	Locate	Dia (in)	Type	Proj (in)
		Horz	Vert							
L-EW 1	2,3				(h)	0 24	Jamb	1/2"	A307	1.50
F-SW A	2,3				(a)	0 28	Endwall	3/4"	A307	2.00
R-EW 4	Bracing Not Used					0 32	Frame	3/4"	A307	2.00
B-SW K	2,3				(a)	0 16	WindCol	3/4"	A307	2.00

ANCHOR BOLT SUMMARY

Qty	Locate	Dia (in)	Type	Proj (in)
0 24	Jamb	1/2"	A307	1.50
0 28	Endwall	3/4"	A307	2.00
0 32	Frame	3/4"	A307	2.00
0 16	WindCol	3/4"	A307	2.00

- NOTES FOR REACTIONS
- The Following Design Data is per Package Steel Systems, Inc.'s standard design practices and established procedures and recommendations of the following Organizations and/or Specifications.
- American Institute of Steel Construction (AISC 2005)
  - American Welding Society Structural Welding Code (AWS D11)
  - North American United States (NAUS07)
- For maximum reactions tables, all loading conditions are examined and only the maximum/minimum horizontal or vertical reactions along with the corresponding horizontal or vertical for those load IDs are reported.
  - Positive reactions are shown in the sketch. Foundation loads are in the opposite directions.
  - Bracing reactions are in the plane of the brace with the horizontal pointing away from the braced bay. The vertical reaction can be downward or upward.
  - Reactions given are based on the design data below. Reactions are not furnished for loads not listed.
  - The endwall column reactions do NOT include wind and seismic reactions from endwall bracing. Reactions given in the bracing reactions table should be combined with the appropriate basic column reactions as necessary to determine the maximum reactions for foundation design.
  - The rigid frame maximum reactions include wind and seismic reactions from sidewall bracing. Reactions given in the bracing reactions table should be combined with the appropriate basic column reactions as necessary to determine the maximum reactions for foundation design.
  - Foundation construction and design is not the responsibility of Package Steel Systems, Inc. The embedment of the anchor bolts in concrete is the responsibility of the foundation designer.
  - Suggested anchor rod diameter, quantity, minimum projection and placement are shown. All anchor rods are assumed to be ASTM F1554 Grade 36 or equal. Anchor rods (not by PSS) shall be set to a tolerance of +/-1/8" in both elevation and location.
  - Column base plates are designed not to exceed a bearing pressure of 1050 pounds per sq. inch (0.35F<sub>c</sub> where F<sub>c</sub>= 3000 psi) unless noted otherwise.
  - Basic design wind pressure is furnished. For components and cladding not specifically designed and/or furnished by PSS, the design pressures and suctions shall be increased based on tributary area and location. Confirmation of the design loads and adequacy to resist such loads shall be the responsibility of a licensed design professional by others.

Building Reactions are based on the following information:

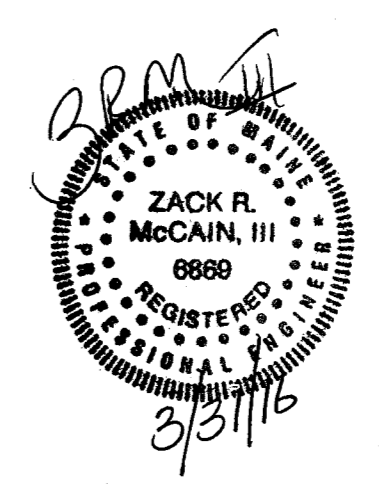
Building Code/Edition:	IBC 09	Snow Loads:		
Building Size:		Ground Snow (Pg)	60.00	psf
Width (ft.)	103	Flat Roof Snow (PF)	46.20	psf
Length (ft.)	52	Snow Exposure Factor (Ce)	1.00	
Back Side Eave Height (ft.)	14.53	Front Factor (Ct)	1.00	
Front Side Eave Height (ft.)	19	Back Side Roof Slope	0.40:12	
Back Side Roof Slope	0.40:12	Snow Importance Factor (Is)	1.10	
Front Side Roof Slope		Sloped Roof Factor (Cs)	1.00	
		Snow Drift at Parapet	32.70	psf

Roof Dead, Collateral, & Live Loads:	Seismic Loads:
Dead Load	5.00 psf
Collateral Load	3.00 psf
Live Load	20.00 psf
Live Load Reduction Taken	No
Wind Loads:	
Basic Wind Speed (3 Second Gust)	100 mph
Wind Exposure	B
Building Enclosure (D/C/P)	Closed
Wind Importance Factor (Iw)	1.15
Internal Pressure Coeff. (GCp)	0.18
Auxiliary Load(s):	(3) 400# Unit Heaters Suspended off Purlins

Acronyms:

AUXx = Auxiliary Load - Case x  
 C= Closed  
 CL= Collateral Load  
 DL= Dead Load  
 FxUNB\_LL= Unbalanced Live Load for Frame IDx  
 LL= Max. of (Live or Snow)  
 LLR= Live Load Unbalanced  
 LnWindL= Longitudinal Wind Load - Left  
 LnWindR= Longitudinal Wind Load - Right  
 mph= miles per hour

Loading Conditions are as follows:  
 1 Dead+Collateral+Snow+Snow\_Drift  
 2 Dead+Collateral+Snow+Slide\_Snow  
 3 Dead+Collateral+0.75Snow+0.75Wind\_Left1+0.75Snow\_Drift  
 4 Dead+Collateral+0.75Snow+0.75Wind\_Right2  
 5 0.6Dead+Wind\_Left1  
 6 0.6Dead+Wind\_Right1  
 7 0.6Dead+Wind\_Right2  
 8 0.6Dead+Wind\_Long1+LWIND1\_L2E  
 9 0.6Dead+Wind\_Long1+LWIND1\_R2E  
 10 0.55Dead+0.7Seismic\_Left  
 11 Dead+Collateral+Snow/2+FIPAT\_SL\_3  
 12 Dead+Collateral+Snow/2+FIPAT\_SL\_4  
 13 Dead+Collateral+Snow/2+FIPAT\_SL\_5  
 14 Dead+Collateral+Snow/2+FIPAT\_SL\_6  
 15 Dead+Collateral+Snow/2+FIPAT\_SL\_1  
 16 Dead+Collateral+Snow/2+FIPAT\_SL\_1  
 17 Dead+Collateral+Snow/2+FIPAT\_SL\_2  
 18 0.6Dead+Wind\_Left2+Wind\_Suction  
 19 0.6Dead+Wind\_Pressure+Wind\_Long1  
 20 0.6Dead+Wind\_Right2+Wind\_Suction  
 21 0.6Dead+Wind\_Right1+Wind\_Suction



REV.	DESCRIPTION	DATE	DRAFT	ENG.
3				
2				
1				
Δ	INITIAL DRAWING RELEASED FOR CONSTRUCTION			
PACKAGE STEEL SYSTEMS, INC.		Biskup Construction Inc.		
PROJECT	Academy for Active Learners	ANCHOR BOLT REACTIONS (SECTION A)		
ID	1603-009	DESIGN: ZRM	DESIGN CHECK: ZRM	
PROJECT	134 Warren Ave	DRAFT: TMZ	DRAFT CHECK: TMZ	
ADDRESS	Portland, ME 04103	DATE: 3/29/16	DRAWING: ARI T-2	