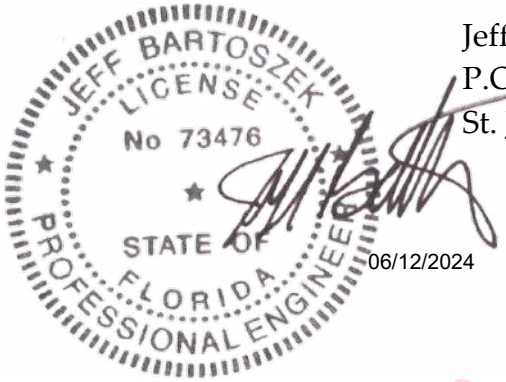
PURPOSE: To design the 41′-9″ x 12′-7″ door for an opening of 42′-0″ x 12′-6 1/2″ for Higher Power Doors. Location is Lake City, Florida with wind speed of 120 mph.

REFERENCES:

A) ASCE 7-22, "Minimum Design Loads and Associated Criteria for Buildings and Other Structures"
B) AISC "Steel Construction Manual", 15th Edition
C) Computer Analysis and Design Program, "Ram Elements", Version 24.0.0.154.
D) Hilti "PROFIS Anchor" Version 2.8.7.
E) Florida Building Code 8th Edition.

ASSUMPTIONS:

1. Door remains closed in a Code specified wind event (i.e., 120 mph).
2. Door will not be open during a snow event, and therefore will not be considered in the analysis.
3. The door may not be operated, open or partially open during a high wind event (i.e., greater than 50 mph).
4. Three computer models will be generated for the analysis and design of the door, due to the variation in support conditions.
   a) Door in closed position – door supported on the ground.
   b) Door in opening position – just as it lifts off the floor.
   c) Door in open position – completely horizontal.



Jeffrey Bartoszek, P.E.
P.O. Box 766
St. Joseph, MI 49085

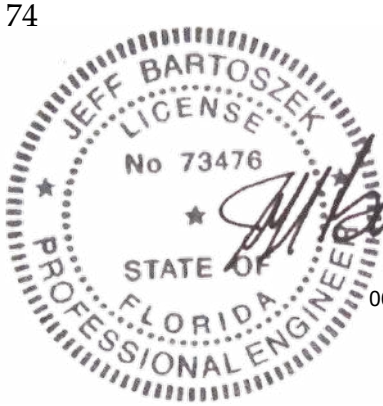
Jeffrey A Bartoszek

Digitally signed by Jeffrey A Bartoszek
Date: 2024.06.12 21:43:27 -04'00'

This item has been digitally signed and sealed by Jeff Bartoszek, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

INDEX

Total pages = 74



Jeffrey Bartoszek, P.E.
P.O. Box 766
St. Joseph, MI 49085

06/12/2024

COMPUTER ANALYSIS METHODOLOGY

Three computer models will be generated for the analysis and design of the door, due to the variation in support conditions.

a) Door in Closed Position

- "X" direction is sideways right, "Y" is vertically up and "Z" is away from door.
- Door is supported vertically by a floor slab
- Bottom corners of the door are supported in the in/out direction by "keeper" plates mounted to the jamb columns.
- Pins at the center of the side verticals are supported in the up/down, in/out and sideway directions
- Pins at the tops of the side verticals are supported in the in/out direction
- Cam extension on jamb column is not loaded, and therefore is not modeled.
- Wind speed = 120 mph.
- Wind loads are based upon "Component" classification, with effective wind area of the entire door area.
- Building is considered as "Enclosed".

b) Door in Opening Position

- "X" direction is sideways right, "Y" is vertically up and "Z" is away from door.
- Door is off the slab and therefore not supported by the floor slab or "keeper" plates.
- Pins at the center of the side verticals are supported in the up/down, in/out and sideway directions
- Pins at the tops of the side verticals are supported in the in/out direction
- Cam extension on jamb column is not loaded, and therefore is not modeled.
- Wind speed = 50 mph.
- Conservatively door is designed as if the building is considered as "Partially Enclosed".

c) Door in Opened Position

- Door is horizontal in a completely open position.
- Pins at the center of the side verticals (now near the top of the jamb column) are supported in the up/down, in/out and sideway directions
- Pins at the tops of the side verticals (now at the rear of the cam) are supported in the in/out direction
- Wind speed = 50 mph.
- Conservatively door is designed as if the building is considered as "Partially Enclosed".

LOAD DISCUSSION

SNOW & ICE

- Snow and ice are considered to be 0, as door is assumed to be closed during snow and ice events.

WIND

- The door is considered to be a door which is to be closed in a Code specified wind event (i.e., 120 mph). The door may not be operated, open or partially open during a high wind event (i.e., greater than 50 mph). The owner/leasor of the door shall require in lease documents or operation documents that the door shall not be operated, open or partially open when wind speeds are greater than 50 mph.
- The door is not considered as an "Awning" or a "Canopy", as it is neither comprised of a lightweight structure as an awning, nor a fixed structure as a canopy. However, the design will meet the Code intent of both awning and canopy. That is, a design wind speed of 50 mph will be used during door repositioning (opening) - as a movable awning, and 50 mph while the door is open or extended - as a canopy.
- Use V = 120 mph for "closed" position, 50 mph for "opening" and 50 mph for "open" position.
- Assume Exposure "C".
- Calculate wind pressures using "Component" classification, with area equal to entire door area.
- When in open position, consider section outside of building to be as an overhang, and no wind pressure on portion inside of building.
- Wind is applied to siding which transfers forces to horizontal members.
- See Sheets 5 - 6 for wind forces.

SEISMIC

- See Sheets 7-9 for Seismic loads.

WIND LOADING

DOOR IN CLOSED POSITION

Using ASCE 7-22 Chapter 30 for Components and Cladding, Part 1, Risk Category II

Wind Speed V (mph)	120	(Figure Section 26.5-1B)
Door Width (ft)	41.75	
Door Height (ft)	12.58	
Door Area (sft)	525	
Exposure "C"		(Section 26.7)
K_z	0.85	(Table 26.10-1)
K_{zt}	1.0	(Section 26.8)
K_d	0.85	(Table 26.6-1)
I	1.0	
qh (psf)	31.3	(eqn. 26.10-1)
P = $q_h k_d[(GC_p)-(GC_{pi})]$) psf)		(eqn. 30.3-1)
GC_p	-0.8	(Figure 30.3-1)
	0.7	
GCpi	-0.18	(Table 26.13-1)
	0.18	
P (psf)	23.4	
(Enclosed Building)	-26.1	

Girt Loading

Girt Height (ft)	Girt Load (#/ft) (+)	(-)
0	30.2	-33.7
2.58	60.6	-67.5
5.17	74.3	-82.7
8.92	86.8	-96.7
12.58	42.9	-47.8

Applying load factor of 0.6 for Wind in the RAM model, not this sheet

DOOR IN OPENING POSITION

Wind Speed (mph)	50	
Door Width (ft)	41.75	
Door Height (ft)	12.58	
Door Area (sft)	525	
Exposure "C"		
K_z	0.85	(Table 26.10-1)
K_{zt}	1.0	(Section 26.8)
K_d	0.85	(Table 26.6-1)
I	1.0	
q_h (psf)	5.4	(eqn. 26.10-1)

WIND LOADING

$P = q_h k_d[(GC_p)-(GC_{pi})]$) psf) (eqn. 30.3-1)

GC_p	-0.8	(Figure 30.3-1)
	0.7	
GC_{pi}	-0.55	(Table 26.13-1)
	0.55	

P (psf)	5.8	Applying load factor of 0.6 for Wind
(Partially Enclosed Building)	-6.2	in the RAM model, not this sheet

Girt Loading

Girt Height (ft)	Girt Load (#/ft) (+)	(-)
0	7.5	-8.1
2.58	14.9	-16.1
5.17	18.3	-19.8
8.92	21.4	-23.1
12.58	10.6	-11.4

DOOR IN OPEN POSITION (CANOPY) (Chapter 30, Section 9)

Wind Speed (mph)	50		
Door Width (ft)	41.75		
Door Height (ft)	12.58	Hinge Position (ft)	7.17
Door Area (sft)	525		

Exposure "C"

K_z	0.85	(Table 26.10-1)
K_{zt}	1.0	(Section 26.8)
K_d	0.85	(Table 26.6-1)
I	1.0	

q_h (psf) 5.4 (eqn. 26.10-1)

$P = q_h k_d*(GC_p)$ psf) (eqn. 30.9-1)

GC_p	-1.1	(Figure 30.9-1B)
	0.6	

P (psf)	-5.1	Applying load factor of 0.6 for Wind
(Partially Enclosed Building)	2.8	in the RAM model, not this sheet

Girt Loading

Girt Height (ft)	Girt Load (#/ft) (+)	(-)
0	6.6	-3.6
2.58	13.1	-7.2
5.17	6.6	-3.6

SEISMIC

- Assume Site Class "D" - stiff soil
- Calculate forces assuming door is a non-building structure (similar to signs and billboards)

$S_s := 0.14$ $S_{ms} := 1.6 \cdot S_s = 0.224$ $S_{ds} := \frac{2}{3} \cdot S_{ms} = 0.149$ Highest value for State of Florida

$S_1 := 0.07$ $S_{m1} := 2.4 \cdot S_1 = 0.168$ $S_{d1} := \frac{2}{3} \cdot S_{m1} = 0.112$ Highest value for State of Florida

Seismic Design Category = "A" (based upon Sds and Sd1)

Use Equivalent Lateral Force Procedure: V = (Cs) x (W)

$R := 3.5$ Ordinary Moment Frame - Steel

$I := 1.0$ (Importance Factor)

$C_s := \frac{S_{ds}}{\left(\frac{R}{I}\right)} = 0.043$ (must be > 0.030) Therefore, $C_{s'} := 0.030$

$Width := 41.75\ ft$ $Height := 12.58\ ft$ $Area := Width \cdot Height = 525\ ft^2$

$Q := 12\ \frac{lbf}{ft^2}$

$W := Area \cdot Q = 6303\ lbf$

$V := C_{s'} \cdot W = 189\ lbf$

Seismic Force = $V = 189\ lbf$ is equivalent to $\frac{V}{Area} = 0.36\ \frac{lbf}{ft^2}$

This is negligible compared to wind force at 120 mph (Closed), 50 mph (Open) and 50 mph (Opening). Therefore, neglect in analysis.

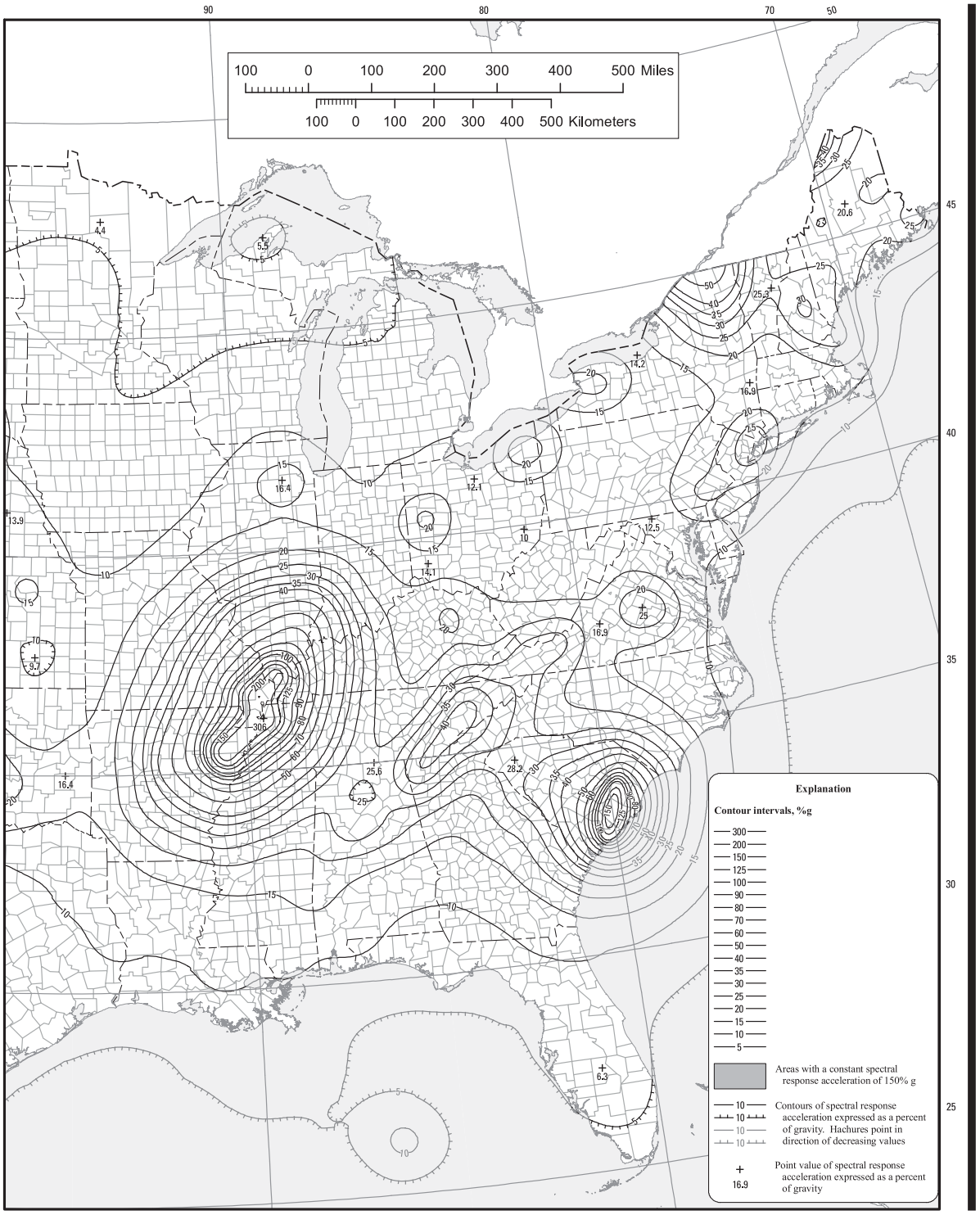


FIGURE 22-1 (*Continued*)

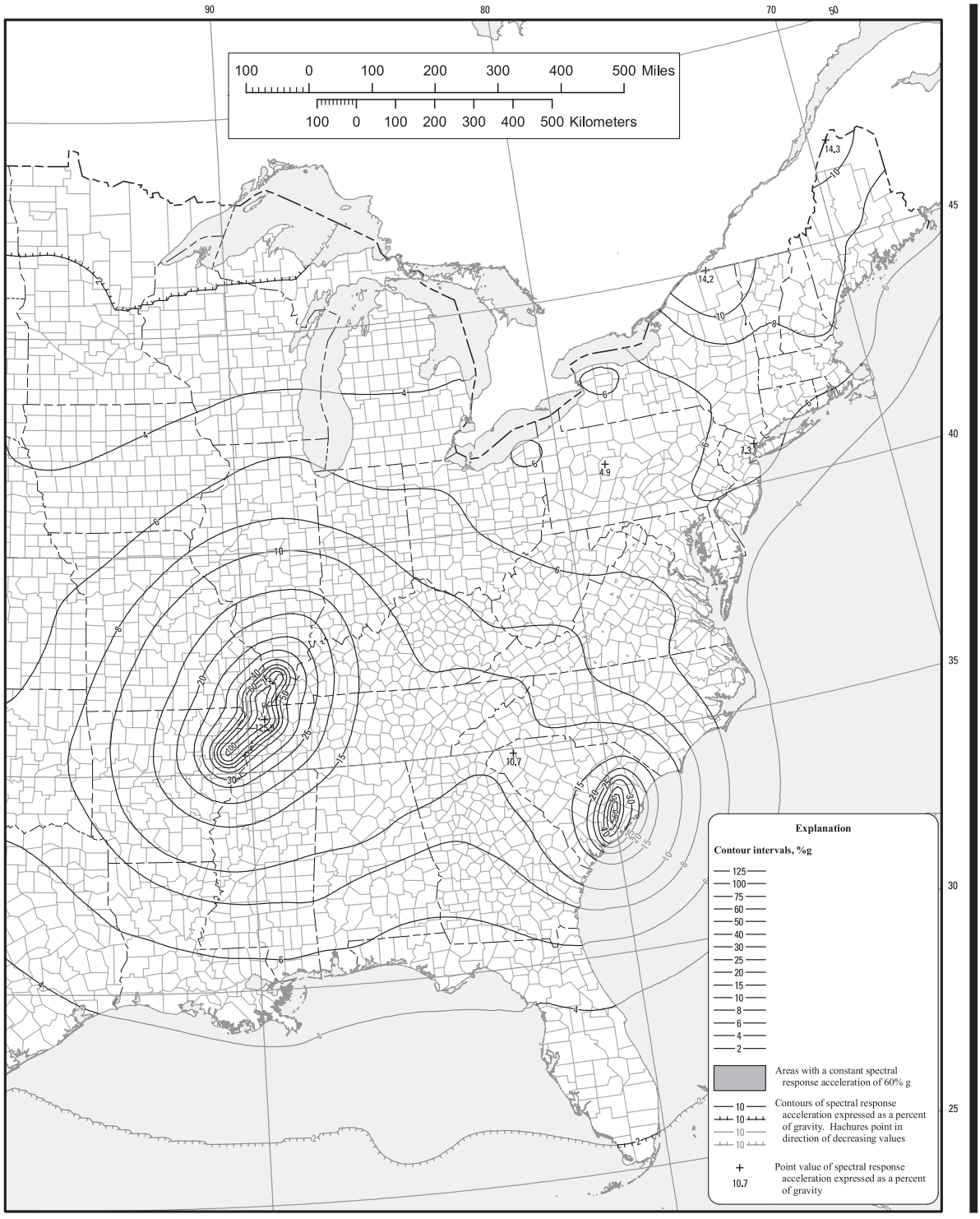


FIGURE 22-2 (*Continued*)

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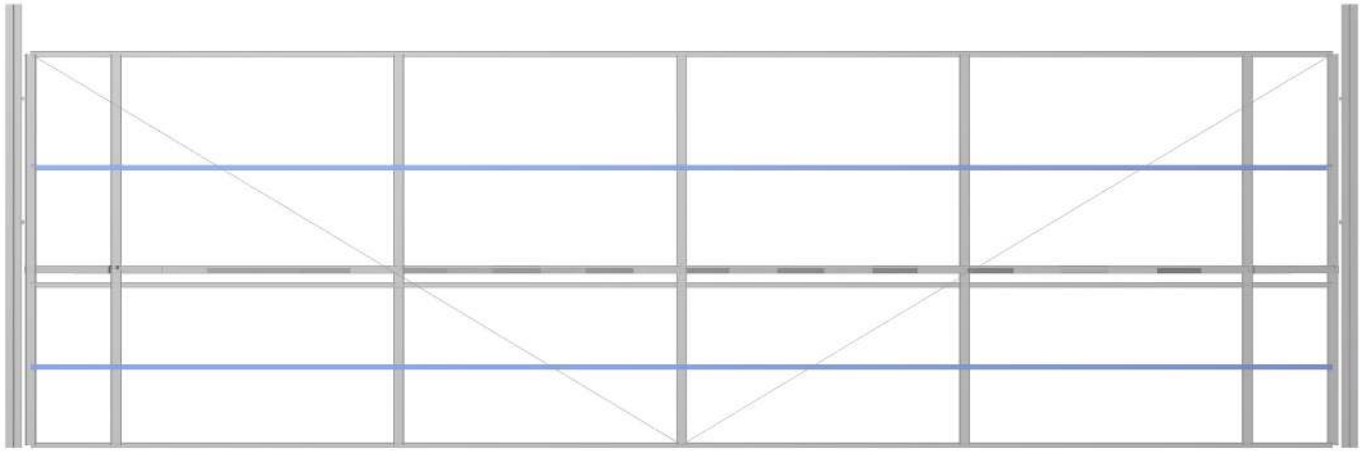
Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



Integrity Structural Engineering, PLLC

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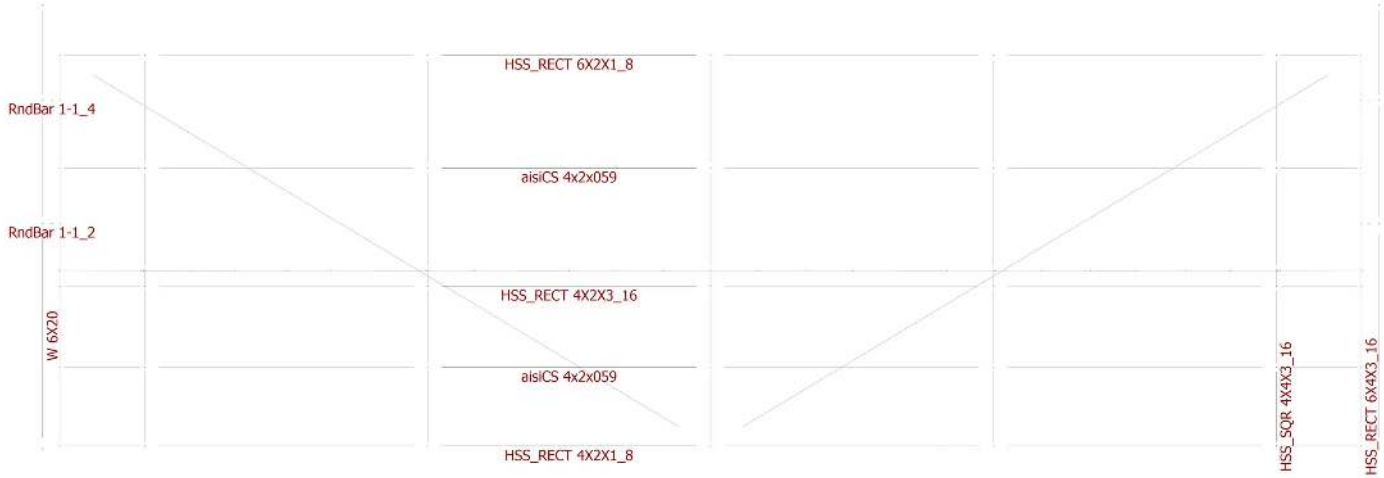
Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



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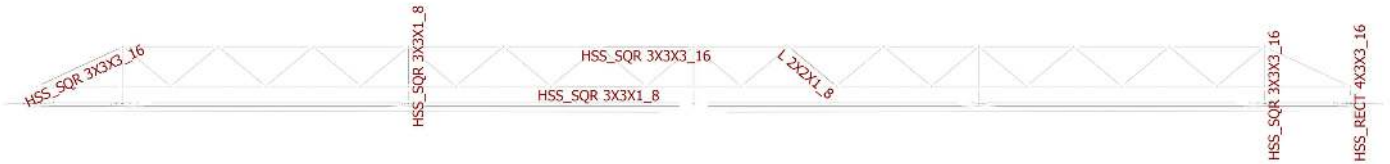
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



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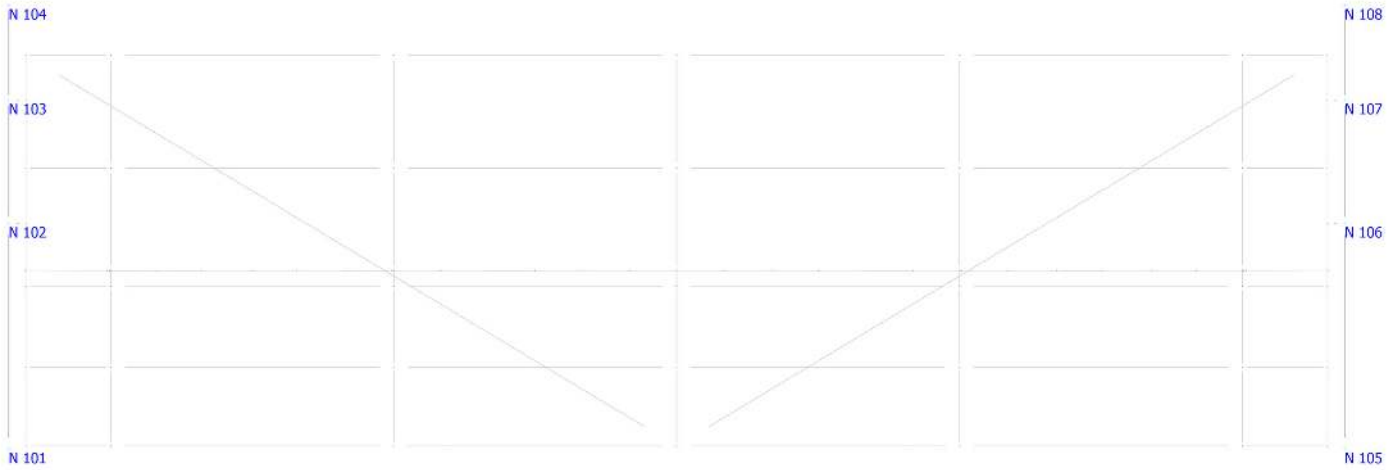
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



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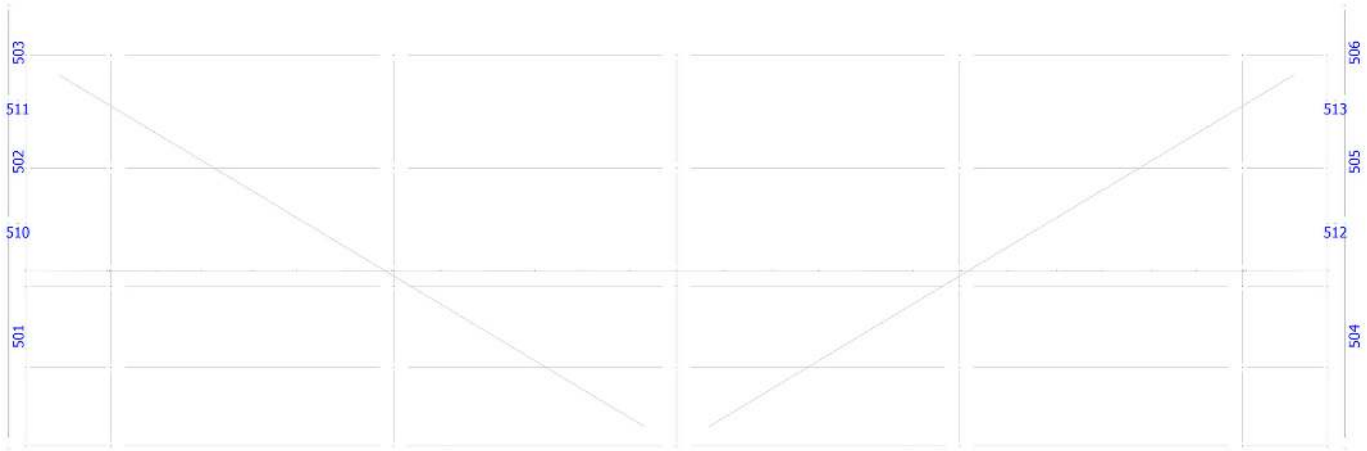
Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



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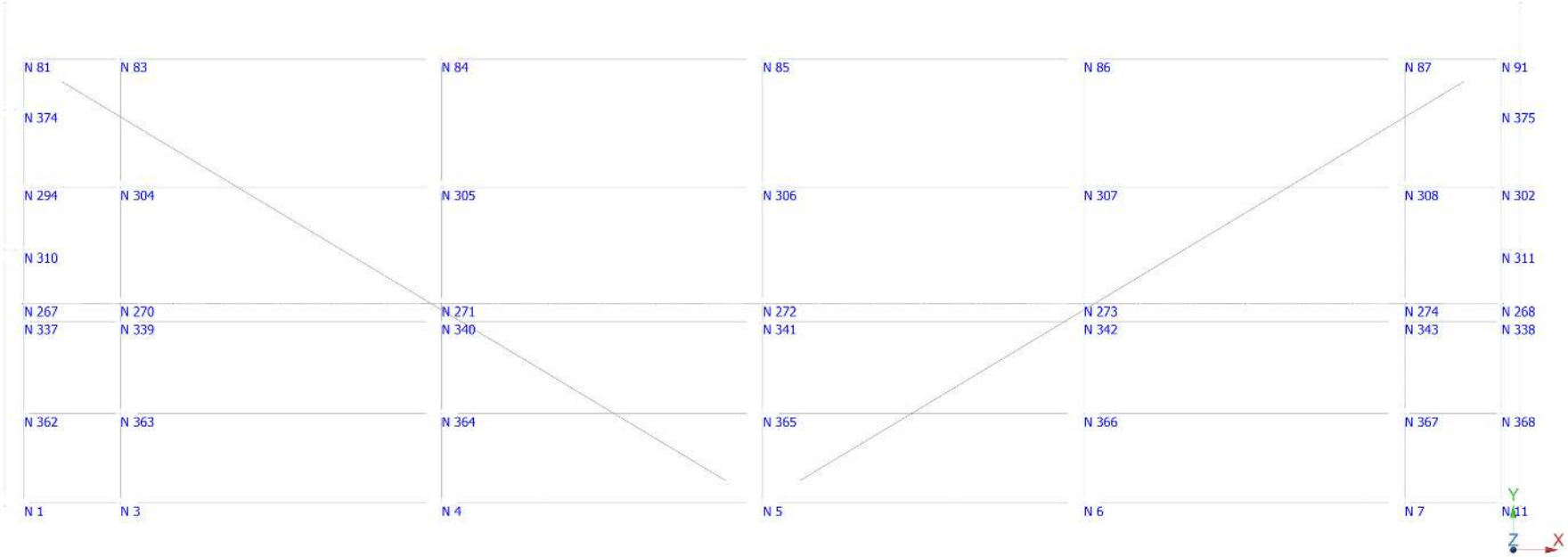
Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



Integrity Structural Engineering, PLLC

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Project: Opening
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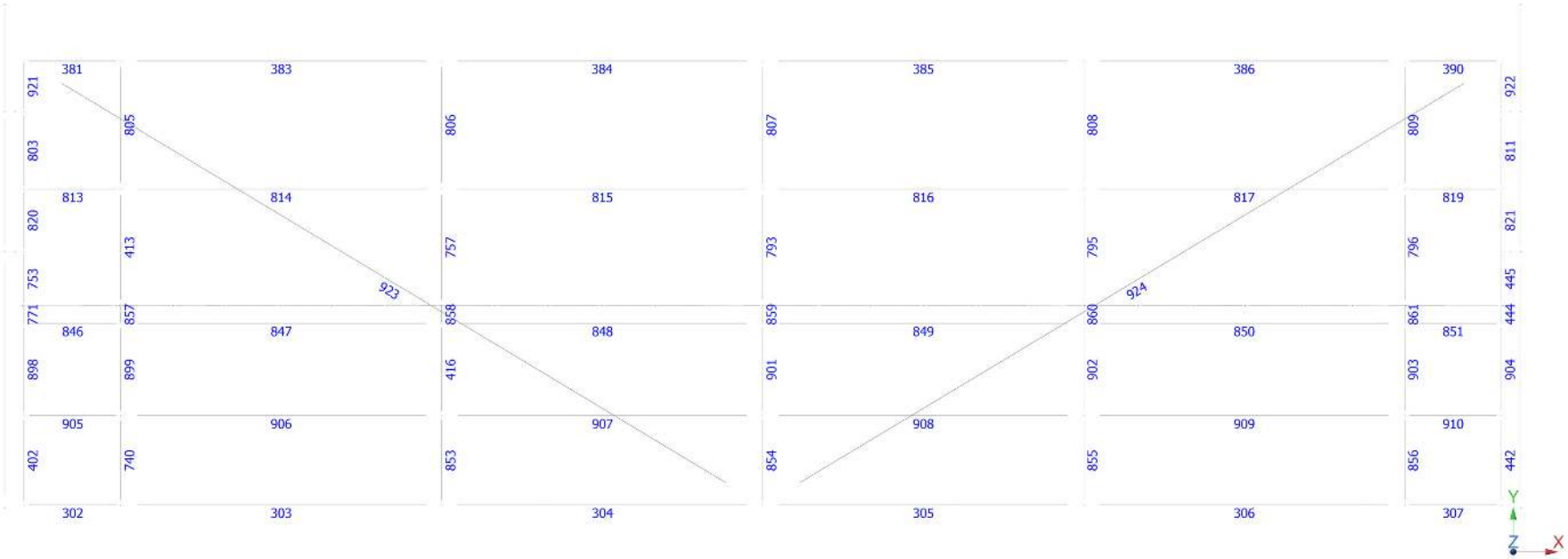
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



Integrity Structural Engineering, PLLC

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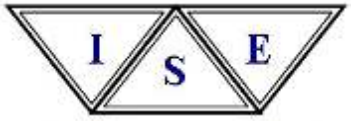
Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:47 PM

Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:50 PM

Project: Closed
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Geometry data

Nodes

Node	X [in]	Y [in]	Z [in]	Rigid Floor
1	2.00	1.00	0.00	0
4	142.50	1.00	0.00	0
11	499.00	1.00	0.00	0
81	2.00	150.00	0.00	0
84	142.50	150.00	0.00	0
91	499.00	150.00	0.00	0
244	250.50	68.00	21.50	0
245	358.50	68.00	21.50	0
3	34.50	1.00	0.00	0
83	34.50	150.00	0.00	0
85	250.50	150.00	0.00	0
5	250.50	1.00	0.00	0
243	142.50	68.00	21.50	0
86	358.50	150.00	0.00	0
6	358.50	1.00	0.00	0
87	466.50	150.00	0.00	0
7	466.50	1.00	0.00	0
246	466.50	68.00	21.50	0
242	34.50	68.00	21.50	0
211	499.00	68.00	6.50	0
207	466.50	68.00	6.50	0
206	358.50	68.00	6.50	0
205	250.50	68.00	6.50	0
204	142.50	68.00	6.50	0
203	34.50	68.00	6.50	0
201	2.00	68.00	6.50	0
105	505.50	0.00	0.00	0
106	505.50	86.00	0.00	0
107	505.50	133.00	0.00	0
108	505.50	169.00	0.00	0
101	-4.50	0.00	0.00	0
102	-4.50	86.00	0.00	0
103	-4.50	133.00	0.00	0
104	-4.50	169.00	0.00	0
250	70.50	68.00	21.50	0
252	160.50	68.00	6.50	0
253	214.50	68.00	21.50	0
254	286.50	68.00	21.50	0
255	304.50	68.00	6.50	0
256	376.50	68.00	6.50	0
257	430.50	68.00	21.50	0
267	2.00	68.00	0.00	0
268	499.00	68.00	0.00	0
270	34.50	68.00	0.00	0
271	142.50	68.00	0.00	0
272	250.50	68.00	0.00	0
273	358.50	68.00	0.00	0

274	466.50	68.00	0.00	0
294	2.00	107.00	0.00	0
302	499.00	107.00	0.00	0
304	34.50	107.00	0.00	0
305	142.50	107.00	0.00	0
306	250.50	107.00	0.00	0
307	358.50	107.00	0.00	0
308	466.50	107.00	0.00	0
310	2.00	86.00	0.00	0
311	499.00	86.00	0.00	0
326	52.50	68.00	6.50	0
337	2.00	62.00	0.00	0
338	499.00	62.00	0.00	0
339	34.50	62.00	0.00	0
340	142.50	62.00	0.00	0
341	250.50	62.00	0.00	0
342	358.50	62.00	0.00	0
343	466.50	62.00	0.00	0
344	106.50	68.00	21.50	0
345	88.50	68.00	6.50	0
349	178.50	68.00	21.50	0
350	196.50	68.00	6.50	0
352	268.50	68.00	6.50	0
353	322.50	68.00	21.50	0
356	394.50	68.00	21.50	0
357	412.50	68.00	6.50	0
362	2.00	31.00	0.00	0
363	34.50	31.00	0.00	0
364	142.50	31.00	0.00	0
365	250.50	31.00	0.00	0
366	358.50	31.00	0.00	0
367	466.50	31.00	0.00	0
368	499.00	31.00	0.00	0
370	124.50	68.00	6.50	0
371	232.50	68.00	6.50	0
372	340.50	68.00	6.50	0
373	448.50	68.00	6.50	0
374	2.00	133.00	0.00	0
375	499.00	133.00	0.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	0	1	1	0	0	0
4	0	1	0	0	0	0
11	0	1	1	0	0	0
3	0	1	0	0	0	0
5	0	1	0	0	0	0
6	0	1	0	0	0	0
7	0	1	0	0	0	0
105	1	1	1	0	0	0
108	1	0	1	0	0	0
101	1	1	1	0	0	0
104	1	0	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
674	203	242	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
679	206	245	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
675	204	243	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
678	205	244	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
682	207	246	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
381	81	83	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
385	85	86	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
302	1	3	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
305	5	6	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
402	1	362	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
442	11	368	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
724	326	242	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
621	201	242	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
416	364	340	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
445	268	311	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
634	246	211	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
628	244	254	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
725	326	250	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
303	3	4	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
383	83	84	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
384	84	85	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
304	4	5	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
390	87	91	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
413	270	304	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
626	243	349	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
444	338	268	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
386	86	87	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
306	6	7	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
307	7	11	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
630	245	356	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
624	242	250	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
661	268	211	Exterior Conn Tube	HSS_RECT 4X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
651	267	201	Exterior Conn Tube	HSS_RECT 4X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
612	207	211	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
610	206	256	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
608	205	352	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
606	204	252	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
604	203	326	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
602	201	203	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
503	103	104	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
502	102	103	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
501	101	102	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
506	107	108	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
505	106	107	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
504	105	106	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
510	102	310	Pivot Pin	RndBar 1-1_2	A1045	0.00	0.00	0.00
511	103	374	Upper Pin	RndBar 1-1_4	A1045	0.00	0.00	0.00
513	375	107	Upper Pin	RndBar 1-1_4	A1045	0.00	0.00	0.00
512	311	106	Pivot Pin	RndBar 1-1_2	A1045	0.00	0.00	0.00
625	250	344	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
607	252	350	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
627	253	244	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
629	254	353	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
609	255	372	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
611	256	357	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
631	257	246	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
727	370	243	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
729	252	243	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
730	252	349	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
731	371	244	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
732	352	244	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00

733	255	353	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
735	256	356	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
736	357	356	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
738	373	246	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
740	3	363	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
753	267	310	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
757	271	305	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
763	270	203	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
764	271	204	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
765	272	205	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
766	273	206	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
767	274	207	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
771	337	267	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
793	272	306	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
795	273	307	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
796	274	308	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
803	294	374	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
805	304	83	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
806	305	84	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
807	306	85	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
808	307	86	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
809	308	87	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
811	302	375	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
813	294	304	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
814	304	305	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
815	305	306	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
816	306	307	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
817	307	308	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
819	308	302	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
820	310	294	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
821	311	302	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
840	326	345	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
846	337	339	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
847	339	340	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
848	340	341	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
849	341	342	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
850	342	343	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
851	343	338	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
853	4	364	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
854	5	365	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
855	6	366	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
856	7	367	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
857	339	270	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
858	340	271	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
859	341	272	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
860	342	273	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
861	343	274	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
862	344	243	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
863	345	370	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
864	345	250	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
866	345	344	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
871	344	370	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
872	349	253	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
873	350	371	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
875	350	349	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
876	350	253	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
877	253	371	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
878	352	255	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
879	353	245	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
881	352	254	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
882	255	254	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
884	372	353	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00

886	356	257	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
887	372	245	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
888	256	245	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
889	357	373	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
891	357	257	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
892	373	257	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
898	362	337	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
899	363	339	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
901	365	341	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
902	366	342	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
903	367	343	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
904	368	338	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
905	362	363	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
906	363	364	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
907	364	365	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
908	365	366	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
909	366	367	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
910	367	368	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
917	370	204	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
918	371	205	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
919	372	206	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
920	373	207	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
921	374	81	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
922	375	91	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
381	90.00	0	0.00	0.00	0.00
385	90.00	0	0.00	0.00	0.00
302	90.00	0	0.00	0.00	0.00
305	90.00	0	0.00	0.00	0.00
402	90.00	0	0.00	0.00	0.00
442	90.00	0	0.00	0.00	0.00
724	90.00	0	0.00	0.00	0.00
416	90.00	0	0.00	0.00	0.00
445	90.00	0	0.00	0.00	0.00
725	90.00	0	0.00	0.00	0.00
303	90.00	0	0.00	0.00	0.00
383	90.00	0	0.00	0.00	0.00
384	90.00	0	0.00	0.00	0.00
304	90.00	0	0.00	0.00	0.00
390	90.00	0	0.00	0.00	0.00
413	90.00	0	0.00	0.00	0.00
444	90.00	0	0.00	0.00	0.00
386	90.00	0	0.00	0.00	0.00
306	90.00	0	0.00	0.00	0.00
307	90.00	0	0.00	0.00	0.00
661	90.00	0	0.00	0.00	0.00
651	90.00	0	0.00	0.00	0.00
503	90.00	0	0.00	0.00	0.00
502	90.00	0	0.00	0.00	0.00
501	90.00	0	0.00	0.00	0.00
506	90.00	0	0.00	0.00	0.00
505	90.00	0	0.00	0.00	0.00
504	90.00	0	0.00	0.00	0.00
727	90.00	0	0.00	0.00	0.00

729	90.00	0	0.00	0.00	0.00
730	90.00	0	0.00	0.00	0.00
731	90.00	0	0.00	0.00	0.00
732	90.00	0	0.00	0.00	0.00
733	90.00	0	0.00	0.00	0.00
735	90.00	0	0.00	0.00	0.00
736	90.00	0	0.00	0.00	0.00
738	90.00	0	0.00	0.00	0.00
740	90.00	0	0.00	0.00	0.00
753	90.00	0	0.00	0.00	0.00
757	90.00	0	0.00	0.00	0.00
771	90.00	0	0.00	0.00	0.00
793	90.00	0	0.00	0.00	0.00
795	90.00	0	0.00	0.00	0.00
796	90.00	0	0.00	0.00	0.00
803	90.00	0	0.00	0.00	0.00
805	90.00	0	0.00	0.00	0.00
806	90.00	0	0.00	0.00	0.00
807	90.00	0	0.00	0.00	0.00
808	90.00	0	0.00	0.00	0.00
809	90.00	0	0.00	0.00	0.00
811	90.00	0	0.00	0.00	0.00
813	90.00	0	0.00	0.00	0.00
814	90.00	0	0.00	0.00	0.00
815	90.00	0	0.00	0.00	0.00
816	90.00	0	0.00	0.00	0.00
817	90.00	0	0.00	0.00	0.00
819	90.00	0	0.00	0.00	0.00
820	90.00	0	0.00	0.00	0.00
821	90.00	0	0.00	0.00	0.00
846	90.00	0	0.00	0.00	0.00
847	90.00	0	0.00	0.00	0.00
848	90.00	0	0.00	0.00	0.00
849	90.00	0	0.00	0.00	0.00
850	90.00	0	0.00	0.00	0.00
851	90.00	0	0.00	0.00	0.00
853	90.00	0	0.00	0.00	0.00
854	90.00	0	0.00	0.00	0.00
855	90.00	0	0.00	0.00	0.00
856	90.00	0	0.00	0.00	0.00
857	90.00	0	0.00	0.00	0.00
858	90.00	0	0.00	0.00	0.00
859	90.00	0	0.00	0.00	0.00
860	90.00	0	0.00	0.00	0.00
861	90.00	0	0.00	0.00	0.00
864	90.00	0	0.00	0.00	0.00
866	90.00	0	0.00	0.00	0.00
871	90.00	0	0.00	0.00	0.00
875	90.00	0	0.00	0.00	0.00
876	90.00	0	0.00	0.00	0.00
877	90.00	0	0.00	0.00	0.00
881	90.00	0	0.00	0.00	0.00
882	90.00	0	0.00	0.00	0.00
884	90.00	0	0.00	0.00	0.00
887	90.00	0	0.00	0.00	0.00
888	90.00	0	0.00	0.00	0.00
891	90.00	0	0.00	0.00	0.00
892	90.00	0	0.00	0.00	0.00
898	90.00	0	0.00	0.00	0.00
899	90.00	0	0.00	0.00	0.00
901	90.00	0	0.00	0.00	0.00
902	90.00	0	0.00	0.00	0.00

903	90.00	0	0.00	0.00	0.00
904	90.00	0	0.00	0.00	0.00
905	90.00	0	0.00	0.00	0.00
906	90.00	0	0.00	0.00	0.00
907	90.00	0	0.00	0.00	0.00
908	90.00	0	0.00	0.00	0.00
909	90.00	0	0.00	0.00	0.00
910	90.00	0	0.00	0.00	0.00
921	90.00	0	0.00	0.00	0.00
922	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
302	0.00	0.00	-1.00	0.00	0.00	-1.00
305	0.00	0.00	-1.00	0.00	0.00	-1.00
416	0.00	0.00	-1.00	0.00	0.00	-1.00
303	0.00	0.00	-1.00	0.00	0.00	-1.00
304	0.00	0.00	-1.00	0.00	0.00	-1.00
413	0.00	0.00	-1.00	0.00	0.00	-1.00
306	0.00	0.00	-1.00	0.00	0.00	-1.00
307	0.00	0.00	-1.00	0.00	0.00	-1.00
661	0.00	0.00	3.00	0.00	0.00	-1.50
651	0.00	0.00	3.00	0.00	0.00	-1.50
510	3.00	0.00	0.00	-2.50	0.00	0.00
511	3.00	0.00	0.00	-2.50	0.00	0.00
513	2.50	0.00	0.00	-3.00	0.00	0.00
512	2.50	0.00	0.00	-3.00	0.00	0.00
740	0.00	0.00	-1.00	0.00	0.00	-1.00
757	0.00	0.00	-1.00	0.00	0.00	-1.00
763	0.00	0.00	1.00	0.00	0.00	-1.50
764	0.00	0.00	1.00	0.00	0.00	-1.50
765	0.00	0.00	1.00	0.00	0.00	-1.50
766	0.00	0.00	1.00	0.00	0.00	-1.50
767	0.00	0.00	1.00	0.00	0.00	-1.50
793	0.00	0.00	-1.00	0.00	0.00	-1.00
795	0.00	0.00	-1.00	0.00	0.00	-1.00
796	0.00	0.00	-1.00	0.00	0.00	-1.00
805	0.00	0.00	-1.00	0.00	0.00	-1.00
806	0.00	0.00	-1.00	0.00	0.00	-1.00
807	0.00	0.00	-1.00	0.00	0.00	-1.00
808	0.00	0.00	-1.00	0.00	0.00	-1.00
809	0.00	0.00	-1.00	0.00	0.00	-1.00
813	0.00	0.00	-1.00	0.00	0.00	-1.00
814	0.00	0.00	-1.00	0.00	0.00	-1.00
815	0.00	0.00	-1.00	0.00	0.00	-1.00
816	0.00	0.00	-1.00	0.00	0.00	-1.00
817	0.00	0.00	-1.00	0.00	0.00	-1.00
819	0.00	0.00	-1.00	0.00	0.00	-1.00
846	0.00	0.00	-1.00	0.00	0.00	-1.00
847	0.00	0.00	-1.00	0.00	0.00	-1.00
848	0.00	0.00	-1.00	0.00	0.00	-1.00
849	0.00	0.00	-1.00	0.00	0.00	-1.00
850	0.00	0.00	-1.00	0.00	0.00	-1.00
851	0.00	0.00	-1.00	0.00	0.00	-1.00
853	0.00	0.00	-1.00	0.00	0.00	-1.00
854	0.00	0.00	-1.00	0.00	0.00	-1.00

855	0.00	0.00	-1.00	0.00	0.00	-1.00
856	0.00	0.00	-1.00	0.00	0.00	-1.00
857	0.00	0.00	-1.00	0.00	0.00	-1.00
858	0.00	0.00	-1.00	0.00	0.00	-1.00
859	0.00	0.00	-1.00	0.00	0.00	-1.00
860	0.00	0.00	-1.00	0.00	0.00	-1.00
861	0.00	0.00	-1.00	0.00	0.00	-1.00
899	0.00	0.00	-1.00	0.00	0.00	-1.00
901	0.00	0.00	-1.00	0.00	0.00	-1.00
902	0.00	0.00	-1.00	0.00	0.00	-1.00
903	0.00	0.00	-1.00	0.00	0.00	-1.00
905	0.00	0.00	-1.00	0.00	0.00	-1.00
906	0.00	0.00	-1.00	0.00	0.00	-1.00
907	0.00	0.00	-1.00	0.00	0.00	-1.00
908	0.00	0.00	-1.00	0.00	0.00	-1.00
909	0.00	0.00	-1.00	0.00	0.00	-1.00
910	0.00	0.00	-1.00	0.00	0.00	-1.00

Hinges

	Node-J				Node-K						
Member	**M33**	**M22**	**V3**	**V2**	**M33**	**M22**	**V3**	**V2**	**TOR**	**AXL**	**Axial rigidity**
381	1	1	0	0	0	0	0	0	0	0	Full
302	1	1	0	0	0	0	0	0	0	0	Full
724	1	1	0	0	1	1	0	0	0	0	Full
725	1	1	0	0	1	1	0	0	0	0	Full
390	0	0	0	0	1	1	0	0	0	0	Full
307	0	0	0	0	1	1	0	0	0	0	Full
661	0	0	0	0	0	1	0	0	0	0	Full
651	0	0	0	0	0	1	0	0	0	0	Full
510	0	0	0	0	0	0	0	0	1	0	Full
511	1	1	0	1	0	0	0	0	1	1	Full
513	0	0	0	0	1	1	0	1	1	1	Full
512	0	0	0	0	0	0	0	0	1	0	Full
727	1	1	0	0	1	1	0	0	0	0	Full
729	1	1	0	0	1	1	0	0	0	0	Full
730	1	1	0	0	1	1	0	0	0	0	Full
731	1	1	0	0	1	1	0	0	0	0	Full
732	1	1	0	0	1	1	0	0	0	0	Full
733	1	1	0	0	1	1	0	0	0	0	Full
735	1	1	0	0	1	1	0	0	0	0	Full
736	1	1	0	0	1	1	0	0	0	0	Full
738	1	1	0	0	1	1	0	0	0	0	Full
740	1	1	0	0	0	0	0	0	0	0	Full
805	0	0	0	0	1	1	0	0	0	0	Full
806	0	0	0	0	1	1	0	0	0	0	Full
807	0	0	0	0	1	1	0	0	0	0	Full
808	0	0	0	0	1	1	0	0	0	0	Full
809	0	0	0	0	1	1	0	0	0	0	Full
813	1	1	0	0	1	1	0	0	0	1	Full
814	1	1	0	0	1	1	0	0	0	1	Full
815	1	1	0	0	1	1	0	0	0	1	Full
816	1	1	0	0	1	1	0	0	0	1	Full
817	1	1	0	0	1	1	0	0	0	1	Full
819	1	1	0	0	1	1	0	0	0	1	Full
846	1	1	0	0	1	1	0	0	0	0	Full
847	1	1	0	0	1	1	0	0	0	0	Full

848	1	1	0	0	1	1	0	0	0	0	Full
849	1	1	0	0	1	1	0	0	0	0	Full
850	1	1	0	0	1	1	0	0	0	0	Full
851	1	1	0	0	1	1	0	0	0	0	Full
853	1	1	0	0	0	0	0	0	0	0	Full
854	1	1	0	0	0	0	0	0	0	0	Full
855	1	1	0	0	0	0	0	0	0	0	Full
856	1	1	0	0	0	0	0	0	0	0	Full
864	1	1	0	0	1	1	0	0	0	0	Full
866	1	1	0	0	1	1	0	0	0	0	Full
871	1	1	0	0	1	1	0	0	0	0	Full
875	1	1	0	0	1	1	0	0	0	0	Full
876	1	1	0	0	1	1	0	0	0	0	Full
877	1	1	0	0	1	1	0	0	0	0	Full
881	1	1	0	0	1	1	0	0	0	0	Full
882	1	1	0	0	1	1	0	0	0	0	Full
884	1	1	0	0	1	1	0	0	0	0	Full
887	1	1	0	0	1	1	0	0	0	0	Full
888	1	1	0	0	1	1	0	0	0	0	Full
891	1	1	0	0	1	1	0	0	0	0	Full
892	1	1	0	0	1	1	0	0	0	0	Full
905	1	1	0	0	1	1	0	0	0	1	Full
906	1	1	0	0	1	1	0	0	0	1	Full
907	1	1	0	0	1	1	0	0	0	1	Full
908	1	1	0	0	1	1	0	0	0	1	Full
909	1	1	0	0	1	1	0	0	0	1	Full
910	1	1	0	0	1	1	0	0	0	1	Full

Glossary

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:50 PM

Project: Closed
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Load data

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
wl1	wind load out	No	WIND
wl2	Wind Load in	No	WIND
c1	DL+0.6wl1	Yes	
c2	DL+0.6wl2	Yes	
c3	0.6DL+0.6wl2	Yes	
c4	0.6DL+0.6wl2	Yes	

Distributed force on members

Condition	Member	Dir1	Val1 [Lb/ft]	Val2 [Lb/ft]	Dist1 [in]	%	Dist2 [in]	%
wl1	381	Z	47.80	47.80	0.00	Yes	100.00	Yes
	385	Z	47.80	47.80	0.00	Yes	100.00	Yes
	302	Z	33.70	33.70	0.00	Yes	100.00	Yes
	305	Z	33.70	33.70	0.00	Yes	100.00	Yes
	303	Z	33.70	33.70	0.00	Yes	100.00	Yes
	383	Z	47.80	47.80	0.00	Yes	100.00	Yes
	384	Z	47.80	47.80	0.00	Yes	100.00	Yes
	304	Z	33.70	33.70	0.00	Yes	100.00	Yes
	390	Z	47.80	47.80	0.00	Yes	100.00	Yes
	386	Z	47.80	47.80	0.00	Yes	100.00	Yes
	306	Z	33.70	33.70	0.00	Yes	100.00	Yes
	307	Z	33.70	33.70	0.00	Yes	100.00	Yes
	813	Z	96.70	96.70	0.00	Yes	100.00	Yes
	814	Z	96.70	96.70	0.00	Yes	100.00	Yes
	815	Z	96.70	96.70	0.00	Yes	100.00	Yes
	816	Z	96.70	96.70	0.00	Yes	100.00	Yes
	817	Z	96.70	96.70	0.00	Yes	100.00	Yes
	819	Z	96.70	96.70	0.00	Yes	100.00	Yes
	846	Z	82.70	82.70	0.00	Yes	100.00	Yes
	847	Z	82.70	82.70	0.00	Yes	100.00	Yes
	848	Z	82.70	82.70	0.00	Yes	100.00	Yes
	849	Z	82.70	82.70	0.00	Yes	100.00	Yes
	850	Z	82.70	82.70	0.00	Yes	100.00	Yes
	851	Z	82.70	82.70	0.00	Yes	100.00	Yes
	905	Z	67.50	67.50	0.00	Yes	100.00	Yes
	906	Z	67.50	67.50	0.00	Yes	100.00	Yes
	907	Z	67.50	67.50	0.00	Yes	100.00	Yes
	908	Z	67.50	67.50	0.00	Yes	100.00	Yes
	909	Z	67.50	67.50	0.00	Yes	100.00	Yes
	910	Z	67.50	67.50	0.00	Yes	100.00	Yes
wl2	381	Z	-42.90	-42.90	0.00	Yes	100.00	Yes
	385	Z	-42.90	-42.90	0.00	Yes	100.00	Yes

302	Z	-30.20	-30.20	0.00	Yes	100.00	Yes
305	Z	-30.20	-30.20	0.00	Yes	100.00	Yes
303	Z	-30.20	-30.20	0.00	Yes	100.00	Yes
383	Z	-42.90	-42.90	0.00	Yes	100.00	Yes
384	Z	-42.90	-42.90	0.00	Yes	100.00	Yes
304	Z	-30.20	-30.20	0.00	Yes	100.00	Yes
390	Z	-42.90	-42.90	0.00	Yes	100.00	Yes
386	Z	-42.90	-42.90	0.00	Yes	100.00	Yes
306	Z	-30.20	-30.20	0.00	Yes	100.00	Yes
307	Z	-30.20	-30.20	0.00	Yes	100.00	Yes
813	Z	-86.80	-86.80	0.00	Yes	100.00	Yes
814	Z	-86.80	-86.80	0.00	Yes	100.00	Yes
815	Z	-86.80	-86.80	0.00	Yes	100.00	Yes
816	Z	-86.80	-86.80	0.00	Yes	100.00	Yes
817	Z	-86.80	-86.80	0.00	Yes	100.00	Yes
819	Z	-86.80	-86.80	0.00	Yes	100.00	Yes
846	Z	-74.30	-74.30	0.00	Yes	100.00	Yes
847	Z	-74.30	-74.30	0.00	Yes	100.00	Yes
848	Z	-74.30	-74.30	0.00	Yes	100.00	Yes
849	Z	-74.30	-74.30	0.00	Yes	100.00	Yes
850	Z	-74.30	-74.30	0.00	Yes	100.00	Yes
851	Z	-74.30	-74.30	0.00	Yes	100.00	Yes
905	Z	-60.60	-60.60	0.00	Yes	100.00	Yes
906	Z	-60.60	-60.60	0.00	Yes	100.00	Yes
907	Z	-60.60	-60.60	0.00	Yes	100.00	Yes
908	Z	-60.60	-60.60	0.00	Yes	100.00	Yes
909	Z	-60.60	-60.60	0.00	Yes	100.00	Yes
910	Z	-60.60	-60.60	0.00	Yes	100.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.25	0.00
wl1	wind load out	No	0.00	0.00	0.00
wl2	Wind Load in	No	0.00	0.00	0.00
c1	DL+0.6wl1	Yes	0.00	0.00	0.00
c2	DL+0.6wl2	Yes	0.00	0.00	0.00
c3	0.6DL+0.6wl2	Yes	0.00	0.00	0.00
c4	0.6DL+0.6wl2	Yes	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
wl1	0.00	0.00	0.00
wl2	0.00	0.00	0.00
c1	0.00	0.00	0.00
c2	0.00	0.00	0.00
c3	0.00	0.00	0.00
c4	0.00	0.00	0.00

Glossary

Comb : Indicates if load condition is a load combination

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:49 PM

Project: Closed
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Steel Code Check
Summary - Group by description

Load conditions to be included in design :

c1=DL+0.6wl1
c2=DL+0.6wl2
c3=0.6DL+0.6wl2
c4=0.6DL+0.6wl2

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
Bottom Horizontal	*HSS_RECT 4X2X1_8*	**307**	c2 at 0.00%	0.12	OK	
C Girt	*aisiCS 4x2x059*	**814**	c1 at 50.00%	0.41	OK	Eq. H1.1-2
Column	*W 6X20*	**501**	c1 at 100.00%	0.31	OK	
Exterior Conn Tube	*HSS_RECT 4X3X3_16*	**651**	c1 at 0.00%	0.27	OK	
Interior Vertical	*HSS_SQR 4X4X3_16*	**860**	c1 at 100.00%	0.47	OK	
Pivot Pin	*RndBar 1-1_2*	**510**	c1 at 100.00%	0.60	OK	
Rigid Link	*HSS_SQR 3X3X3_16*	**763**	c1 at 100.00%	0.43	OK	
Side Vertical	*HSS_RECT 6X4X3_16*	**771**	c1 at 100.00%	0.48	OK	
Top Horizontal	*HSS_RECT 6X2X1_8*	**383**	c1 at 100.00%	0.29	OK	
Truss Bottom Chord	*HSS_SQR 3X3X1_8*	**917**	c1 at 100.00%	**0.63**	**OK**	
Truss Top Chord	*HSS_SQR 3X3X3_16*	**627**	c1 at 100.00%	0.56	OK	
Truss Vertical Web	*HSS_SQR 3X3X1_8*	**675**	c2 at 0.00%	0.26	OK	
Truss Web	*L 2X2X1_8*	**864**	c1 at 50.00%	0.56	OK	
Tube Girt	*HSS_RECT 4X2X3_16*	**849**	c1 at 50.00%	0.55	OK	
Upper Pin	*RndBar 1-1_4*	**511**	c1 at 100.00%	0.07	OK	

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:43 PM

Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Geometry data

Nodes

Node	X [in]	Y [in]	Z [in]	Rigid Floor
1	2.00	1.00	0.00	0
4	142.50	1.00	0.00	0
11	499.00	1.00	0.00	0
81	2.00	150.00	0.00	0
84	142.50	150.00	0.00	0
91	499.00	150.00	0.00	0
244	250.50	68.00	21.50	0
245	358.50	68.00	21.50	0
3	34.50	1.00	0.00	0
83	34.50	150.00	0.00	0
85	250.50	150.00	0.00	0
5	250.50	1.00	0.00	0
243	142.50	68.00	21.50	0
86	358.50	150.00	0.00	0
6	358.50	1.00	0.00	0
87	466.50	150.00	0.00	0
7	466.50	1.00	0.00	0
246	466.50	68.00	21.50	0
242	34.50	68.00	21.50	0
211	499.00	68.00	6.50	0
207	466.50	68.00	6.50	0
206	358.50	68.00	6.50	0
205	250.50	68.00	6.50	0
204	142.50	68.00	6.50	0
203	34.50	68.00	6.50	0
201	2.00	68.00	6.50	0
105	505.50	0.00	0.00	0
106	505.50	86.00	0.00	0
107	505.50	133.00	0.00	0
108	505.50	169.00	0.00	0
101	-4.50	0.00	0.00	0
102	-4.50	86.00	0.00	0
103	-4.50	133.00	0.00	0
104	-4.50	169.00	0.00	0
250	70.50	68.00	21.50	0
252	160.50	68.00	6.50	0
253	214.50	68.00	21.50	0
254	286.50	68.00	21.50	0
255	304.50	68.00	6.50	0
256	376.50	68.00	6.50	0
257	430.50	68.00	21.50	0
267	2.00	68.00	0.00	0
268	499.00	68.00	0.00	0
270	34.50	68.00	0.00	0
271	142.50	68.00	0.00	0
272	250.50	68.00	0.00	0
273	358.50	68.00	0.00	0

274	466.50	68.00	0.00	0
294	2.00	107.00	0.00	0
302	499.00	107.00	0.00	0
304	34.50	107.00	0.00	0
305	142.50	107.00	0.00	0
306	250.50	107.00	0.00	0
307	358.50	107.00	0.00	0
308	466.50	107.00	0.00	0
310	2.00	86.00	0.00	0
311	499.00	86.00	0.00	0
326	52.50	68.00	6.50	0
337	2.00	62.00	0.00	0
338	499.00	62.00	0.00	0
339	34.50	62.00	0.00	0
340	142.50	62.00	0.00	0
341	250.50	62.00	0.00	0
342	358.50	62.00	0.00	0
343	466.50	62.00	0.00	0
344	106.50	68.00	21.50	0
345	88.50	68.00	6.50	0
349	178.50	68.00	21.50	0
350	196.50	68.00	6.50	0
352	268.50	68.00	6.50	0
353	322.50	68.00	21.50	0
356	394.50	68.00	21.50	0
357	412.50	68.00	6.50	0
362	2.00	31.00	0.00	0
363	34.50	31.00	0.00	0
364	142.50	31.00	0.00	0
365	250.50	31.00	0.00	0
366	358.50	31.00	0.00	0
367	466.50	31.00	0.00	0
368	499.00	31.00	0.00	0
370	124.50	68.00	6.50	0
371	232.50	68.00	6.50	0
372	340.50	68.00	6.50	0
373	448.50	68.00	6.50	0
374	2.00	133.00	0.00	0
375	499.00	133.00	0.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
105	1	1	1	0	0	0
108	1	0	1	0	0	0
101	1	1	1	0	0	0
104	1	0	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
923	5	81	Cable brace	RndBar 1_4	A1045	0.00	0.00	0.00
381	81	83	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
385	85	86	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
302	1	3	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
305	5	6	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
402	1	362	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
442	11	368	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
679	206	245	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
724	326	242	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
621	201	242	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
416	364	340	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
445	268	311	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
634	246	211	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
628	244	254	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
725	326	250	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
303	3	4	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
383	83	84	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
384	84	85	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
304	4	5	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
390	87	91	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
413	270	304	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
626	243	349	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
675	204	243	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
444	338	268	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
386	86	87	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
306	6	7	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
307	7	11	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
630	245	356	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
624	242	250	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
661	268	211	Exterior Conn Tube	HSS_RECT 4X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
651	267	201	Exterior Conn Tube	HSS_RECT 4X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
612	207	211	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
610	206	256	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
608	205	352	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
606	204	252	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
604	203	326	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
602	201	203	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
503	103	104	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
502	102	103	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
501	101	102	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
506	107	108	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
505	106	107	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
504	105	106	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
510	102	310	Pivot Pin	RndBar 1-1_2	A1045	0.00	0.00	0.00
511	103	374	Upper Pin	RndBar 1-1_4	A1045	0.00	0.00	0.00
513	375	107	Upper Pin	RndBar 1-1_4	A1045	0.00	0.00	0.00
512	311	106	Pivot Pin	RndBar 1-1_2	A1045	0.00	0.00	0.00
674	203	242	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
678	205	244	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
682	207	246	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
625	250	344	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
607	252	350	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
627	253	244	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
629	254	353	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
609	255	372	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
611	256	357	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
631	257	246	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
727	370	243	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
729	252	243	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
730	252	349	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
731	371	244	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
732	352	244	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00

733	255	353	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
735	256	356	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
736	357	356	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
738	373	246	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
740	3	363	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
753	267	310	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
757	271	305	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
763	270	203	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
764	271	204	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
765	272	205	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
766	273	206	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
767	274	207	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
771	337	267	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
793	272	306	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
795	273	307	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
796	274	308	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
803	294	374	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
805	304	83	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
806	305	84	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
807	306	85	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
808	307	86	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
809	308	87	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
811	302	375	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
813	294	304	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
814	304	305	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
815	305	306	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
816	306	307	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
817	307	308	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
819	308	302	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
820	310	294	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
821	311	302	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
840	326	345	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
846	337	339	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
847	339	340	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
848	340	341	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
849	341	342	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
850	342	343	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
851	343	338	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
853	4	364	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
854	5	365	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
855	6	366	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
856	7	367	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
857	339	270	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
858	340	271	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
859	341	272	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
860	342	273	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
861	343	274	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
862	344	243	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
863	345	370	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
864	345	250	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
866	345	344	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
871	344	370	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
872	349	253	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
873	350	371	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
875	350	349	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
876	350	253	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
877	253	371	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
878	352	255	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
879	353	245	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
881	352	254	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
882	255	254	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
884	372	353	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00

886	356	257	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
887	372	245	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
888	256	245	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
889	357	373	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
891	357	257	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
892	373	257	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
898	362	337	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
899	363	339	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
901	365	341	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
902	366	342	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
903	367	343	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
904	368	338	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
905	362	363	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
906	363	364	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
907	364	365	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
908	365	366	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
909	366	367	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
910	367	368	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
917	370	204	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
918	371	205	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
919	372	206	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
920	373	207	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
921	374	81	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
922	375	91	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
924	5	91	Cable brace	RndBar 1_4	A1045	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
381	90.00	0	0.00	0.00	0.00
385	90.00	0	0.00	0.00	0.00
302	90.00	0	0.00	0.00	0.00
305	90.00	0	0.00	0.00	0.00
402	90.00	0	0.00	0.00	0.00
442	90.00	0	0.00	0.00	0.00
724	90.00	0	0.00	0.00	0.00
416	90.00	0	0.00	0.00	0.00
445	90.00	0	0.00	0.00	0.00
725	90.00	0	0.00	0.00	0.00
303	90.00	0	0.00	0.00	0.00
383	90.00	0	0.00	0.00	0.00
384	90.00	0	0.00	0.00	0.00
304	90.00	0	0.00	0.00	0.00
390	90.00	0	0.00	0.00	0.00
413	90.00	0	0.00	0.00	0.00
444	90.00	0	0.00	0.00	0.00
386	90.00	0	0.00	0.00	0.00
306	90.00	0	0.00	0.00	0.00
307	90.00	0	0.00	0.00	0.00
661	90.00	0	0.00	0.00	0.00
651	90.00	0	0.00	0.00	0.00
503	90.00	0	0.00	0.00	0.00
502	90.00	0	0.00	0.00	0.00
501	90.00	0	0.00	0.00	0.00
506	90.00	0	0.00	0.00	0.00
505	90.00	0	0.00	0.00	0.00
504	90.00	0	0.00	0.00	0.00

727	90.00	0	0.00	0.00	0.00
729	90.00	0	0.00	0.00	0.00
730	90.00	0	0.00	0.00	0.00
731	90.00	0	0.00	0.00	0.00
732	90.00	0	0.00	0.00	0.00
733	90.00	0	0.00	0.00	0.00
735	90.00	0	0.00	0.00	0.00
736	90.00	0	0.00	0.00	0.00
738	90.00	0	0.00	0.00	0.00
740	90.00	0	0.00	0.00	0.00
753	90.00	0	0.00	0.00	0.00
757	90.00	0	0.00	0.00	0.00
771	90.00	0	0.00	0.00	0.00
793	90.00	0	0.00	0.00	0.00
795	90.00	0	0.00	0.00	0.00
796	90.00	0	0.00	0.00	0.00
803	90.00	0	0.00	0.00	0.00
805	90.00	0	0.00	0.00	0.00
806	90.00	0	0.00	0.00	0.00
807	90.00	0	0.00	0.00	0.00
808	90.00	0	0.00	0.00	0.00
809	90.00	0	0.00	0.00	0.00
811	90.00	0	0.00	0.00	0.00
813	90.00	0	0.00	0.00	0.00
814	90.00	0	0.00	0.00	0.00
815	90.00	0	0.00	0.00	0.00
816	90.00	0	0.00	0.00	0.00
817	90.00	0	0.00	0.00	0.00
819	90.00	0	0.00	0.00	0.00
820	90.00	0	0.00	0.00	0.00
821	90.00	0	0.00	0.00	0.00
846	90.00	0	0.00	0.00	0.00
847	90.00	0	0.00	0.00	0.00
848	90.00	0	0.00	0.00	0.00
849	90.00	0	0.00	0.00	0.00
850	90.00	0	0.00	0.00	0.00
851	90.00	0	0.00	0.00	0.00
853	90.00	0	0.00	0.00	0.00
854	90.00	0	0.00	0.00	0.00
855	90.00	0	0.00	0.00	0.00
856	90.00	0	0.00	0.00	0.00
857	90.00	0	0.00	0.00	0.00
858	90.00	0	0.00	0.00	0.00
859	90.00	0	0.00	0.00	0.00
860	90.00	0	0.00	0.00	0.00
861	90.00	0	0.00	0.00	0.00
864	90.00	0	0.00	0.00	0.00
866	90.00	0	0.00	0.00	0.00
871	90.00	0	0.00	0.00	0.00
875	90.00	0	0.00	0.00	0.00
876	90.00	0	0.00	0.00	0.00
877	90.00	0	0.00	0.00	0.00
881	90.00	0	0.00	0.00	0.00
882	90.00	0	0.00	0.00	0.00
884	90.00	0	0.00	0.00	0.00
887	90.00	0	0.00	0.00	0.00
888	90.00	0	0.00	0.00	0.00
891	90.00	0	0.00	0.00	0.00
892	90.00	0	0.00	0.00	0.00
898	90.00	0	0.00	0.00	0.00
899	90.00	0	0.00	0.00	0.00
901	90.00	0	0.00	0.00	0.00

902	90.00	0	0.00	0.00	0.00
903	90.00	0	0.00	0.00	0.00
904	90.00	0	0.00	0.00	0.00
905	90.00	0	0.00	0.00	0.00
906	90.00	0	0.00	0.00	0.00
907	90.00	0	0.00	0.00	0.00
908	90.00	0	0.00	0.00	0.00
909	90.00	0	0.00	0.00	0.00
910	90.00	0	0.00	0.00	0.00
921	90.00	0	0.00	0.00	0.00
922	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
923	0.00	0.00	-3.00	0.00	0.00	-3.00
302	0.00	0.00	-1.00	0.00	0.00	-1.00
305	0.00	0.00	-1.00	0.00	0.00	-1.00
416	0.00	0.00	-1.00	0.00	0.00	-1.00
303	0.00	0.00	-1.00	0.00	0.00	-1.00
304	0.00	0.00	-1.00	0.00	0.00	-1.00
413	0.00	0.00	-1.00	0.00	0.00	-1.00
306	0.00	0.00	-1.00	0.00	0.00	-1.00
307	0.00	0.00	-1.00	0.00	0.00	-1.00
661	0.00	0.00	3.00	0.00	0.00	-1.50
651	0.00	0.00	3.00	0.00	0.00	-1.50
510	3.00	0.00	0.00	-2.50	0.00	0.00
511	3.00	0.00	0.00	-2.50	0.00	0.00
513	2.50	0.00	0.00	-3.00	0.00	0.00
512	2.50	0.00	0.00	-3.00	0.00	0.00
740	0.00	0.00	-1.00	0.00	0.00	-1.00
757	0.00	0.00	-1.00	0.00	0.00	-1.00
763	0.00	0.00	1.00	0.00	0.00	-1.50
764	0.00	0.00	1.00	0.00	0.00	-1.50
765	0.00	0.00	1.00	0.00	0.00	-1.50
766	0.00	0.00	1.00	0.00	0.00	-1.50
767	0.00	0.00	1.00	0.00	0.00	-1.50
793	0.00	0.00	-1.00	0.00	0.00	-1.00
795	0.00	0.00	-1.00	0.00	0.00	-1.00
796	0.00	0.00	-1.00	0.00	0.00	-1.00
805	0.00	0.00	-1.00	0.00	0.00	-1.00
806	0.00	0.00	-1.00	0.00	0.00	-1.00
807	0.00	0.00	-1.00	0.00	0.00	-1.00
808	0.00	0.00	-1.00	0.00	0.00	-1.00
809	0.00	0.00	-1.00	0.00	0.00	-1.00
813	0.00	0.00	-1.00	0.00	0.00	-1.00
814	0.00	0.00	-1.00	0.00	0.00	-1.00
815	0.00	0.00	-1.00	0.00	0.00	-1.00
816	0.00	0.00	-1.00	0.00	0.00	-1.00
817	0.00	0.00	-1.00	0.00	0.00	-1.00
819	0.00	0.00	-1.00	0.00	0.00	-1.00
846	0.00	0.00	-1.00	0.00	0.00	-1.00
847	0.00	0.00	-1.00	0.00	0.00	-1.00
848	0.00	0.00	-1.00	0.00	0.00	-1.00
849	0.00	0.00	-1.00	0.00	0.00	-1.00
850	0.00	0.00	-1.00	0.00	0.00	-1.00
851	0.00	0.00	-1.00	0.00	0.00	-1.00

853	0.00	0.00	-1.00	0.00	0.00	-1.00
854	0.00	0.00	-1.00	0.00	0.00	-1.00
855	0.00	0.00	-1.00	0.00	0.00	-1.00
856	0.00	0.00	-1.00	0.00	0.00	-1.00
857	0.00	0.00	-1.00	0.00	0.00	-1.00
858	0.00	0.00	-1.00	0.00	0.00	-1.00
859	0.00	0.00	-1.00	0.00	0.00	-1.00
860	0.00	0.00	-1.00	0.00	0.00	-1.00
861	0.00	0.00	-1.00	0.00	0.00	-1.00
899	0.00	0.00	-1.00	0.00	0.00	-1.00
901	0.00	0.00	-1.00	0.00	0.00	-1.00
902	0.00	0.00	-1.00	0.00	0.00	-1.00
903	0.00	0.00	-1.00	0.00	0.00	-1.00
905	0.00	0.00	-1.00	0.00	0.00	-1.00
906	0.00	0.00	-1.00	0.00	0.00	-1.00
907	0.00	0.00	-1.00	0.00	0.00	-1.00
908	0.00	0.00	-1.00	0.00	0.00	-1.00
909	0.00	0.00	-1.00	0.00	0.00	-1.00
910	0.00	0.00	-1.00	0.00	0.00	-1.00
924	0.00	0.00	-3.00	0.00	0.00	-3.00

Hinges

	Node-J				Node-K						
Member	**M33**	**M22**	**V3**	**V2**	**M33**	**M22**	**V3**	**V2**	**TOR**	**AXL**	**Axial rigidity**
923	0	0	0	0	0	0	0	0	0	0	Tension only
381	1	1	0	0	0	0	0	0	0	0	Full
302	1	1	0	0	0	0	0	0	0	0	Full
724	1	1	0	0	1	1	0	0	0	0	Full
725	1	1	0	0	1	1	0	0	0	0	Full
390	0	0	0	0	1	1	0	0	0	0	Full
307	0	0	0	0	1	1	0	0	0	0	Full
661	0	0	0	0	0	1	0	0	0	0	Full
651	0	0	0	0	0	1	0	0	0	0	Full
510	0	0	0	0	0	0	0	0	1	0	Full
511	1	1	0	1	0	0	0	0	1	1	Full
513	0	0	0	0	1	1	0	1	1	1	Full
512	0	0	0	0	0	0	0	0	1	0	Full
727	1	1	0	0	1	1	0	0	0	0	Full
729	1	1	0	0	1	1	0	0	0	0	Full
730	1	1	0	0	1	1	0	0	0	0	Full
731	1	1	0	0	1	1	0	0	0	0	Full
732	1	1	0	0	1	1	0	0	0	0	Full
733	1	1	0	0	1	1	0	0	0	0	Full
735	1	1	0	0	1	1	0	0	0	0	Full
736	1	1	0	0	1	1	0	0	0	0	Full
738	1	1	0	0	1	1	0	0	0	0	Full
740	1	1	0	0	0	0	0	0	0	0	Full
805	0	0	0	0	1	1	0	0	0	0	Full
806	0	0	0	0	1	1	0	0	0	0	Full
807	0	0	0	0	1	1	0	0	0	0	Full
808	0	0	0	0	1	1	0	0	0	0	Full
809	0	0	0	0	1	1	0	0	0	0	Full
813	1	1	0	0	1	1	0	0	0	1	Full
814	1	1	0	0	1	1	0	0	0	1	Full
815	1	1	0	0	1	1	0	0	0	1	Full
816	1	1	0	0	1	1	0	0	0	1	Full

817	1	1	0	0	1	1	0	0	0	1	Full
819	1	1	0	0	1	1	0	0	0	1	Full
846	1	1	0	0	1	1	0	0	0	0	Full
847	1	1	0	0	1	1	0	0	0	0	Full
848	1	1	0	0	1	1	0	0	0	0	Full
849	1	1	0	0	1	1	0	0	0	0	Full
850	1	1	0	0	1	1	0	0	0	0	Full
851	1	1	0	0	1	1	0	0	0	0	Full
853	1	1	0	0	0	0	0	0	0	0	Full
854	1	1	0	0	0	0	0	0	0	0	Full
855	1	1	0	0	0	0	0	0	0	0	Full
856	1	1	0	0	0	0	0	0	0	0	Full
864	1	1	0	0	1	1	0	0	0	0	Full
866	1	1	0	0	1	1	0	0	0	0	Full
871	1	1	0	0	1	1	0	0	0	0	Full
875	1	1	0	0	1	1	0	0	0	0	Full
876	1	1	0	0	1	1	0	0	0	0	Full
877	1	1	0	0	1	1	0	0	0	0	Full
881	1	1	0	0	1	1	0	0	0	0	Full
882	1	1	0	0	1	1	0	0	0	0	Full
884	1	1	0	0	1	1	0	0	0	0	Full
887	1	1	0	0	1	1	0	0	0	0	Full
888	1	1	0	0	1	1	0	0	0	0	Full
891	1	1	0	0	1	1	0	0	0	0	Full
892	1	1	0	0	1	1	0	0	0	0	Full
905	1	1	0	0	1	1	0	0	0	1	Full
906	1	1	0	0	1	1	0	0	0	1	Full
907	1	1	0	0	1	1	0	0	0	1	Full
908	1	1	0	0	1	1	0	0	0	1	Full
909	1	1	0	0	1	1	0	0	0	1	Full
910	1	1	0	0	1	1	0	0	0	1	Full
924	0	0	0	0	0	0	0	0	0	0	Tension only

Glossary

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y

TZ : Translation in Z

Integrity Structural Engineering, PLLC

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Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Load data

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
wl1	wind load out	No	WIND
wl2	Wind Load in	No	WIND
c1	DL+0.6wl1	Yes	
c2	DL+0.6wl2	Yes	
c3	0.6DL+0.6wl2	Yes	
c4	0.6DL+0.6wl2	Yes	

Distributed force on members

Condition	Member	Dir1	Val1 [Lb/ft]	Val2 [Lb/ft]	Dist1 [in]	%	Dist2 [in]	%
wl1	381	Z	11.40	11.40	0.00	Yes	100.00	Yes
	385	Z	11.40	11.40	0.00	Yes	100.00	Yes
	302	Z	8.10	8.10	0.00	Yes	100.00	Yes
	305	Z	8.10	8.10	0.00	Yes	100.00	Yes
	303	Z	8.10	8.10	0.00	Yes	100.00	Yes
	383	Z	11.40	11.40	0.00	Yes	100.00	Yes
	384	Z	11.40	11.40	0.00	Yes	100.00	Yes
	304	Z	8.10	8.10	0.00	Yes	100.00	Yes
	390	Z	11.40	11.40	0.00	Yes	100.00	Yes
	386	Z	11.40	11.40	0.00	Yes	100.00	Yes
	306	Z	8.10	8.10	0.00	Yes	100.00	Yes
	307	Z	8.10	8.10	0.00	Yes	100.00	Yes
	813	Z	23.10	23.10	0.00	Yes	100.00	Yes
	814	Z	23.10	23.10	0.00	Yes	100.00	Yes
	815	Z	23.10	23.10	0.00	Yes	100.00	Yes
	816	Z	23.10	23.10	0.00	Yes	100.00	Yes
	817	Z	23.10	23.10	0.00	Yes	100.00	Yes
	819	Z	23.10	23.10	0.00	Yes	100.00	Yes
	846	Z	19.80	19.80	0.00	Yes	100.00	Yes
	847	Z	19.80	19.80	0.00	Yes	100.00	Yes
	848	Z	19.80	19.80	0.00	Yes	100.00	Yes
	849	Z	19.80	19.80	0.00	Yes	100.00	Yes
	850	Z	19.80	19.80	0.00	Yes	100.00	Yes
	851	Z	19.80	19.80	0.00	Yes	100.00	Yes
	905	Z	16.10	16.10	0.00	Yes	100.00	Yes
	906	Z	16.10	16.10	0.00	Yes	100.00	Yes
	907	Z	16.10	16.10	0.00	Yes	100.00	Yes
	908	Z	16.10	16.10	0.00	Yes	100.00	Yes
	909	Z	16.10	16.10	0.00	Yes	100.00	Yes
	910	Z	16.10	16.10	0.00	Yes	100.00	Yes
wl2	381	Z	-10.60	-10.60	0.00	Yes	100.00	Yes
	385	Z	-10.60	-10.60	0.00	Yes	100.00	Yes

302	Z	-7.50	-7.50	0.00	Yes	100.00	Yes
305	Z	-7.50	-7.50	0.00	Yes	100.00	Yes
303	Z	-7.50	-7.50	0.00	Yes	100.00	Yes
383	Z	-10.60	-10.60	0.00	Yes	100.00	Yes
384	Z	-10.60	-10.60	0.00	Yes	100.00	Yes
304	Z	-7.50	-7.50	0.00	Yes	100.00	Yes
390	Z	-10.60	-10.60	0.00	Yes	100.00	Yes
386	Z	-10.60	-10.60	0.00	Yes	100.00	Yes
306	Z	-7.50	-7.50	0.00	Yes	100.00	Yes
307	Z	-7.50	-7.50	0.00	Yes	100.00	Yes
813	Z	-21.40	-21.40	0.00	Yes	100.00	Yes
814	Z	-21.40	-21.40	0.00	Yes	100.00	Yes
815	Z	-21.40	-21.40	0.00	Yes	100.00	Yes
816	Z	-21.40	-21.40	0.00	Yes	100.00	Yes
817	Z	-21.40	-21.40	0.00	Yes	100.00	Yes
819	Z	-21.40	-21.40	0.00	Yes	100.00	Yes
846	Z	-18.30	-18.30	0.00	Yes	100.00	Yes
847	Z	-18.30	-18.30	0.00	Yes	100.00	Yes
848	Z	-18.30	-18.30	0.00	Yes	100.00	Yes
849	Z	-18.30	-18.30	0.00	Yes	100.00	Yes
850	Z	-18.30	-18.30	0.00	Yes	100.00	Yes
851	Z	-18.30	-18.30	0.00	Yes	100.00	Yes
905	Z	-14.90	-14.90	0.00	Yes	100.00	Yes
906	Z	-14.90	-14.90	0.00	Yes	100.00	Yes
907	Z	-14.90	-14.90	0.00	Yes	100.00	Yes
908	Z	-14.90	-14.90	0.00	Yes	100.00	Yes
909	Z	-14.90	-14.90	0.00	Yes	100.00	Yes
910	Z	-14.90	-14.90	0.00	Yes	100.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.25	0.00
wl1	wind load out	No	0.00	0.00	0.00
wl2	Wind Load in	No	0.00	0.00	0.00
c1	DL+0.6wl1	Yes	0.00	0.00	0.00
c2	DL+0.6wl2	Yes	0.00	0.00	0.00
c3	0.6DL+0.6wl2	Yes	0.00	0.00	0.00
c4	0.6DL+0.6wl2	Yes	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
wl1	0.00	0.00	0.00
wl2	0.00	0.00	0.00
c1	0.00	0.00	0.00
c2	0.00	0.00	0.00
c3	0.00	0.00	0.00
c4	0.00	0.00	0.00

Glossary

Comb : Indicates if load condition is a load combination

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Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Steel Code Check
Summary - Group by description

Load conditions to be included in design :

c1=DL+0.6wl1
c2=DL+0.6wl2
c3=0.6DL+0.6wl2
c4=0.6DL+0.6wl2

See page 66

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
Bottom Horizontal	*HSS_RECT 4X2X1_8*	**305**	c1 at 0.00%	0.12	OK	
C Girt	*aisiCS 4x2x059*	**814**	c1 at 50.00%	0.13	OK	Eq. H1.1-2
Cable brace	*RndBar 1_4*	**924**	c1 at 100.00%	**3.59**	**N.G.**	
Column	*W 6X20*	**504**	c2 at 100.00%	0.11	OK	
Exterior Conn Tube	*HSS_RECT 4X3X3_16*	**661**	c1 at 0.00%	0.08	OK	
Interior Vertical	*HSS_SQR 4X4X3_16*	**857**	c2 at 100.00%	0.20	OK	
Pivot Pin	*RndBar 1-1_2*	**510**	c1 at 0.00%	0.28	OK	
Rigid Link	*HSS_SQR 3X3X3_16*	**763**	c2 at 100.00%	0.16	OK	
Side Vertical	*HSS_RECT 6X4X3_16*	**821**	c1 at 0.00%	0.15	OK	
Top Horizontal	*HSS_RECT 6X2X1_8*	**385**	c1 at 0.00%	0.21	OK	
Truss Bottom Chord	*HSS_SQR 3X3X1_8*	**612**	c2 at 100.00%	0.41	OK	
Truss Top Chord	*HSS_SQR 3X3X3_16*	**862**	c1 at 100.00%	0.18	OK	
Truss Vertical Web	*HSS_SQR 3X3X1_8*	**674**	c2 at 0.00%	0.11	OK	
Truss Web	*L 2X2X1_8*	**864**	c1 at 50.00%	0.14	OK	
Tube Girt	*HSS_RECT 4X2X3_16*	**849**	c1 at 0.00%	0.10	OK	
Upper Pin	*RndBar 1-1_4*	**513**	c2 at 0.00%	0.03	OK	

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Project: Open
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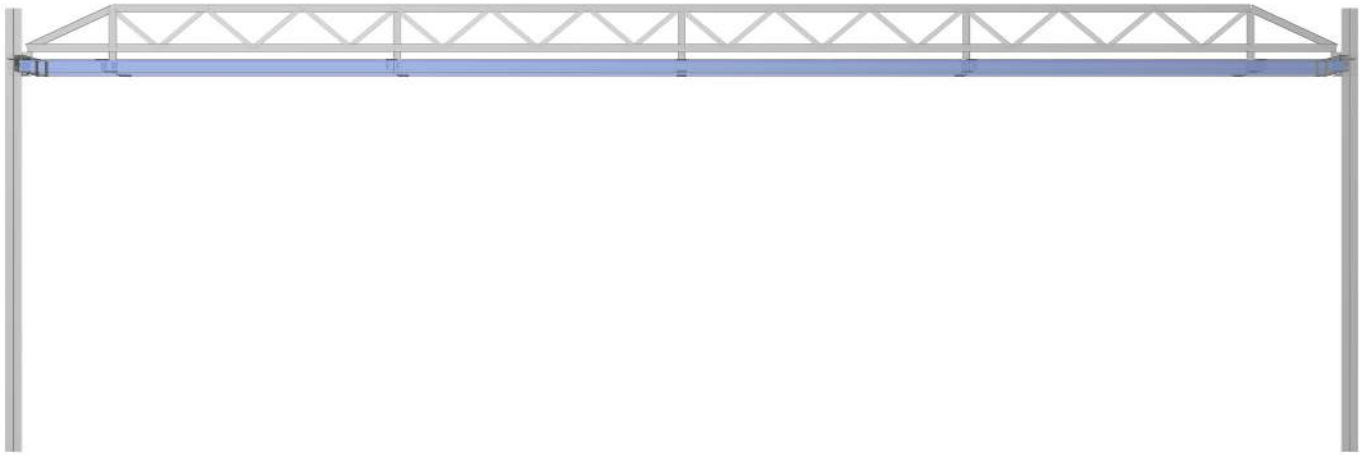
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



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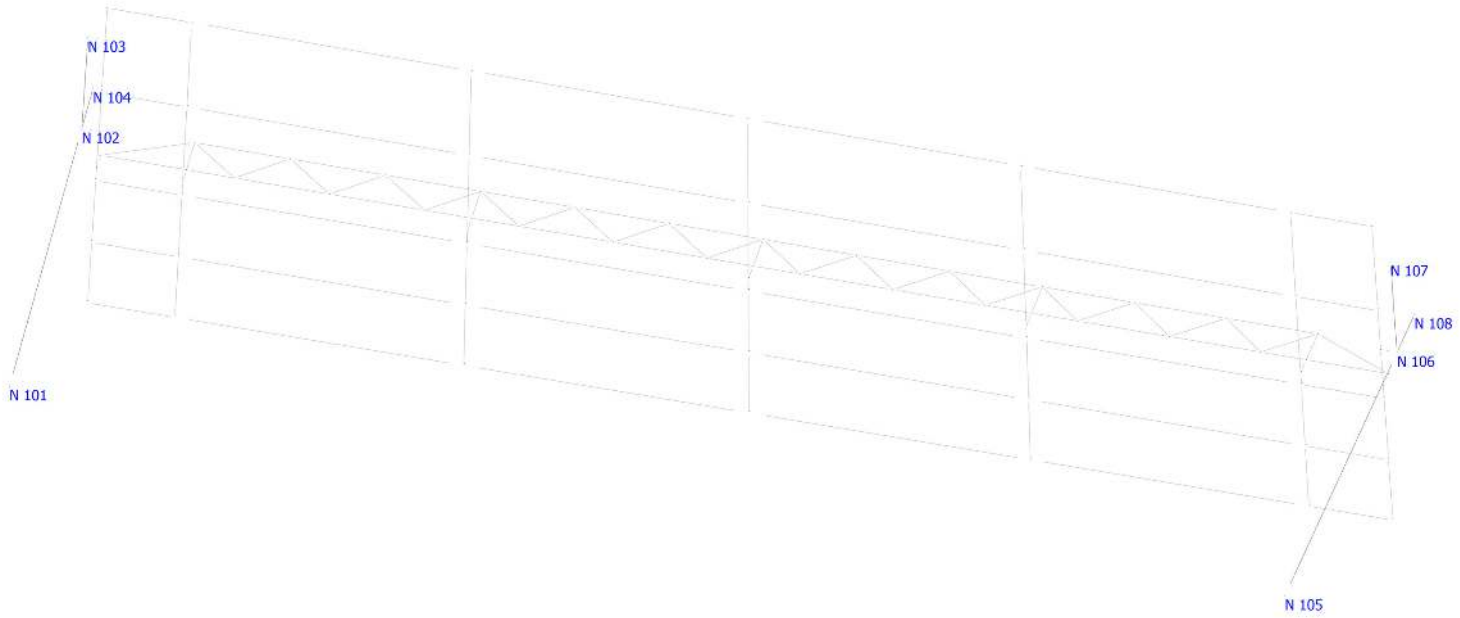
Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070



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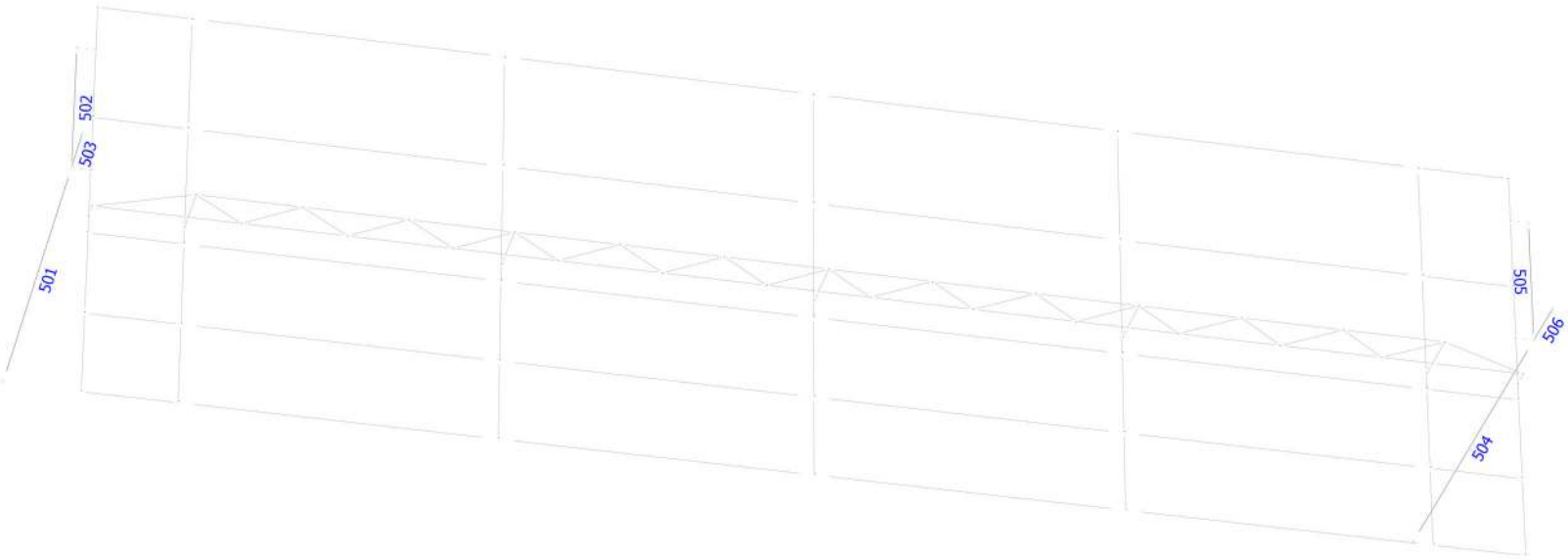
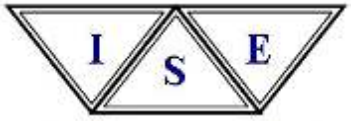
Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070





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Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Geometry data

Nodes

Node	X [in]	Y [in]	Z [in]	Rigid Floor
101	-4.50	86.00	0.00	0
1	2.00	1.00	147.00	0
4	142.50	1.00	147.00	0
11	499.00	1.00	147.00	0
81	2.00	150.00	147.00	0
84	142.50	150.00	147.00	0
91	499.00	150.00	147.00	0
244	250.50	68.00	168.50	0
245	358.50	68.00	168.50	0
3	34.50	1.00	147.00	0
83	34.50	150.00	147.00	0
85	250.50	150.00	147.00	0
5	250.50	1.00	147.00	0
243	142.50	68.00	168.50	0
86	358.50	150.00	147.00	0
6	358.50	1.00	147.00	0
87	466.50	150.00	147.00	0
7	466.50	1.00	147.00	0
246	466.50	68.00	168.50	0
242	34.50	68.00	168.50	0
211	499.00	68.00	153.50	0
207	466.50	68.00	153.50	0
206	358.50	68.00	153.50	0
205	250.50	68.00	153.50	0
204	142.50	68.00	153.50	0
203	34.50	68.00	153.50	0
201	2.00	68.00	153.50	0
105	505.50	86.00	0.00	0
106	505.50	86.00	147.00	0
107	505.50	133.00	147.00	0
108	505.50	86.00	169.00	0
102	-4.50	86.00	147.00	0
103	-4.50	133.00	147.00	0
104	-4.50	86.00	169.00	0
250	70.50	68.00	168.50	0
252	160.50	68.00	153.50	0
253	214.50	68.00	168.50	0
254	286.50	68.00	168.50	0
255	304.50	68.00	153.50	0
256	376.50	68.00	153.50	0
257	430.50	68.00	168.50	0
267	2.00	68.00	147.00	0
268	499.00	68.00	147.00	0
270	34.50	68.00	147.00	0
271	142.50	68.00	147.00	0
272	250.50	68.00	147.00	0
273	358.50	68.00	147.00	0

274	466.50	68.00	147.00	0
294	2.00	107.00	147.00	0
302	499.00	107.00	147.00	0
304	34.50	107.00	147.00	0
305	142.50	107.00	147.00	0
306	250.50	107.00	147.00	0
307	358.50	107.00	147.00	0
308	466.50	107.00	147.00	0
310	2.00	86.00	147.00	0
311	499.00	86.00	147.00	0
326	52.50	68.00	153.50	0
337	2.00	62.00	147.00	0
338	499.00	62.00	147.00	0
339	34.50	62.00	147.00	0
340	142.50	62.00	147.00	0
341	250.50	62.00	147.00	0
342	358.50	62.00	147.00	0
343	466.50	62.00	147.00	0
344	106.50	68.00	168.50	0
345	88.50	68.00	153.50	0
349	178.50	68.00	168.50	0
350	196.50	68.00	153.50	0
352	268.50	68.00	153.50	0
353	322.50	68.00	168.50	0
356	394.50	68.00	168.50	0
357	412.50	68.00	153.50	0
362	2.00	31.00	147.00	0
363	34.50	31.00	147.00	0
364	142.50	31.00	147.00	0
365	250.50	31.00	147.00	0
366	358.50	31.00	147.00	0
367	466.50	31.00	147.00	0
368	499.00	31.00	147.00	0
370	124.50	68.00	153.50	0
371	232.50	68.00	153.50	0
372	340.50	68.00	153.50	0
373	448.50	68.00	153.50	0
374	2.00	133.00	147.00	0
375	499.00	133.00	147.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
101	1	1	1	0	0	0
105	1	1	1	0	0	0
107	1	0	0	0	0	0
108	1	1	0	0	0	0
103	1	0	0	0	0	0
104	1	1	0	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
381	81	83	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
385	85	86	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
302	1	3	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
305	5	6	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
402	1	362	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
442	11	368	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
679	206	245	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
724	326	242	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
621	201	242	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
416	364	340	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
445	268	311	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
634	246	211	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
628	244	254	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
725	326	250	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
303	3	4	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
383	83	84	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
384	84	85	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
304	4	5	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
390	87	91	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
413	270	304	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
626	243	349	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
675	204	243	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
444	338	268	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
386	86	87	Top Horizontal	HSS_RECT 6X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
306	6	7	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
307	7	11	Bottom Horizontal	HSS_RECT 4X2X1_8	A500 GrB rectangular	0.00	0.00	0.00
630	245	356	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
624	242	250	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
661	268	211	Exterior Conn Tube	HSS_RECT 4X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
651	267	201	Exterior Conn Tube	HSS_RECT 4X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
612	207	211	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
610	206	256	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
608	205	352	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
606	204	252	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
604	203	326	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
602	201	203	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
503	102	104	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
502	102	103	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
501	101	102	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
506	106	108	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
505	106	107	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
504	105	106	Column	W 6X20	A992 Gr50	0.00	0.00	0.00
510	102	310	Pivot Pin	RndBar 1-1_2	A1045	0.00	0.00	0.00
511	103	374	Upper Pin	RndBar 1-1_4	A1045	0.00	0.00	0.00
513	375	107	Upper Pin	RndBar 1-1_4	A1045	0.00	0.00	0.00
512	311	106	Pivot Pin	RndBar 1-1_2	A1045	0.00	0.00	0.00
674	203	242	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
678	205	244	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
682	207	246	Truss Vertical Web	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
625	250	344	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
607	252	350	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
627	253	244	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
629	254	353	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
609	255	372	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
611	256	357	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
631	257	246	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
727	370	243	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
729	252	243	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
730	252	349	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
731	371	244	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
732	352	244	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
733	255	353	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00

735	256	356	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
736	357	356	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
738	373	246	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
740	3	363	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
753	267	310	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
757	271	305	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
763	270	203	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
764	271	204	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
765	272	205	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
766	273	206	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
767	274	207	Rigid Link	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
771	337	267	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
793	272	306	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
795	273	307	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
796	274	308	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
803	294	374	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
805	304	83	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
806	305	84	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
807	306	85	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
808	307	86	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
809	308	87	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
811	302	375	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
813	294	304	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
814	304	305	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
815	305	306	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
816	306	307	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
817	307	308	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
819	308	302	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
820	310	294	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
821	311	302	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
840	326	345	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
846	337	339	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
847	339	340	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
848	340	341	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
849	341	342	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
850	342	343	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
851	343	338	Tube Girt	HSS_RECT 4X2X3_16	A500 GrB rectangular	0.00	0.00	0.00
853	4	364	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
854	5	365	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
855	6	366	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
856	7	367	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
857	339	270	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
858	340	271	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
859	341	272	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
860	342	273	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
861	343	274	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
862	344	243	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
863	345	370	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
864	345	250	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
866	345	344	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
871	344	370	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
872	349	253	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
873	350	371	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
875	350	349	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
876	350	253	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
877	253	371	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
878	352	255	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
879	353	245	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00
881	352	254	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
882	255	254	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
884	372	353	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
886	356	257	Truss Top Chord	HSS_SQR 3X3X3_16	A500 GrB rectangular	0.00	0.00	0.00

887	372	245	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
888	256	245	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
889	357	373	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
891	357	257	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
892	373	257	Truss Web	L 2X2X1_8	A36	0.00	0.00	0.00
898	362	337	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
899	363	339	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
901	365	341	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
902	366	342	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
903	367	343	Interior Vertical	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
904	368	338	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
905	362	363	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
906	363	364	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
907	364	365	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
908	365	366	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
909	366	367	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
910	367	368	C Girt	aisiCS 4x2x059	A570 Gr50 cold form	0.00	0.00	0.00
917	370	204	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
918	371	205	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
919	372	206	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
920	373	207	Truss Bottom Chord	HSS_SQR 3X3X1_8	A500 GrB rectangular	0.00	0.00	0.00
921	374	81	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
922	375	91	Side Vertical	HSS_RECT 6X4X3_16	A500 GrB rectangular	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
381	90.00	0	0.00	0.00	0.00
385	90.00	0	0.00	0.00	0.00
302	90.00	0	0.00	0.00	0.00
305	90.00	0	0.00	0.00	0.00
402	90.00	0	0.00	0.00	0.00
442	90.00	0	0.00	0.00	0.00
724	90.00	0	0.00	0.00	0.00
416	90.00	0	0.00	0.00	0.00
445	90.00	0	0.00	0.00	0.00
725	90.00	0	0.00	0.00	0.00
303	90.00	0	0.00	0.00	0.00
383	90.00	0	0.00	0.00	0.00
384	90.00	0	0.00	0.00	0.00
304	90.00	0	0.00	0.00	0.00
390	90.00	0	0.00	0.00	0.00
413	90.00	0	0.00	0.00	0.00
444	90.00	0	0.00	0.00	0.00
386	90.00	0	0.00	0.00	0.00
306	90.00	0	0.00	0.00	0.00
307	90.00	0	0.00	0.00	0.00
661	90.00	0	0.00	0.00	0.00
651	90.00	0	0.00	0.00	0.00
502	90.00	0	0.00	0.00	0.00
505	90.00	0	0.00	0.00	0.00
727	90.00	0	0.00	0.00	0.00
729	90.00	0	0.00	0.00	0.00
730	90.00	0	0.00	0.00	0.00
731	90.00	0	0.00	0.00	0.00
732	90.00	0	0.00	0.00	0.00
733	90.00	0	0.00	0.00	0.00

735	90.00	0	0.00	0.00	0.00
736	90.00	0	0.00	0.00	0.00
738	90.00	0	0.00	0.00	0.00
740	90.00	0	0.00	0.00	0.00
753	90.00	0	0.00	0.00	0.00
757	90.00	0	0.00	0.00	0.00
771	90.00	0	0.00	0.00	0.00
793	90.00	0	0.00	0.00	0.00
795	90.00	0	0.00	0.00	0.00
796	90.00	0	0.00	0.00	0.00
803	90.00	0	0.00	0.00	0.00
805	90.00	0	0.00	0.00	0.00
806	90.00	0	0.00	0.00	0.00
807	90.00	0	0.00	0.00	0.00
808	90.00	0	0.00	0.00	0.00
809	90.00	0	0.00	0.00	0.00
811	90.00	0	0.00	0.00	0.00
813	90.00	0	0.00	0.00	0.00
814	90.00	0	0.00	0.00	0.00
815	90.00	0	0.00	0.00	0.00
816	90.00	0	0.00	0.00	0.00
817	90.00	0	0.00	0.00	0.00
819	90.00	0	0.00	0.00	0.00
820	90.00	0	0.00	0.00	0.00
821	90.00	0	0.00	0.00	0.00
846	90.00	0	0.00	0.00	0.00
847	90.00	0	0.00	0.00	0.00
848	90.00	0	0.00	0.00	0.00
849	90.00	0	0.00	0.00	0.00
850	90.00	0	0.00	0.00	0.00
851	90.00	0	0.00	0.00	0.00
853	90.00	0	0.00	0.00	0.00
854	90.00	0	0.00	0.00	0.00
855	90.00	0	0.00	0.00	0.00
856	90.00	0	0.00	0.00	0.00
857	90.00	0	0.00	0.00	0.00
858	90.00	0	0.00	0.00	0.00
859	90.00	0	0.00	0.00	0.00
860	90.00	0	0.00	0.00	0.00
861	90.00	0	0.00	0.00	0.00
864	90.00	0	0.00	0.00	0.00
866	90.00	0	0.00	0.00	0.00
871	90.00	0	0.00	0.00	0.00
875	90.00	0	0.00	0.00	0.00
876	90.00	0	0.00	0.00	0.00
877	90.00	0	0.00	0.00	0.00
881	90.00	0	0.00	0.00	0.00
882	90.00	0	0.00	0.00	0.00
884	90.00	0	0.00	0.00	0.00
887	90.00	0	0.00	0.00	0.00
888	90.00	0	0.00	0.00	0.00
891	90.00	0	0.00	0.00	0.00
892	90.00	0	0.00	0.00	0.00
898	90.00	0	0.00	0.00	0.00
899	90.00	0	0.00	0.00	0.00
901	90.00	0	0.00	0.00	0.00
902	90.00	0	0.00	0.00	0.00
903	90.00	0	0.00	0.00	0.00
904	90.00	0	0.00	0.00	0.00
905	90.00	0	0.00	0.00	0.00
906	90.00	0	0.00	0.00	0.00
907	90.00	0	0.00	0.00	0.00

908	90.00	0	0.00	0.00	0.00
909	90.00	0	0.00	0.00	0.00
910	90.00	0	0.00	0.00	0.00
921	90.00	0	0.00	0.00	0.00
922	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
302	0.00	0.00	-1.00	0.00	0.00	-1.00
305	0.00	0.00	-1.00	0.00	0.00	-1.00
416	0.00	0.00	-1.00	0.00	0.00	-1.00
303	0.00	0.00	-1.00	0.00	0.00	-1.00
304	0.00	0.00	-1.00	0.00	0.00	-1.00
413	0.00	0.00	-1.00	0.00	0.00	-1.00
306	0.00	0.00	-1.00	0.00	0.00	-1.00
307	0.00	0.00	-1.00	0.00	0.00	-1.00
661	0.00	0.00	3.00	0.00	0.00	-1.50
651	0.00	0.00	3.00	0.00	0.00	-1.50
510	3.00	0.00	0.00	-2.50	0.00	0.00
511	3.00	0.00	0.00	-2.50	0.00	0.00
513	2.50	0.00	0.00	-3.00	0.00	0.00
512	2.50	0.00	0.00	-3.00	0.00	0.00
740	0.00	0.00	-1.00	0.00	0.00	-1.00
757	0.00	0.00	-1.00	0.00	0.00	-1.00
763	0.00	0.00	1.00	0.00	0.00	-1.50
764	0.00	0.00	1.00	0.00	0.00	-1.50
765	0.00	0.00	1.00	0.00	0.00	-1.50
766	0.00	0.00	1.00	0.00	0.00	-1.50
767	0.00	0.00	1.00	0.00	0.00	-1.50
793	0.00	0.00	-1.00	0.00	0.00	-1.00
795	0.00	0.00	-1.00	0.00	0.00	-1.00
796	0.00	0.00	-1.00	0.00	0.00	-1.00
805	0.00	0.00	-1.00	0.00	0.00	-1.00
806	0.00	0.00	-1.00	0.00	0.00	-1.00
807	0.00	0.00	-1.00	0.00	0.00	-1.00
808	0.00	0.00	-1.00	0.00	0.00	-1.00
809	0.00	0.00	-1.00	0.00	0.00	-1.00
813	0.00	0.00	-1.00	0.00	0.00	-1.00
814	0.00	0.00	-1.00	0.00	0.00	-1.00
815	0.00	0.00	-1.00	0.00	0.00	-1.00
816	0.00	0.00	-1.00	0.00	0.00	-1.00
817	0.00	0.00	-1.00	0.00	0.00	-1.00
819	0.00	0.00	-1.00	0.00	0.00	-1.00
846	0.00	0.00	-1.00	0.00	0.00	-1.00
847	0.00	0.00	-1.00	0.00	0.00	-1.00
848	0.00	0.00	-1.00	0.00	0.00	-1.00
849	0.00	0.00	-1.00	0.00	0.00	-1.00
850	0.00	0.00	-1.00	0.00	0.00	-1.00
851	0.00	0.00	-1.00	0.00	0.00	-1.00
853	0.00	0.00	-1.00	0.00	0.00	-1.00
854	0.00	0.00	-1.00	0.00	0.00	-1.00
855	0.00	0.00	-1.00	0.00	0.00	-1.00
856	0.00	0.00	-1.00	0.00	0.00	-1.00
857	0.00	0.00	-1.00	0.00	0.00	-1.00
858	0.00	0.00	-1.00	0.00	0.00	-1.00
859	0.00	0.00	-1.00	0.00	0.00	-1.00

860	0.00	0.00	-1.00	0.00	0.00	-1.00
861	0.00	0.00	-1.00	0.00	0.00	-1.00
899	0.00	0.00	-1.00	0.00	0.00	-1.00
901	0.00	0.00	-1.00	0.00	0.00	-1.00
902	0.00	0.00	-1.00	0.00	0.00	-1.00
903	0.00	0.00	-1.00	0.00	0.00	-1.00
905	0.00	0.00	-1.00	0.00	0.00	-1.00
906	0.00	0.00	-1.00	0.00	0.00	-1.00
907	0.00	0.00	-1.00	0.00	0.00	-1.00
908	0.00	0.00	-1.00	0.00	0.00	-1.00
909	0.00	0.00	-1.00	0.00	0.00	-1.00
910	0.00	0.00	-1.00	0.00	0.00	-1.00

Hinges

	Node-J				Node-K						
Member	**M33**	**M22**	**V3**	**V2**	**M33**	**M22**	**V3**	**V2**	**TOR**	**AXL**	**Axial rigidity**
381	1	1	0	0	0	0	0	0	0	0	Full
302	1	1	0	0	0	0	0	0	0	0	Full
724	1	1	0	0	1	1	0	0	0	0	Full
725	1	1	0	0	1	1	0	0	0	0	Full
390	0	0	0	0	1	1	0	0	0	0	Full
307	0	0	0	0	1	1	0	0	0	0	Full
661	0	0	0	0	0	1	0	0	0	0	Full
651	0	0	0	0	0	1	0	0	0	0	Full
510	0	0	0	0	0	0	0	0	1	0	Full
511	1	0	0	1	0	0	0	0	1	1	Full
513	0	0	0	0	1	0	0	1	1	1	Full
512	0	0	0	0	0	0	0	0	1	0	Full
727	1	1	0	0	1	1	0	0	0	0	Full
729	1	1	0	0	1	1	0	0	0	0	Full
730	1	1	0	0	1	1	0	0	0	0	Full
731	1	1	0	0	1	1	0	0	0	0	Full
732	1	1	0	0	1	1	0	0	0	0	Full
733	1	1	0	0	1	1	0	0	0	0	Full
735	1	1	0	0	1	1	0	0	0	0	Full
736	1	1	0	0	1	1	0	0	0	0	Full
738	1	1	0	0	1	1	0	0	0	0	Full
740	1	1	0	0	0	0	0	0	0	0	Full
805	0	0	0	0	1	1	0	0	0	0	Full
806	0	0	0	0	1	1	0	0	0	0	Full
807	0	0	0	0	1	1	0	0	0	0	Full
808	0	0	0	0	1	1	0	0	0	0	Full
809	0	0	0	0	1	1	0	0	0	0	Full
813	1	1	0	0	1	1	0	0	0	1	Full
814	1	1	0	0	1	1	0	0	0	1	Full
815	1	1	0	0	1	1	0	0	0	1	Full
816	1	1	0	0	1	1	0	0	0	1	Full
817	1	1	0	0	1	1	0	0	0	1	Full
819	1	1	0	0	1	1	0	0	0	1	Full
846	1	1	0	0	1	1	0	0	0	0	Full
847	1	1	0	0	1	1	0	0	0	0	Full
848	1	1	0	0	1	1	0	0	0	0	Full
849	1	1	0	0	1	1	0	0	0	0	Full
850	1	1	0	0	1	1	0	0	0	0	Full
851	1	1	0	0	1	1	0	0	0	0	Full
853	1	1	0	0	0	0	0	0	0	0	Full

854	1	1	0	0	0	0	0	0	0	0	Full
855	1	1	0	0	0	0	0	0	0	0	Full
856	1	1	0	0	0	0	0	0	0	0	Full
864	1	1	0	0	1	1	0	0	0	0	Full
866	1	1	0	0	1	1	0	0	0	0	Full
871	1	1	0	0	1	1	0	0	0	0	Full
875	1	1	0	0	1	1	0	0	0	0	Full
876	1	1	0	0	1	1	0	0	0	0	Full
877	1	1	0	0	1	1	0	0	0	0	Full
881	1	1	0	0	1	1	0	0	0	0	Full
882	1	1	0	0	1	1	0	0	0	0	Full
884	1	1	0	0	1	1	0	0	0	0	Full
887	1	1	0	0	1	1	0	0	0	0	Full
888	1	1	0	0	1	1	0	0	0	0	Full
891	1	1	0	0	1	1	0	0	0	0	Full
892	1	1	0	0	1	1	0	0	0	0	Full
905	1	1	0	0	1	1	0	0	0	1	Full
906	1	1	0	0	1	1	0	0	0	1	Full
907	1	1	0	0	1	1	0	0	0	1	Full
908	1	1	0	0	1	1	0	0	0	1	Full
909	1	1	0	0	1	1	0	0	0	1	Full
910	1	1	0	0	1	1	0	0	0	1	Full

Glossary

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:20 PM

Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Load data

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
wl1	wind load out	No	WIND
wl2	Wind Load in	No	WIND
c1	DL+0.6wl1	Yes	
c2	DL+0.6wl2	Yes	
c3	0.6DL+0.6wl2	Yes	
c4	0.6DL+0.6wl2	Yes	

Distributed force on members

Condition	Member	Dir1	Val1 [Lb/ft]	Val2 [Lb/ft]	Dist1 [in]	%	Dist2 [in]	%
wl1	302	Z	6.60	6.60	0.00	Yes	100.00	Yes
	305	Z	6.60	6.60	0.00	Yes	100.00	Yes
	303	Z	6.60	6.60	0.00	Yes	100.00	Yes
	304	Z	6.60	6.60	0.00	Yes	100.00	Yes
	306	Z	6.60	6.60	0.00	Yes	100.00	Yes
	307	Z	6.60	6.60	0.00	Yes	100.00	Yes
	846	Z	6.60	6.60	0.00	Yes	100.00	Yes
	847	Z	6.60	6.60	0.00	Yes	100.00	Yes
	848	Z	6.60	6.60	0.00	Yes	100.00	Yes
	849	Z	6.60	6.60	0.00	Yes	100.00	Yes
	850	Z	6.60	6.60	0.00	Yes	100.00	Yes
	851	Z	6.60	6.60	0.00	Yes	100.00	Yes
	905	Z	13.10	13.10	0.00	Yes	100.00	Yes
	906	Z	13.10	13.10	0.00	Yes	100.00	Yes
	907	Z	13.10	13.10	0.00	Yes	100.00	Yes
	908	Z	13.10	13.10	0.00	Yes	100.00	Yes
	909	Z	13.10	13.10	0.00	Yes	100.00	Yes
	910	Z	13.10	13.10	0.00	Yes	100.00	Yes
wl2	302	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	305	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	303	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	304	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	306	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	307	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	846	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	847	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	848	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	849	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	850	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	851	Z	-3.60	-3.60	0.00	Yes	100.00	Yes
	905	Z	-7.20	-7.20	0.00	Yes	100.00	Yes
	906	Z	-7.20	-7.20	0.00	Yes	100.00	Yes

907	Z	-7.20	-7.20	0.00	Yes	100.00	Yes
908	Z	-7.20	-7.20	0.00	Yes	100.00	Yes
909	Z	-7.20	-7.20	0.00	Yes	100.00	Yes
910	Z	-7.20	-7.20	0.00	Yes	100.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	0.00	-1.25
wl1	wind load out	No	0.00	0.00	0.00
wl2	Wind Load in	No	0.00	0.00	0.00
c1	DL+0.6wl1	Yes	0.00	0.00	0.00
c2	DL+0.6wl2	Yes	0.00	0.00	0.00
c3	0.6DL+0.6wl2	Yes	0.00	0.00	0.00
c4	0.6DL+0.6wl2	Yes	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
wl1	0.00	0.00	0.00
wl2	0.00	0.00	0.00
c1	0.00	0.00	0.00
c2	0.00	0.00	0.00
c3	0.00	0.00	0.00
c4	0.00	0.00	0.00

Glossary

Comb : Indicates if load condition is a load combination

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:20 PM

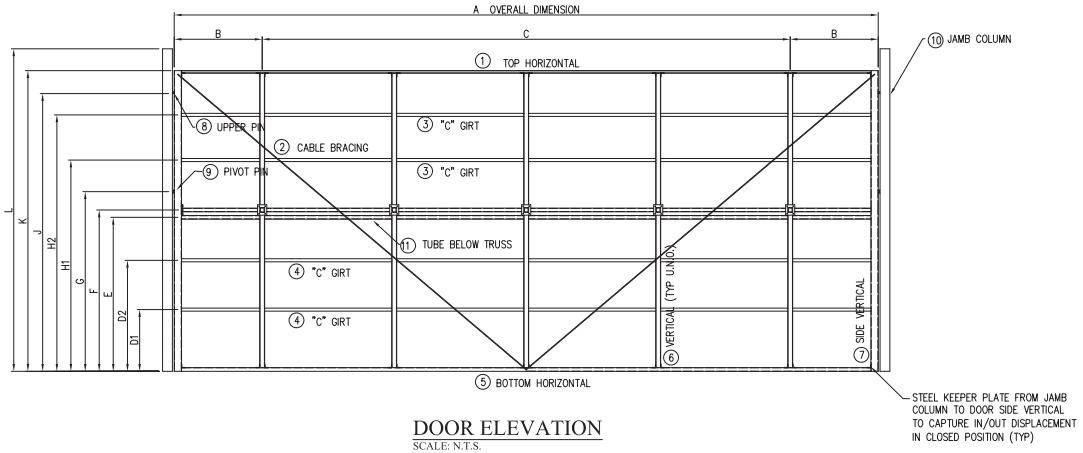
Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Steel Code Check
Summary - Group by description

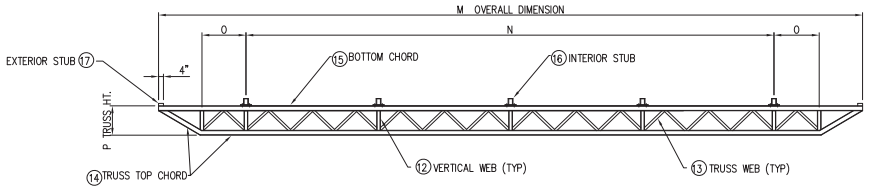
Load conditions to be included in design :

c1=DL+0.6wl1
c2=DL+0.6wl2
c3=0.6DL+0.6wl2
c4=0.6DL+0.6wl2

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
Bottom Horizontal	*HSS_RECT 4X2X1_8*	**304**	c2 at 62.50%	0.05	OK	
C Girt	*aisiCS 4x2x059*	**906**	c2 at 50.00%	0.04	OK	Sec. F4
Column	*W 6X20*	**502**	c2 at 0.00%	0.07	OK	
Exterior Conn Tube	*HSS_RECT 4X3X3_16*	**661**	c2 at 100.00%	0.12	OK	
Interior Vertical	*HSS_SQR 4X4X3_16*	**857**	c2 at 100.00%	0.15	OK	
Pivot Pin	*RndBar 1-1_2*	**512**	c2 at 100.00%	**0.31**	**OK**	
Rigid Link	*HSS_SQR 3X3X3_16*	**767**	c2 at 100.00%	0.18	OK	
Side Vertical	*HSS_RECT 6X4X3_16*	**753**	c2 at 100.00%	0.21	OK	
Top Horizontal	*HSS_RECT 6X2X1_8*	**386**	c1 at 0.00%	0.09	OK	
Truss Bottom Chord	*HSS_SQR 3X3X1_8*	**610**	c2 at 0.00%	0.17	OK	
Truss Top Chord	*HSS_SQR 3X3X3_16*	**627**	c2 at 0.00%	0.17	OK	
Truss Vertical Web	*HSS_SQR 3X3X1_8*	**675**	c2 at 0.00%	0.09	OK	
Truss Web	*L 2X2X1_8*	**725**	c2 at 50.00%	0.21	OK	
Tube Girt	*HSS_RECT 4X2X3_16*	**848**	c2 at 0.00%	0.10	OK	
Upper Pin	*RndBar 1-1_4*	**511**	c2 at 100.00%	0.19	OK	



DOOR ELEVATION
SCALE: N.T.S.

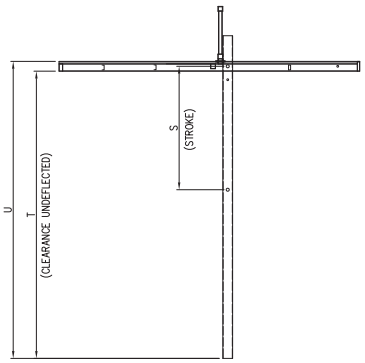


TRUSS PLAN
SCALE: N.T.S.

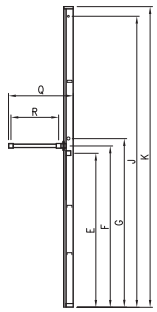
	MATERIALS	TYPE	DESCRIPTION	REMARKS
1	6x2x1/8 HSS	A500 GrB	TOP HORIZONTAL	
2		5000# BREAKING STRENGTH	CABLE BRACING	
3	CS4x2x059	A570 Gr50 COLD FORM	"C" GIRT	
4	CS4x2x059	A570 Gr50 COLD FORM	"C" GIRT	
5	4x2x1/8 HSS	A500 GrB	BOTTOM HORIZONTAL	
6	4x4x3/16 HSS	A500 GrB	INTERIOR VERTICAL	
7	6x4x3/16 HSS	A500 GrB	SIDE VERTICAL	
8	1 1/4"ø	A1045	UPPER PIN	
9	1 1/2"ø	A1045	PIVOT PIN	
10	W6x20	A992	JAMB COLUMN	
11	4x2x3/16 HSS	A500 GrB	TUBE BELOW TRUSS	
12	3x3x1/8 HSS	A500 GrB	VERTICAL WEB	
13	2x2x1/8 ANGLE	A36	TRUSS WEB	
14	3x3x3/16 HSS	A500 GrB	TRUSS TOP CHORD	
15	3x3x1/8 HSS	A500 GrB	TRUSS BOTTOM CHORD	
16	3x3x3/16 HSS	A500 GrB	INTERIOR STUB	
17	4x3x3/16 HSS	A500 GrB	EXTERIOR STUB	

DIMENSIONS	
A	41'-9"
B	2'-10 1/2"
C	4 SPA. @ 9'-0" = 36'-0"
D1	2'-7"
D2	N/A
E	5'-2"
F	5'-8"
G	7'-2"
H1	8'-11"
H2	N/A
J	11'-4"
K	12'-7"
L	14'-1"
M	41'-9"
N	24 SPA. @ 1'-6" = 36'-0"
O	0
P	1'-6"
Q	2'-2"
R	1'-3"
S	5'-1"
T	12'-0"
U	12'-6"

DRAWING IS NOT TO SCALE AND IS FOR FABRICATION ONLY. DIMENSIONS MAY VARY DUE TO FABRICATOR TOLERANCES OR PREFERENCES. PRIOR TO ORDERING AND INSTALLING SHEETING, WINDOWS, DOORS, ETC., OWNER AND/OR CONTRACTOR SHALL CONTACT HIGHER POWER DOORS FOR A TRIM & CUT SHEET.

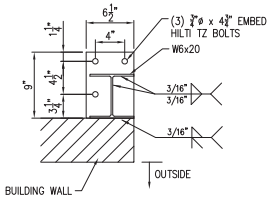


DOOR SECTION - OPEN
SCALE: N.T.S.



DOOR SECTION - CLOSED
SCALE: N.T.S.

BUILDING OWNER IS RESPONSIBLE FOR DESIGNING THE SUPPORTING SLAB/FOOTING, FOR THE BASE PLATE AND ANCHOR PATTERN SHOWN, AND FOR THE ALLOWABLE STRESS DESIGN LOADS SHOWN IN NOTES 6 AND 7.



BASE DETAIL
SCALE: N.T.S.

(LEFT SIDE SHOWN
RIGHT SIDE MIRRORED)

NOTES:
1. PROJECT LOCATION: LAKE CITY, FLORIDA.
2. DOOR MAY NOT BE OPERATED, OPEN OR PARTIALLY OPEN WITH WIND SPEEDS Vult> 50 MPH (3-SECOND GUST).
3. DOOR DESIGNED AS A COMPONENT/CLADDING, PART 1, INTERIOR ZONE AND CORNER ZONE.
4. WIND DATA (ALL DATA IS ULTIMATE)
   RISK CATEGORY II
   WIND EXPOSURE C
4A. Vult (CLOSED POSITION) = 120 MPH
   DESIGN WIND PRESSURES: 23.4 PSF, -26.1 PSF
4B. Vult (OPENING POSITION) = 50 MPH
   DESIGN WIND PRESSURES: 5.8 PSF, -6.2 PSF
4C. Vult (OPEN POSITION) = 50 MPH
   DESIGN WIND PRESSURES: 2.8 PSF, -5.1 PSF
5. OWNER TO PROVIDE SIDING MEETING CODE REQUIREMENTS FOR DOOR. SECURE TO FRAMING PER CODE, AT 12" MAXIMUM SPACINGS.
6. LATERAL REACTIONS FROM DOOR TO BUILDING (WORKING STRESS)
   = 2,000# @ TOP OF COLUMN
   = 2,500# @ SLAB
7. VERTICAL REACTION TO THE SLAB = 2,500#
8. DEFLECTION
   1" DEFLECTION IN THE OPEN POSITION
   1" AS THE DOOR BEGINS TO OPEN
9. DESIGN OF THIS STRUCTURE MEETS THE WIND LOAD REQUIREMENTS OF THE FLORIDA BUILDING CODE, 8TH EDITION.

HIGHER POWER
HYDRAULIC DOORS
1400 Territorial Rd. Benton Harbor, MI 49022
(269) 927-8990 PH (269) 027-1400 FAX

REV.	DATE	BY	DESCRIPTION
0	06/12/24	JAB	FOR PERMIT

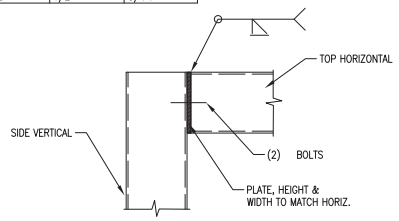
JEFF BARTOSZEK P.E.
P.O. Box 766 St. Joseph, Michigan 49085
269-985-4214 www.mispy92.com

JEFF BARTOSZEK LICENSE No. 73476 STATE OF FLORIDA PROFESSIONAL ENGINEER

TITLE DIMENSIONAL PLAN
42'-0" x 12'-6 1/21" OPENING, 120 MPH
PROJECT STROUBE LANDER
LAKE CITY, FLORIDA

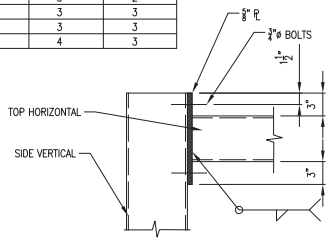
SHEET	PROJECT NO.	DRAWN BY	APPROVED BY	DATE	SCALE
S-1	24070	BKV	JAB	06/12/2024	AS NOTED

PLATE SCHEDULE		
DOOR WIDTH	PLATE t	BOLT SIZE
< 75'	1/4"	5/8"ø
> 75'	1/2"	3/4"ø



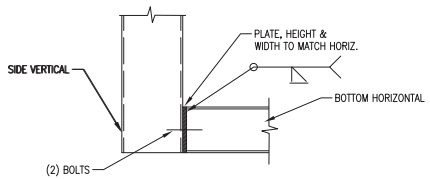
A TOP HORIZONTAL - SIDE VERTICAL (NO SAG TRUSS)
Scale: N.T.S.

BOLT SCHEDULE		
DOOR WIDTH	# TOP BOLTS	# BOTT. BOLTS
8"	3	2
10"	3	3
12"	3	3
14"	4	3

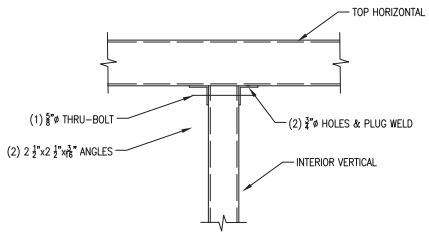


B TOP HORIZONTAL - SIDE VERTICAL (WITH SAG TRUSS)
Scale: N.T.S.

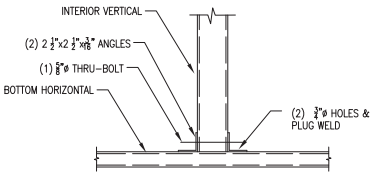
PLATE SCHEDULE		
DOOR WIDTH	PLATE t	BOLT SIZE
< 75'	1/4"	5/8"ø
> 75'	1/2"	3/4"ø



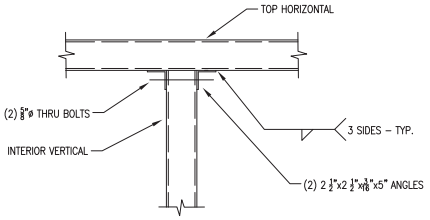
C BOTTOM HORIZONTAL - SIDE VERTICAL
Scale: N.T.S.



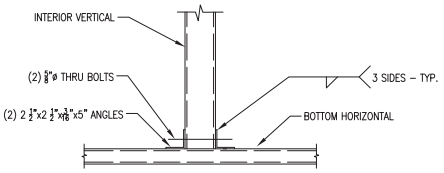
D 4" DEEP INTERIOR VERTICAL TO TOP HORIZ.
Scale: N.T.S.



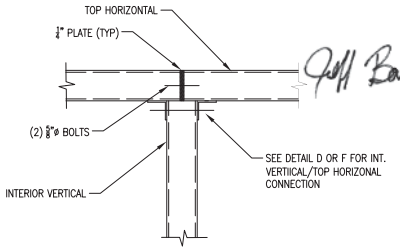
E 4" DEEP INTERIOR VERTICAL TO BOTTOM HORIZ.
Scale: N.T.S.



F 6"+ INTERIOR VERTICAL - TOP HORIZONTAL
Scale: N.T.S.



G 6"+ INTERIOR VERTICAL - BOTTOM HORIZONTAL
Scale: N.T.S.

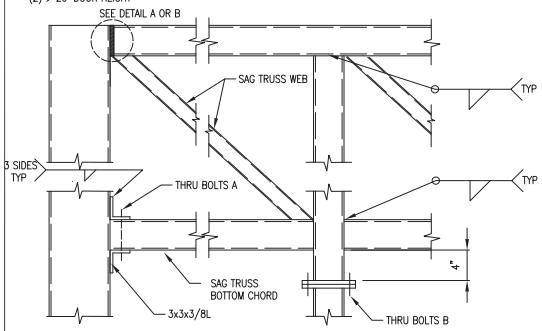


I TOP HORIZONTAL SPLICE - NO SAG TRUSS
REQUIRED FOR DOOR WIDTH >53'
Scale: N.T.S.

BOLT SCHEDULE A	
CHORD DEPTH	BOLTS
4"	(2) 5/8"ø
6"	(2) 5/8"ø
8"	(3) 5/8"ø
10" (1)	(3) 5/8"ø
10" (2)	(3) 3/4"ø
12"	(4) 3/4"ø

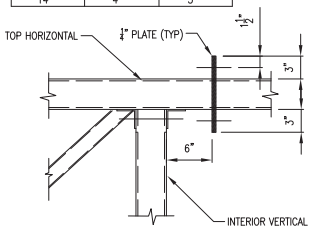
BOLT SCHEDULE B		
CHORD DEPTH	BOLTS	PLATE t
4"	(4) 3/4"ø	3/8"
6"	(4) 3/4"ø	3/8"
8"	(6) 3/4"ø	1/2"
10"	(6) 3/4"ø	1/2"
12"	(8) 3/4"ø	1/2"

(1) < 20' DOOR HEIGHT
(2) > 20' DOOR HEIGHT

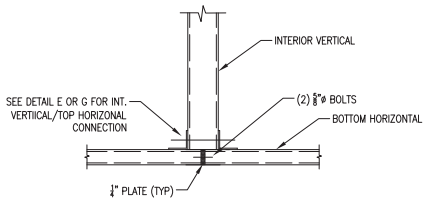


H SAG TRUSS
Scale: N.T.S.

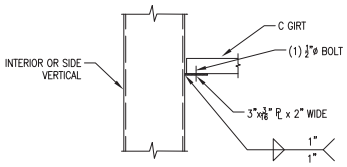
BOLT SCHEDULE		
DOOR WIDTH	# TOP BOLTS	# BOTT. BOLTS
8"	3	2
10"	3	3
12"	3	3
14"	4	3



J TOP HORIZONTAL SPLICE - WITH SAG TRUSS
REQUIRED FOR DOOR WIDTH >53'
Scale: N.T.S.



K BOTTOM HORIZONTAL SPLICE
REQUIRED FOR DOOR WIDTH >53'
Scale: N.T.S.



L C GIRT TO VERTICAL
Scale: N.T.S.

Jeffrey A Bartoszek
Digitally signed by Jeffrey A Bartoszek
Date: 2024.06.11 08:54:47 -04'00'

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REV.	DATE	BY	DESCRIPTION
1	06/11/24	JAB	ISSUED FOR FLORIDA

06/11/2024

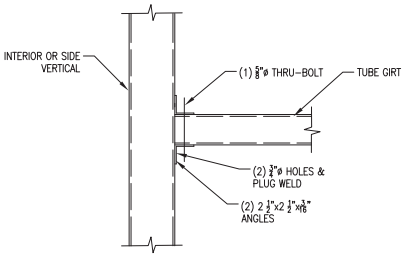
JEFF BARTOSZEK LICENSE No. 73476 STATE OF FLORIDA PROFESSIONAL ENGINEER

JEFF BARTOSZEK P.E.
P.O. Box 765, St. Joseph, Michigan 49085
269-363-6214 www.mileyhill.com

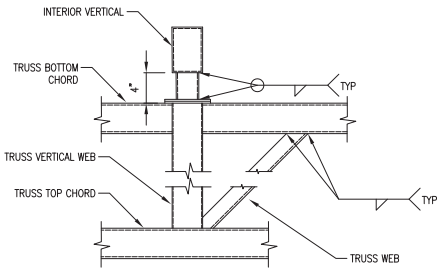
TITLE STEEL FRAMED DOORS
STANDARD CONNECTION DETAILS

PROJECT HIGHER POWER DOORS
BENTON HARBOR, MICHIGAN

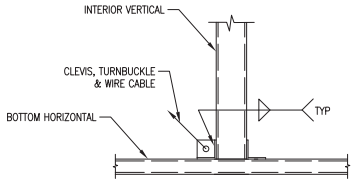
SHEET S5-01 | PROJECT NO. | DRAWN BY: BKV | APPROVED BY: JAB | DATE 06/2018 | SCALE AS NOTED



M HORIZONTAL TUBE TO VERTICAL
Scale: N.T.S.

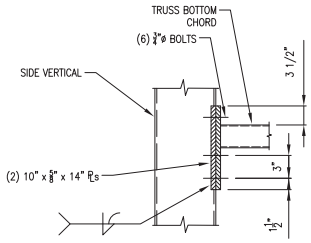


N FLAT TRUSS TO INTERIOR VERTICAL
Scale: N.T.S.



Q BRACE CABLE - BOTTOM VERTICAL
Scale: N.T.S.

STRAND CABLE – SCHEDULE – 7 WIRE GALAVANIZED			
STRAND DIA.	STRAND BREAKING STRENGTH	CLEVIS SIZE	TURNBUCKLE SIZE
3/16"	3,990#	2 1/2	3/4
7/32"	5,400#	2 1/2	3/4
1/4"	6,650#	2 1/2	7/8
9/32"	8,950#	3	1
5/16"	11,200#	3	1 1/8
3/8"	15,400#	3 1/2	1 1/4
7/16"	20,800#	4	1 1/2



P FLAT TRUSS - SIDE VERTICAL
Scale: N.T.S.

Jeffrey A Bartoszek

Digitally signed by Jeffrey A Bartoszek
Date: 2024.06.11 08:55:57 -04'00'

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REV.	DATE	BY	DESCRIPTION
1	06/11/24	JAB	ISSUED FOR FLORIDA

06/11/2024

JEFF BARTOSZEK LICENSE No. 73476 STATE OF FLORIDA PROFESSIONAL ENGINEER

JEFF BARTOSZEK P.E.
P.O. Box 766 St. Joseph, Michigan 49085
269-985-4214 www.thejeffp3d.com

TITLE STEEL FRAMED DOORS
STANDARD CONNECTION DETAILS

PROJECT HIGHER POWER DOORS
BENTON HARBOR, MICHIGAN

SHEET	PROJECT NO.	DRAWN BY	APPROVED BY	DATE	SCALE
S5-02		BKV	JAB	06/2018	AS NOTED

Integrity Structural Engineering, PLLC

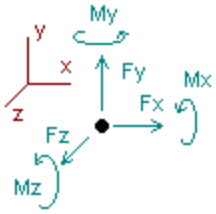
Current Date: 6/12/2024 3:50 PM

Project: Closed
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Analysis result

Nodes

Reactions



Direction of positive forces and moments

	Forces [Lb]			Moments [Lb*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **c1=DL+0.6wl1**						
101	-126.08799	300.87946	-1339.64990	0.00000	0.00000	0.00000
1	0.00000	-81.86919	-893.41286	0.00000	0.00000	0.00000
104	-129.80832	0.00000	-1847.30720	0.00000	0.00000	0.00000
SUM	-255.89631	219.01027	-4080.37000	0.00000	0.00000	0.00000
Condition **c2=DL+0.6wl2**						
101	111.51847	363.40182	1189.46870	0.00000	0.00000	0.00000
1	0.00000	544.79932	866.46402	0.00000	0.00000	0.00000
104	114.04688	0.00000	1606.95730	0.00000	0.00000	0.00000
SUM	225.56535	908.20114	3662.89000	0.00000	0.00000	0.00000
Condition **c3=0.6DL+0.6wl2**						
101	112.01133	230.97134	1191.33830	0.00000	0.00000	0.00000
1	0.00000	450.38091	855.22386	0.00000	0.00000	0.00000
104	114.59591	0.00000	1616.32780	0.00000	0.00000	0.00000
SUM	226.60725	681.35226	3662.89000	0.00000	0.00000	0.00000
Condition **c4=0.6DL+0.6wl2**						
101	112.01133	230.97134	1191.33830	0.00000	0.00000	0.00000
1	0.00000	450.38091	855.22386	0.00000	0.00000	0.00000
104	114.59591	0.00000	1616.32780	0.00000	0.00000	0.00000
SUM	226.60725	681.35226	3662.89000	0.00000	0.00000	0.00000

Building Reactions
Base: 1,340 + 893 = 2,233#
Top: 1,847#

Integrity Structural Engineering, PLLC

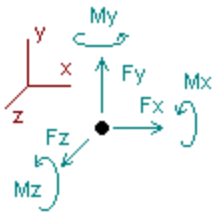
Current Date: 6/12/2024 3:18 PM

Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Analysis result

Nodes

Reactions



Direction of positive forces and moments

	Forces [Lb]			Moments [Lb*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **c2=DL+0.6wl2**						
101	61.84970	-145.02779	2022.18830	0.00000	0.00000	0.00000
SUM	61.84970	-145.02779	2022.18830	0.00000	0.00000	0.00000

Vertical reaction at slab

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:42 PM

Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Analysis result

Members

Maximum forces at members

Condition : **c1=DL+0.6wl1**

	Axial [Lb]	Shear V2 [Lb]	Shear V3 [Lb]	Torsion [Lb*ft]	M22 [Lb*ft]	M33 [Lb*ft]
MEMBER **923**						
Max	990.91	0.59	-1.33	0.01	-13.07	3.35
Min	990.91	0.59	-1.33	0.01	-13.07	3.35

Condition : **c2=DL+0.6wl2**

	Axial [Lb]	Shear V2 [Lb]	Shear V3 [Lb]	Torsion [Lb*ft]	M22 [Lb*ft]	M33 [Lb*ft]
MEMBER **923**						
Max	963.69	0.83	1.55	0.01	-8.73	4.64
Min	963.69	0.83	1.55	0.01	-8.73	4.64

Condition : **c3=0.6DL+0.6wl2**

	Axial [Lb]	Shear V2 [Lb]	Shear V3 [Lb]	Torsion [Lb*ft]	M22 [Lb*ft]	M33 [Lb*ft]
MEMBER **923**						
Max	571.61	0.84	0.87	0.01	-2.73	2.83
Min	571.61	0.84	0.87	0.01	-2.73	2.83

Condition : **c4=0.6DL+0.6wl2**

	Axial [Lb]	Shear V2 [Lb]	Shear V3 [Lb]	Torsion [Lb*ft]	M22 [Lb*ft]	M33 [Lb*ft]
MEMBER **923**						
Max	571.61	0.84	0.87	0.01	-2.73	2.83
Min	571.61	0.84	0.87	0.01	-2.73	2.83

991 x 5 = 4,955#
Use 5,000# Breaking Strength for cable bracing

The type of brace to be utilized in the door construction will be a wire cable. However, since a cable is not a "Section" choice in the analysis program, the brace will be modeled as a Round Bar section. The axial tension force from the analysis will then be used and multiplied by 5 to obtain a minimum breaking strength rating for the cable.

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:17 PM

Project: Open
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Analysis result

Nodes

Translations

	Translations [in]			Rotations [Rad]		
Node	**TX**	**TY**	**TZ**	**RX**	**RY**	**RZ**
Condition **DL=Dead Load**						
5	0.00000	0.07369	-0.41321	0.00216	0.00000	0.00000
85	0.00000	0.07552	-0.49956	0.00033	0.00000	0.00000

Deflection when door is open

Integrity Structural Engineering, PLLC

Current Date: 6/12/2024 3:41 PM

Project: Opening
Client: Higher Power Doors
Structural Engineer: Jeffrey Bartoszek
Job Number: 24070

Analysis result

Nodes

Translations

	Translations [in]			Rotations [Rad]		
Node	**TX**	**TY**	**TZ**	**RX**	**RY**	**RZ**
Condition **DL=Dead Load**						
85	0.00000	-0.43007	0.15567	0.00081	0.00000	0.00000
5	0.00000	-0.43822	-0.10869	0.00995	0.00000	0.00000

Deflection as door begins to open

Company:	Integrity Structural Engineering, PLLC	Page:	1
Specifier:		Project:	Higher Power Doors
Address:	P.O. Box 766, St. Joseph, MI	Sub-Project I Pos. No.:	
Phone I Fax:	|	Date:	5/10/2021
E-Mail:			

Specifier's comments:

1 Input data

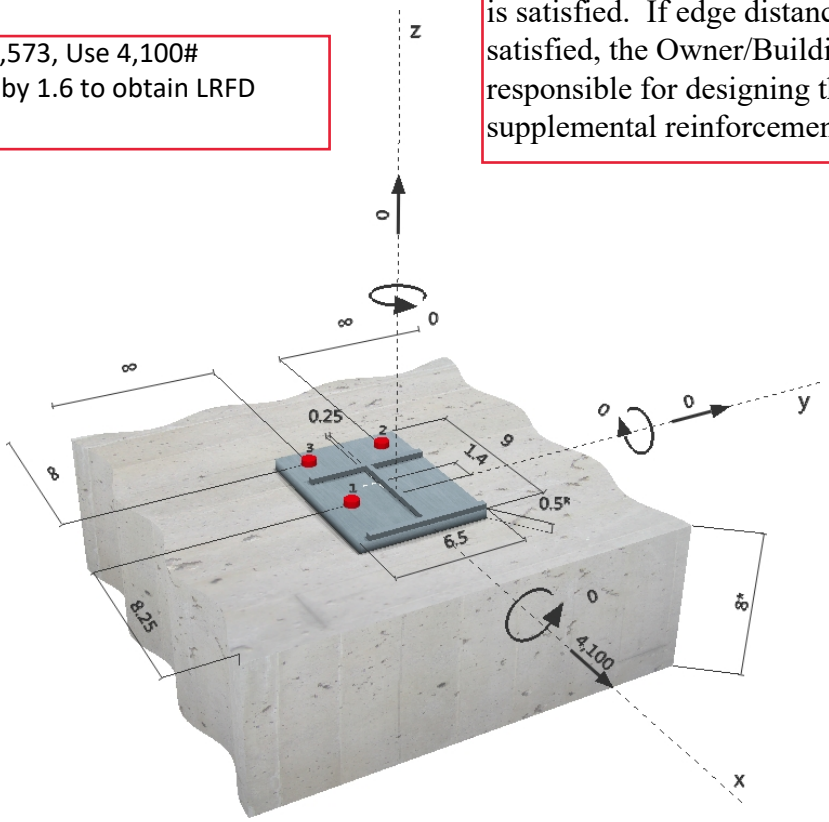
Anchor type and diameter:	**Kwik Bolt TZ - CS 3/4 (4 3/4)**
Return period (service life in years):	50
Effective embedment depth:	h_{ef} = 4.750 in., h_{nom} = 5.563 in.
Material:	Carbon Steel
Evaluation Service Report:	ESR-1917
Issued I Valid:	5/1/2019 | 5/1/2021
Proof:	Design method ACI 318 / AC193
Stand-off installation:	e_b = 0.000 in. (no stand-off); t = 0.500 in.
Anchor plate:	l_x x l_y x t = 9.000 in. x 6.500 in. x 0.500 in.; (Recommended plate thickness: not calculated
Profile:	W shape (AISC), W6X20; (L x W x T x FT) = 6.200 in. x 6.020 in. x 0.260 in. x 0.365 in.
Base material:	cracked concrete, , f_c' = 3,500 psi; h = 8.000 in.
Reinforcement:	tension: condition B, shear: condition B; no supplemental splitting reinforcement present edge reinforcement: none or < No. 4 bar
Seismic loads (cat. C, D, E, or F)	no

[R] - The anchor calculation is based on a rigid anchor plate assumption.

Note: This analysis uses maximum edge distances so that pryout strength and edge failure is satisfied. If edge distance is not able to be satisfied, the Owner/Building engineer shall be responsible for designing the slab/footing and supplemental reinforcement for the loads shown.

Geometry [in.] & Loading [lb, in.lb]

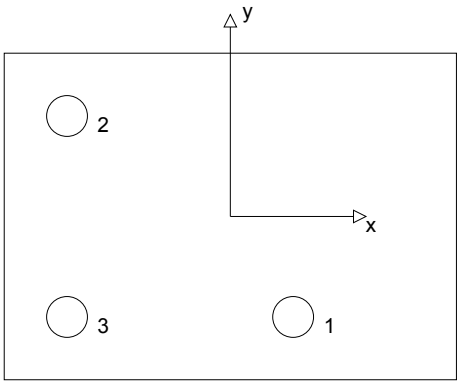
Shear Load 2,233 x 1.6 = 3,573, Use 4,100# (multiplying reaction load by 1.6 to obtain LRFD reaction load).



Company: Integrity Structural Engineering, PLLC
Specifier:
Address: P.O. Box 766, St. Joseph, MI
Phone I Fax: |
E-Mail:

2 Load case/Resulting anchor forces

Load case: Design loads



Anchor reactions [lb]
Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	0	1,250	1,159	-467
2	0	1,797	1,781	233
3	0	1,183	1,159	233

max. concrete compressive strain: - [‰]
max. concrete compressive stress: - [psi]
resulting tension force in (x/y)=(0.000/0.000): 0 [lb]
resulting compression force in (x/y)=(0.000/0.000): 0 [lb]

Anchor forces are calculated based on the assumption of a rigid anchor plate.

3 Tension load

	Load N_{ua} [lb]	Capacity ϕN_n [lb]	Utilization $\beta_N = N_{ua}/\phi N_n$	Status
Steel Strength*	N/A	N/A	N/A	N/A
Pullout Strength*	N/A	N/A	N/A	N/A
Concrete Breakout Strength**	N/A	N/A	N/A	N/A

* anchor having the highest loading **anchor group (anchors in tension)

Company:	Integrity Structural Engineering, PLLC	Page:	3
Specifier:		Project:	Higher Power Doors
Address:	P.O. Box 766, St. Joseph, MI	Sub-Project I Pos. No.:	
Phone I Fax:	|	Date:	5/10/2021
E-Mail:			

4 Shear load

	Load V_{ua} [lb]	Capacity ϕV_n [lb]	Utilization $\beta_V = V_{ua}/\phi V_n$	Status
Steel Strength*	1,797	8,888	21	OK
Steel failure (with lever arm)*	N/A	N/A	N/A	N/A
Pryout Strength**	4,100	20,618	20	OK
Concrete edge failure in direction x+**	4,126	6,919	60	OK

* anchor having the highest loading **anchor group (relevant anchors)

4.1 Steel Strength

V_{sa} = ESR value refer to ICC-ES ESR-1917
$\phi\ V_{steel} \geq V_{ua}$ ACI 318-08 Eq. (D-2)

Variables

$A_{se,V}$ [in.^{2}]	f_{uta} [psi]	$\alpha_{V,seis}$
0.24	106,000	0.859

Calculations

V_{sa} [lb]
13,674

Results

V_{sa} [lb]	ϕ_{steel}	$\phi\ V_{sa}$ [lb]	V_{ua} [lb]
13,674	0.650	8,888	1,797

4.2 Pryout Strength

$V_{cpg} = k_{cp}\left[\left(\frac{A_{Nc}}{A_{Nc0}}\right)\psi_{ec,N}\,\psi_{ed,N}\,\psi_{c,N}\,\psi_{cp,N}\,N_b\right]$ ACI 318-08 Eq. (D-31)

$\phi\ V_{cpg} \geq V_{ua}$ ACI 318-08 Eq. (D-2)

A_{Nc} see ACI 318-08, Part D.5.2.1, Fig. RD.5.2.1(b)

$A_{Nc0} = 9\,h_{ef}^2$ ACI 318-08 Eq. (D-6)

$\psi_{ec,N} = \left(\frac{1}{1+\frac{2\,e'_N}{3\,h_{ef}}}\right) \leq 1.0$ ACI 318-08 Eq. (D-9)

$\psi_{ed,N} = 0.7 + 0.3\left(\frac{c_{a,min}}{1.5h_{ef}}\right) \leq 1.0$ ACI 318-08 Eq. (D-11)

$\psi_{cp,N} = \mathrm{MAX}\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5h_{ef}}{c_{ac}}\right) \leq 1.0$ ACI 318-08 Eq. (D-13)

$N_b = k_c\,\lambda\,\sqrt{f'_c}\,h_{ef}^{1.5}$ ACI 318-08 Eq. (D-7)

Variables

k_{cp}	h_{ef} [in.]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	$c_{a,min}$ [in.]
2	4.750	0.000	0.917	8.250

$\psi_{c,N}$	c_{ac} [in.]	k_c	λ	f'_c [psi]
1.000	9.000	17	1	3,500

Calculations

A_{Nc} [in.^{2}]	A_{Nc0} [in.^{2}]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
324.19	203.06	1.000	0.886	1.000	1.000	10,412

Results

V_{cpg} [lb]	$\phi_{concrete}$	$\phi\ V_{cpg}$ [lb]	V_{ua} [lb]
29,455	0.700	20,618	4,100

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4.3 Concrete edge failure in direction x+

$V_{cbg} = \left(\frac{A_{Vc}}{A_{Vc0}}\right) \psi_{ec,V} \psi_{ed,V} \psi_{c,V} \psi_{h,V} \psi_{parallel,V} V_b$ ACI 318-08 Eq. (D-22)

$\phi V_{cbg} \geq V_{ua}$ ACI 318-08 Eq. (D-2)

A_{Vc} see ACI 318-08, Part D.6.2.1, Fig. RD.6.2.1(b)

$A_{Vc0} = 4.5 c_{a1}^2$ ACI 318-08 Eq. (D-23)

$\psi_{ec,V} = \left(\frac{1}{1 + \frac{2e'_v}{3c_{a1}}}\right) \leq 1.0$ ACI 318-08 Eq. (D-26)

$\psi_{ed,V} = 0.7 + 0.3\left(\frac{c_{a2}}{1.5c_{a1}}\right) \leq 1.0$ ACI 318-08 Eq. (D-28)

$\psi_{h,V} = \sqrt{\frac{1.5c_{a1}}{h_a}} \geq 1.0$ ACI 318-08 Eq. (D-29)

$V_b = \left(7\left(\frac{l_e}{d_a}\right)^{0.2}\sqrt{d_a}\right) \lambda \sqrt{f'_c}\, c_{a1}^{1.5}$ ACI 318-08 Eq. (D-24)

Variables

c_{a1} [in.]	c_{a2} [in.]	e_{cV} [in.]	$\psi_{c,V}$	h_a [in.]
8.250	-	0.000	1.000	8.000

l_e [in.]	λ	d_a [in.]	f'_c [psi]	$\psi_{parallel,V}$
4.750	1.000	0.750	3,500	1.000

Calculations

A_{Vc} [in.^{2}]	A_{Vc0} [in.^{2}]	$\psi_{ec,V}$	$\psi_{ed,V}$	$\psi_{h,V}$	V_b [lb]
198.00	306.28	1.000	1.000	1.244	12,293

Results

V_{cbg} [lb]	$\phi_{concrete}$	ϕV_{cbg} [lb]	V_{ua} [lb]
9,884	0.700	6,919	4,126

5 Warnings

- The anchor design methods in PROFIS Anchor require rigid anchor plates per current regulations (ETAG 001/Annex C, EOTA TR029, etc.). This means load re-distribution on the anchors due to elastic deformations of the anchor plate are not considered - the anchor plate is assumed to be sufficiently stiff, in order not to be deformed when subjected to the design loading. PROFIS Anchor calculates the minimum required anchor plate thickness with FEM to limit the stress of the anchor plate based on the assumptions explained above. The proof if the rigid anchor plate assumption is valid is not carried out by PROFIS Anchor. Input data and results must be checked for agreement with the existing conditions and for plausibility!
- Condition A applies when supplementary reinforcement is used. The Φ factor is increased for non-steel Design Strengths except Pullout Strength and Pryout strength. Condition B applies when supplementary reinforcement is not used and for Pullout Strength and Pryout Strength. Refer to your local standard.
- Refer to the manufacturer's product literature for cleaning and installation instructions.
- Checking the transfer of loads into the base material and the shear resistance are required in accordance with ACI 318 or the relevant standard!
- The characteristic bond resistances depend on the return period (service life in years): 50

Fastening meets the design criteria!

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6 Installation data

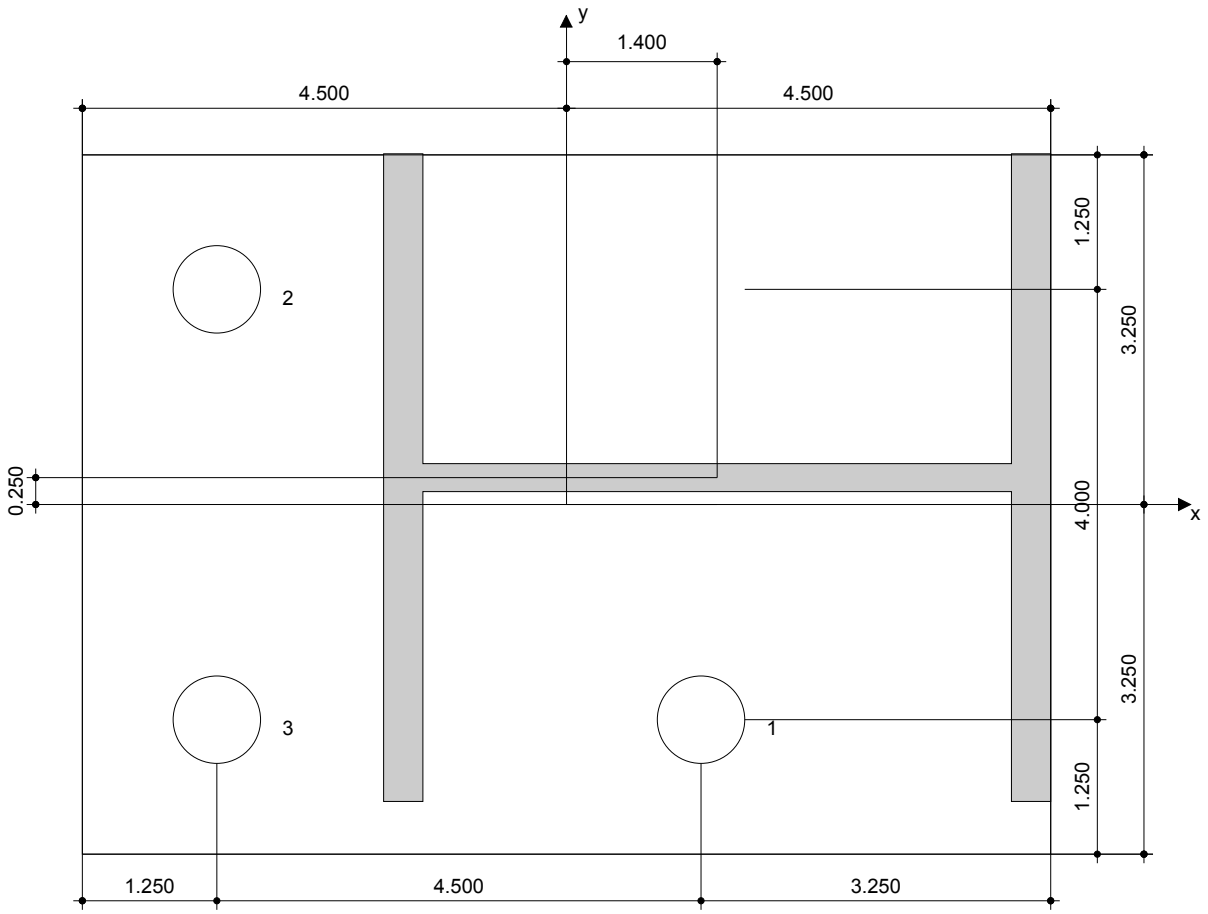
Anchor plate, steel: -
Profile: W shape (AISC), W6X20; (L x W x T x FT) = 6.200 in. x 6.020 in. x 0.260 in. x 0.365 in.
Hole diameter in the fixture: d_f = 0.813 in.
Plate thickness (input): 0.500 in.
Recommended plate thickness: not calculated
Drilling method: Hammer drilled
Cleaning: Manual cleaning of the drilled hole according to instructions for use is required.

Anchor type and diameter: Kwik Bolt TZ - CS 3/4 (4 3/4)
Installation torque: 1,320.002 in.lb

Hole diameter in the base material: 0.750 in.
Hole depth in the base material: 5.750 in.
Minimum thickness of the base material: 8.000 in.

6.1 Recommended accessories

Drilling	Cleaning	Setting
• Suitable Rotary Hammer	• Manual blow-out pump	• Torque wrench
• Properly sized drill bit		• Hammer



Coordinates Anchor in.

Anchor	x	y	c_{-x}	c_{+x}	c_{-y}	c_{+y}
1	1.250	-2.000	-	8.250	-	-
2	-3.250	2.000	-	12.750	-	-
3	-3.250	-2.000	-	12.750	-	-

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7 Remarks; Your Cooperation Duties

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