Cushing Terrell

February 25, 2026

Geoff Luczycki
Fortress Building Products
1702 N 1st St
Garland, TX 75040

CT Project Number: 23-08-292

Re: Fortress Two Story Evolution Deck – Eccentric Bracket

Dear Geoff,

Per your request Cushing Terrell has designed the eccentric beam-to-post bracket for vertical loading for the Fortress Evolution Decking. The deck columns are assumed to be continuous 5-1/2" SQ x 12-gauge with a maximum single floor height of 9'-0" for a maximum of two levels. The eccentric brackets are to be 12g cold formed material. All material is assumed to be Q235 steel with a yield strength of 34ksi. The attached calculations conform to the latest provisions of the IBC and ASCE 7.

The E22 bracket assembly is comprised of (2) angle brackets and (1) flat bracket. The maximum vertical ASD capacity of this assembly is 9000 lbf.

The E15 bracket assembly is comprised of (1) angle bracket and (1) flat bracket. The maximum vertical ASD capacity of this assembly is 5400 lbf.

Both assemblies must be installed per the attached shop drawings to reach their full capacity.

Cushing Terrell designed the eccentric beam-to-post bracket for vertical loading for the Fortress Evolution Deck only. We take no responsibility for the deck as a whole, any element the deck attaches to, or any element not mentioned in this letter. Please contact us with any questions.

Please reference the attached shop drawings for further information.

Sincerely,

Sean Smith, EIT
Structural Engineer in Training
seansmith@cushingterrell.com

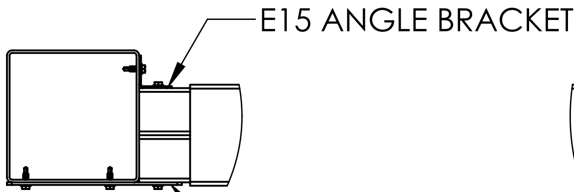
Cushing Terrell
Sushil Shenoy
5915 S Regal St.,
STE 314,
Spokane, WA
99223
509-921-7731
2026.03.09
11:16:33-07'00'

STATE OF TEXAS
SUSHIL SHENOY
122616
LICENSED
PROFESSIONAL ENGINEER

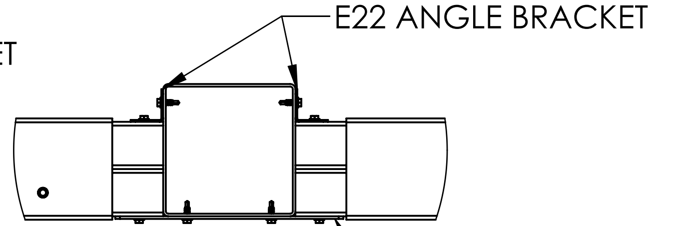
Firm Number: F-2217
EXP 12/31/2026

Attachments: Shop drawings, calculations

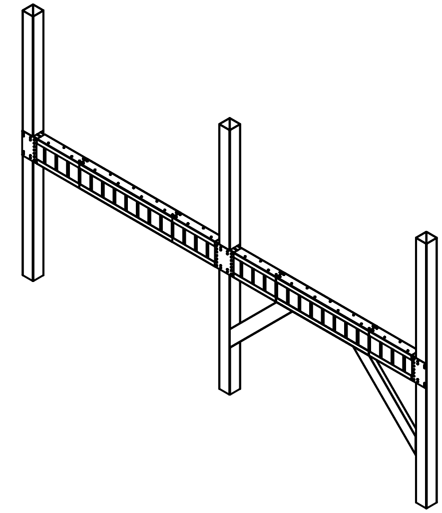
GENERAL NOTES:
1. ALL DIMENSIONS ARE SHOWN IN INCHES [mm]
2. DETAIL SECTION OF BRACKET CONNECTION. BEAM TO BE SUPPORT AT BOTH ENDS.

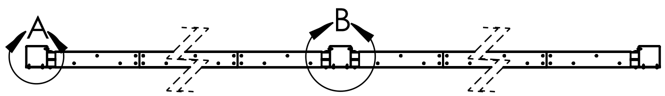


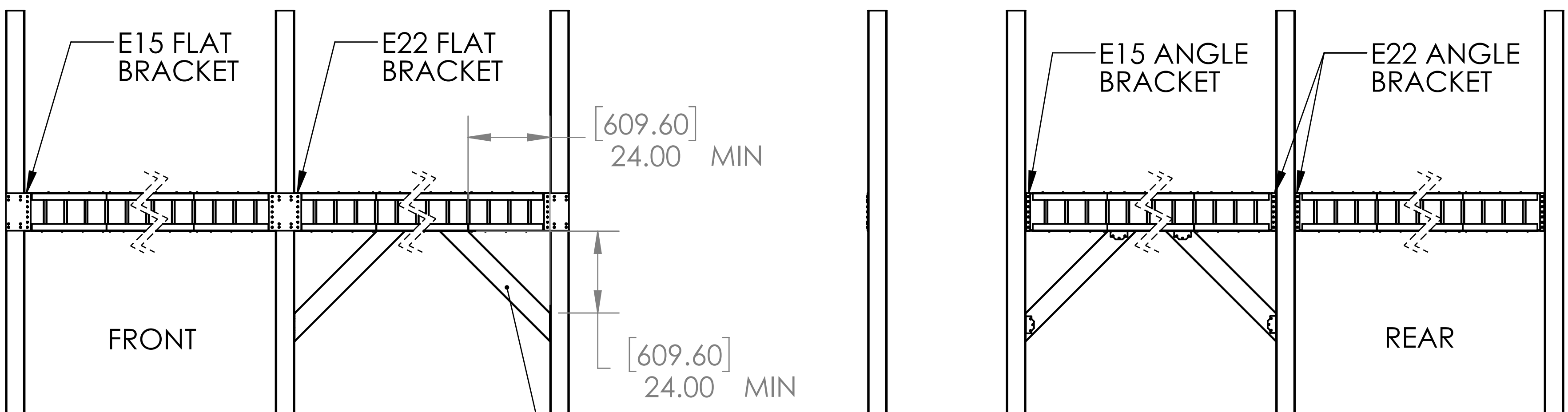
DETAIL A
SCALE 1 : 8



DETAIL B
SCALE 1 : 8







LATERAL BRACING TO BE USED IN SEISMIC CATEGORIES D, E, F.
IN SEISMIC CATEGORIES A, B, C, LATERAL BRACING MAY BE OMITTED IN LIEU OF (2) SIMPSON DTT2Z'S TO HOST STRUCTURE AT EACH DECK DIAPHRAGM

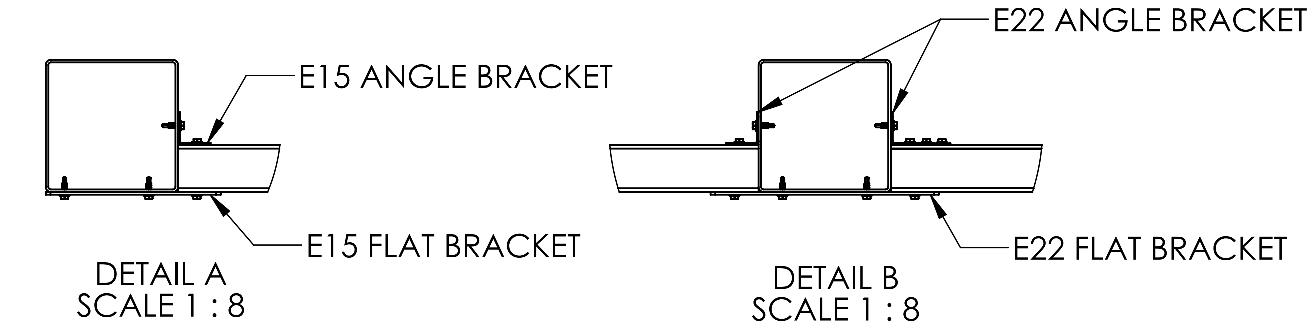
REV	DATE	BY	DESCRIPTION
0	6/10/25	ECT	Initial Drawing

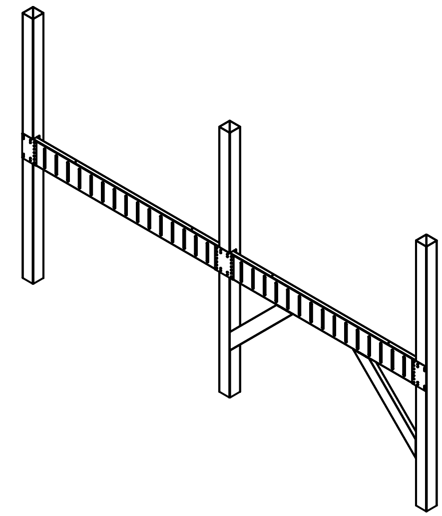
FORTRESS™ BUILDING PRODUCTS

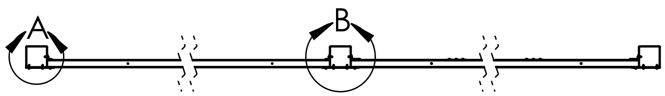
Fortress Iron, LP
1720 N 1st Street
Garland, Tx 75040

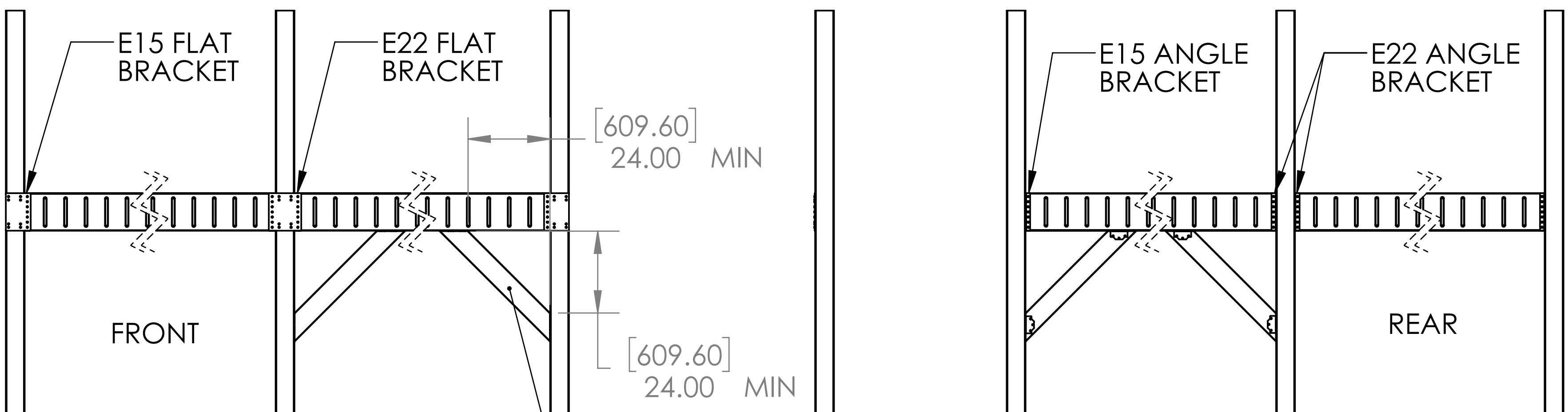
DESCRIPTION: E15 AND E22 BRACKET INSTALLATION
DRAWN BY: KevinF
SCALE: 1:50
DATE: 4/3/2025
DIVISION:
Sheet: 1 OF 3
ITEM #:
FILE NAME/PART #: E15 E22 Installation
REV:

GENERAL NOTES:
1. ALL DIMENSIONS ARE SHOWN IN INCHES [mm]
2. DETAIL SECTION OF BRACKET CONNECTION. BEAM TO BE SUPPORT AT BOTH ENDS.









LATERAL BRACING TO BE USED IN SEISMIC CATEGORIES D, E, F.
IN SEISMIC CATEGORIES A, B, C, LATERAL BRACING MAY BE OMITTED IN LIEU OF (2) SIMPSON DTT2Z'S TO HOST STRUCTURE AT EACH DECK DIAPHRAGM

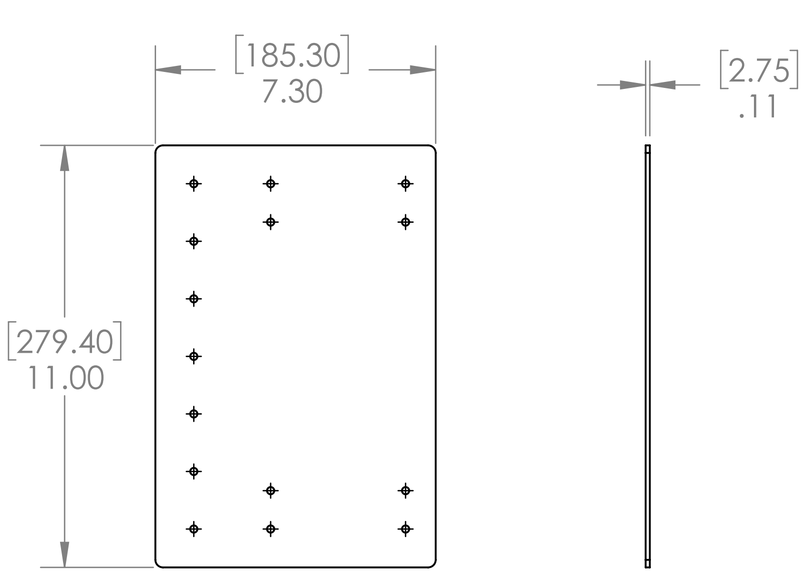
REV	DATE	BY	DESCRIPTION
0	6/10/25	ECT	Initial Drawing

FORTRESS™ BUILDING PRODUCTS

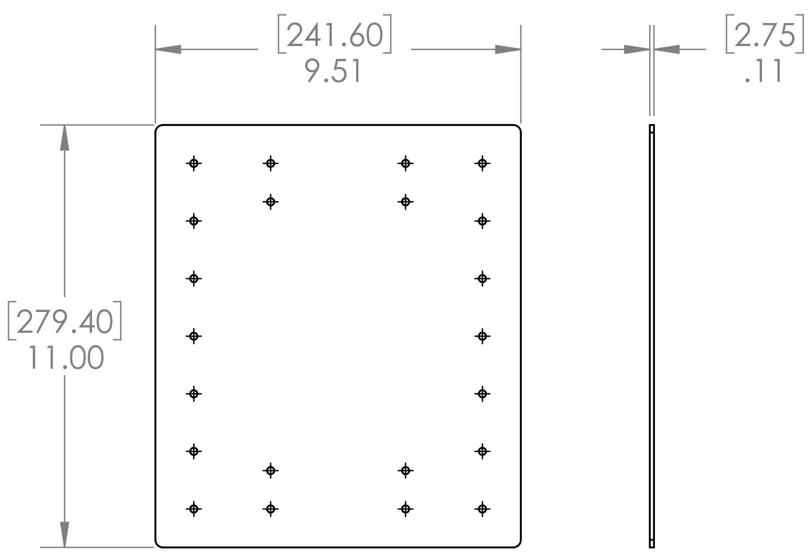
Fortress Iron, LP
1720 N 1st Street
Garland, Tx 75040

DESCRIPTION: E15 AND E22 BRACKET INSTALLATION
DRAWN BY: KevinF
SCALE: 1:50
DATE: 4/3/2025
DIVISION:
Sheet: 2 OF 3
ITEM #:
FILE NAME/PART #: E15 E22 Installation
REV:

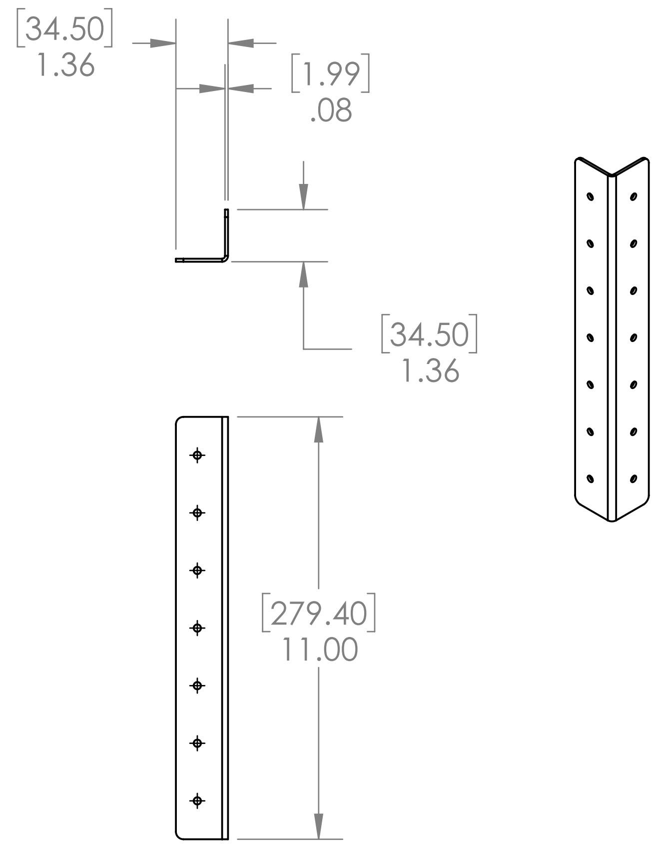
GENERAL NOTES:
1. ALL DIMENSIONS ARE SHOWN IN INCHES [mm]
2. DETAIL SECTION OF BRACKET CONNECTION. BEAM TO BE SUPPORT AT BOTH ENDS.



E15 FLAT BRACKET



E22 FLAT BRACKET



E15 AND E22 ANGLE BRACKET

REV	DATE	BY	DESCRIPTION
0	04/03/25	GL	Initial Drawing

Fortress Iron, LP
1720 N 1st Street
Garland, Tx 75040

DESCRIPTION:
E15 AND E22 BRACKET INSTALLATION

DRAWN BY: KevinF		SCALE: 1:5
DATE: 4/3/2025	DIVISION:	
Sheet: 3 OF 3	ITEM #:	FILE NAME/PART #: E15 E22 Installation	REV:

Cushing Terrell

02.25.2026

Structural Calculations for

Fortress Two Story Evolution Deck

Vertical and Lateral Capacities

150mph ultimate wind loading

Prepared by:
Sean Smith, EIT

Reviewed by:
Sushil Shenoy, PE

PREPARED FOR
Fortress Building Products
1702 N 1st St
Garland, TX 75040

cushingterrell.com

Cushing Terrell

Table of Contents

Rim Connection, min 16g thickness, #12 Cold Formed Screw Allowable Shear 394 #, No Eccentric Loading

	x (in)	y (in)	V (#)	V Angle
1	0	10	385.714	270.0
2	0	8.5	385.714	270.0
3	0	7	385.714	270.0
4	0	5.5	385.714	270.0
5	0	4	385.714	270.0
6	0	2.5	385.714	270.0
7	0	1	385.714	270.0

ASD Shear Load (Half Beam Load)

P	M (+CCW)
2700.0 #	0 #-in

X (in)	Y (in)
0	11

Angle (degrees CCW from vertical down)

0

Centroid

X' (in)	Y' (in)
0.00	5.50

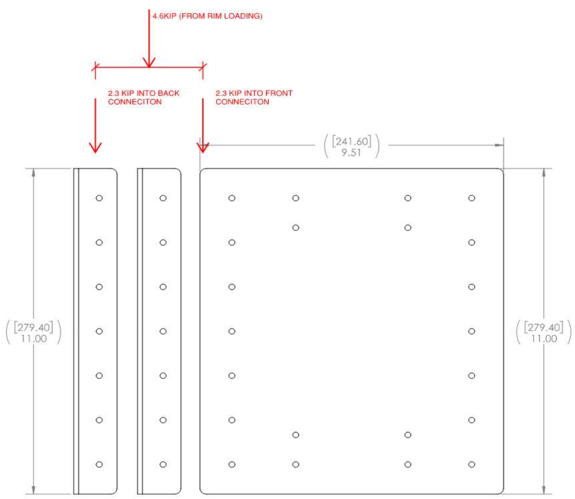
Max Fastener Shear

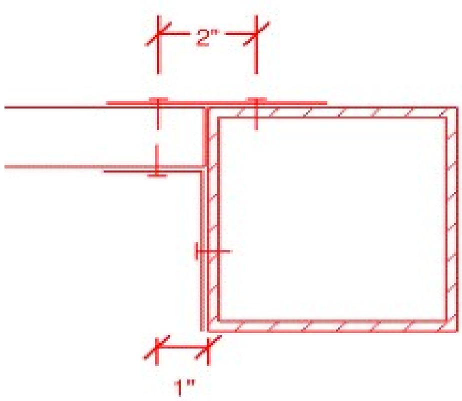
385.714 #

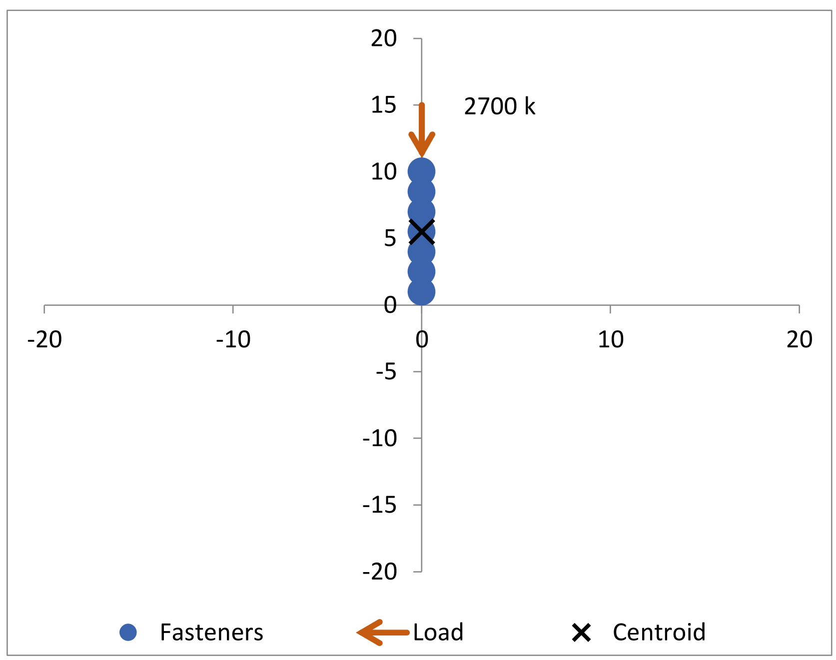
Max Group Shear (ASD)

385.714 #

Below 394#, Therefore OKAY







Post Connection, min 12g thickness, #12 Cold Formed Screw Allowable Shear: 777 #

	x (in)	y (in)	V (#)	V Angle
1	2	10	771.613	241.0
2	2	9	734.964	246.7
3	2	2	734.964	293.3
4	2	1	771.613	299.0

ASD Shear Load (Half Beam Load)

P	M (+CCW)
2700.0 #	0 #-in

X (in)	Y (in)
0	11

Angle (degrees CCW from vertical down)

0

Centroid

X' (in)	Y' (in)
2.00	5.50

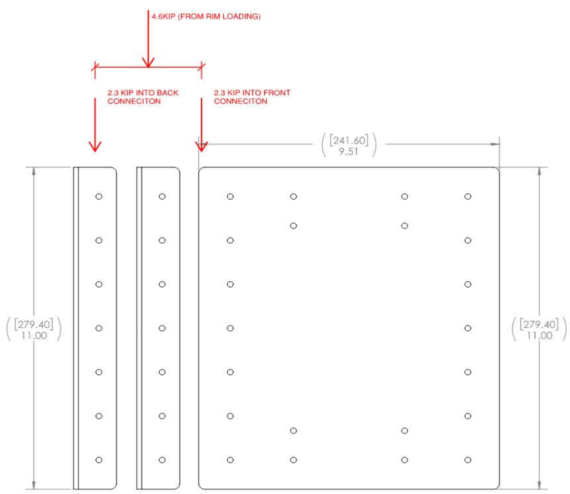
Max Fastener Shear

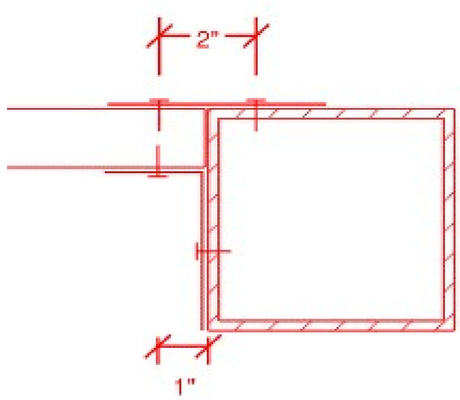
771.613 #

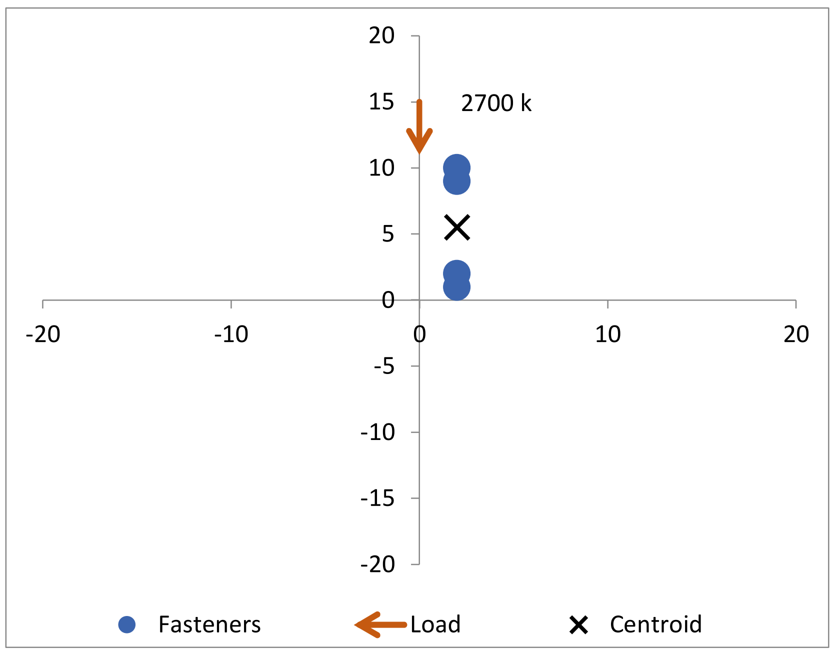
Max Group Shear (ASD)

771.613 #

Below 777#, Therefore OKAY







Screw Capacities

Table Notes

1. Capacities based on AISI S100 Section E4.
2. When connecting materials of different steel thicknesses or tensile strengths, use the lowest values. Tabulated values assume two sheets of equal thickness are connected.
3. Capacities are based on Allowable Strength Design (ASD) and include safety factor of 3.0.
4. Where multiple fasteners are used, screws are assumed to have a center-to-center spacing of at least 3 times the nominal diameter (d).
5. Screws are assumed to have a center-of-screw to edge-of-steel dimension of at least 1.5 times the nominal diameter (d) of the screw.
6. Pull-out capacity is based on the lesser of pull-out capacity in sheet closest to screw tip or tension strength of screw.
7. Pull-over capacity is based on the lesser of pull-over capacity for sheet closest to screw header or tension strength of screw.
8. Values are for pure shear or tension loads. See AISI Section E4.5 for combined shear and pull-over.
9. Screw Shear (Pss), tension (Pts), diameter, and head diameter are from CFSEI Tech Note (F701-12).
10. Screw shear strength is the average value, and tension strength is the lowest value listed in CFSEI Tech Note (F701-12).
11. Higher values for screw strength (Pss, Pts), may be obtained by specifying screws from a specific manufacturer.

Allowable Screw Connection Capacity (lbs)

Thickness (Mils)	Design Thickness	Fy Yield (ksi)	Fu Tensile (ksi)	#6 Screw (Pss = 643 lbs, Pts = 419 lbs) 0.138" dia, 0.272" Head			#8 Screw (Pss= 1278 lbs, Pts = 586 lbs) 0.164" dia, 0.272" Head			#10 Screw (Pss= 1644 lbs, Pts = 1158 lbs) 0.190" dia, 0.340" Head			#12 Screw (Pss= 2330 lbs, Pts = 2325 lbs) 0.216" dia, 0.340" Head			¼" Screw (Pss= 3048 lbs, Pts = 3201 lbs) 0.250" dia, 0.409" Head		
				Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over
18	0.0188	33	33	44	24	84	48	29	84	52	33	105	55	38	105	60	44	127
27	0.0283	33	33	82	37	127	89	43	127	96	50	159	102	57	159	110	66	191
30	0.0312	33	33	95	40	140	103	48	140	111	55	175	118	63	175	127	73	211
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	61	140	164	72	195	177	84	265	188	95	265	203	110	318
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	79	140	244	94	195	263	109	345	280	124	345	302	144	415
54	0.0566	33	45	214	100	140	344	118	195	370	137	386	394	156	433	424	180	521
68	0.0713	33	45	214	125	140	426	149	195	523	173	386	557	196	545	600	227	656
97	0.1017	33	45	214	140	140	426	195	195	548	246	386	777	280	775	1,016	324	936
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	140	140	426	195	195	548	301	386	777	342	775	1,016	396	1,067
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	140	140	426	171	195	534	198	386	569	225	625	613	261	752
68	0.0713	50	65	214	140	140	426	195	195	548	249	386	777	284	775	866	328	948
97	0.1017	50	65	214	140	140	426	195	195	548	356	386	777	405	775	1,016	468	1,067
118	0.1242	50	65	214	140	140	426	195	195	548	386	386	777	494	775	1,016	572	1,067

SHEAR LIMIT FOR RIM JOIST

SHEAR LIMIT FOR COLUMN

SUPREME Allowable Screw Connection Capacity (Pounds Per Screw)

Thickness (mil)	Design Thickness (in)	Fy Yield (ksi)	Fu Tensile (ksi)	#6 Screw (Pss = 643 lbs, Pts = 419 lbs) 0.138" Dia; 0.272" Head			#8 Screw (Pss= 1278 lbs, Pts = 586 lbs) 0.164" Dia; 0.272" Head			#10 Screw (Pss= 1644 lbs, Pts = 1158 lbs) 0.190" Dia; 0.340" Head			#12 Screw (Pss= 2330 lbs, Pts = 2325 lbs) 0.216" Dia; 0.340" Head			¼" Screw (Pss= 3048 lbs, Pts = 3201 lbs) 0.250" Dia; 0.409" Head		
				Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over	Shear	Pull-Out	Pull-Over
D25	0.0155	50	65	111 [1]	39	137	111 [1]	47	137	111 [1]	54	171	-	-	-	-	-	-
D20	0.0188	57	65	142 [1]	48	140	150 [1]	57	166	164 [1]	66	208	109	75	208	-	-	-
30EQD	0.0235	57	65	174 [1]	60	140	184 [1]	71	195	236 [1]	82	260	152	93	260	-	-	-
33EQD	0.0235	57	65	174 [1]	60	140	184 [1]	71	195	236 [1]	82	260	152	93	260	-	-	-
33EQS	0.0295	57	65	171	75	140	187	89	195	201	103	326	214	117	326	231	136	392
43EQS	0.0400	57	65	270	102	140	295	121	195	317	140	386	338	159	442	364	184	532

[1]Values are based on testing using AISI S100 procedures.

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Fortress - Two Story Deck

(Calculations based on ASCE 7-16)

Wind Development

$h := 20\ ft$	Max Height of Deck
$k_h := 0.9$	Assuming Exp C
$k_{zt} := 1$	Assumed 1
$k_d := 0.85$	Directional Factor
$k_e := 1$	Conservatively 1
$V := 150$	Maximum Wind Speed

$q_h := 0.00256\ k_h \cdot k_{zt} \cdot k_d \cdot k_e \cdot V^2\ psf = 44.06\ psf$

$G := 0.85$	Gust Factor
$C_N := 1.2$	Governing Net Pressure Coefficient (T27.3-7)

$W := q_h \cdot G \cdot C_N = 44.95\ psf$	Design Wind Pressure (Eq 27.3-2)

Vertical Loading

$DL := 10\ psf$	Dead Load
$LL := 40 \cdot 1.5\ psf = 60\ psf$	Residential Live Load

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Loading on Deck Framing

Single Beam

5.5" Post

$trib := \frac{16}{2}\ ft = 8\ ft$ Maximum Joist Trib

$l := 12.34\ ft$ Maximum Beam Length

$P_D := DL \cdot trib \cdot l \cdot 0.5 = 0.49\ kip$ Axial Dead acting on Column per Span

$P_L := LL \cdot trib \cdot l \cdot 0.5 = 2.96\ kip$ Axial Live acting on Column per Span

$P_W := W \cdot trib \cdot l \cdot 0.5 = 2.22\ kip$ Axial Wind Load on Column per Span

$LC := P_D + P_L = 3.46\ kip$ ASD Maximum Load on Beam Connections

$\frac{LC}{2} = 1.73\ kip$ *< 2.7kip Bracket Capacity*

Downward Loading per Connection Point
(Eccentric Brackets on both sides of beam)

$P_{w1} := \frac{W \cdot \left(11\ in\ trib + 2.5\ ft^2\right)}{2\ l} = 17.91\ plf$ Wind Load on Upper Floor

$P_{w2} := \frac{W \cdot \left(11\ in\ trib + 4.5\ ft^2\right)}{2\ l} + P_{w1} = 39.46\ plf$ Wind Load on Lower Floor

Double Beam

5.5" Post

$trib := \frac{16}{2}\ ft = 8\ ft$ Maximum Joist Trib

$l := 16\ ft$ Maximum Beam Length

$P_D := DL \cdot trib \cdot l \cdot 0.5 = 0.64\ kip$ Axial Dead acting on Column per Span

$P_L := LL \cdot trib \cdot l \cdot 0.5 = 3.84\ kip$ Axial Live acting on Column per Span

$P_W := W \cdot trib \cdot l \cdot 0.5 = 2.88\ kip$ Axial Wind Load on Column per Span

$LC := P_D + P_L = 4.48\ kip$ ASD Maximum Load for Beam Connections

$\frac{LC}{2} = 2.24\ kip$ *< 2.7kip Bracket Capacity*

Downward Loading per Connection Point
(Eccentric Brackets on both sides of beam)

$P_{w1} := \frac{W \cdot \left(11\ in\ trib + 2.5\ ft^2\right)}{2\ l} = 13.81\ plf$ Wind Load on Upper Floor

$P_{w2} := \frac{W \cdot \left(11\ in\ trib + 4.5\ ft^2\right)}{2\ l} + P_{w1} = 30.43\ plf$ Wind Load on Lower Floor

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Equivalent Seismic Loading

$R := 3$ Seismic Response Modification Coeff (Ordinary Braced Frame)

$I := 1$ Importance Factor

$DL := 10\ psf$ Dead Load

Worst Case Loading, 100psf, 5-1/2" Post

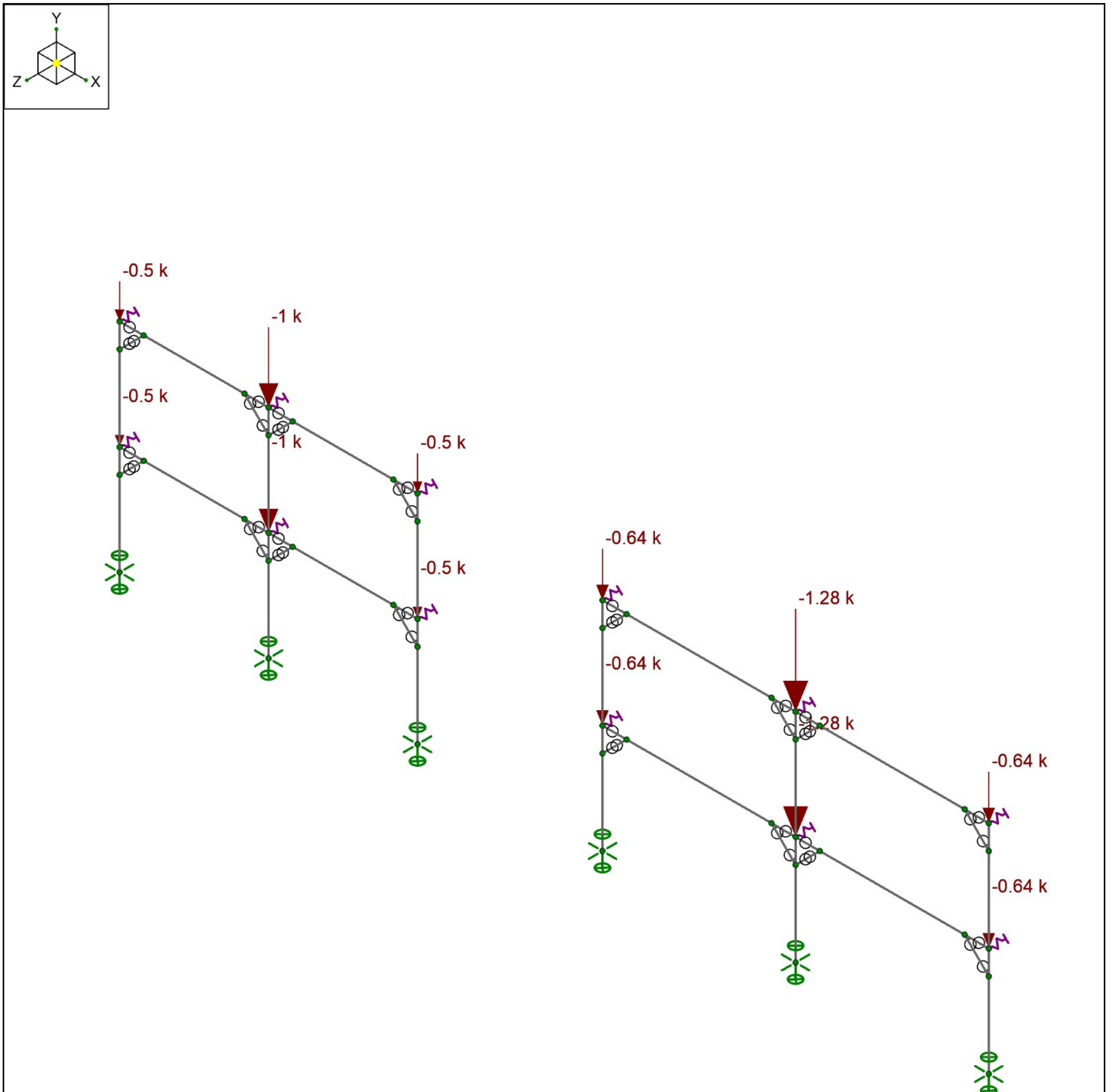
$P_{w1} := 13.81\ plf$ Wind Load on Single Story Frame

$trib := 8\ ft$ Maximum Joist Tributary Length

$$S_{DS} := \frac{R \cdot P_{w1}}{DL \cdot trib} = 0.518$$ Equivalent Spectral Response Acceleration Parameter

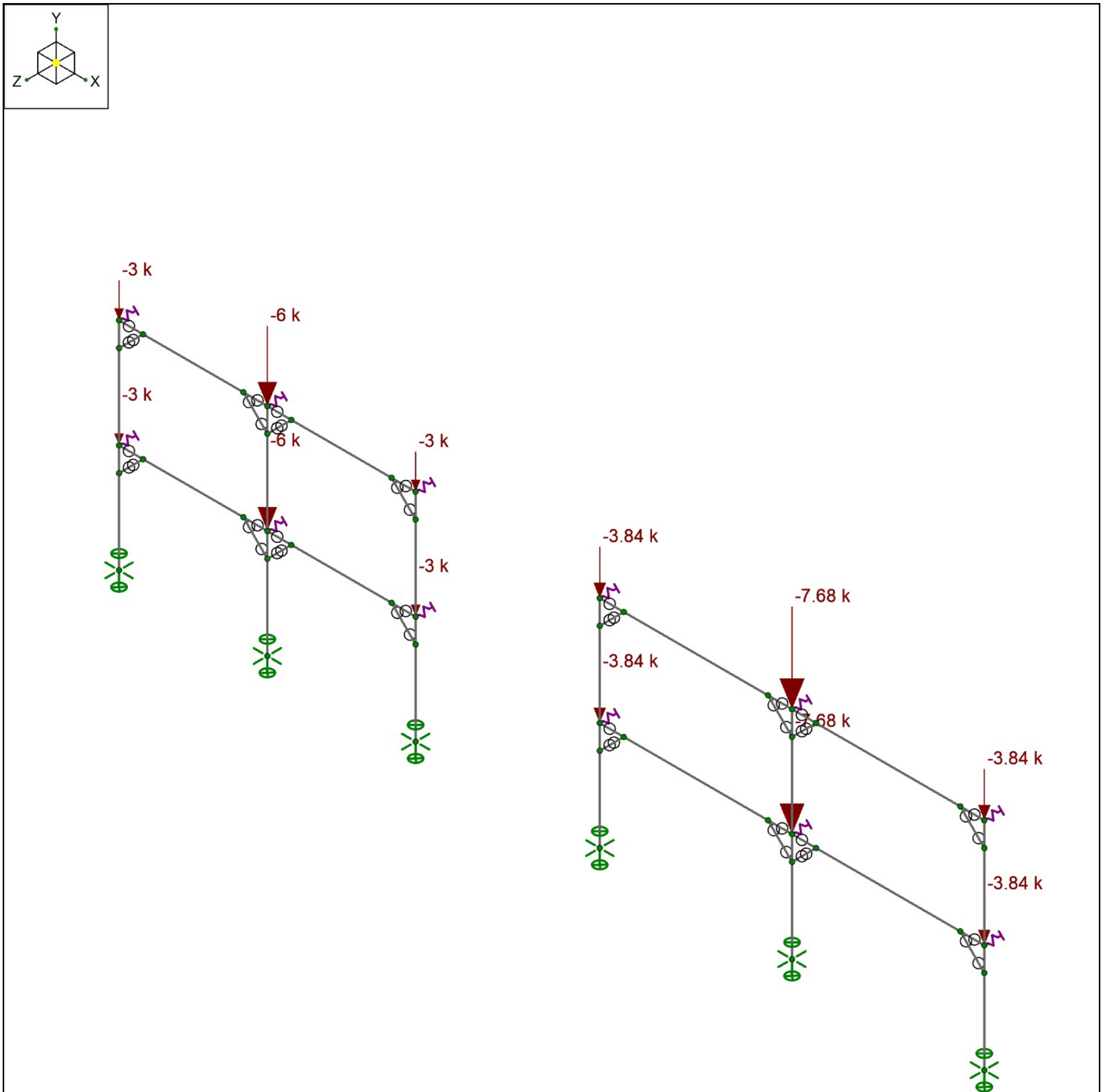
$$C_s := \frac{S_{DS}}{\frac{R}{I}} = 0.173$$ Equivalent Seismic Response Factor

Cs Factor of 0.173 Equivalent Seismic Response Factor



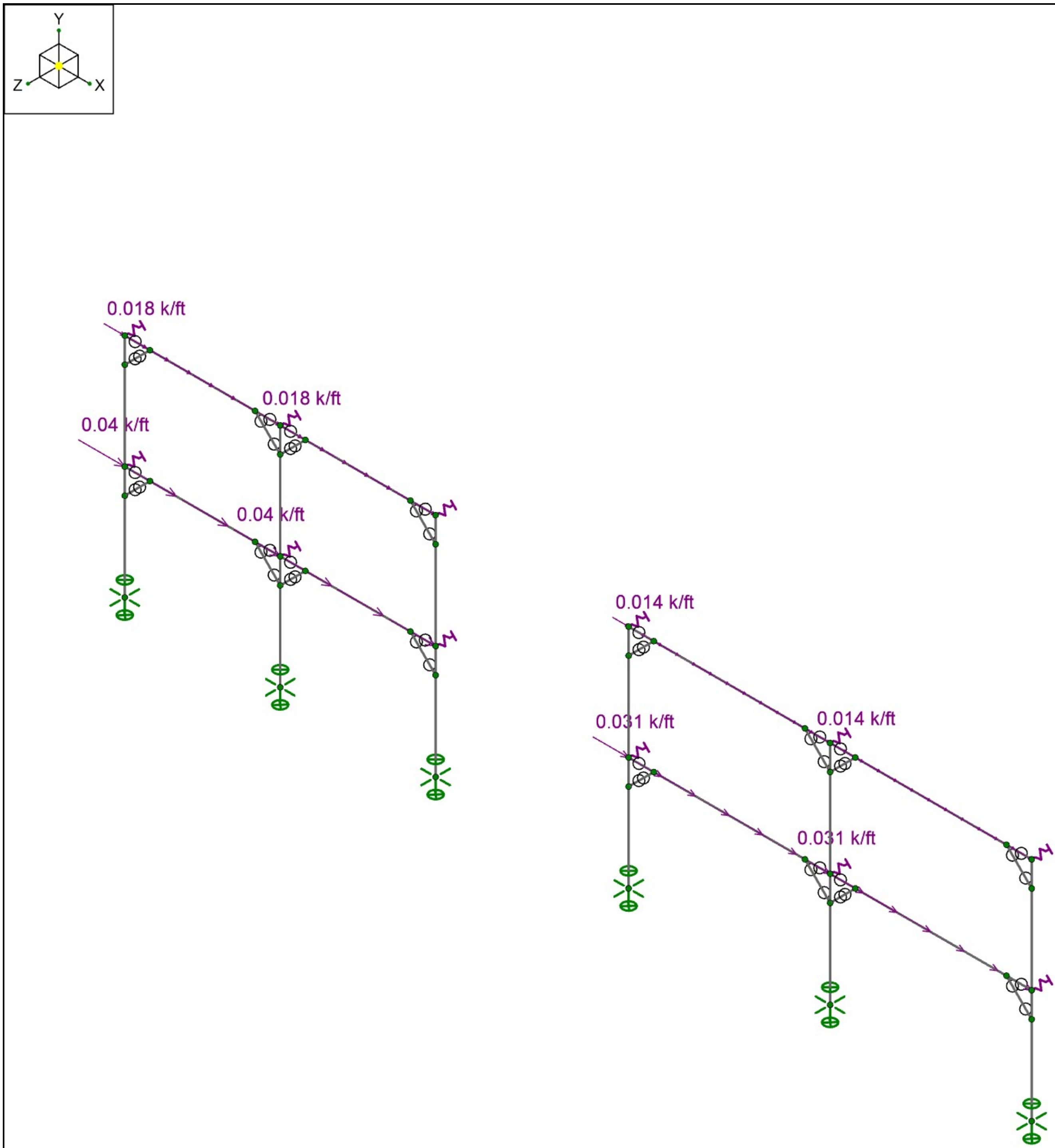
Loads: BLC 1, DL

RISA A NEMETSCHEK COMPANY	Eclipse Engineering, PC	Fotress-Fe Two Story	SK-1
	SDS		Nov 20, 2024 at 04:24 PM
	23-08-292	Dead Load	2024.11.18_Fortress-2 Deck-...



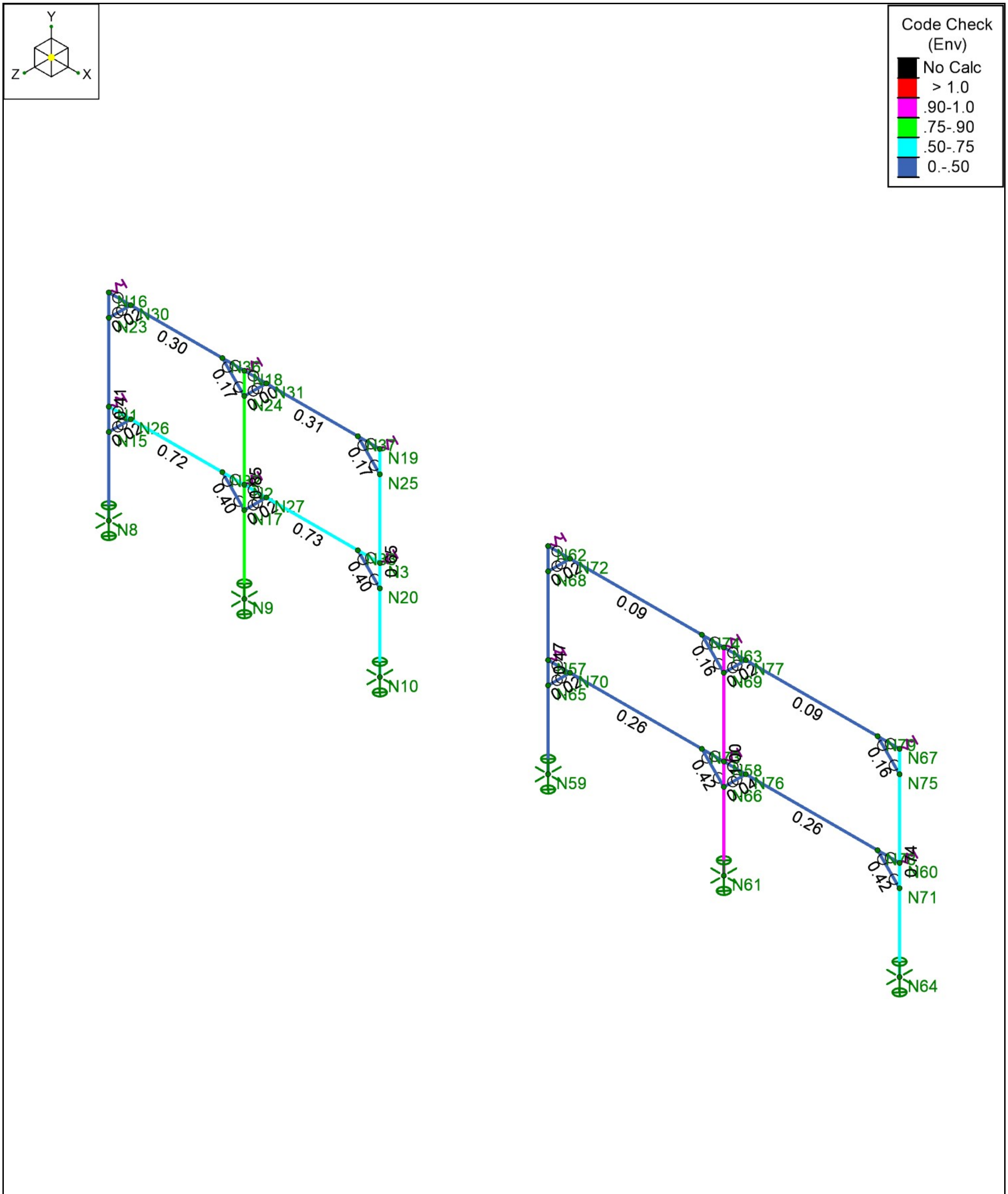
Loads: BLC 2, LL

RISA A NEMETSCHEK COMPANY	Eclipse Engineering, PC	Fotress-Fe Two Story	SK-2
	SDS		Nov 20, 2024 at 04:24 PM
	23-08-292	Live Load	2024.11.18_Fortress-2 Deck-…



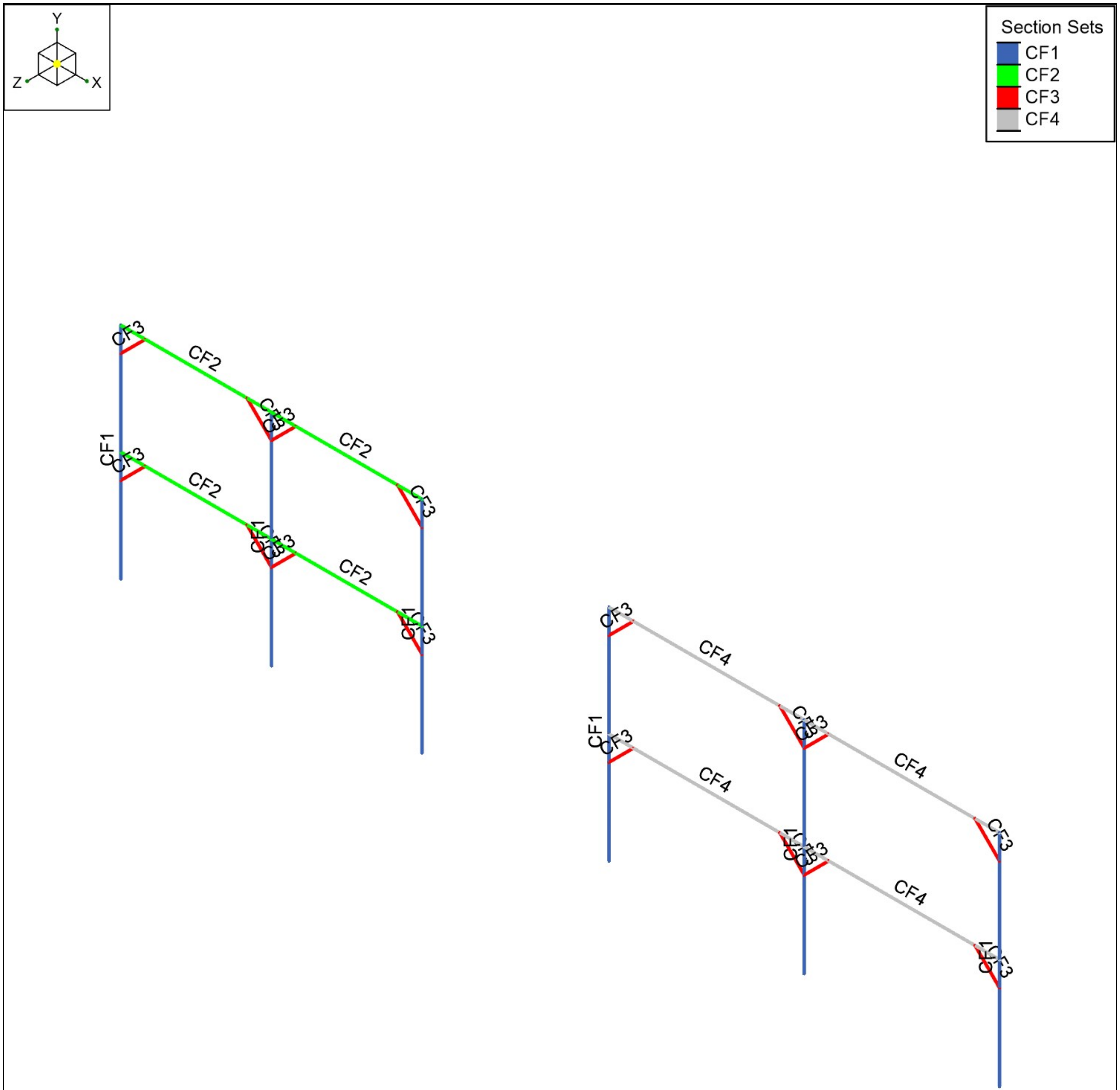
Loads: BLC 3, WL

RISA A NEMETSCHEK COMPANY	Eclipse Engineering, PC	Fotress-Fe Two Story	SK-3
	SDS		Nov 20, 2024 at 04:24 PM
	23-08-292	Wind Load	2024.11.18_Fortress-2 Deck-…



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

RISA A NEMETSCHEK COMPANY	Eclipse Engineering, PC	Fotress-Fe Two Story	SK-4
	SDS		Nov 20, 2024 at 04:25 PM
	23-08-292	Unity Check	2024.11.18_Fortress-2 Deck-...



Envelope Only Solution

RISA A NEMETSCHEK COMPANY	Eclipse Engineering, PC	Fotress-Fe Two Story	SK-5
	SDS		Nov 20, 2024 at 04:42 PM
	23-08-292	Section Set	2024.11.18_Fortress-2 Deck-…

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65
3	Q235	29000	11500	0.027	0.65	0.284	34	46

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	CF1	CFS5.5X5.5X.108	None	None	Q235	Typical	2.279	10.911	10.912	16.931
2	CF2	RIMBEAM	None	None	Q235	Typical	1.611	1.329	21.03	4.304
3	CF3	BRACE2	None	None	Q235	Typical	0.393	0.239	0.239	0.374
4	CF4	DBLRIM	None	None	Q235	Typical	6.337	11.36	80.18	30.34

Cold Formed Steel Design Parameters

	Label	Shape	Length [ft]	Lb y-y [ft]	Lcomp top [ft]	Function
1	M1	CF1	18	Segment	Lbyy	Lateral
2	M4	CF1	18	Segment	Lbyy	Lateral
3	M7	CF1	18	Segment	Lbyy	Lateral
4	M18	CF2	12.34	1	Lbyy	Lateral
5	M26	CF2	12.34	1	Lbyy	Lateral
6	M13	CF3	2.828		Lbyy	Lateral
7	M19	CF2	12.34	1	Lbyy	Lateral
8	M20	CF3	2.828		Lbyy	Lateral
9	M14	CF3	2.828		Lbyy	Lateral
10	M27	CF2	12.34	1	Lbyy	Lateral
11	M24	CF3	2.828		Lbyy	Lateral
12	M15	CF3	2.828		Lbyy	Lateral
13	M25	CF3	2.828		Lbyy	Lateral
14	M17	CF3	2.828		Lbyy	Lateral
15	M28	CF3	2.828		Lbyy	Lateral
16	M40	CF1	18	Segment	Lbyy	Lateral
17	M41	CF1	18	Segment	Lbyy	Lateral
18	M42	CF1	18	Segment	Lbyy	Lateral
19	M45	CF3	2.828		Lbyy	Lateral
20	M47	CF3	2.828		Lbyy	Lateral
21	M48	CF3	2.828		Lbyy	Lateral
22	M50	CF3	2.828		Lbyy	Lateral
23	M51	CF3	2.828		Lbyy	Lateral
24	M52	CF3	2.828		Lbyy	Lateral
25	M53	CF3	2.828		Lbyy	Lateral
26	M54	CF3	2.828		Lbyy	Lateral
27	M43	CF4	16	1	Lbyy	Lateral
28	M44	CF4	16	1	Lbyy	Lateral
29	M46	CF4	16	1	Lbyy	Lateral
30	M49	CF4	16	1	Lbyy	Lateral

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	IBC 16-8	Yes	Y	DL	1						
2	IBC 16-9	Yes	Y	DL	1	LL	1	LLS	1		
3	IBC 16-12 (a) (a)	Yes	Y	DL	1	WL	0.6				
4	IBC 16-13 (a) (a)	Yes	Y	DL	1	WL	0.45	LL	0.75	LLS	0.75
5	IBC 16-15 (a)	Yes	Y	DL	0.6	WL	0.6				

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N18	max	0	5	0	5	0	5	0	5	0	5	0	5
2		min	0	1	0	1	0	1	0	1	0	1	0	1
3	N2	max	0	5	0	5	0	5	0	5	0	5	0	5
4		min	0	1	0	1	0	1	0	1	0	1	0	1
5	N1	max	0	5	0	5	0	5	0	5	0	5	0	5
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	N3	max	0	5	0	5	0	5	0	5	0	5	0	5
8		min	0	1	0	1	0	1	0	1	0	1	0	1
9	N16	max	0	5	0	5	0	5	0	5	0	5	0	5
10		min	0	1	0	1	0	1	0	1	0	1	0	1
11	N19	max	0	5	0	5	0	5	0	5	0	5	0	5
12		min	0	1	0	1	0	1	0	1	0	1	0	1
13	N9	max	0	1	14.142	2	0	5	0	5	0	5	0	5
14		min	-0.357	5	1.3	5	0	1	0	1	0	1	0	1
15	N8	max	0.007	2	7.138	2	0	5	0	5	0	5	0	5
16		min	-0.141	5	0.252	5	0	1	0	1	0	1	0	1
17	N10	max	-0.002	1	7.138	2	0	5	0	5	0	5	0	5
18		min	-0.364	3	1.098	5	0	1	0	1	0	1	0	1
19	N57	max	0	5	0	5	0	5	0	5	0	5	0	5
20		min	0	1	0	1	0	1	0	1	0	1	0	1
21	N58	max	0	5	0	5	0	5	0	5	0	5	0	5
22		min	0	1	0	1	0	1	0	1	0	1	0	1
23	N59	max	0.015	2	9.227	2	0	5	0	5	0	5	0	5
24		min	-0.126	5	0.611	5	0	1	0	1	0	1	0	1
25	N60	max	0	5	0	5	0	5	0	5	0	5	0	5
26		min	0	1	0	1	0	1	0	1	0	1	0	1
27	N61	max	0	1	18.446	2	0	5	0	5	0	5	0	5
28		min	-0.366	5	1.829	5	0	1	0	1	0	1	0	1
29	N62	max	0	5	0	5	0	5	0	5	0	5	0	5
30		min	0	1	0	1	0	1	0	1	0	1	0	1
31	N63	max	0	5	0	5	0	5	0	5	0	5	0	5
32		min	0	1	0	1	0	1	0	1	0	1	0	1
33	N64	max	-0.007	1	9.227	2	0	5	0	5	0	5	0	5
34		min	-0.375	3	1.268	5	0	1	0	1	0	1	0	1
35	N67	max	0	5	0	5	0	5	0	5	0	5	0	5
36		min	0	1	0	1	0	1	0	1	0	1	0	1
37	Totals:	max	0	1	65.317	2	0	5						
38		min	-1.723	5	6.358	5	0	1						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0.751	3	0	5	0	5	0	5	0	5	-7.522e-6	1
2		min	0	2	-0.013	2	0	1	0	1	0	1	-4.909e-3	3
3	N2	max	0.753	3	-0.002	5	0	5	0	5	0	5	0	1
4		min	0	1	-0.026	2	0	1	0	1	0	1	-3.515e-3	3
5	N8	max	0	5	0	5	0	5	0	5	0	5	4.37e-5	2
6		min	0	2	0	2	0	1	0	1	0	1	-7.936e-3	3
7	N3	max	0.754	3	-0.001	5	0	5	0	5	0	5	1.936e-5	2
8		min	0	1	-0.013	2	0	1	0	1	0	1	-3.514e-3	3
9	N9	max	0	5	0	5	0	5	0	5	0	5	0	1
10		min	0	1	0	2	0	1	0	1	0	1	-9.447e-3	3
11	N16	max	1.061	3	-0.001	5	0	5	0	5	0	5	-2.998e-5	1
12		min	0	1	-0.019	2	0	1	0	1	0	1	-1.888e-3	5
13	N18	max	1.06	3	-0.002	5	0	5	0	5	0	5	0	1

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
14		min	0	1	-0.038	2	0	1	0	1	0	1	-1.41e-3	5
15	N10	max	0	3	0	5	0	5	0	5	0	5	-1.449e-5	1
16		min	0	1	0	2	0	1	0	1	0	1	-9.463e-3	3
17	N15	max	0.618	3	0	5	0	5	0	5	0	5	-1.301e-5	1
18		min	-0.001	2	-0.01	2	0	1	0	1	0	1	-6.103e-3	3
19	N17	max	0.667	3	-0.002	5	0	5	0	5	0	5	0	1
20		min	0	1	-0.02	2	0	1	0	1	0	1	-4.709e-3	3
21	N19	max	1.06	3	-0.002	5	0	5	0	5	0	5	1.071e-4	2
22		min	0	2	-0.019	2	0	1	0	1	0	1	-1.398e-3	5
23	N23	max	1.015	3	-0.001	5	0	5	0	5	0	5	-1.461e-5	1
24		min	-0.002	2	-0.018	2	0	1	0	1	0	1	-2.037e-3	3
25	N24	max	1.025	3	-0.003	5	0	5	0	5	0	5	0	1
26		min	0	1	-0.036	2	0	1	0	1	0	1	-1.999e-3	3
27	N26	max	0.751	3	0.044	5	0	5	0	5	0	5	1.727e-3	3
28		min	0	2	-0.012	2	0	1	0	1	0	1	-1.046e-5	1
29	N20	max	0.668	3	-0.002	5	0	5	0	5	0	5	3.951e-5	2
30		min	0	1	-0.01	2	0	1	0	1	0	1	-4.713e-3	3
31	N30	max	1.061	3	0.018	5	0	5	0	5	0	5	7.104e-4	5
32		min	0	1	-0.021	2	0	1	0	1	0	1	-8.939e-5	2
33	N32	max	0.752	3	0.07	5	0	5	0	5	0	5	-1.767e-5	1
34		min	0	2	-0.02	2	0	1	0	1	0	1	-2.231e-3	3
35	N36	max	1.06	3	0.028	5	0	5	0	5	0	5	-9.034e-6	1
36		min	0	1	-0.035	2	0	1	0	1	0	1	-9.335e-4	5
37	N25	max	1.025	3	-0.002	5	0	5	0	5	0	5	5.341e-5	2
38		min	0.001	1	-0.018	2	0	1	0	1	0	1	-1.984e-3	3
39	N27	max	0.753	3	0.043	5	0	5	0	5	0	5	1.763e-3	4
40		min	0	1	-0.02	2	0	1	0	1	0	1	1.767e-5	1
41	N31	max	1.06	3	0.016	5	0	5	0	5	0	5	7.738e-4	4
42		min	0	2	-0.035	2	0	1	0	1	0	1	9.034e-6	1
43	N33	max	0.753	3	0.07	3	0	5	0	5	0	5	1.046e-5	1
44		min	0	1	-0.012	2	0	1	0	1	0	1	-2.22e-3	3
45	N37	max	1.06	3	0.028	5	0	5	0	5	0	5	8.939e-5	2
46		min	0	2	-0.021	2	0	1	0	1	0	1	-9.171e-4	5
47	N57	max	0.571	3	-0.001	5	0	5	0	5	0	5	-2.969e-5	1
48		min	0	2	-0.017	2	0	1	0	1	0	1	-3.414e-3	3
49	N58	max	0.572	3	-0.003	5	0	5	0	5	0	5	0	1
50		min	0	1	-0.033	2	0	1	0	1	0	1	-1.84e-3	5
51	N59	max	0	5	0	5	0	5	0	5	0	5	9.692e-5	2
52		min	0	2	0	2	0	1	0	1	0	1	-6.187e-3	3
53	N60	max	0.572	3	-0.001	5	0	5	0	5	0	5	5.647e-5	2
54		min	0	1	-0.017	2	0	1	0	1	0	1	-1.841e-3	5
55	N61	max	0	5	0	5	0	5	0	5	0	5	0	1
56		min	0	1	0	2	0	1	0	1	0	1	-7.845e-3	3
57	N62	max	0.738	3	-0.002	5	0	5	0	5	0	5	-8.004e-5	1
58		min	0	1	-0.025	2	0	1	0	1	0	1	-7.154e-4	5
59	N63	max	0.738	3	-0.004	5	0	5	0	5	0	5	0	1
60		min	0	1	-0.05	2	0	1	0	1	0	1	-5.064e-4	5
61	N64	max	0	3	0	5	0	5	0	5	0	5	-4.739e-5	1
62		min	0	1	0	2	0	1	0	1	0	1	-7.847e-3	3
63	N65	max	0.475	3	-0.001	5	0	5	0	5	0	5	-4.451e-5	1
64		min	-0.003	2	-0.013	2	0	1	0	1	0	1	-4.508e-3	3
65	N66	max	0.529	3	-0.003	5	0	5	0	5	0	5	0	2
66		min	0	1	-0.026	2	0	1	0	1	0	1	-2.963e-3	5
67	N67	max	0.738	3	-0.002	5	0	5	0	5	0	5	1.839e-4	2
68		min	0	2	-0.025	2	0	1	0	1	0	1	-4.968e-4	5

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
69	N68	max	0.722	3	-0.002	5	0	5	0	5	0	5	-3.69e-5	1
70		min	-0.004	2	-0.023	2	0	1	0	1	0	1	-8.488e-4	5
71	N69	max	0.726	3	-0.004	5	0	5	0	5	0	5	0	1
72		min	0	1	-0.046	2	0	1	0	1	0	1	-9.864e-4	5
73	N70	max	0.571	3	0.014	5	0	5	0	5	0	5	5.819e-4	5
74		min	0	2	-0.017	2	0	1	0	1	0	1	-5.678e-5	1
75	N71	max	0.529	3	-0.002	5	0	5	0	5	0	5	9.125e-5	2
76		min	0.002	1	-0.013	2	0	1	0	1	0	1	-2.964e-3	5
77	N72	max	0.738	3	0.002	5	0	5	0	5	0	5	1.403e-4	5
78		min	0	1	-0.028	2	0	1	0	1	0	1	-1.501e-4	2
79	N73	max	0.571	3	0.028	5	0	5	0	5	0	5	1.609e-5	1
80		min	0	2	-0.028	2	0	1	0	1	0	1	-8.65e-4	5
81	N74	max	0.738	3	0.005	5	0	5	0	5	0	5	2.601e-5	1
82		min	0	1	-0.047	2	0	1	0	1	0	1	-2.552e-4	5
83	N75	max	0.726	3	-0.002	5	0	5	0	5	0	5	8.674e-5	2
84		min	0.002	1	-0.023	2	0	1	0	1	0	1	-9.794e-4	5
85	N76	max	0.572	3	0.013	5	0	5	0	5	0	5	5.965e-4	5
86		min	0	1	-0.028	2	0	1	0	1	0	1	-1.609e-5	1
87	N77	max	0.738	3	0	5	0	5	0	5	0	5	1.834e-4	4
88		min	0	2	-0.047	2	0	1	0	1	0	1	-2.601e-5	1
89	N78	max	0.572	3	0.029	5	0	5	0	5	0	5	5.678e-5	1
90		min	0	1	-0.017	2	0	1	0	1	0	1	-8.548e-4	5
91	N79	max	0.738	3	0.007	5	0	5	0	5	0	5	1.501e-4	2
92		min	0	2	-0.028	2	0	1	0	1	0	1	-2.375e-4	5