PRPF20231137

STRUCTURAL CALCULATIONS FOR:

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

Cimco Sales, Inc Building
2315 Inter Avenue
Puyallup, WA 98372

Job # COLA93804467

**(12' WIDE X 48' LONG BUILDING
WITH 10' LOW EAVE HEIGHT
AND 2:12 SINGLE SLOPE ROOF PITCH)**

INDEX TO CALCULATIONS

Distributor:
JM Buildings & Construction

JAMES C LOUGHREY
STATE OF WASHINGTON
22009139
REGISTERED
PROFESSIONAL ENGINEER

Structural Engineering by:

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2700 Market St NE
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James C Loughrey
Digitally signed by James C Loughrey
Date: 2023.08.01 14:57:09 -07'00'

JOB INFORMATION:

JOB NAME: Cimco Sales, Inc
JOB ADDRESS: 2315 Inter Avenue
Puyallup, WA 98372
JOB NUMBER: COLA93804467

MAIN BUILDING FRAME WIDTH (ft.):	12.00
OVERALL ENCLOSED BUILDING WIDTH (ft.):	12.00
BUILDING LENGTH (ft.):	48.00
BUILDING FRAME LOW EAVE HEIGHT (ft.):	10.00
BUILDING FRAME ROOF SLOPE (?/12):	2.00
Corner Wall Zones (ft):	6.00
Sidewall Interior Zone (ft):	36.00

MATERIAL SPECIFICATIONS:

CONCRETE: 2500 psi (28-day Strength)
CONCRETE REINFORCING: ASTM A615, Grade 60 (Fy = 60,000 psi)
STRUCTURAL BOLTS: ASTM A307
METAL ROOF PANELS: ASTM A653, Grade 80 (Fy = 80,000 psi min.)
METAL WALL PANELS: ASTM A653, Grade 80 (Fy = 80,000 psi min.)
CEE AND ZEE COLD-FORMED STEEL: ASTM A570, Grade 55 (Fy = 55,000 psi min.)

PROJECT PARAMETERS:

SITE CLASS:	D
RISK CATEGORY:	II

GOVERNING CODES: -- 2018 International Building Code (Load Combinations per 2018 IBC Section 1605.3.1)
-- AISI S100 (North American Specification for the Design of Cold-Formed Steel Structural Members)

VERTICAL LOADS:

DEAD LOADS:	METAL ROOF PANEL:	1.0	psf
	PURLINS:	1.0	psf
	MISC.:	0.0	psf
	STEEL FRAMES:	1.0	psf
	TOTAL ROOF DEAD LOAD:	3.0	psf
	WALL DEAD LOAD:	3.0	psf
ROOF LIVE LOADS:			
	ROOF LIVE LOAD REDUCTION FACTORS (R1 x R2):	1.00	
	DESIGN LIVE LOAD FOR CLEARSPAN FRAMES:	20.0	psf
	DESIGN LIVE LOAD FOR PURLINS AND OTHER ELEMENTS:	20.0	psf
ROOF SNOW LOADS:	GROUND SNOW LOAD:	25.0	psf
	SNOW LOAD IMPORTANCE FACTOR, Is:	1.00	
	Ce, Exposure Factor:	1.00	
	Ct, Thermal Factor:	1.20	
	Cs, Slope Factor:	1.00	
	MIN. ROOF SNOW LOAD:	25.0	psf
	DESIGN SLOPED ROOF SNOW LOAD:	25.0	psf

LATERAL LOADS:

SEISMIC LOADS:

(Based on ASCE 7-16, Chapter 12, using Site Class "D" and Risk Category "II")

	'Short' Period			1-sec. Period	
	PERP. TO SIDEWALL (TRANSVERSE)	PERP. TO ENDWALL (LONGITUDINAL)		PERP. TO SIDEWALL	PERP. TO ENDWALL
Ss:	1.259	1.259	S1:	0.433	0.433
Fa:	1.200	1.200	Fv:	1.867	1.867
$S_{MS} = (F_a \times S_s) =$	1.511	1.511	$S_{M1} =$	0.808	0.808
$S_{DS} = (2/3) \times S_{MS} =$	1.007	1.007	$S_{D1} =$	0.539	0.539
R =	3.0	3.0		3.0	3.0
REDUNDANCY FACTOR, rho =	1.30	1.30		1.30	1.30
SEISMIC IMPORTANCE FACTOR, Ie =	1.00	1.00		1.00	1.00
Cs =	0.335	0.335		0.179	0.179
Eh = Cs x W x rho=	0.4355 W	0.4355 W		0.2327 W	0.2327 W
Eh (ASD) = Eh * .7 =	0.304 W	0.304 W		0.162 W	0.162 W
W =TOTAL SEISMIC DESIGN DEAD LOAD (lbs.) =	3024	3024		3024	3024
LATERAL SYSTEM SEISMIC SHEAR EFFECT, Eh (lbs.) =	**919**	**919**		**490**	**490**
SEISMIC DESIGN CATEGORY (FOR BOTH PERIODS PER SEC. 1613.5.6.1):	D			D	
.8 x Ts =	0.43		(ASCE 11.4.6)		
Ta (sec.) =	0.20	0.13	(ASCE 12.8.2.1)		

WIND LOADS:

ULTIMATE WIND SPEED (mph) = 110
EXPOSURE = C
BUILDING ENCLOSURE TYPE: PARTIALLY ENCLOSED

MEAN ROOF HEIGHT (ft.): 12.00

VELOCITY EXPOSURE COEFFICIENT, Kz = 0.850
WIND TOPOGRAPHICAL FACTOR, Kt = 1.000
WIND DIRECTIONALITY FACTOR, Kd = 0.850
GROUND ELEVATION FACTOR, Ke = 0.998

ULTIMATE WIND PRESSURE (psf): 22.33

MAIN FORCE RESISTING SYSTEM (MFRS) DESIGN WIND PRESSURES (Perp. to Sidewall):

	G * Cp ± Gcpi	ULTIMATE WIND PRESSURE (psf):	
Coefficient for Windward Wall Ballooning:	0.130	2.90	(pressure)
Coefficient for Leeward Wall Ballooning:	-0.975	-21.77	(suction)
Coefficient for Windward Roof Upward Ballooning:	-1.598	-35.70	(suction)
Coefficient for Leeward Roof Upward Ballooning:	-1.598	-35.70	(suction)
Coefficient for Windward Roof Downward Ballooning:	0.000	0.00	
Coefficient for Leeward Roof Downward Ballooning:	-1.598	-35.70	(suction)
Coefficient for Windward Wall Deflation:	1.230	27.47	(pressure)
Coefficient for Leeward Wall Deflation:	0.125	2.79	(pressure)
Coefficient for Windward Roof Upward Deflation:	-0.498	-11.13	(suction)
Coefficient for Leeward Roof Upward Deflation:	0.397	8.87	(pressure)
Coefficient for Windward Roof Downward Deflation:	0.397	8.87	(pressure)
Coefficient for Leeward Roof Downward Deflation:	0.397	8.87	(pressure)

ALLOWABLE STRESS LATERAL SYSTEM WIND FORCE PERP. TO SIDEWALLS, W (lbs.) = 3892

MAIN FORCE RESISTING SYSTEM (MFRS) DESIGN WIND PRESSURES (Perp. to Endwall):

Int. Zone Wall Pressure Horiz. Coefficient:	1.105
Int. Zone Endwall Ultimate Wind Pressure (psf):	24.68

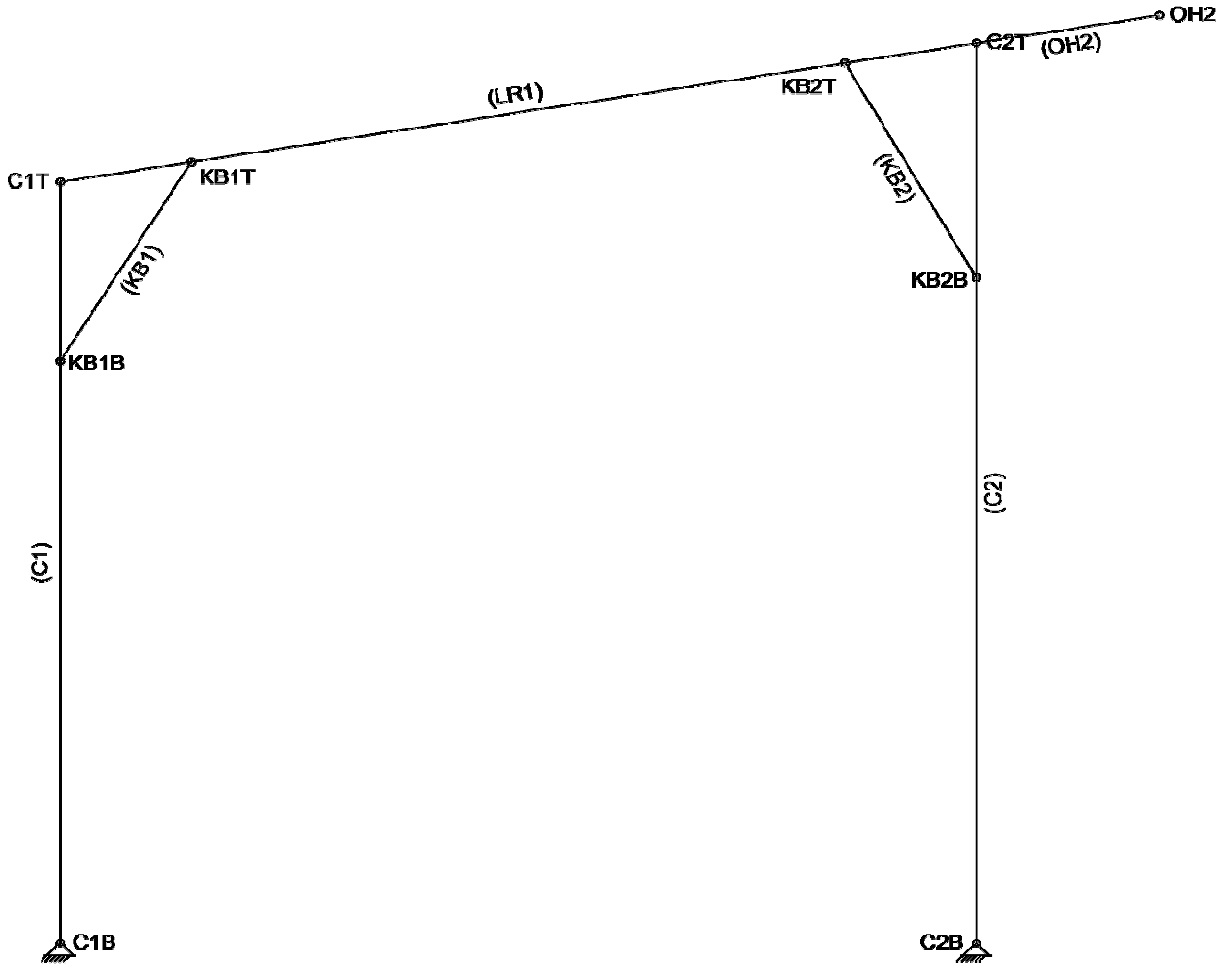
ALLOWABLE STRESS LATERAL SYSTEM WIND FORCE PERP. TO ENDWALLS, W (lbs.) = 713

CLADDING AND COMPONENT ALLOWABLE STRESS DESIGN WIND PRESSURES:

	GCp ± Gcpi (FIELD)		Pressures (psf)	
Element	**INWARD**	**OUTWARD**	**INWARD**	**OUTWARD**
Roof Purlins:	0.770	-1.450	10.31	19.43
Sidewall Girts:	1.306	-1.396	17.51	18.71
Endwall Girts:	1.314	-1.404	17.60	18.81
Endwall Columns:	1.327	-1.417	17.78	18.98

CLEARSPAN FRAME ANALYSIS:

Analysis & Design Software:	ACT Dimensions version 2.22.8.3 by ACT Building Systems
Applicable Frame Numbers:	1-4
Overall Nominal Frame Width:	12' - 0"
Nominal Eave Height:	10' - 0"
Roof Pitch:	Single Slope 2:12
Tributary Width:	192.00 in
Design Roof Snow Load:	25.00 psf
Roof Live Load:	20.00 psf
Wind Speed AndAlso Exposure:	110 mph, C



X - JOINT LABEL (SEE RISA ANALYSIS NEXT PAGE)
(X) - MEMBER LABEL (SEE RISA ANALYSIS NEXT PAGE)

FRAME NODE AND MEMBER DIAGRAM

Cold Formed Steel Properties

	Label	E[psi]	G[psi]	Nu	Therm(/1E5 F)	Density[lb/ft^3]	Yield[psi]	Fu[psi]
1	CF_STL	29500065	11300025	0.3	0.65	490	55000	70000

Joint Coordinates

	Label	X[ft]	Y[ft]
1	C1B	1.000	0.000
2	C1T	1.000	9.153
3	C2B	11.001	0.000
4	C2T	11.001	10.820
5	OH2	13.001	11.153
6	KB1B	1.000	7.000
7	KB1T	2.434	9.392
8	KB2B	11.001	8.001
9	KB2T	9.567	10.581

Member Primary Data

	Label	I Joint	J Joint	Shape	Type	DesignList	Material	DesignRules
1	C1	C1B	C1T	2-8in x 4in 14G CEE-BB	Beam	CS	CF_STL	Typical
2	C2	C2B	C2T	2-8in x 4in 14G CEE-BB	Beam	CS	CF_STL	Typical
3	OH2	OH2	C2T	2-8in x 4in 14G CEE-BB	Beam	CS	CF_STL	Typical
4	KB1	KB1B	KB1T	2-4in x 2.5in 16G CEE-BB	Beam	CS	CF_STL	Typical
5	KB2	KB2B	KB2T	2-4in x 2.5in 16G CEE-BB	Beam	CS	CF_STL	Typical
6	LR1	C1T	C2T	2-8in x 4in 14G CEE-BB	Beam	CS	CF_STL	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[ft]	J Offset[ft]	T/C Only	Physical
1	C1		PIN	0.000	0.000		Yes
2	C2		PIN	0.000	0.000		Yes
3	OH2			0.000	0.000		Yes
4	KB1	PIN	PIN	0.000	0.000		
5	KB2	PIN	PIN	0.000	0.000		
6	LR1			0.359	0.359		Yes

Cold Formed Steel Design Parameters

	Label	Shape	Length[ft]	Lb-out[ft]	Lb-in[ft]	Lcomp top[ft]	Lcomp bot[ft]	K-out	K-in	Cm	Out sway	In sway
1	C1	2-8in x 4in 14G CEE-BB	9.153	4.667			4.667		0.8	1		Yes
2	C2	2-8in x 4in 14G CEE-BB	10.820						0.8	1		Yes
3	OH2	2-8in x 4in 14G CEE-BB	2.028						0.8	1		Yes
4	KB1	2-4in x 2.5in 16G CEE-BB	2.789									
5	KB2	2-4in x 2.5in 16G CEE-BB	2.952									
6	LR1	2-8in x 4in 14G CEE-BB	10.138	3.986			3.986		0.8	1		Yes

Basic Load Cases

	BLC Description	Category	Joint	Point	Distributed
1	Roof Dead	DL	0	0	2
2	Roof Snow	SL	0	0	2
3	Roof Live	RLL	0	0	2
4	Wall Dead	DL	0	0	0
5	Floor Dead	DL	0	0	0
6	Floor Live	LL	0	0	0
7	Wind To Right - Upward Balooning	OL1	0	0	8
8	Wind To Right - Upward Deflation	OL2	0	0	8

Basic Load Cases (continued)

	BLC Description	Category	Joint	Point	Distributed
9	Wind To Right - Downward Balooning	OL3	0	0	2
10	Wind To Right - Downward Deflation	OL4	0	0	8
11	Wind To Left - Upward Balooning	OL5	0	0	8
12	Wind To Left - Upward Deflation	OL6	0	0	8
13	Wind To Left - Downward Balooning	OL7	0	0	4
14	Wind To Left - Downward Deflation	OL8	0	0	6
15	Earthquake+	None	0	0	4
16	Earthquake-	None	0	0	4

Member Distributor Loads (BLC 1 : Roof Dead)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	OH2	Y	-48.000	-48.000	0.000	2.028
2	LR1	Y	-48.000	-48.000	0.000	9.421

Member Distributor Loads (BLC 2 : Roof Snow)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	OH2	Y	-394.558	-394.558	0.000	2.028
2	LR1	Y	-394.558	-394.558	0.000	9.421

Member Distributor Loads (BLC 3 : Roof Live)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	OH2	Y	-315.646	-315.646	0.000	2.028
2	LR1	Y	-315.646	-315.646	0.000	9.421

Member Distributor Loads (BLC 7 : Wind To Right - Upward Balooning)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	46.390	46.390	0.000	9.153
2	C2	X	347.924	347.924	0.000	10.820
3	OH2	X	187.532	187.532	0.000	2.028
4	OH2	Y	1125.194	1125.194	0.000	2.028
5	LR1	X	-93.766	-93.766	0.000	4.204
6	LR1	X	-93.766	-93.766	4.204	9.421
7	LR1	Y	562.597	562.597	0.000	4.204
8	LR1	Y	562.597	562.597	4.204	9.421

Member Distributor Loads (BLC 8 : Wind To Right - Upward Deflation)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	438.919	438.919	0.000	9.153
2	C2	X	-44.606	-44.606	0.000	10.820
3	OH2	X	58.469	58.469	0.000	2.028
4	OH2	Y	350.816	350.816	0.000	2.028
5	LR1	X	-29.235	-29.235	0.000	4.204
6	LR1	X	-29.235	-29.235	4.204	9.421
7	LR1	Y	175.408	175.408	0.000	4.204
8	LR1	Y	175.408	175.408	4.204	9.421

Member Distributor Loads (BLC 9 : Wind To Right - Downward Balooning)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	46.390	46.390	0.000	9.153
2	C2	X	347.924	347.924	0.000	10.820

Member Distributor Loads (BLC 10 : Wind To Right - Downward Deflation)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	438.919	438.919	0.000	9.153
2	C2	X	-44.606	-44.606	0.000	10.820
3	OH2	X	-46.580	-46.580	0.000	2.028
4	OH2	Y	-279.480	-279.480	0.000	2.028
5	LR1	X	23.290	23.290	0.000	4.204
6	LR1	X	23.290	23.290	4.204	9.421
7	LR1	Y	-139.740	-139.740	0.000	4.204
8	LR1	Y	-139.740	-139.740	4.204	9.421

Member Distributor Loads (BLC 11 : Wind To Left - Upward Balooning)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	-347.924	-347.924	0.000	9.153
2	C2	X	-46.390	-46.390	0.000	10.820
3	OH2	X	164.091	164.091	0.000	2.028
4	OH2	Y	984.544	984.544	0.000	2.028
5	LR1	X	-93.766	-93.766	0.000	5.217
6	LR1	X	-93.766	-93.766	5.217	9.421
7	LR1	Y	562.597	562.597	0.000	5.217
8	LR1	Y	562.597	562.597	5.217	9.421

Member Distributor Loads (BLC 12 : Wind To Left - Upward Deflation)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	44.606	44.606	0.000	9.153
2	C2	X	-438.919	-438.919	0.000	10.820
3	OH2	X	-23.290	-23.290	0.000	2.028
4	OH2	Y	-139.740	-139.740	0.000	2.028
5	LR1	X	-29.235	-29.235	0.000	5.217
6	LR1	X	-29.235	-29.235	5.217	9.421
7	LR1	Y	175.408	175.408	0.000	5.217
8	LR1	Y	175.408	175.408	5.217	9.421

Member Distributor Loads (BLC 13 : Wind To Left - Downward Balooning)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	-347.924	-347.924	0.000	9.153
2	C2	X	-46.390	-46.390	0.000	10.820
3	OH2	X	93.766	93.766	0.000	2.028
4	OH2	Y	562.597	562.597	0.000	2.028

Member Distributor Loads (BLC 14 : Wind To Left - Downward Deflation)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	44.606	44.606	0.000	9.153
2	C2	X	-438.919	-438.919	0.000	10.820
3	OH2	X	-23.290	-23.290	0.000	2.028
4	OH2	Y	-139.740	-139.740	0.000	2.028
5	LR1	X	23.290	23.290	0.000	9.421
6	LR1	Y	-139.740	-139.740	0.000	9.421

Member Distributor Loads (BLC 15 : Earthquake+)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	15.998	15.998	0.000	9.153
2	C2	X	15.998	15.998	0.000	10.820
3	OH2	X	15.998	15.998	0.000	2.028
4	LR1	X	15.998	15.998	0.000	9.421

Member Distributor Loads (BLC 16 : Earthquake-)

	Member Label	Direction	Start Mag[lb/ft]	End Mag[lb/ft]	Start Loc[ft/%]	End Loc[ft/%]
1	C1	X	-15.998	-15.998	0.000	9.153
2	C2	X	-15.998	-15.998	0.000	10.820
3	OH2	X	-15.998	-15.998	0.000	2.028
4	LR1	X	-15.998	-15.998	0.000	9.421

Load Combinations

	Description	PDelta	SRSS	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DL ONLY			DL	1						
2	FLL ONLY			LL	1						
3	IBC 16-9			DL	1	LL	1				
4	IBC 16-10 (a)			DL	1	RLL	1				
5	IBC 16-10 (b)			DL	1	SL	1				
6	IBC 16-11 (a)			DL	1	LL	0.75	RLL	0.75		
7	IBC 16-11 (b)			DL	1	LL	0.75	SL	0.75		
8	IBC 16-12 (a) 1			DL	1	OL1	0.6				
9	IBC 16-12 (a) 2			DL	1	OL2	0.6				
10	IBC 16-12 (a) 3			DL	1	OL3	0.6				
11	IBC 16-12 (a) 4			DL	1	OL4	0.6				
12	IBC 16-12 (a) 5			DL	1	OL5	0.6				
13	IBC 16-12 (a) 6			DL	1	OL6	0.6				
14	IBC 16-12 (a) 7			DL	1	OL7	0.6				
15	IBC 16-12 (a) 8			DL	1	OL8	0.6				
16	IBC 16-12 (b) 1			DL	1	15	0.7				
17	IBC 16-12 (b) 2			DL	1	16	0.7				
18	IBC 16-13 (a) 1			DL	1	LL	0.75	RLL	0.75	OL1	0.45
19	IBC 16-13 (a) 2			DL	1	LL	0.75	RLL	0.75	OL2	0.45
20	IBC 16-13 (a) 3			DL	1	LL	0.75	RLL	0.75	OL3	0.45
21	IBC 16-13 (a) 4			DL	1	LL	0.75	RLL	0.75	OL4	0.45
22	IBC 16-13 (a) 5			DL	1	LL	0.75	RLL	0.75	OL5	0.45
23	IBC 16-13 (a) 6			DL	1	LL	0.75	RLL	0.75	OL6	0.45
24	IBC 16-13 (a) 7			DL	1	LL	0.75	RLL	0.75	OL7	0.45
25	IBC 16-13 (a) 8			DL	1	LL	0.75	RLL	0.75	OL8	0.45
26	IBC 16-13 (b) 1			DL	1	LL	0.75	SL	0.75	OL1	0.45
27	IBC 16-13 (b) 2			DL	1	LL	0.75	SL	0.75	OL2	0.45
28	IBC 16-13 (b) 3			DL	1	LL	0.75	SL	0.75	OL3	0.45

Load Combinations (continued)

	Description	PDelta	SRSS	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
29	IBC 16-13 (b) 4			DL	1	LL	0.75	SL	0.75	OL4	0.45
30	IBC 16-13 (b) 5			DL	1	LL	0.75	SL	0.75	OL5	0.45
31	IBC 16-13 (b) 6			DL	1	LL	0.75	SL	0.75	OL6	0.45
32	IBC 16-13 (b) 7			DL	1	LL	0.75	SL	0.75	OL7	0.45
33	IBC 16-13 (b) 8			DL	1	LL	0.75	SL	0.75	OL8	0.45
34	IBC 16-14 (a) 1			DL	1	LL	0.75	SL	0.75	15	0.525
35	IBC 16-14 (a) 2			DL	1	LL	0.75	SL	0.75	16	0.525
36	IBC 16-15 (a) 1			DL	0.6	OL1	0.6				
37	IBC 16-15 (a) 2			DL	0.6	OL2	0.6				
38	IBC 16-15 (a) 3			DL	0.6	OL3	0.6				
39	IBC 16-15 (a) 4			DL	0.6	OL4	0.6				
40	IBC 16-15 (a) 5			DL	0.6	OL5	0.6				
41	IBC 16-15 (a) 6			DL	0.6	OL6	0.6				
42	IBC 16-15 (a) 7			DL	0.6	OL7	0.6				
43	IBC 16-15 (a) 8			DL	0.6	OL8	0.6				
44	IBC 16-16 (a) 1			DL	0.6	15	0.7				
45	IBC 16-16 (a) 2			DL	0.6	16	0.7				

Envelope Joint Reactions

	Joint		X[lb]	LC	Y[lb]	LC	Moment[ft-lb]	LC
1	C1B	max	1574	12	2830	33	0	13
2	C1B	min	-1724	37	-2383	36	-0	38
3	C2B	max	2027	41	3725	29	0	8
4	C2B	min	-1629	10	-4055	40	-0	37
5	Total	max	2798	41	5067	5	0	13
6	Total	min	-2513	10	-4219	36	-0	38

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	Shear[lb]	LC	Moment[ft-lb]	LC
1	C1	1	max	2830	33	1574	12	0	13
2		1	min	-2383	36	-1724	37	-0	38
3	C1	2	max	4248	10	2893	37	0	14
4		2	min	-5095	41	-2967	12	-0	39
5	C2	1	max	3725	29	2027	41	0	8
6		1	min	-4055	40	-1629	10	-0	37
7	C2	2	max	2760	31	2547	10	0	36
8		2	min	-3051	36	-3134	41	-0	15
9	OH2	1	max	0	43	0	10	0	10
10		1	min	-0	9	-0	40	-0	40
11	OH2	2	max	198	29	1255	36	945	29
12		2	min	-440	36	-932	29	-1272	36
13	KB1	1	max	7482	13	0	41	-0	1
14		1	min	-6442	36	-0	28	-0	1
15	KB1	2	max	7482	13	0	41	0	28
16		2	min	-6442	36	-0	28	-0	41
17	KB2	1	max	5171	29	0	45	-0	1
18		1	min	-6548	40	0	1	-0	1
19	KB2	2	max	5171	29	0	45	-0	1
20		2	min	-6548	40	0	1	-0	1
21	LR1	1	max	3347	39	4568	41	0	43
22		1	min	-3633	12	-3764	10	-0	8

Envelope Member Section Forces (continued)

	Member	Sec		Axial[lb]	LC	Shear[lb]	LC	Moment[ft-lb]	LC
23	LR1	2	max	2758	41	3161	12	1272	36
24		2	min	-2204	10	-2932	39	-945	29

AISI S100-16 : ASD Cold Formed Steel Code Checks

	Member	Shape	H1.2-1 Check	Loc[ft]	LC	H2-1 Check	Loc[ft]	LC
1	C1	2-8in x 4in 14G CEE-BB	0.71	7.000	4	0.55	7.000	4
2	C2	2-8in x 4in 14G CEE-BB	0.89	8.000	4	0.68	8.000	4
3	KB1	2-4in x 2.5in 16G CEE-BB	0.33	2.789	1	0.00	2.789	1
4	KB2	2-4in x 2.5in 16G CEE-BB	0.24	2.952	1	0.00	2.952	1
5	LR1	2-8in x 4in 14G CEE-BB	0.67	1.453	6	0.76	1.453	5

AISI S100-16 : ASD Cold Formed Steel Allowable Member Load

	Member	Shape	Pn/Om[lb]	Tn/Om[lb]	Mn/Om[lb-ft]	Cb	Cm
1	C1	2-8in x 4in 14G CEE-BB	22252	72457	10851	1	1
2	C2	2-8in x 4in 14G CEE-BB	18367	72457	10322	1	1
3	KB1	2-4in x 2.5in 16G CEE-BB	22363	35830	3602	1	1
4	KB2	2-4in x 2.5in 16G CEE-BB	21984	35830	3602	1	1
5	LR1	2-8in x 4in 14G CEE-BB	19885	72457	10851	1	1

FRAME BRACE END SCREW CONNECTION DESIGN

Brace results apply at Frames 1-4

Single Slope Frame Columns: Double 8in x 4in 14G CEE
Single Slope Frame Rafters: Double 8in x 4in 14G CEE
Single Slope Frame Typ. Knee Braces: Double 4in x 2.5in 16G CEE

Low Eave Knee Brace Vert. Intersection Dimension per Detail A/2 (ft.): 7' - 2 3/4"
Low Eave Knee Brace Horiz. Intersection Dimension per Detail A/2 (ft.): 1' - 1 1/8"
High Eave Knee Brace Vert. Intersection Dimension per Detail B/2 (ft.): 8' - 3 1/8"
High Eave Knee Brace Horiz. Intersection Dimension per Detail B/2 (ft.): 1' - 1 1/4"

Screw Size: #14
Ultimate Single Shear Screw Strength (lbs.): 2450
Ω = 2.5

	n Screws	R3d (group effect factor)	V single screw (lbs.)	P (design allowable, lbs.)
Low Eave Knee Brace	7	0.71	581	4069
High Eave Knee Brace	7	0.71	581	4069

*** MAX. LOW EAVE KNEE BRACE FORCE (lbs.):** **3741** (INSTALL (7) #14 SCREWS AT EACH END OF EACH LOW EAVE KNEE BRACE)

*** MAX. HIGH EAVE KNEE BRACE FORCE (lbs.):** **3741** (INSTALL (7) #14 SCREWS AT EACH END OF EACH HIGH EAVE KNEE BRACE)

FRAME BRACE END ALTERNATE BOLT CONNECTION DESIGN

NOTATIONS

Fu = Tensile strength of connected part (psi)
Fy = Yield strength of connected part (psi)
db = Nominal bolt diameter (in.)
g1 = Nominal gauge of thinnest connected part (in.)
t1 = Thickness of thinnest connected part (in.)
Pn = Nominal bearing strength per bolt (lbs.)

ALLOWABLE SHEAR BASED ON CONNECTED MATERIALS:

Fu (psi) = 70000 db = 0.625
Fy (psi) = 55000 g1 = 16
d/t = 10.59 t1 = 0.059
C = 2.94
Pn = 7591

Allowable shear based on connected material bearing (lbs.): 3100

Bolt Grade: A307
Allowable shear based on A307 bolt in shear (lbs.): 3068

Allowable Shear on Each Bolt (lbs.): **3068**

MAX. LOW EAVE KNEE BRACE FORCE (lbs.): **3741** (USE MIN. (2) 5/8" DIAM. A307 BOLTS AT EACH END OF EACH LOW EAVE KNEE BRACE)

MAX. HIGH EAVE KNEE BRACE FORCE (lbs.): **3741** (USE MIN. (2) 5/8" DIAM. A307 BOLTS AT EACH END OF EACH HIGH EAVE KNEE BRACE)

LATERAL FORCE RESISTANCE X-BRACING AND DIAPHRAGM ANALYSIS

Reports verifying diaphragm capacity available upon request.

'ENDWALL A' X-BRACING TOTAL SHEAR FORCE, ASD, LBS.:	**948**	(ADD KNEE BRACES TO ENDWALL FRAME IN LIEU OF X-BRACING)
'ENDWALL B' X-BRACING TOTAL SHEAR FORCE, ASD, LBS.:	**948**	(ADD KNEE BRACES TO ENDWALL FRAME IN LIEU OF X-BRACING)
'SIDEWALL A' X-BRACING TOTAL SHEAR FORCE, ASD, LBS.:	**913**	(X-BRACING USED TO RESIST LOAD)
BAY #	2	
X-BRACING WIDTH (ft.):	16.00	
HEIGHT (ft.):	9.94	
SHEAR FORCE, ASD (lbs.):	913	
BASE UPLIFT TENSION, ASD (lbs.):	567	
X-BRACING TENSION, ASD (lbs.):	1075	
STRAP SIZE:	(1) 1.5" x 16ga. strap	
'SIDEWALL B' X-BRACING TOTAL SHEAR FORCE, ASD, LBS.:	**0**	(DRAG 369 LBS SHEAR LOAD AT THIS WALL TO OPPOSITE SIDEWALL)
'ROOF' TOTAL SHEAR FORCE, ASD, LBS.:	**0**	(SHEETING DIAPHRAGM ACTION USED TO RESIST LOAD)
PANEL #:	1	
PANEL WIDTH (ft.):	48.00	
PANEL WIDTH RELATIVE STIFFNESS:	2304	
HEIGHT (ft.):	12.17	
MAX. PANEL SHEAR FORCE, ASD (lbs.):	0	
PANEL SHEAR, ASD (plf):	0	
ALLOWABLE PANEL SHEAR, ASD (plf):	172	
	OK	
REACTION AT PANEL END, ASD:	0	

ROOF PURLIN DESIGN

MEMBER SIZE USED -->	8in x 2.5/2.5in 14G ZEE	
	ALL BAYS	
SPAN (ft.):	16.00	
DOWNWARD LOAD TRIB. WIDTH (ft.):	3.99	
DOWNWARD DISTRIBUTED LOAD (lbs./ft.):	106	
UPWARD LOAD TRIB. WIDTH (ft.):	3.99	
UPWARD DISTRIBUTED LOAD (lbs./ft.):	76	
DESIGN DOWNWARD BENDING MOMENT, Mu (ft.-lbs.):	5673	
DESIGN DOWNWARD END SHEAR (lbs.):	849	
DESIGN UPWARD BENDING MOMENT, Mu (ft.-lbs.):	4106	
DESIGN UPWARD END SHEAR (lbs.):	676	
PURLIN BRACING LOCATIONS:	M/S	
INSIDE FLANGE UNBRACED LENGTH (FT.):	7.92	
(Mn values from NASPEC Section C3.1) -->		
+Mn allow (ft.-lbs.):	7862	
-Mn allow (ft.-lbs.):	6954	
	OK	
DOWNWARD DEFLECTION (in.):	0.57	
	= (L/336)	
UPWARD DEFLECTION (in.):	0.40	
	= (L/470)	
	8in x 2.5in 16G Eave Strut (At Low Eave) OK	8in x 2.5in 16G Eave Strut (At High Eave) OK

WALL GIRT DESIGN

	SIDEWALL 'A' GIRT DESIGN
MEMBER SIZE USED -->	8in x 2.5/2.5in 16G ZEE
	ALL BAYS
BAY WIDTH (ft.):	16.00
MAX. GIRT SPAN (ft.):	16.00
TRIB. WIDTH (ft.):	5.00
INWARD DISTRIBUTED LOAD (lbs./ft.):	88
OUTWARD DISTRIBUTED LOAD (lbs./ft.):	94
DESIGN INWARD BENDING MOMENT, Mu (ft.-lbs.):	4708
DESIGN INWARD END SHEAR (lbs.):	722
DESIGN OUTWARD BENDING MOMENT, Mu (ft.-lbs.):	5000
DESIGN OUTWARD END SHEAR (lbs.):	772
GIRT BRACING LOCATIONS:	M/S
INSIDE FLANGE UNBRACED LENGTH (FT.):	8.00
(Mn values from NASPEC Section C3.1) -->	
+Mn allow (ft.-lbs.):	6172
-Mn allow (ft.-lbs.):	5418
	OK
INWARD DEFLECTION (in.):	0.55
	= (L/343)
OUTWARD DEFLECTION (in.):	0.59
	= (L/321)

	ENDWALL 'A' GIRT DESIGN	ENDWALL 'B' GIRT DESIGN
MEMBER SIZE USED -->	4in x 2.5/2.5in 16G ZEE	4in x 2.5/2.5in 16G ZEE
	BAY #1	BAY #1
BAY WIDTH (ft.):	9.33	9.33
MAX. GIRT SPAN (ft.):	9.33	9.33
TRIB. WIDTH (ft.):	6.00	6.00
INWARD DISTRIBUTED LOAD (lbs./ft.):	106	106
OUTWARD DISTRIBUTED LOAD (lbs./ft.):	113	113
DESIGN INWARD BENDING MOMENT, Mu (ft.-lbs.):	1957	1957
DESIGN INWARD END SHEAR (lbs.):	518	518
DESIGN OUTWARD BENDING MOMENT, Mu (ft.-lbs.):	2091	2091
DESIGN OUTWARD END SHEAR (lbs.):	554	554
GIRT BRACING LOCATIONS:	M/S	M/S
INSIDE FLANGE UNBRACED LENGTH (FT.):	4.67	4.67
(Mn values from NASPEC Section C3.1) -->		
+Mn allow (ft.-lbs.):	2760	2760
-Mn allow (ft.-lbs.):	2720	2720
	OK	OK
INWARD DEFLECTION (in.):	0.38	0.38
	= (L/291)	= (L/291)
OUTWARD DEFLECTION (in.):	0.41	0.41
	= (L/272)	= (L/272)

ENDWALL COLUMN DESIGN

LOCATION:	**ENDWALL 'A' (LEFT ENDWALL)**	
COLUMN #:		CORNER 'B'
END BAY (Y/N?):		---
DISTANCE FROM BLDG. CORNER:		0.00
BAY WIDTH TO SIDE 1 (ft.):		12.00
BAY WIDTH TO SIDE 2 (ft.):		0.00
MAX. ENDWALL COLUMN HT. (ft.):		11.13
MAX. TRIB. WIDTH (ft.):		6.00
MAX. DISTRIBUTED LOAD (plf):		114
MAX DESIGN MOMENT, with Ωf = 1.67 (ft.-lbs.):		2945
V horiz. (lbs.):		634
# OF #14 TOP END CONN. SCREWS:		
COMPOSITE DESIGN (Y/N)?		Y
	CORNER COLUMN STIFFENER:	8in x 4in 14G CEE 6in x 4in 16G CEE
ENDWALL COLUMN MEMBER -->		
DESIGN SECTION -->		6in x 4in 16G CEE
FLYBRACING ELEV. (ft.):		---
INSIDE FLANGE UNBRACED LENGTH (FT.):		11.13
(Mn values from NASPEC Section C3.1) -->		
+Mn allow =		9455
-Mn allow =		7409
DEFLECTION :		0.08
DEFLECTION (L/?):		(> L/1000)
		OK
		24 in. O.C.
		3

LOCATION:	**ENDWALL 'B' (RIGHT ENDWALL)**	
COLUMN #:		CORNER 'B'
END BAY (Y/N?):		---
DISTANCE FROM BLDG. CORNER:		0.00
BAY WIDTH TO SIDE 1 (ft.):		12.00
BAY WIDTH TO SIDE 2 (ft.):		0.00
MAX. ENDWALL COLUMN HT. (ft.):		11.13
MAX. TRIB. WIDTH (ft.):		6.00
MAX. DISTRIBUTED LOAD (plf):		114
MAX DESIGN MOMENT, with Ωf = 1.67 (ft.-lbs.):		2945
V horiz. (lbs.):		634
# OF #14 TOP END CONN. SCREWS:		
COMPOSITE DESIGN (Y/N)?		Y
	CORNER COLUMN MEMBER:	8in x 4in 14G CEE
	CORNER COLUMN STIFFENER:	6in x 4in 16G CEE
ENDWALL COLUMN MEMBER -->		
DESIGN SECTION -->		6in x 4in 16G CEE
FLYBRACING ELEV. (ft.):		---
INSIDE FLANGE UNBRACED LENGTH (FT.):		11.13
(Mn values from NASPEC Section C3.1) -->		
+Mn allow =		9455
-Mn allow =		7409
DEFLECTION :		0.08
DEFLECTION (L/?):		(> L/1000)
		OK
		24 in. O.C.
		3

ROUND CONCRETE PIER DESIGN

CONCRETE STRENGTH (f'c):	2500	psi
REINF. YIELD STRENGTH:	60000	psi
ALLOW. VERT. SOIL PRESSURE:	1500	psf
ALLOW. LATERAL SOIL PRESSURE:	300	pcf

TYPICAL CLEARSPAN FRAME PIERS:

PIER DIAMETER	24	IN.	
PIER DEPTH	5.17	FT.	(GOVERNED BY PERPENDICULAR LOAD)
MAX. LOAD ON PIER (DOWN)	3725	LBS.	
(INCREASE ALLOW. SOIL PRESSURE BY 20% FOR EACH ADDITIONAL FOOT OF DEPTH BELOW 1'-0", MAX. 4500 PSF)			
DESIGN LOAD AT SOIL SURFACE	6160	LBS.	
DESIGN SOIL PRESSURE	3206	PSF	
AREA REQUIRED	1.92	FT.^2	
AREA PROVIDED	3.14	FT.^2	**OK**
FTG. HOLDOWN	2670	LBS.	
SOIL HOLDOWN	1759	LBS.	
MAX. UPLIFT ON FTG.	3575	LBS.	**OK**

LATERAL RESISTANCE CHECK(EMBEDMENT LENGTH)

DIRECTION RELATIVE TO WALL -->	PERP. DIR.	PARALLEL DIR.		
RIGID SURFACE (Y/N):	N	N		
MAX. THRUST AT BASE =	2027	713	LBS.	
HT. OF LOAD ABOVE GRADE =	0.50	0.50	FT.	
ALLOWABLE LAT. BR'NG. =	300	300	PSF/FT.	(ALLOWING 1/2" HORIZ. MOVEMENT)
TRIAL DEPTH =	5.17	5.17	FT.	
A =	4.59	1.62		
d MIN. (LATERAL) =	5.08	2.05	FT.	**OK**

**** USE 24" DIAM. ROUND CLEARSPAN FRAME PIERS WITH A DEPTH OF 5'-2" ****

DESIGN MOMENT:	7657	2021	FT-LBS	
a=	0.30	0.18		(A.C.I. FLEXURE TABLES)
ADD'TL As REQ.	0.07	0.03	IN.^2	

PLACE (1) #4 @ (2) SIDES OF PIERS
IN ADDITION TO ONE LAYER (HOOP) OF 6 X 6-W1.4 X W1.4 WIRE MESH

CONCRETE ANCHOR DESIGN PER ACI 318-14, CHAPTER 17

ANCHOR LOCATION: SIDEWALL C.S. FRAME COLUMNS

DESIGN LOADS (from RISA analysis), ALLOWABLE STRESS LEVELS :	SIDE #1	SIDE #2
D.L. SHEAR FORCE (LBS.), POSITIVE SHEAR LOADS ARE TOWARD EDGE OF SLAB:	**28**	**28**
D.L. VERTICAL FORCE (LBS.):	**-216**	**-333**
F.L.L. SHEAR FORCE (LBS.):	**0**	**0**
F.L.L. VERTICAL FORCE (LBS.):	**0**	**0**
RLL SHEAR FORCE (LBS.):	**184**	**184**
RLL VERTICAL FORCE (LBS.):	**-1423**	**-2191**
SL SHEAR FORCE (LBS.):	**230**	**230**
SL VERTICAL FORCE (LBS.):	**-1779**	**-2739**
WIND L-R SHEAR FORCE (LBS.):	**-923**	**1288**
WIND L-R VERTICAL FORCE (LBS.):	**2513**	**2036**
WIND R-L SHEAR FORCE (LBS.):	**1546**	**-996**
WIND R-L VERTICAL FORCE (LBS.):	**123**	**4255**
SEISMIC SHEAR FORCE (LBS.):	**188**	**-164**
SEISMIC VERTICAL FORCE (LBS.):	**-243**	**243**

CONCRETE ANCHOR MANUFACTURER AND TYPE: DEWALT 'SCREW-BOLT+' ANCHOR
(VALUES FROM ESR-3889 REPORT, EFF. THRU 11/2023)
STEEL CONCRETE ANCHOR TENSILE STRENGTH: 115000 PSI
NORMAL WT. CONCRETE STRENGTH (f'c): 2500 PSI
CONCRETE ANCHOR TENSION REINFORCING PROVIDED? **N**
CONCRETE ANCHOR SHEAR REINFORCING PROVIDED? **N**

ACI 318-14 Table 5.3.1:	(Eqn. 9-2)	(Eqn. 9-3)	(Eqn. 9-4)	(Eqn. 9-5)	(Eqn. 9-6)	(Eqn. 9-7)
GOVERNING LOAD COMB. EQUATION:	(9-2b.2)	(9-3f.1)	(9-4c.2)	(9-5a.1)	(9-6b.2)	(9-7a.1)
ULT. SHEAR FORCE (LBS.), Vu:	**148**	**884**	**-497**	**347**	**-971**	**293**
ULT. TENSION FORCE (LBS.), Tu:	**0**	**0**	**1164**	**0**	**3955**	**0**
CONCRETE ANCHOR TYPE (diam. x length):	**.5X3.0**					
CONCRETE ANCHOR DIAM. (IN.):	**0.500**	**0.500**	**0.500**	**0.500**	**0.500**	**0.500**
CONCRETE ANCHOR LENGTH (IN.):	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**
NUMBER OF CONCRETE ANCHORS:	**4**	**4**	**4**	**4**	**4**	**4**
SPECIAL INSPECTION REQUIRED?	**N**	**N**	**N**	**N**	**N**	**N**
X' CONCRETE ANCHOR SPACING:	**4.00**	**4.00**	**4.00**	**4.00**	**4.00**	**4.00**
'Y' CONCRETE ANCHOR SPACING:	**2.89**	**2.89**	**2.89**	**2.89**	**2.89**	**2.89**
EFFECTIVE EMBEDMENT:	**2.17**	**2.17**	**2.17**	**2.17**	**2.17**	**2.17**
LOAD EDGE DISTANCE, c1:	**8.00**	**8.00**	**8.00**	**8.00**	**8.00**	**8.00**
PERP. EDGE DISTANCE, c2:	**10.4**	**10.4**	**10.4**	**10.4**	**10.4**	**10.4**
DEPTH OF CONCRETE EDGE (IN.):	**62.0**	**62.0**	**62.0**	**62.0**	**62.0**	**62.0**
CRACKED CONCRETE CONDITION (Y/N)?	**N**	**N**	**N**	**N**	**N**	**N**
e eccentricity (IN.) =	0.00	0.00	0.00	0.00	0.00	0.00
psi [ec,N] ((Eqn. 17.4.2.5a)) =	1.00	1.00	1.00	1.00	1.00	1.00
psi [ed,N] ((Eqn. 17.4.2.7a, 17.4.2.7b)) =	1.00	1.00	1.00	1.00	1.00	1.00
psi [c,N] ((Sec. 17.4.2.6)) =	1.40	1.40	1.40	1.40	1.40	1.40
psi [cp,N] (Eqn.17.4.2.7b, 17.4.3.1) =	1.00	1.00	1.00	1.00	1.00	1.00
psi [c,P] (Sec. 17.4.3.6) =	1.40	1.40	1.40	1.40	1.40	1.40
V eccentricity (IN.) =	0.00	0.00	0.00	0.00	0.00	0.00
psi [ec,V] (Eqn. 17.5.2.5) =	1.00	1.00	1.00	1.00	1.00	1.00
psi [ed,V] (Eqn. 17.5.2.6a, 17.5.2.6b) =	0.96	0.96	0.96	0.96	0.96	0.96
psi [c,V] (Sec. 17.5.2.7) =	1.40	1.40	1.40	1.40	1.40	1.40
ANo (IN.^2) =	42.4	42.4	42.4	42.4	42.4	42.4
AN (IN.^2) =	61.2	61.2	61.2	61.2	61.2	61.2
Nb (LBS.) =	3836	3836	3836	3836	3836	3836
Ncbg (LBS.) =	7754	7754	7754	7754	7754	7754
Ns (LBS.) =	81900	81900	81900	81900	81900	81900
Npn (LBS.) =	0	0	0	0	0	0
SEISMIC TENSION DUCTILITY FACTOR:	1.00	1.00	1.00	0.40	1.00	0.40
ΦNn (LBS.) =	**7754**	**7754**	**7754**	**3102**	**7754**	**3102**
	0.00%	0.00%	15.01%	0.00%	51.00%	0.00%
Avc (IN.^2) =	316.6	316.6	316.6	316.6	316.6	316.6
Avco (IN.^2) =	288.0	288.0	288.0	288.0	288.0	288.0
Vb (LBS.) =	7511	7511	7511	7511	7511	7511
Vcbg (LBS.) =	11095	11095	11095	11095	11095	11095
Vs (LBS.) =	35440	35440	35440	35440	35440	35440
SEISMIC SHEAR DUCTILITY FACTOR:	1.00	1.00	1.00	0.40	1.00	0.40
ΦVn (LBS.) =	**11095**	**11095**	**11095**	**4438**	**11095**	**4438**
	1.34%	7.97%	4.48%	7.83%	8.75%	6.61%
MAX. UNITY VALUE (Sec. 17.6):	0.01	0.08	0.15	0.08	0.51	0.07

MAX. UNITY: 0.51

USE ----> (4) - 1/2" DIAM. X 3" LONG DEWALT 'SCREW-BOLT+' ANCHOR CONCRETE ANCHORS IN 3.5 IN. DEEP HOLES

#DIV/0!

CSC BUILDING SYSTEMS

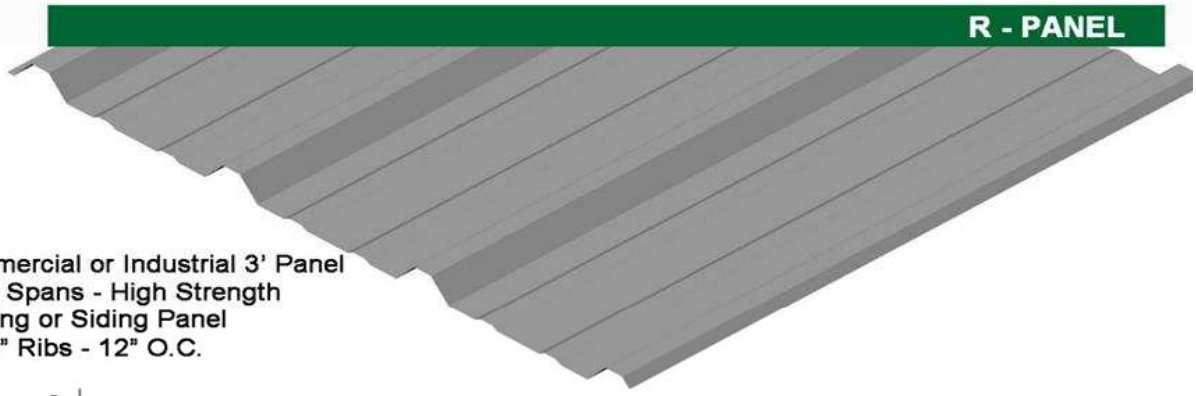
CURFMAN STEEL CORPORATION

Metal Roofing and Siding

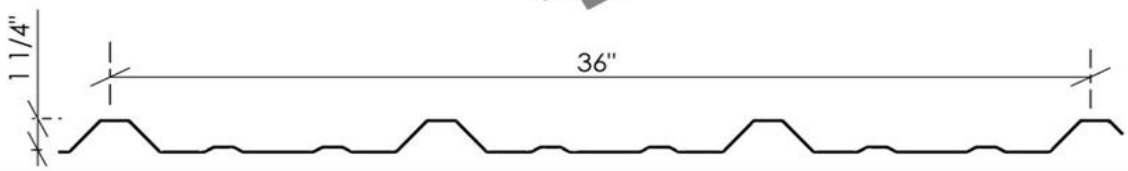
521 Midvale Road, P.O. Box 977, Sunnyside Wa. 98944

509 - 837 - 4650

R - PANEL



Commercial or Industrial 3' Panel
Long Spans - High Strength
Roofing or Siding Panel
1 1/4" Ribs - 12" O.C.



CSC R-Panel					SECTION PROPERTIES			
				Top in Compression		Bottom in Compression		
	Width	Yield	Weight	IXX	Se	IXX	Se	
Ga	Inches	ksi	psf	in^4	in^3	in^4	in^3	
26	36	80	0.799	0.03000	0.02846	0.02014	0.03042	
	Live	Wind In	Wind Out					
Span ft.	Load psf	Load psf	Load psf					
1.5	554	738	786					
2.0	311	415	397					
2.5	199	266	254					
3.0	138	184	176					
3.5	101	134	129	Notes				
4.0	67	90	90	1. Theoretical section properties have been calculated per AISI 2007				
5.0	34	46	46	2. Allowable load is calculated in accordance with AISI 2007, 3 or more equal spans.				
6.0	20	26	26	3. Deflection is limited by a maximum deflection ratio of L/180 of span.				
7.0	12	16	16	4. Wind reduction factor is .75				

SCREW CONNECTION DESIGN

NOTATIONS

ds = Nominal screw diameter (in.)
Ω Omega = 3.0
Pns = Nominal shear stength per screw (lbs.)
Pnt = Nominal tension strength per screw (lbs.)
Pnot = Nominal pull-out strength per screw (lbs.)
Pnov = Nominal pull-over strength per screw (lbs.)
g1 = nominal gauge of member in contact with the screw head (in.)
t1 = Thickness of member in contact with the screw head (in.)
g2 = nominal gauge of member NOT in contact with the screw head (in.)
t2 = Thickness of member NOT in contact with the screw head (in.)
Fu1 = Tensile strength of member in contact with the screw head (lbs.)
Fu2 = Tensile strength of member NOT in contact with the screw head (lbs.)

	ROOF PANEL (R-Panel 26G)		WALL PANEL (R-Panel 26G)	
g1 =	26	g1 =	26
g2 =	14	g2 =	16
t1 =	0.0179	t1 =	0.0179
t2 =	0.0747	t2 =	0.057
Fu1 =	80000	Fu1 =	80000
Fu2 =	67000	Fu2 =	67000
Screw # =	12	Screw # =	12
ds (in.) =	0.216	ds (in.) =	0.216
ALLOWABLE SHEAR BASED ON CONNECTED MATERIALS:			
t2/t1 =	4.17	t2/t1 =	3.18
Pns (eq. E4.3.1-4) =	835	Pns (eq. E4.3.1-4) =	835
Allowable Shear per Screw (Ω Omega = 3.0):	278	Allowable Shear per Screw =	278
ALLOWABLE SHEAR BASED ON SCREW:			
Allowable Shear per Screw =	625	Allowable Shear per Screw =	625
Design Shear per Screw =	**278**	**Design Shear per Screw =**	**278**
ALLOWABLE TENSION BASED ON CONNECTED MATERIALS:			
Pullout Strength, Pnot (eq. E4.4.1.1) =	919		701
Pullover Strength, Pnov (eq. E4.4.2.1) =	537		537
Allowable Tension per Screw (lbs.) =	**179**		**179**
Nominal Screw Tension Strength (lbs) =	860		860