

NEGATIVE LOAD SPAN CHART FOR : PETERSEN BOX RIB SERIES BOX RIB 2 @ 12" X 0.032" ALUMINUM (w/ SCREW LEG)						
Span, ft.	TWO EQUAL SPANS			THREE EQUAL SPANS		
	W (psf)	Re	Ri	W (psf)	Re	Ri
1.00	42.40	15.9	53.0	48.18	19.3	53.0
1.25	33.92	15.9	53.0	38.55	19.3	53.0
1.50	28.27	15.9	53.0	32.12	19.3	53.0
1.75	24.23	15.9	53.0	27.53	19.3	53.0
2.00	21.20	15.9	53.0	24.09	19.3	53.0
2.25	18.84	15.9	53.0	21.41	19.3	53.0
2.50	16.96	15.9	53.0	19.27	19.3	53.0
2.75	15.42	15.9	53.0	17.52	19.3	53.0
3.00	14.13	15.9	53.0	16.06	19.3	53.0
3.25	13.05	15.9	53.0	14.83	19.3	53.0
3.50	12.11	15.9	53.0	13.77	19.3	53.0
3.75	11.31	15.9	53.0	12.85	19.3	53.0
4.00	10.60	15.9	53.0	12.05	19.3	53.0

W = Allowable Uniform Wind Load, psf

Re = End Support Reaction, 53.0 #/ft. of panel

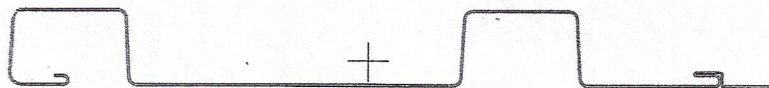
Ri = Intermediate Support Reaction, 53.0 #/ft. of panel

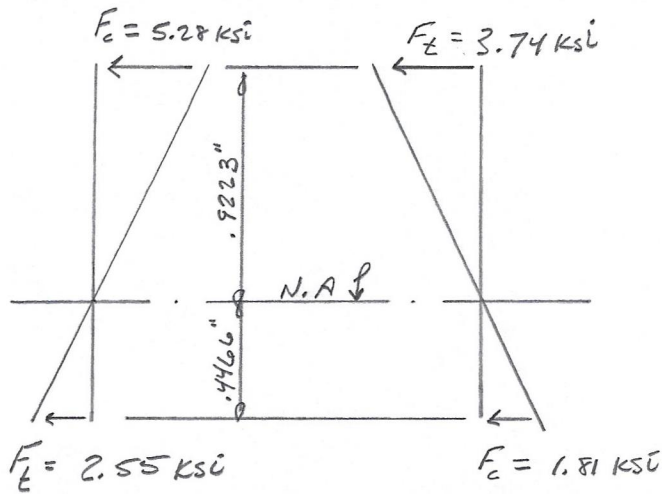
Deflection Limit = L/180

$F_y = 5.28$  ksi

$I_{xx} = 0.1940$  in<sup>4</sup>

$S_{xx} = 0.2104$  in<sup>3</sup>





$$\frac{b}{t}_{(Top)} = \frac{2}{0.032}$$

$$\frac{b}{t}_{(Top)} = 62.5$$

$$F_{c(Top)} = \frac{330}{62.5}$$

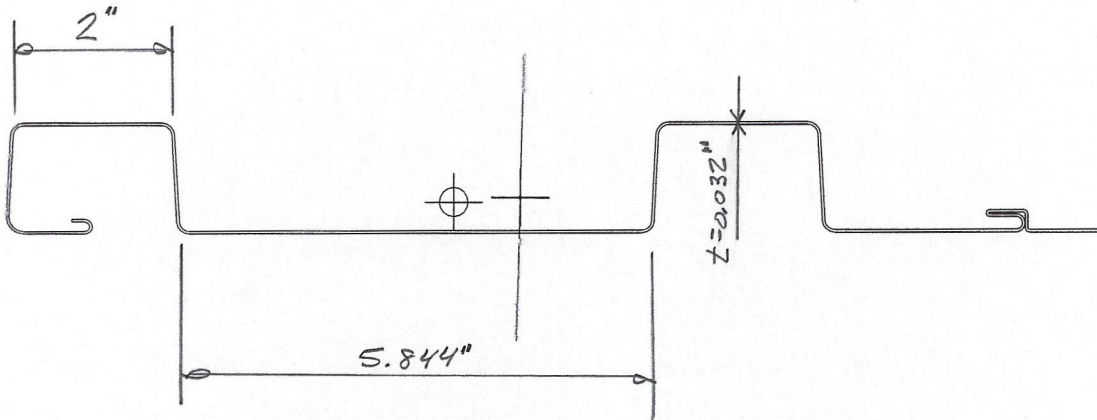
$$F_{c(Top)} = 5.28 \text{ ksi}$$

$$\frac{b}{t}_{(Bot)} = \frac{5.844}{0.032}$$

$$\frac{b}{t}_{(Bot)} = 182.6$$

$$F_{c(Bot)} = \frac{330}{182.6}$$

$$F_{c(Bot)} = 1.81 \text{ ksi}$$



$$F_{c(Top)} = 5.28 \text{ ksi} \quad F_{t(Top)} = 2.55 \text{ ksi}$$

$$F_{c(Bot)} = 1.81 \text{ ksi} \quad F_{t(Bot)} = 3.74 \text{ ksi}$$

Section: PETERSEN BOX RIB-2 PANEL\_NAIL STRIP - 12 X 0.032 ALUM.cfss  
 BOX RIB 2 - 12" X 0.032" ALUM.  
 BOX RIB - 2 W/ NAIL STRIP  
 Rev. Date: 4/27/2020 10:24:05 AM  
 By: Thomas M. Shingler, PE  
 Printed: 4/27/2020 10:24:29 AM

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**Section Inputs**

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Material: A653 SS Grade 40  
 Apply cold work of forming strength increase.  
 No inelastic reserve strength increase.  
 Modulus of Elasticity, E 29500 ksi  
 Yield Strength, Fy 40 ksi  
 Tensile Strength, Fu 55 ksi  
 Torsion Constant Override, J 0 in<sup>4</sup>  
 Warping Constant Override, Cw 0 in<sup>6</sup>

Part 1, Thickness 0.032 in  
 Placement of Part from Origin:  
 X to center of gravity 0 in  
 Y to center of gravity 0 in

Outside dimensions, Open shape

	Length (in)	Angle (deg)	Radius (in)	Web	k Coef.	Hole Size (in)	Distance (in)
1	0.2500	0.000	0.12500	None	0.000	0.0000	0.1250
2	0.1840	-90.000	0.06000	None	0.000	0.0000	0.0840
3	0.1000	-180.000	0.06000	None	0.000	0.0000	0.0500
4	0.9670	-180.000	0.12500	None	0.000	0.0000	0.4835
5	1.3650	87.000	0.18750	Single	0.000	0.0000	0.6825
6	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
7	1.3650	-87.000	0.12500	Single	0.000	0.0000	0.6825
8	5.8440	0.000	0.12500	None	0.000	0.0000	2.9220
9	1.3650	87.000	0.12500	Single	0.000	0.0000	0.6825
10	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
11	1.3650	-87.000	0.12500	Single	0.000	0.0000	0.6825
12	2.4800	0.000	0.12500	None	0.000	0.0000	1.2400
13	0.2280	90.000	0.07550	None	0.000	0.0000	0.1140
14	0.4800	180.000	0.07550	None	0.000	0.0000	0.2400
15	0.0800	90.000	0.00800	None	0.000	0.0000	0.0320
16	0.0600	0.000	0.00800	None	0.000	0.0000	0.0300
17	0.4550	0.000	0.01875	None	0.000	0.0000	0.2275
18	0.2800	-90.000	0.01875	None	0.000	0.0000	0.1400
19	0.9650	0.000	0.01875	None	0.000	0.0000	0.4825

**Full Section Properties**

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Area	0.66123 in <sup>2</sup>	Wt.	0.0022482 k/ft	Width	20.663 in
Ix	0.194 in <sup>4</sup>	rx	0.5418 in	Ixy	-0.312 in <sup>4</sup>
Sx(t)	0.2104 in <sup>3</sup>	y(t)	0.9223 in	α	88.503 deg
Sx(b)	0.4346 in <sup>3</sup>	y(b)	0.4466 in		
Zx	0.2809 in <sup>3</sup>	Height	1.3688 in		
Iy	12.117 in <sup>4</sup>	ry	4.2809 in	xo	-0.8147 in
Sy(l)	1.9211 in <sup>3</sup>	x(l)	6.3077 in	yo	-0.0568 in
Sy(r)	1.6918 in <sup>3</sup>	x(r)	7.1624 in	jx	0.8045 in
Zy	2.5174 in <sup>3</sup>	Width	13.4701 in	jy	0.3776 in

CFS Version 12.0.2

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BOX RIB 2 - 12" X 0.032" ALUM.

BOX RIB - 2 W/ NAIL STRIP

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I <sub>1</sub>	12.126 in <sup>4</sup>	r <sub>1</sub>	4.2823 in	Cw	4.6781 in <sup>6</sup>
I <sub>2</sub>	0.186 in <sup>4</sup>	r <sub>2</sub>	0.5303 in	J	0.0002257 in <sup>4</sup>
I <sub>c</sub>	12.312 in <sup>4</sup>	r <sub>c</sub>	4.3150 in		
I <sub>o</sub>	12.753 in <sup>4</sup>	r <sub>o</sub>	4.3916 in		

DESIGN INPUT DATA FOR BOX RIB 2 X 0.032" AL W/ SCREW L

PRODUCT PROPERTIES :

E = 10100. KSI

I = .1940 IN<sup>4</sup>/FT

S = .2104 IN<sup>3</sup>/FT

DESIGN PARAMETERS :

DEFLECTION = L/ 180.

ALLOW. BENDING STRESS (PSI) = 5280.0

ALLOW. END SUPPORT REACTION (#/FT) = 53.0

ALLOW. INTERMEDIATE SUPPORT REACTION (#/FT) = 53.0

## LOAD-SPAN TABLE FOR BOX RIB 2 X 0.032" AL W/ SCREW L

DEFLECIION = L/ 180.

SPAN (FT)	SIMPLE SPAN		TWO EQUAL SPAN			THREE EQUAL SPAN		
	W(PSF)	RE	W(PSF)	RE	RI	W(PSF)	RE	RI
1.00	106.00	53.0	42.40	15.9	53.0	48.18	19.3	53.0
1.25	84.80	53.0	33.92	15.9	53.0	38.55	19.3	53.0
1.50	70.67	53.0	28.27	15.9	53.0	32.12	19.3	53.0
1.75	60.57	53.0	24.23	15.9	53.0	27.53	19.3	53.0
2.00	53.00	53.0	21.20	15.9	53.0	24.09	19.3	53.0
2.25	47.11	53.0	18.84	15.9	53.0	21.41	19.3	53.0
2.50	42.40	53.0	16.96	15.9	53.0	19.27	19.3	53.0
2.75	38.55	53.0	15.42	15.9	53.0	17.52	19.3	53.0
3.00	35.33	53.0	14.13	15.9	53.0	16.06	19.3	53.0
3.25	32.62	53.0	13.05	15.9	53.0	14.83	19.3	53.0
3.50	30.29	53.0	12.11	15.9	53.0	13.77	19.3	53.0
3.75	28.27	53.0	11.31	15.9	53.0	12.85	19.3	53.0
4.00	26.50	53.0	10.60	15.9	53.0	12.05	19.3	53.0

W = ALLOWABLE UNIFORM LOAD

RE = END SOPPORT REACTION AT ALLOW. LOAD (#/FT)

RI = INTERMEDIATE SUPPORT REACTION AT ALLOW. LOAD (#/FT)