

NEGATIVE LOAD SPAN CHART FOR : PETERSEN BOX RIB SERIES
 BOX RIB 3 @ 12" X 0.032" ALUMINUM (w/ CLIP)

Span, ft.	TWO EQUAL SPANS			THREE EQUAL SPANS		
	W (psf)	Re	Ri	W (psf)	Re	Ri
1.00	74.08	27.8	92.6	84.18	33.7	92.6
1.25	59.26	27.8	92.6	67.35	33.7	92.6
1.50	49.39	27.8	92.6	56.12	33.7	92.6
1.75	42.33	27.8	92.6	48.10	33.7	92.6
2.00	37.04	27.8	92.6	42.09	33.7	92.6
2.25	32.92	27.8	92.6	37.41	33.7	92.6
2.50	29.63	27.8	92.6	33.67	33.7	92.6
2.75	26.94	27.8	92.6	30.61	33.7	92.6
3.00	24.69	27.8	92.6	28.06	33.7	92.6
3.25	22.79	27.8	92.6	25.90	33.7	92.6
3.50	21.17	27.8	92.6	24.05	33.7	92.6
3.75	19.75	27.8	92.6	22.45	33.7	92.6
4.00	18.52	27.8	92.6	21.05	33.7	92.6

W = Allowable Uniform Wind Load, psf

Re = End Support Reaction, 92.6 #/ft. of panel

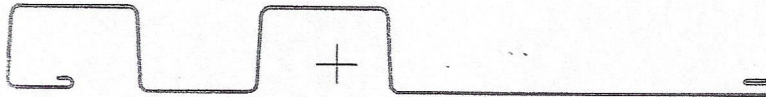
Ri = Intermediate Support Reaction, 92.6 #/ft. of panel

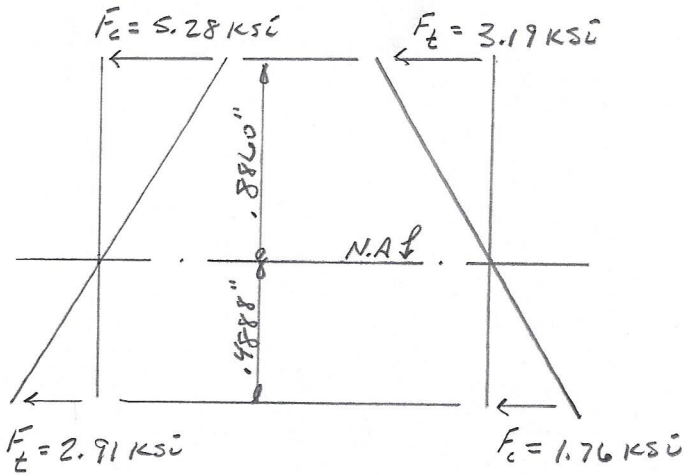
Deflection Limit = $L/180$

$F_y = 5.28$ ksi

$I_{xx} = 0.1850$ in⁴

$S_{xx} = 0.2086$ in³





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

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

$$F_c(\text{Top}) = \frac{330}{62.5}$$

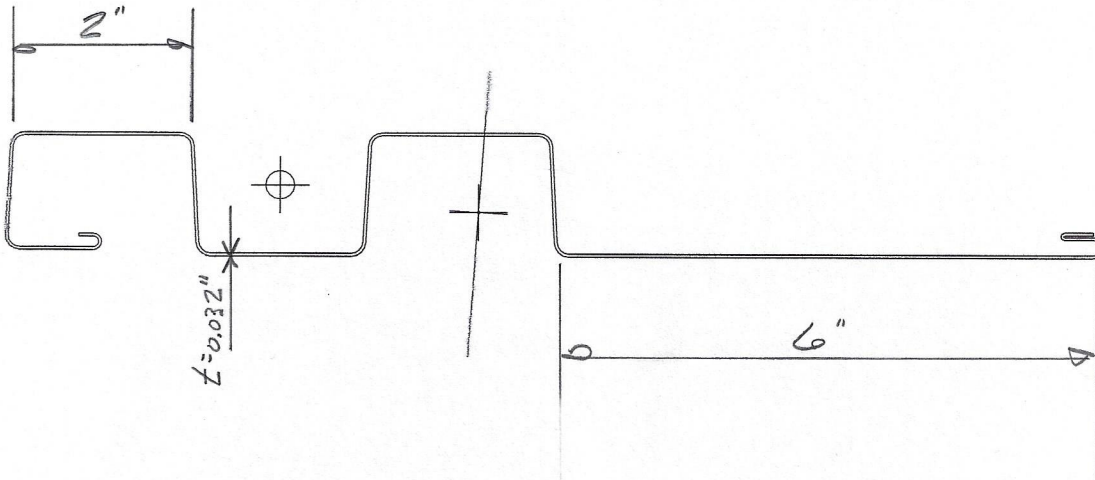
$$F_c(\text{Top}) = 5.28 \text{ ksi}$$

$$\frac{b}{t}(\text{Bot}) = \frac{6}{0.032}$$

$$\frac{b}{t}(\text{Bot}) = 187.5$$

$$F_c(\text{Bot}) = \frac{330}{187.5}$$

$$F_c(\text{Bot}) = 1.76 \text{ ksi}$$



$$F_c(\text{Top}) = 5.28 \text{ ksi} \qquad F_t(\text{Top}) = 2.91 \text{ ksi}$$

$$F_c(\text{Bot}) = 1.76 \text{ ksi} \qquad F_t(\text{Bot}) = 3.19 \text{ ksi}$$

Section Inputs

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 in⁴

Warping Constant Override, Cw 0 in⁶

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	1.3150	87.000	0.12500	None	0.000	0.0000	0.6575
6	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
7	1.3750	-87.000	0.12500	Single	0.000	0.0000	0.6875
8	1.8440	0.000	0.12500	None	0.000	0.0000	0.9220
9	1.3750	87.000	0.12500	Single	0.000	0.0000	0.6875
10	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
11	1.3750	-87.000	0.12500	Single	0.000	0.0000	0.6875
12	6.0000	0.000	0.12500	None	0.000	0.0000	3.0000
13	0.2280	90.000	0.07550	None	0.000	0.0000	0.1140
14	0.4600	180.000	0.07550	None	0.000	0.0000	0.2300
15	0.0880	90.000	0.01200	None	0.000	0.0000	0.0360
16	0.0440	0.000	0.01200	None	0.000	0.0000	0.0180
17	0.3100	0.000	0.01875	None	0.000	0.0000	0.1550

Full Section Properties

Area	0.60371 in ²	Wt.	0.0020526 k/ft	Width	18.866 in
Ix	0.185 in ⁴	rx	0.5533 in	Ixy	-0.574 in ⁴
Sx(t)	0.2086 in ³	y(t)	0.8860 in	α	86.032 deg
Sx(b)	0.3781 in ³	y(b)	0.4888 in		
Zx	0.2759 in ³	Height	1.3748 in		
Iy	8.420 in ⁴	ry	3.7346 in	x _o	-2.1767 in
Sy(l)	1.6233 in ³	x(l)	5.1872 in	y _o	0.3028 in
Sy(r)	1.2316 in ³	x(r)	6.8371 in	jx	2.6655 in
Zy	1.9282 in ³	Width	12.0244 in	jy	-1.6620 in

CFS Version 12.0.2

Section: PETERSEN BOX RIB - 3 PANEL_WITH CLIP - 12 X 0.032 ALUM.cfss
BOX RIB 3 - PANEL - 12" X 0.032" ALUM.

BOX RIB - 3 W/ CLIP

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Page 2

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I ₁	8.460 in ⁴	r ₁	3.7435 in	Cw	1.8342 in ⁶
I ₂	0.145 in ⁴	r ₂	0.4901 in	J	0.00020607 in ⁴
I _c	8.605 in ⁴	r _c	3.7754 in		
I _o	11.521 in ⁴	r _o	4.3684 in		

DESIGN INPUT DATA FOR BOX RIB 3 X 0.032" ALUM. W/ CLIP

PRODUCT PROPERTIES :

E = 10100. KSI

I = .1850 IN⁴/FT

S = .2086 IN³/FT

DESIGN PARAMETERS :

DEFLECTION = L/ 180.

ALLOW. BENDING STRESS (PSI) = 5280.0

ALLOW. END SUPPORT REACTION (#/FT) = 92.6

ALLOW. INTERMEDIATE SUPPORT REACTION (#/FT) = 92.6

LOAD-SPAN TABLE FOR BOX RIB 3 X 0.032" ALUM. W/ CLIP

DEFLECTION = 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	185.20	92.6	74.08	27.8	92.6	84.18	33.7	92.6
1.25	148.16	92.6	59.26	27.8	92.6	67.35	33.7	92.6
1.50	123.47	92.6	49.39	27.8	92.6	56.12	33.7	92.6
1.75	105.83	92.6	42.33	27.8	92.6	48.10	33.7	92.6
2.00	92.60	92.6	37.04	27.8	92.6	42.09	33.7	92.6
2.25	82.31	92.6	32.92	27.8	92.6	37.41	33.7	92.6
2.50	74.08	92.6	29.63	27.8	92.6	33.67	33.7	92.6
2.75	67.35	92.6	26.94	27.8	92.6	30.61	33.7	92.6
3.00	61.73	92.6	24.69	27.8	92.6	28.06	33.7	92.6
3.25	56.98	92.6	22.79	27.8	92.6	25.90	33.7	92.6
3.50	52.91	92.6	21.17	27.8	92.6	24.05	33.7	92.6
3.75	49.39	92.6	19.75	27.8	92.6	22.45	33.7	92.6
4.00	45.89	91.8	18.52	27.8	92.6	21.05	33.7	92.6

W = ALLOWABLE UNIFORM LOAD

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

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