NEGATIVE LOAD SPAN CHART FOR : PETERSEN BOX RIB SERIES BOX RIB 4 @ 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	89.04	33.4	111.3	101.18	40.5	111.3
1.25	71.23	33.4	111.3	80.95	40.5	111.3
1.50	59.36	33.4	111.3	67.45	40.5	111.3
1.75	50.88	33.4	111.3	57.82	40.5	111.3
2.00	44.52	33.4	111.3	50.59	40.5	111.3
2.25	39.57	33.4	111.3	44.97	40.5	111.3
2.50	35.62	33.4	111.3	40.47	40.5	111.3
2.75	32.38	33.4	111.3	36.79	40.5	111.3
3.00	29.68	33.4	111.3	33.73	40.5	111.3
3.25	27.40	33.4	111.3	31.13	40.5	111.3
3.50	25.44	33.4	111.3	28.91	40.5	111.3
3.75	23.74	33.4	111.3	26.98	40.5	111.3
4.00	22.26	33.4	111.3	25.30	40.5	111.3

W = Allowable Uniform Wind Load, psf

Re = End Support Reaction, 111.3 #/ft. of panel

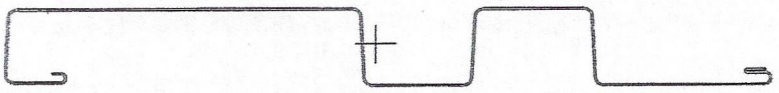
Ri = Intermediate Support Reaction, 111.3 #/ft. of panel

Deflection Limit = L/180

F_y = 1.76 ksi

I_{xx} = 0.2220 in^4

S_{xx} = 0.3465 in^3



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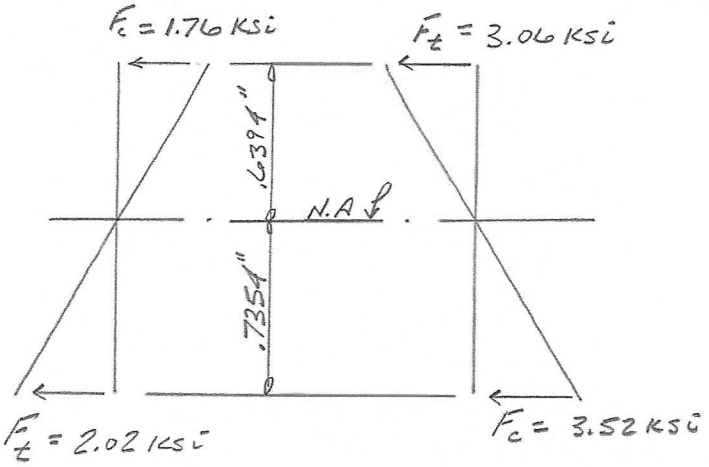


$b/t_{(Top)} = \frac{6}{0.032}$

$b/t_{(Top)} = 187.5$

$F_{c(Top)} = \frac{330}{187.5}$

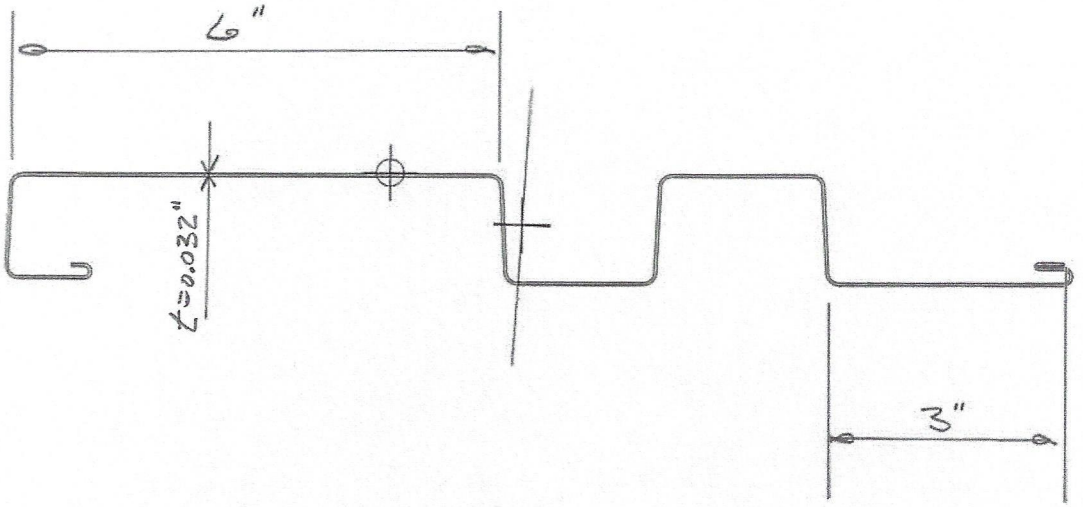
$F_{c(Top)} = 1.76$ ksi

$b/t_{(Bot)} = \frac{3}{0.032}$

$b/t_{(Bot)} = 93.8$

$F_{c(Bot)} = \frac{330}{93.8}$

$F_{c(Bot)} = 3.52$ ksi



$F_{c(Top)} = 1.76$ ksi $\quad F_{t(Top)} = 2.02$ ksi

$F_{c(Bot)} = 3.52$ ksi $\quad F_{t(Bot)} = 3.06$ ksi

PETERSEN BOX RIB - 12" X 0.032"
BOX RIB - 4 W/ CLIP
Rev. Date: 4/7/2020 10:00:32 AM
By: Thomas M. Shingler, PE
Printed: 4/7/2020 10:00:58 AM

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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 in^4
Warping Constant Override, Cw	0 in^6

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	6.0000	0.000	0.12500	None	0.000	0.0000	3.0000
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	3.0000	0.000	0.12500	None	0.000	0.0000	1.5000
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	0.63571 in^2	Wt.	0.0021614 k/ft	Width	19.866 in
Ix	0.222 in^4	rx	0.5904 in	Ixy	-0.619 in^4
Sx(t)	0.3465 in^3	y(t)	0.6394 in	α	86.568 deg
Sx(b)	0.3013 in^3	y(b)	0.7354 in		
Zx	0.3570 in^3	Height	1.3748 in		
Iy	10.501 in^4	ry	4.0643 in	x_o	-1.6115 in
Sy(l)	1.6650 in^3	x(l)	6.3069 in	y_o	0.6522 in
Sy(r)	1.5632 in^3	x(r)	6.7175 in	jx	1.1858 in
Zy	2.2173 in^3	Width	13.0244 in	jy	-5.4991 in

PETERSEN BOX RIB - 12" X 0.032"
BOX RIB - 4 W/ CLIP
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I_1	10.538 in⁴	r_1	4.0715 in	Cw	3.7332 in⁶
I_2	0.184 in⁴	r_2	0.5387 in	J	0.0002170 in⁴
Ic	10.723 in⁴	rc	4.1069 in		
I_o	12.644 in⁴	r_o	4.4597 in		

DESIGN INPUT DATA FOR BOX RIB 4 X 0.032" ALUM. W/ CLIP

PRODUCT PROPERTIES :

E = 10100. KSI

I = .2220 IN4/FT S = .3465 IN3/FT

DESIGN PARAMETERS :

DEFLECTION = L/ 180.

ALLOW. BENDING STRESS (PSI)	=	1760.0
ALLOW. END SUPPORT REACTION (#/FT)	=	111.3
ALLOW. INTERMEDIATE SUPPORT REACTION (#/FT)	=	111.3

LOAD-SPAN TABLE FOR BOX RIB 4 X 0.032" ALUM. W/ CLIP

DEFLECION = L/ 180.

SPAN	SIMPLE SPAN		TWO EQUAL SPAN			THREE EQUAL SPAN		
(FT)	W(PSF)	RE	W(PSF)	RE	RI	W(PSF)	RE	RI
1.00	222.60	111.3	89.04	33.4	111.3	101.18	40.5	111.3
1.25	178.08	111.3	71.23	33.4	111.3	80.95	40.5	111.3
1.50	148.40	111.3	59.36	33.4	111.3	67.45	40.5	111.3
1.75	127.20	111.3	50.88	33.4	111.3	57.82	40.5	111.3
2.00	101.64	101.6	44.52	33.4	111.3	50.59	40.5	111.3
2.25	80.31	90.3	39.57	33.4	111.3	44.97	40.5	111.3
2.50	65.05	81.3	35.62	33.4	111.3	40.47	40.5	111.3
2.75	53.76	73.9	32.38	33.4	111.3	36.79	40.5	111.3
3.00	45.17	67.8	29.68	33.4	111.3	33.73	40.5	111.3
3.25	38.49	62.5	27.40	33.4	111.3	31.13	40.5	111.3
3.50	33.19	58.1	25.44	33.4	111.3	28.91	40.5	111.3
3.75	28.91	54.2	23.74	33.4	111.3	26.98	40.5	111.3
4.00	25.41	50.8	22.26	33.4	111.3	25.30	40.5	111.3

W = ALLOWABLE UNIFORM LOAD
RE = END SOPPORT REACTION AT ALLOW. LOAD (#/FT)
RI = INTERMEDIATE SUPPORT REACTION AT ALLOW. LOAD (#/FT)