NEGATIVE LOAD SPAN CHART FOR : PETERSEN BOX RIB SERIES BOX RIB 1 @ 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	46.00	17.3	57.5	52.27	20.9	57.5
1.25	36.80	17.3	57.5	41.82	20.9	57.5
1.50	30.67	17.3	57.5	34.85	20.9	57.5
1.75	26.29	17.3	57.5	29.87	20.9	57.5
2.00	23.00	17.3	57.5	26.14	20.9	57.5
2.25	20.44	17.3	57.5	23.23	20.9	57.5
2.50	18.40	17.3	57.5	20.91	20.9	57.5
2.75	16.73	17.3	57.5	19.01	20.9	57.5
3.00	15.33	17.3	57.5	17.42	20.9	57.5
3.25	14.15	17.3	57.5	16.08	20.9	57.5
3.50	13.14	17.3	57.5	14.94	20.9	57.5
3.75	12.27	17.3	57.5	13.94	20.9	57.5
4.00	11.50	17.3	57.5	13.07	20.9	57.5

W = Allowable Uniform Wind Load, psf

Re = End Support Reaction, 57.5 #/ft. of panel

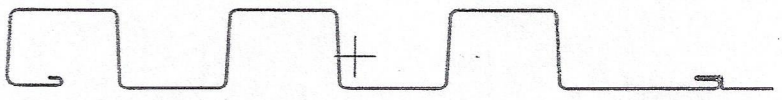
Ri = Intermediate Support Reaction, 57.5 #/ft. of panel

Deflection Limit = L/180

F_y = 5.28 ksi

I_{xx} = 0.2890 in^4

S_{xx} = 0.3349 in^3



BOX RIB -1 PANEL - 12" X 0.032" ALUM.
BOX RIB W/ NAIL STRIP
Rev. Date: 4/27/2020 10:16:19 AM
By: Thomas M. Shingler, PE
Printed: 4/27/2020 10:16:41 AM

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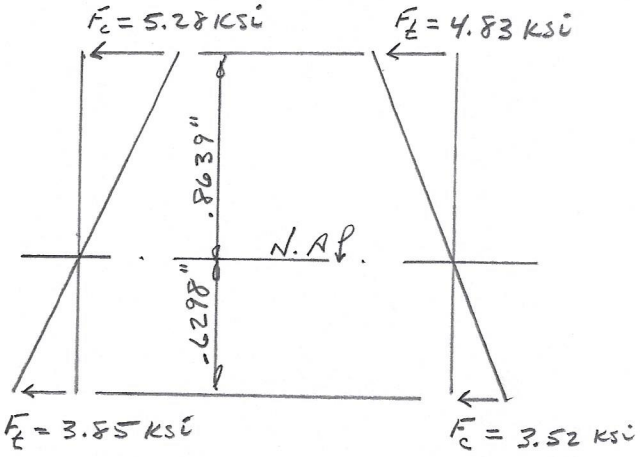


$b/t_{(Top)} = \frac{2}{0.032}$

$b/t_{(Top)} = 62.5$

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

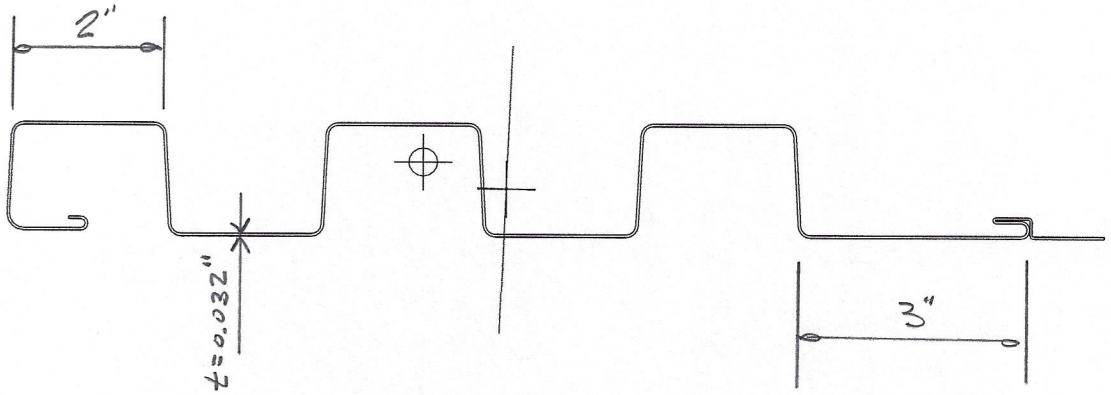
$F_{c(Top)} = 5.28$ KSI

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

$b/t_{(Bot)} = 93.75$

$F_{c(Bot)} = \frac{330}{93.75}$

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



BOX RIB -1 PANEL - 12" X 0.032" ALUM.
BOX RIB W/ NAIL STRIP
Rev. Date: 4/27/2020 10:16:19 AM
By: Thomas M. Shingler, PE
Printed: 4/27/2020 10:16:42 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 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	1.4300	87.000	0.18750	Single	0.000	0.0000	0.7150
6	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
7	1.4900	-87.000	0.12500	Single	0.000	0.0000	0.7450
8	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
9	1.4900	87.000	0.12500	Single	0.000	0.0000	0.7450
10	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
11	1.4900	-87.000	0.12500	Single	0.000	0.0000	0.7450
12	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
13	1.4900	87.000	0.12500	Single	0.000	0.0000	0.7450
14	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
15	1.4900	-87.000	0.12500	Single	0.000	0.0000	0.7450
16	3.0000	0.000	0.12500	None	0.000	0.0000	1.5000
17	0.2280	90.000	0.07550	None	0.000	0.0000	0.1140
18	0.4800	180.000	0.07550	None	0.000	0.0000	0.2400
19	0.0800	90.000	0.00800	None	0.000	0.0000	0.0320
20	0.0600	0.000	0.00800	None	0.000	0.0000	0.0300
21	0.4550	0.000	0.01875	None	0.000	0.0000	0.2275
22	0.2800	-90.000	0.01875	None	0.000	0.0000	0.1400
23	0.9650	0.000	0.01875	None	0.000	0.0000	0.4825

Full Section Properties

Area	0.78156 in²	Wt.	0.0026573 k/ft	Width	24.424 in
Ix	0.289 in⁴	rx	0.6084 in	Ixy	-0.591 in⁴
Sx(t)	0.3349 in³	y(t)	0.8639 in	α	87.618 deg
Sx(b)	0.4594 in³	y(b)	0.6298 in		
Zx	0.4285 in³	Height	1.4936 in		

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I_y	14.467 in^4	r_y	4.3024 in	x_o	-1.0796 in
$S_{y(l)}$	2.2290 in^3	$x_{(l)}$	6.4905 in	y_o	0.3511 in
$S_{y(r)}$	1.8618 in^3	$x_{(r)}$	7.7707 in	jx	1.1605 in
Z_y	2.9074 in^3	Width	14.2612 in	jy	-3.6259 in
I_1	14.492 in^4	r_1	4.3061 in	Cw	4.5063 in^6
I_2	0.265 in^4	r_2	0.5820 in	J	0.0002668 in^4
Ic	14.757 in^4	rc	4.3452 in		
I_o	15.764 in^4	r_o	4.4911 in		

DESIGN INPUT DATA FOR BOX RIB 1 X 0.032" AL W/ SCREW L

PRODUCT PROPERTIES :

E = 10100. KSI

I = .2890 IN4/FT S = .3349 IN3/FT

DESIGN PARAMETERS :

DEFLECTION = L/ 180.

ALLOW. BENDING STRESS (PSI)	=	5280.0
ALLOW. END SUPPORT REACTION (#/FT)	=	57.5
ALLOW. INTERMEDIATE SUPPORT REACTION (#/FT)	=	57.5

LOAD-SPAN TABLE FOR BOX RIB 1 X 0.032" AL W/ SCREW L

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	115.00	57.5	46.00	17.3	57.5	52.27	20.9	57.5
1.25	92.00	57.5	36.80	17.3	57.5	41.82	20.9	57.5
1.50	76.67	57.5	30.67	17.3	57.5	34.85	20.9	57.5
1.75	65.71	57.5	26.29	17.3	57.5	29.87	20.9	57.5
2.00	57.50	57.5	23.00	17.3	57.5	26.14	20.9	57.5
2.25	51.11	57.5	20.44	17.3	57.5	23.23	20.9	57.5
2.50	46.00	57.5	18.40	17.3	57.5	20.91	20.9	57.5
2.75	41.82	57.5	16.73	17.3	57.5	19.01	20.9	57.5
3.00	38.33	57.5	15.33	17.3	57.5	17.42	20.9	57.5
3.25	35.38	57.5	14.15	17.3	57.5	16.08	20.9	57.5
3.50	32.86	57.5	13.14	17.3	57.5	14.94	20.9	57.5
3.75	30.67	57.5	12.27	17.3	57.5	13.94	20.9	57.5
4.00	28.75	57.5	11.50	17.3	57.5	13.07	20.9	57.5

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