NEGATIVE LOAD SPAN CHART FOR : PETERSEN BOX RIB SERIES BOX RIB 3 @ 12" X 24 GA. STEEL (w/ CLIP)						
Span, ft.	TWO EQUAL SPANS			THREE EQUAL SPANS		
	W (psf)	Re	Ri	W (psf)	Re	Ri
1.00	110.24	41.3	137.8	125.27	50.1	137.8
1.25	88.19	41.3	137.8	100.22	50.1	137.8
1.50	73.49	41.3	137.8	83.52	50.1	137.8
1.75	62.99	41.3	137.8	71.58	50.1	137.8
2.00	55.12	41.3	137.8	62.64	50.1	137.8
2.25	49.00	41.3	137.8	55.68	50.1	137.8
2.50	44.10	41.3	137.8	50.11	50.1	137.8
2.75	40.09	41.3	137.8	45.55	50.1	137.8
3.00	36.75	41.3	137.8	41.76	50.1	137.8
3.25	33.92	41.3	137.8	38.55	50.1	137.8
3.50	31.50	41.3	137.8	35.79	50.1	137.8
3.75	29.40	41.3	137.8	33.41	50.1	137.8
4.00	27.56	41.3	137.8	31.32	50.1	137.8

W = Allowable Uniform Wind Load, psf

Re = End Support Reaction, 137.8 #/ft. of panel

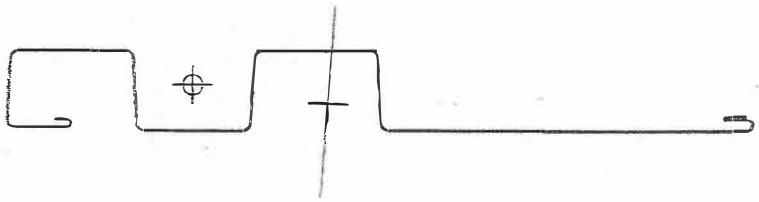
Ri = Intermediate Support Reaction, 137.8 #/ft. of panel

Deflection Limit = L/180

F_y = 40 ksi

I_{xx} = 0.1060 in^4

S_{xx} = 0.1201 in^3



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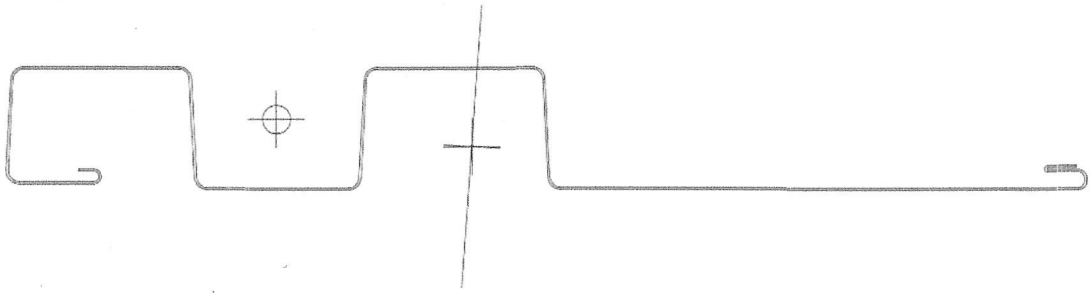
$(+) I_{xx}/ft = 0.1145\ in^4/ft$

$(+) S_{xx}/ft = 0.1201\ in^3/ft$

$(-) I_{xx}/ft = 0.1027\ in^4/ft$

$(-) S_{xx}/ft = 0.1546\ in^3/ft$



$(+)\ I_{EFF}/ft = (.71 \times 0.1145) + (.29 \times 0.1027) = 0.111\ in^4/ft$

$(-)\ I_{EFF}/ft = (.71 \times 0.1027) + (.29 \times 0.1145) = 0.106\ in^4/ft$

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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 0.024 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	0.1680	-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	0.0720	90.000	0.01200	None	0.000	0.0000	0.0360
16	0.0360	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	0.45500 in^2	Wt.	0.0015470 k/ft	Width	18.958 in
Ix	0.1409 in^4	rx	0.5565 in	Ixy	-0.4348 in^4
Sx(t)	0.1589 in^3	y(t)	0.8865 in	α	86.034 deg
Sx(b)	0.2888 in^3	y(b)	0.4878 in		
Zx	0.2092 in^3	Height	1.3744 in		
Iy	6.3829 in^4	ry	3.7454 in	x_o	-2.1824 in
Sy(l)	1.2282 in^3	x(l)	5.1969 in	y_o	0.3049 in
Sy(r)	0.9315 in^3	x(r)	6.8519 in	jx	2.6729 in
Zy	1.4573 in^3	Width	12.0488 in	jy	-1.6731 in

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I_1	6.4130 in⁴	r_1	3.7543 in	Cw	1.4137 in⁶
I_2	0.1108 in⁴	r_2	0.4934 in	J	0.00008736 in⁴
Ic	6.5238 in⁴	rc	3.7865 in		
I_o	8.7332 in⁴	r_o	4.3811 in		

Fully Braced Strength - AISI S100-16/S1-18, US, ASD

Material Type: A653 SS Grade 40, Fy=40 ksi

Axial		Positive Bending		Positive Bending	
Pao	4.402 k	Maxo	2.877 k-in	Mayo	11.863 k-in
Ae	0.19809 in²	Ixe	0.1145 in⁴	Iye	3.9893 in⁴
Ta	11.296 k	Sxe(t)	0.1201 in³	Sye(l)	0.9987 in³
		Sxe(b)	0.2716 in³	Sye(r)	0.4953 in³
Shear					
Vay	1.178 k	Negative Bending		Negative Bending	
Vax	0.062 k	Maxo	3.467 k-in	Mayo	21.771 k-in
		Ixe	0.1027 in⁴	Iye	6.0880 in⁴
Torsion		Sxe(t)	0.1447 in³	Sye(l)	1.1378 in³
Ba	9.5667 k-in²	Sxe(b)	0.1546 in³	Sye(r)	0.9089 in³

Section contains no web elements for horizontal shear.

DESIGN INPUT DATA FOR BOX RIB 3 X 24 GA. W/ CLIP

PRODUCT PROPERTIES :

E = 29500. KSI

I = .1060 IN4/FT S = .1201 IN3/FT

DESIGN PARAMETERS :

DEFLECTION = L/ 180.

ALLOW. BENDING STRESS (PSI)	=	24000.0
ALLOW. END SUPPORT REACTION (#/FT)	=	137.8
ALLOW. INTERMEDIATE SUPPORT REACTION (#/FT)	=	137.8

LOAD-SPAN TABLE FOR BOX RIB 3 X 24 GA. 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	275.60	137.8	110.24	41.3	137.8	125.27	50.1	137.8
1.25	220.48	137.8	88.19	41.3	137.8	100.22	50.1	137.8
1.50	183.73	137.8	73.49	41.3	137.8	83.52	50.1	137.8
1.75	157.49	137.8	62.99	41.3	137.8	71.58	50.1	137.8
2.00	137.80	137.8	55.12	41.3	137.8	62.64	50.1	137.8
2.25	122.49	137.8	49.00	41.3	137.8	55.68	50.1	137.8
2.50	110.24	137.8	44.10	41.3	137.8	50.11	50.1	137.8
2.75	100.22	137.8	40.09	41.3	137.8	45.55	50.1	137.8
3.00	91.87	137.8	36.75	41.3	137.8	41.76	50.1	137.8
3.25	84.80	137.8	33.92	41.3	137.8	38.55	50.1	137.8
3.50	78.74	137.8	31.50	41.3	137.8	35.79	50.1	137.8
3.75	73.49	137.8	29.40	41.3	137.8	33.41	50.1	137.8
4.00	68.90	137.8	27.56	41.3	137.8	31.32	50.1	137.8

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