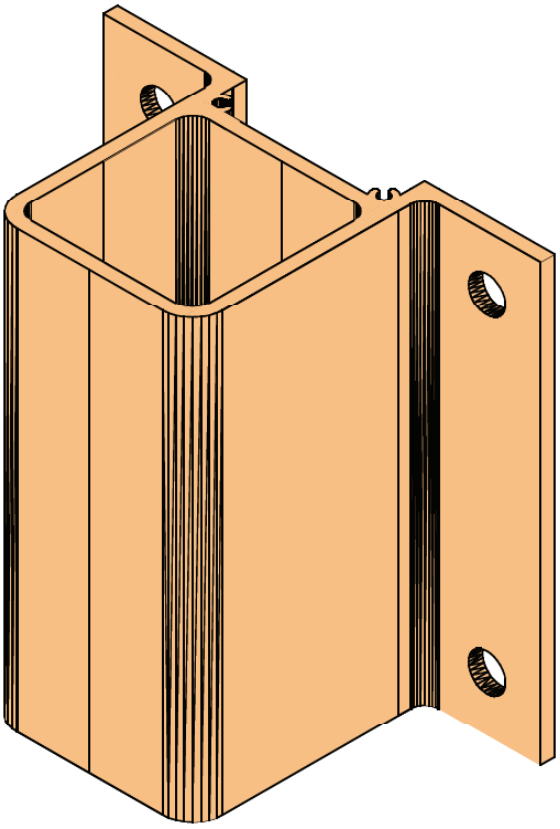
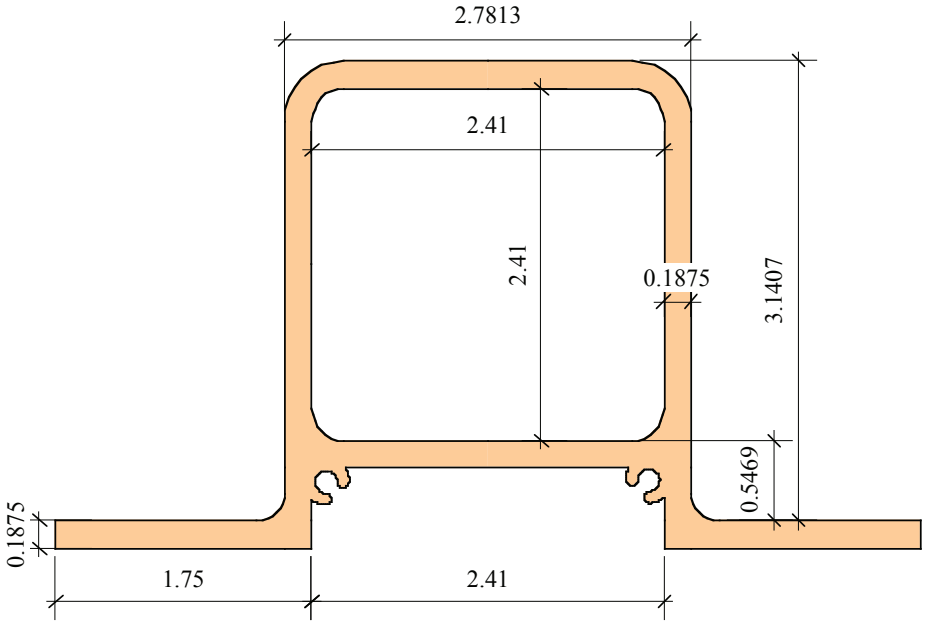
FASCIA BRACKET

Allowable stresses
ADM Table 2-24 6063-T6 Aluminum

Ft = 15 ksi, uniform tension
Ft = 20 ksi, flat element bending
F_B = 31 ksi
Fc = 20 ksi, flat element bending

Section Properties
Area: 2.78 sq in
Perim: 28.99 in
I_{xx}: 3.913 in^4
I_{yy}: 5.453 in^4
C_{xx}: 1.975 in/1.353 in
C_{yy}: 2.954 in
S_{xx}: 1.981 in^3 front
S_{xx}: 2.892 in^3
S_{yy}: 1.846 in^3





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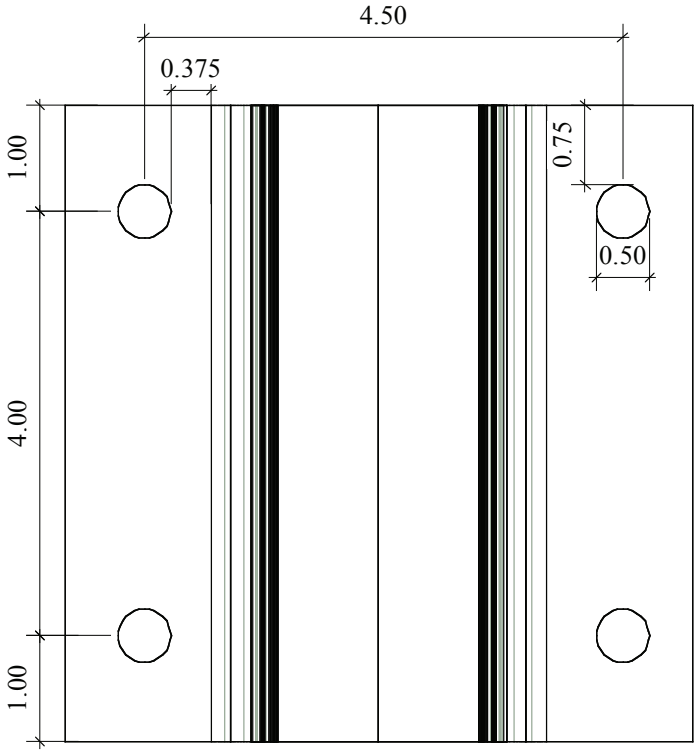
Allowable moment on bracket:

$Ma = F_t * S$

Ma_{xx} = 15 ksi*1.981 in^3 = 29,175"# - Outward moment

Ma_{yy} = 15 ksi*1.846 in^3 = 27,690"# - Sidewise moment



Flange bending strength
Determine maximum allowable bolt load:

Tributary flange
b_f= 8t = 8*0.1875 = 1.5" each side of hole
b_t =1.5"+1"+0.5"+1.75" = 4.75"

S= 4.75"*0.1875^2/6=0.0278 in^3
Ma_f = 0.0278 in^3*20 ksi = 557"#

Allowable bolt tension
T = Ma_f/0.375 = 1,485#
3/8" bolt standard washer

For Heavy washer
T=Ma_f/0.1875= 2,971#

Typical Installation – Post load = 250# at 42" AFF – Top hole is 2" below finish floor

T_{up} = [250#*(42"+ 7")/5"]/2 bolts = 1,225# tension

T_{bot} = [250#(42"+1")/5"]/2 bolts = 1,075# tension

For centerline holes:
T = [250#*(42"+ 5")/3"]/2 bolts = 1,958# tension
For lag screws into beam face:
- 3/8" lag screw – withdrawal strength per NDS Table 11.2A

Wood species – G ≥ 0.43 – W = 243#/in

Adjustments – Cd = 1.33, Cm = 0.75 (where weather exposed)

No other adjustments required.

W' = 243#/in*1.33 = 323 #/in – where protected from weather

W' = 243#/in*1.33*0.75 = 243#/in – where weather exposed

For protected installations the minimum embedment is:

l_e = 1,225#/323#/in = 3.79" : +7/32" for tip = 4.0"

For weather exposed installations the minimum embedment is:

l_e = 1,225#/243#/in = 5.04" : +7/32" for tip = 5.26" requires 5-1/2" screw

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