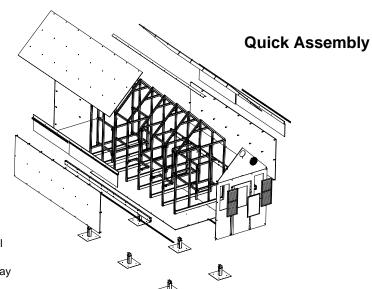


Permanent or Reusable

Pingel Design Group Inc Disaster Relief Housing

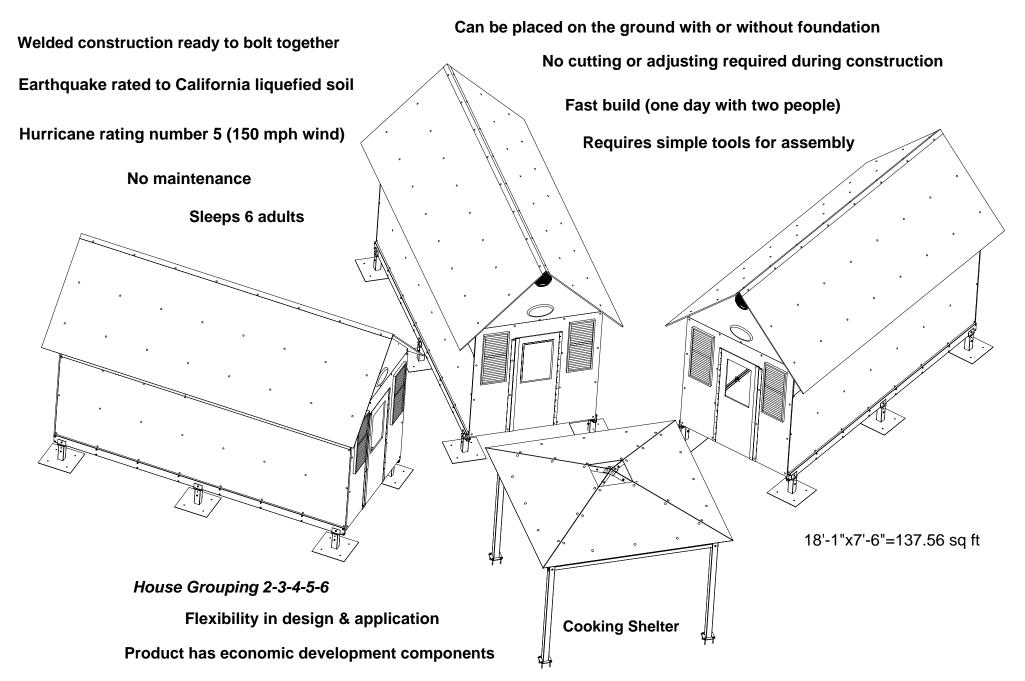
Hurricane & Earthquake Resistant



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Disaster Relief Housing Concept



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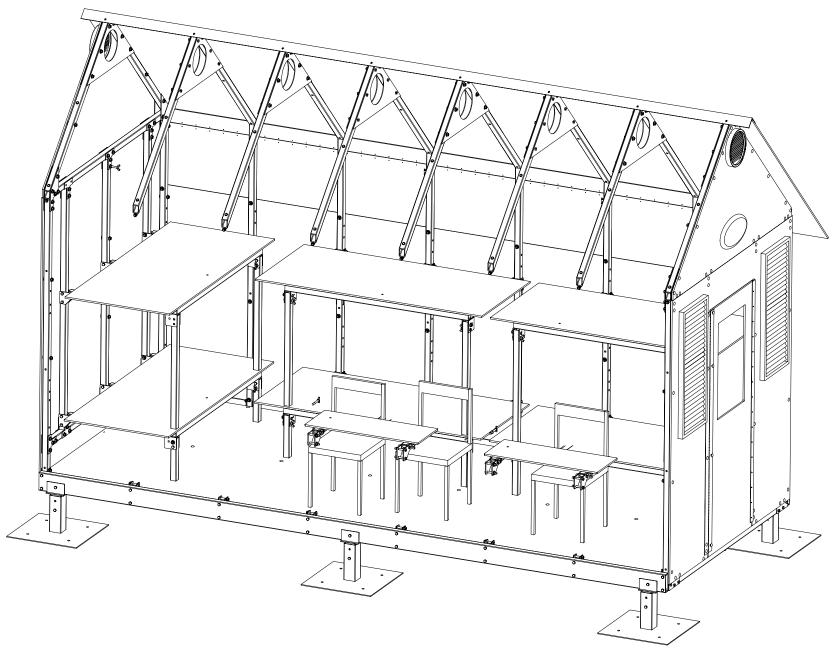
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Exploded view

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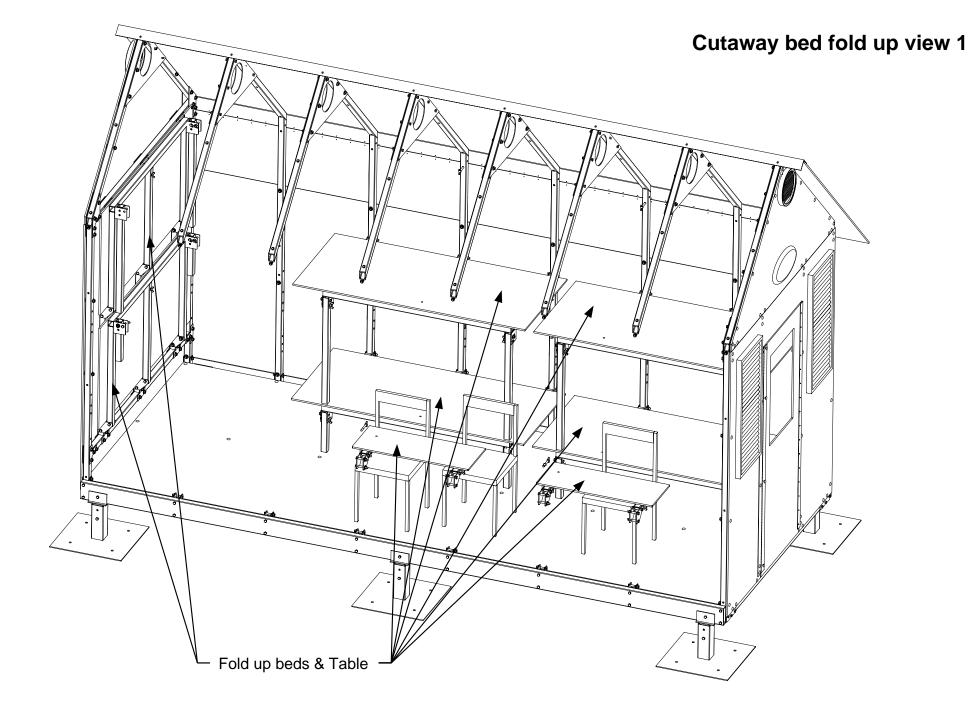
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Cutaway view 1



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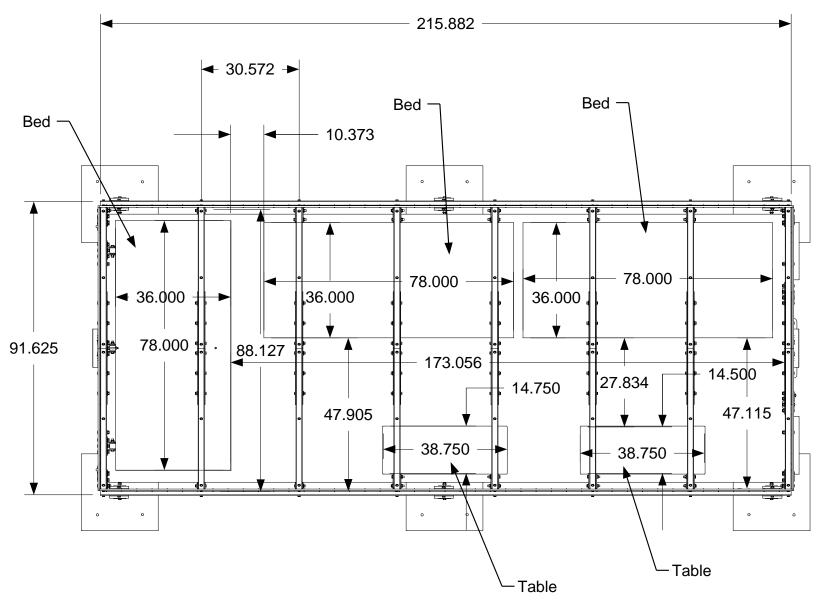
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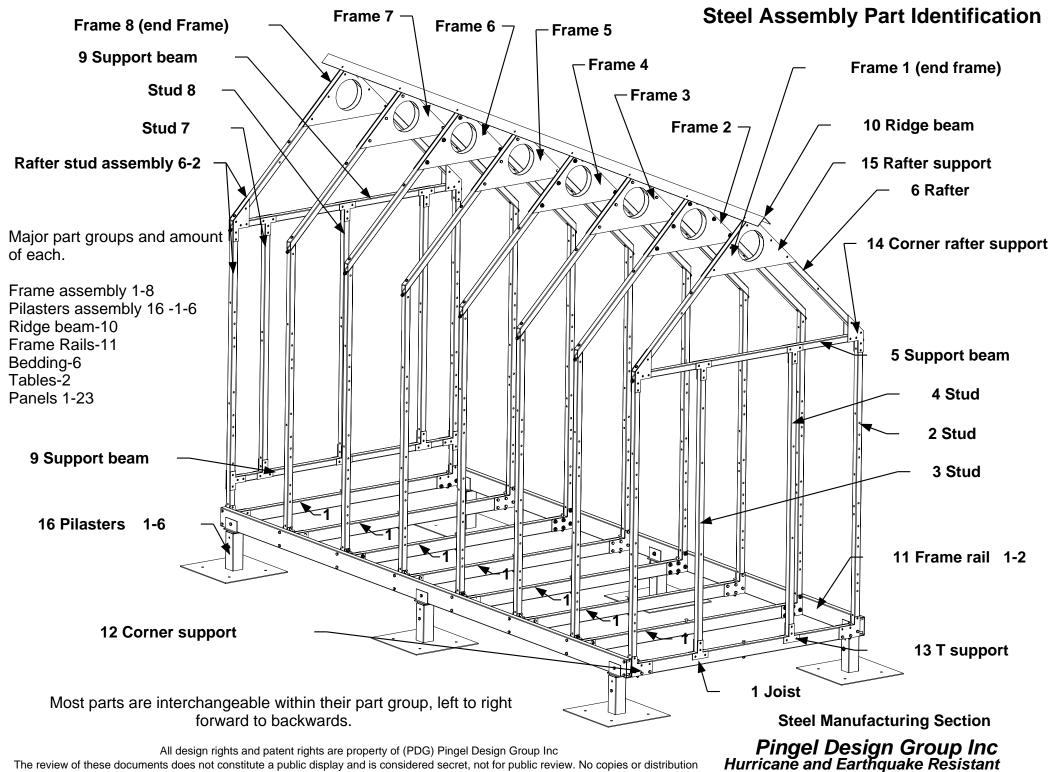
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Plan view 1



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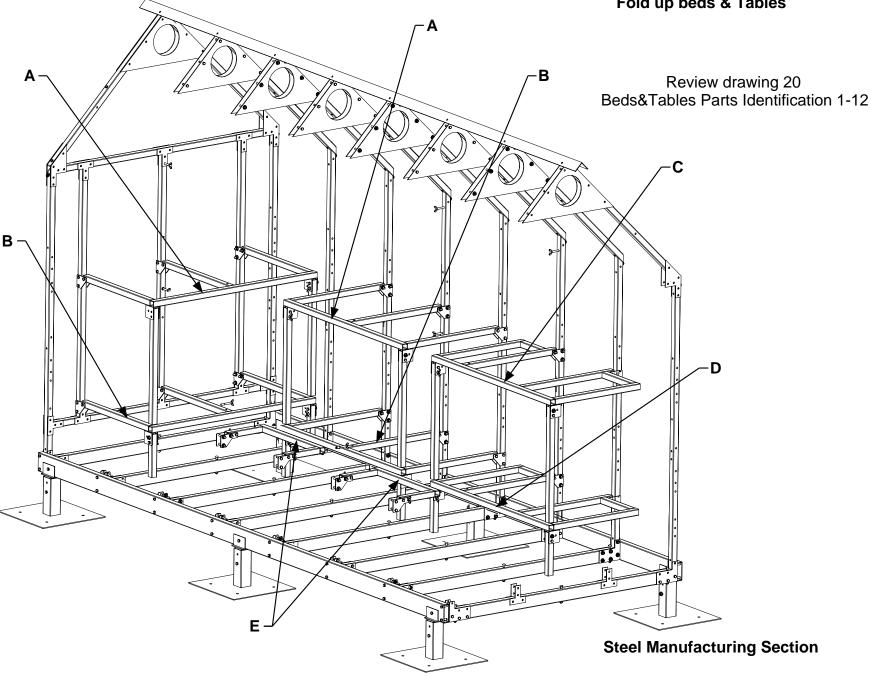
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Disaster Relief Housing

Most parts are interchangeable within their part group, left to right forward to backwards.

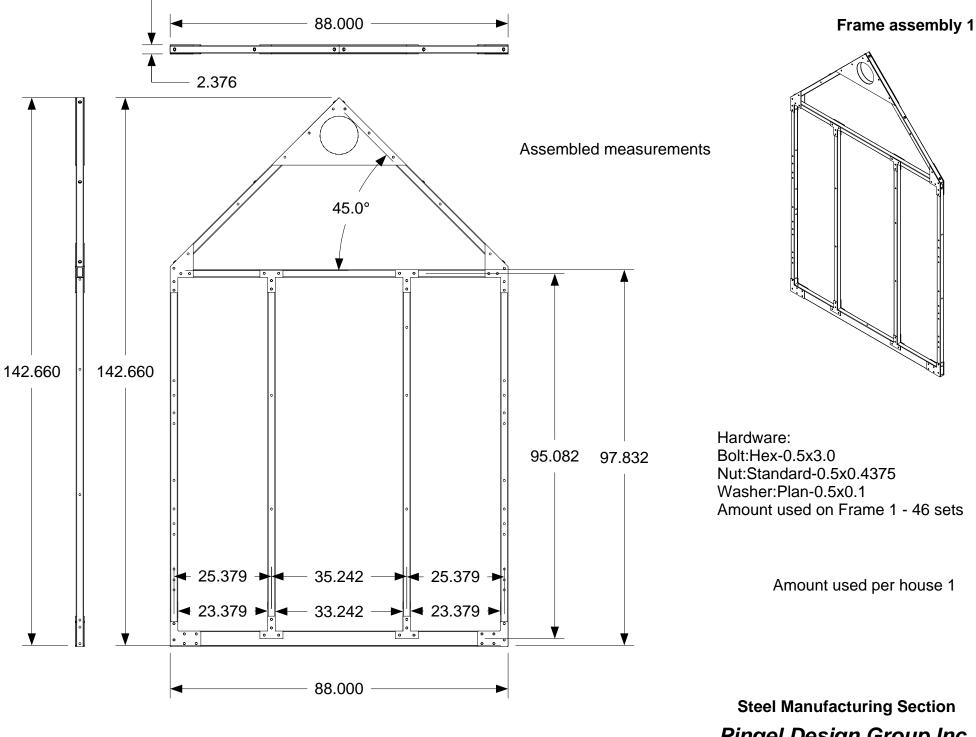
Steel Assembly Part Identification

Fold up beds & Tables



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Pingel Design Group Inc Hurricane and Earthquake Resistant Disaster Relief Housing

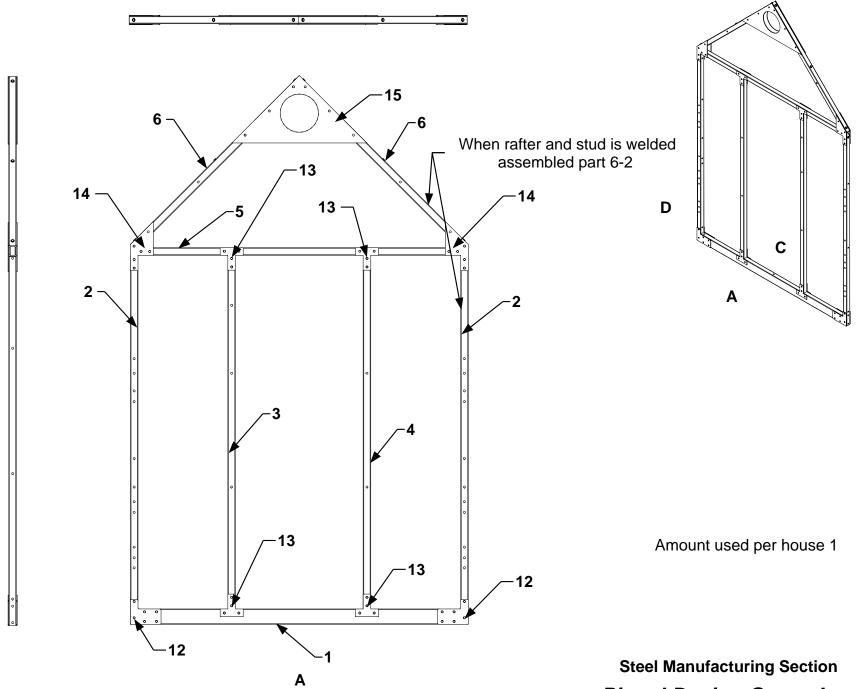


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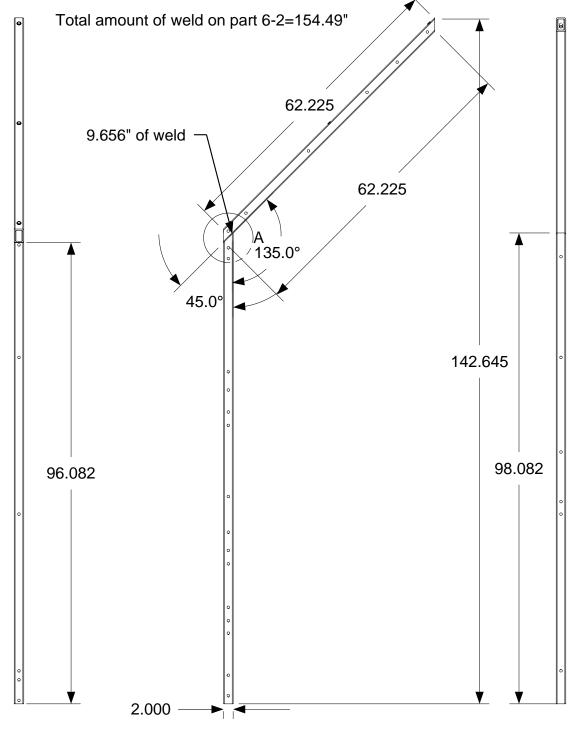
Frame assembly 1 identification



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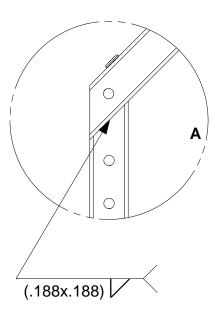
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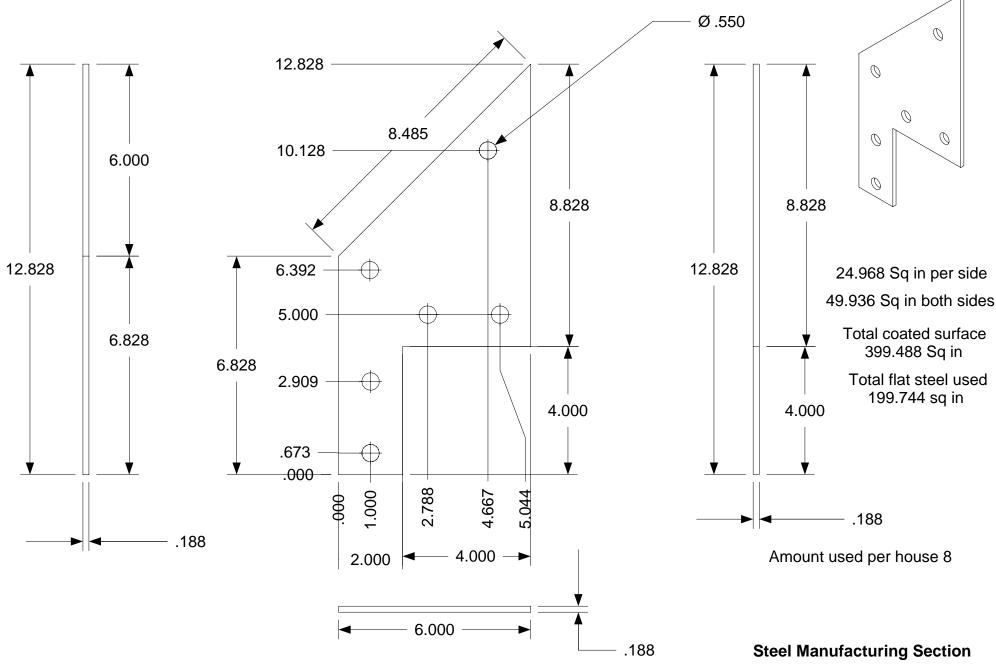


Each rafter stud assembly 6-2 parts can be used on every frame 1-8. The parts are siamese.

Amount used per house 16

Steel Manufacturing Section

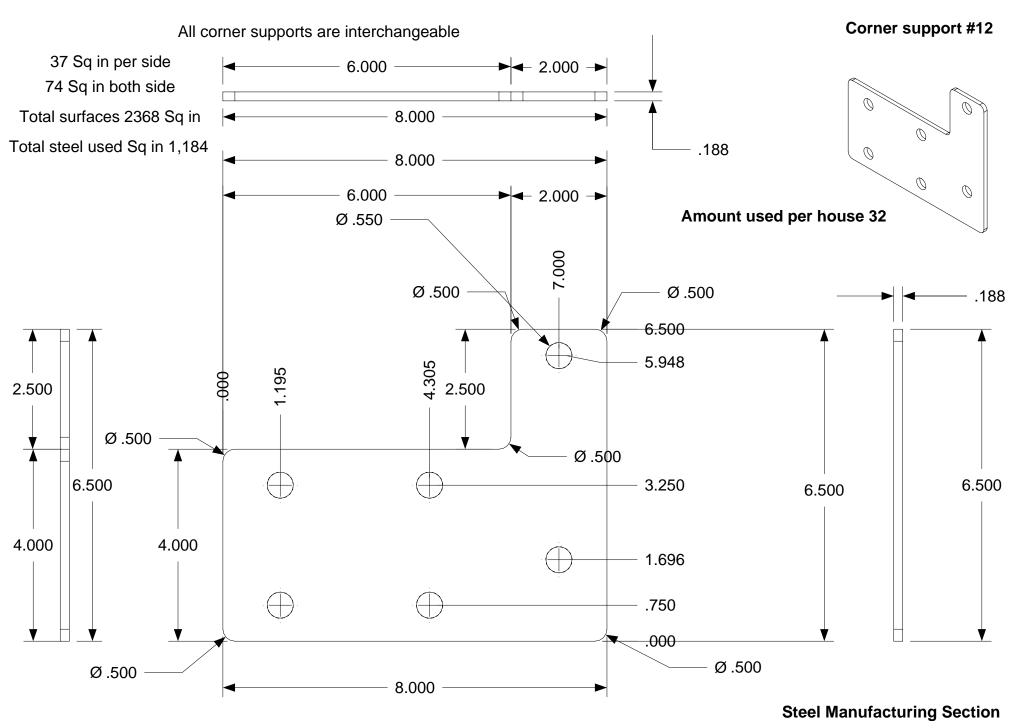
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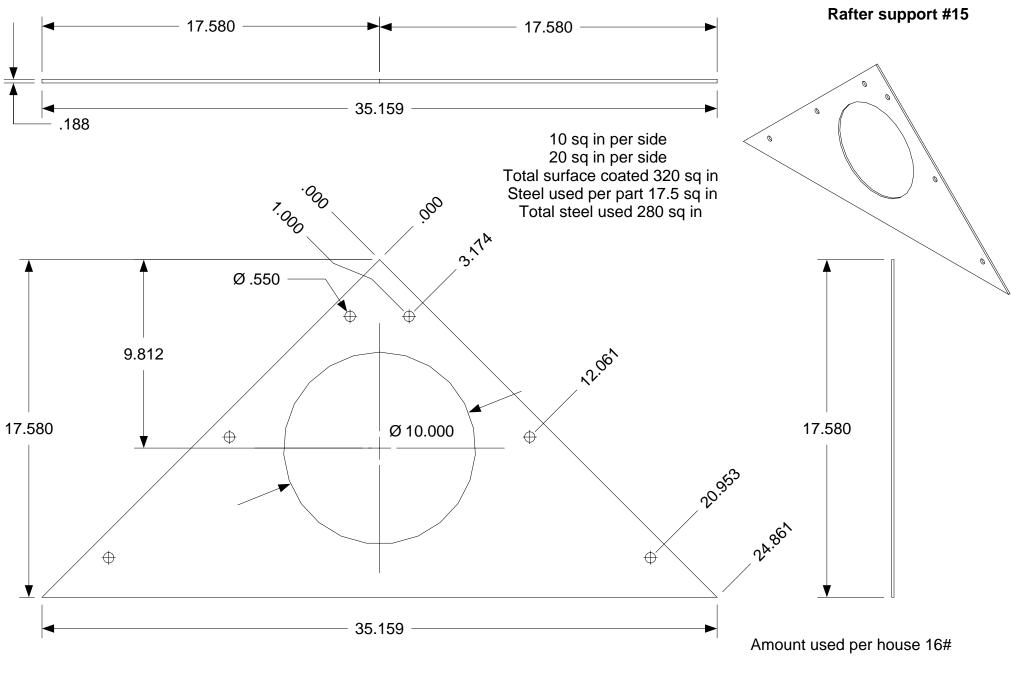
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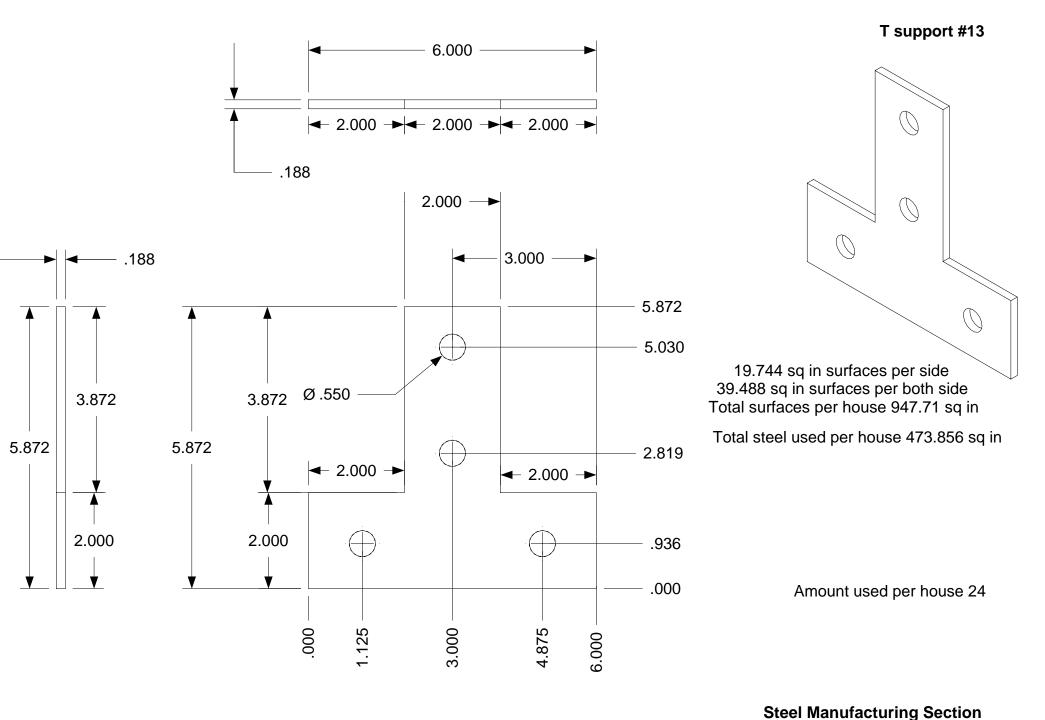
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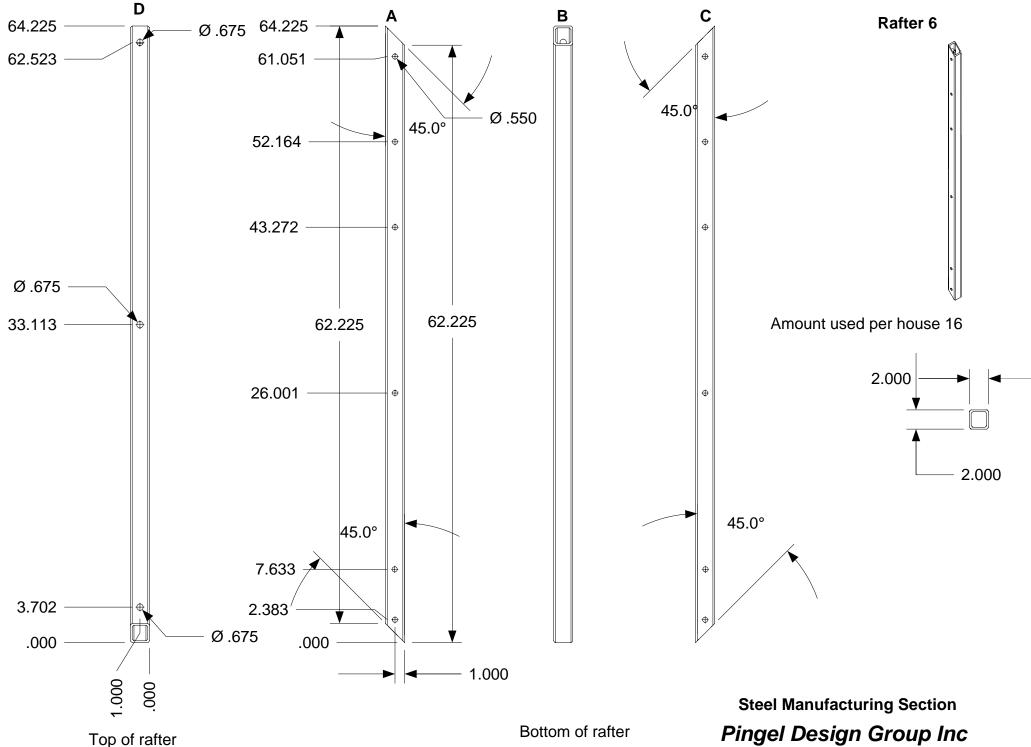
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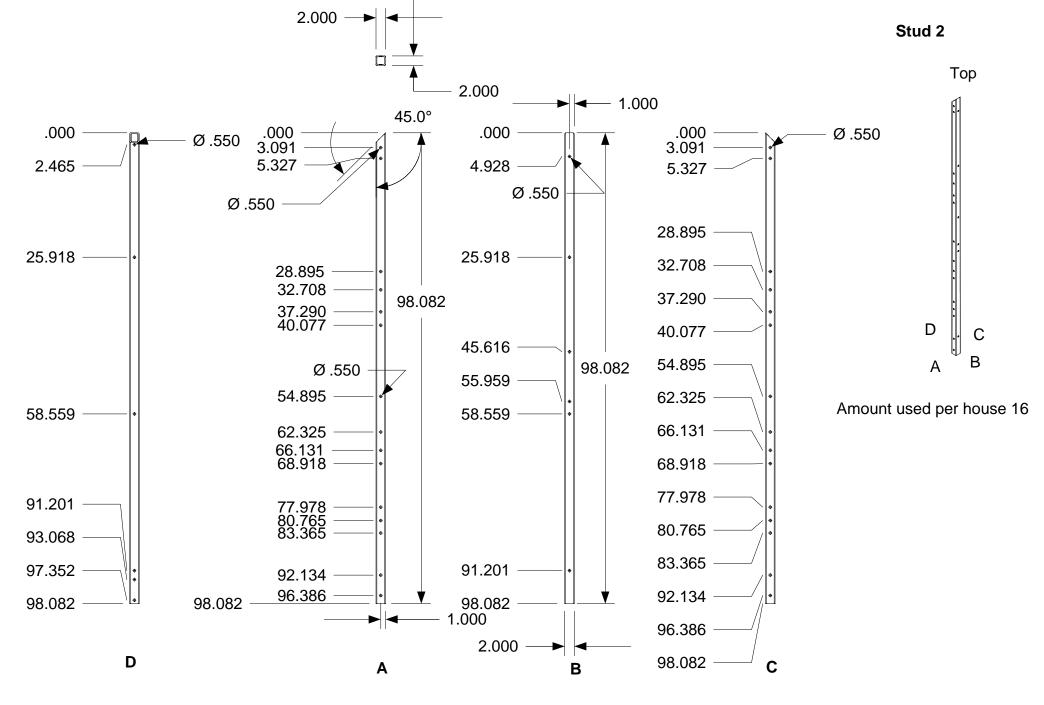
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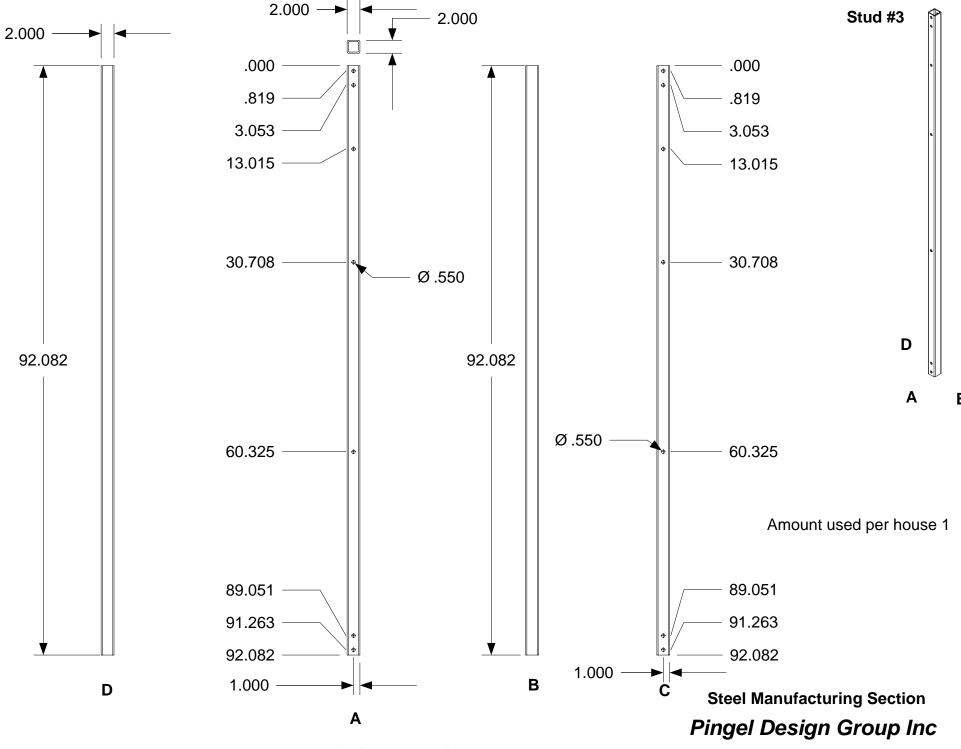


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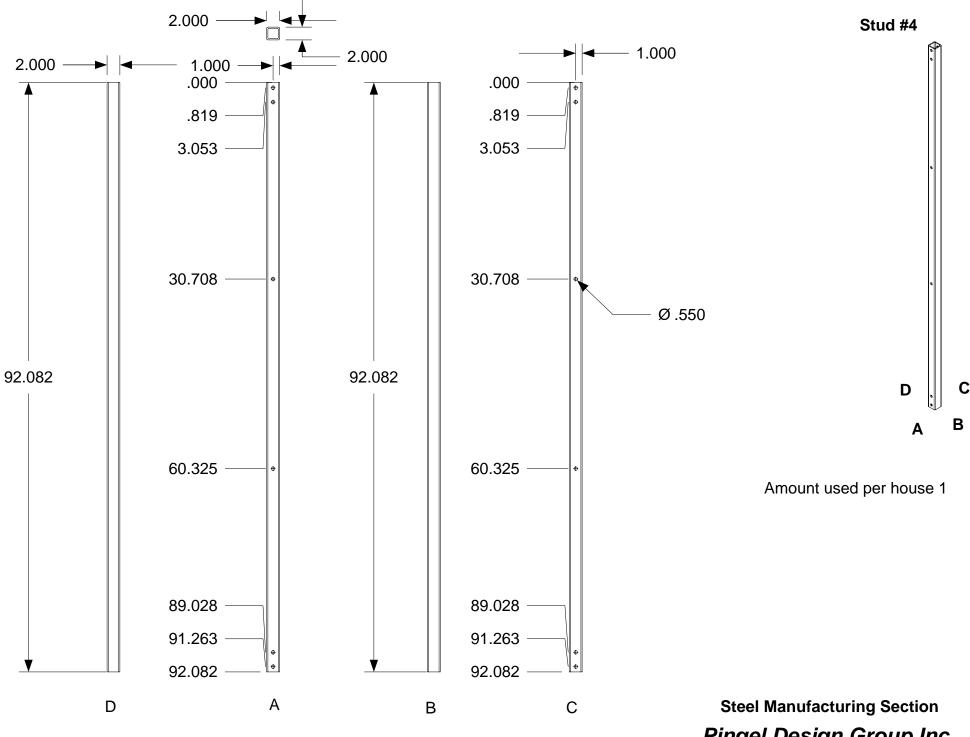
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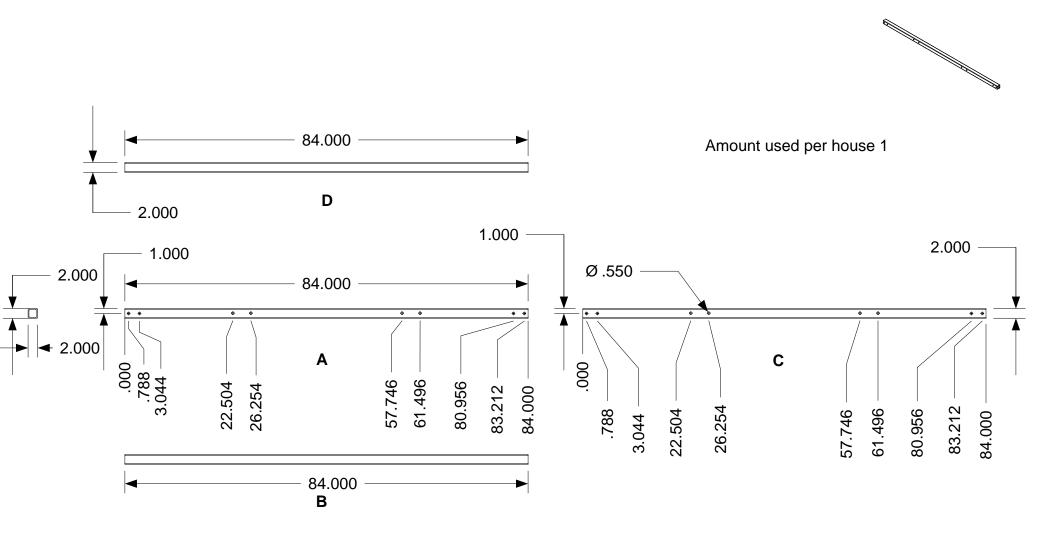
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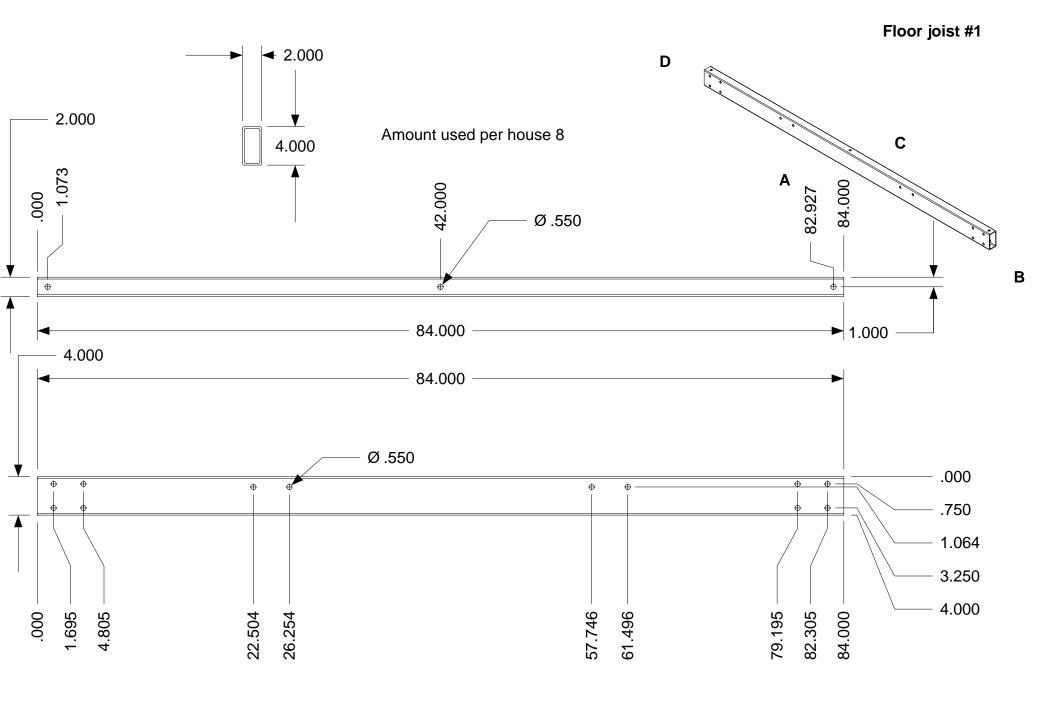
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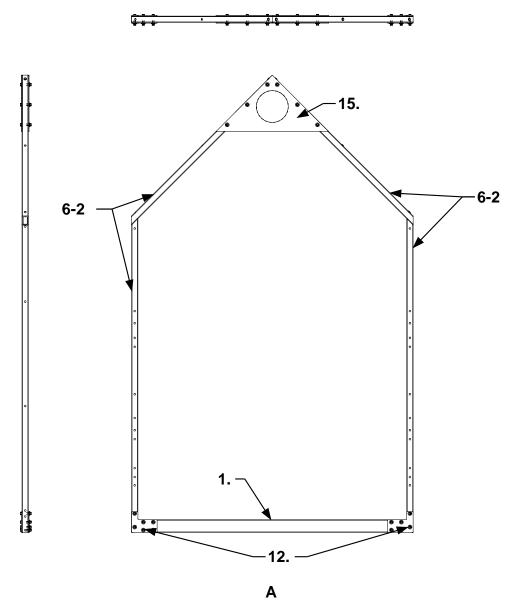
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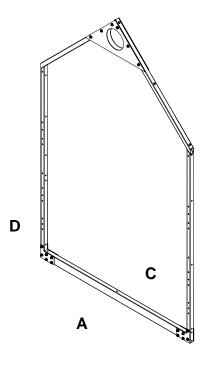
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Frame 1& Frame 8 use same parts with minor changes to part 1 ref: joist #1

Review drawings 5-7-8-15 for sub component details



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В

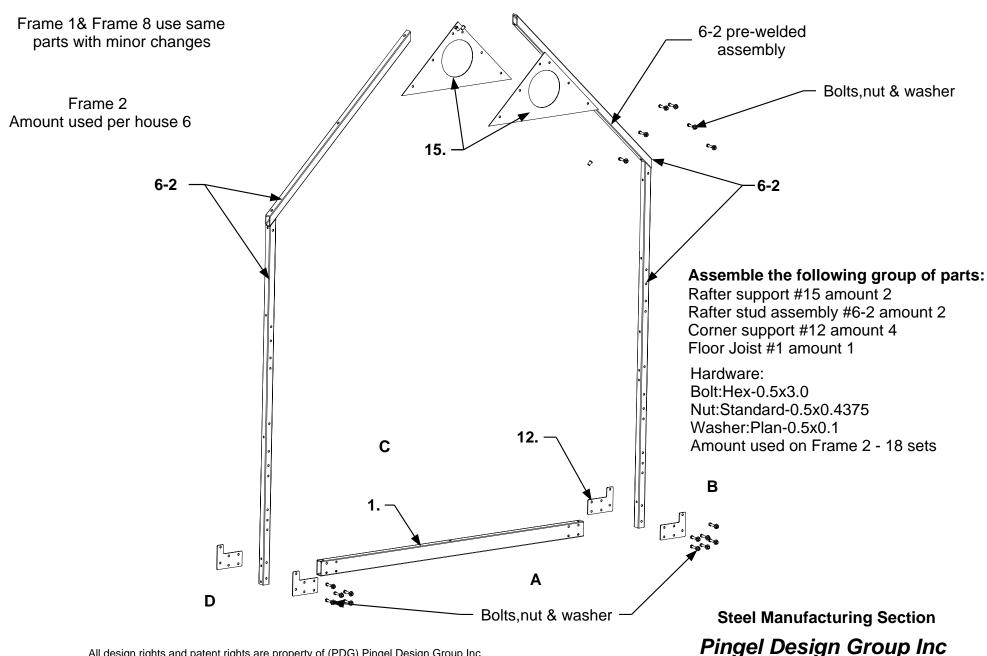
Assemble the following group of parts:

Rafter support #15 amount 2 Rafter stud assembly #6-2 amount 2 Corner support #12 amount 4 Floor Joist #1 amount 1

Hardware:
Bolt:Hex-0.5x3.0
Nut:Standard-0.5x0.4375
Washer:Plan-0.5x0.1
Amount used on Frame 2 - 18 sets

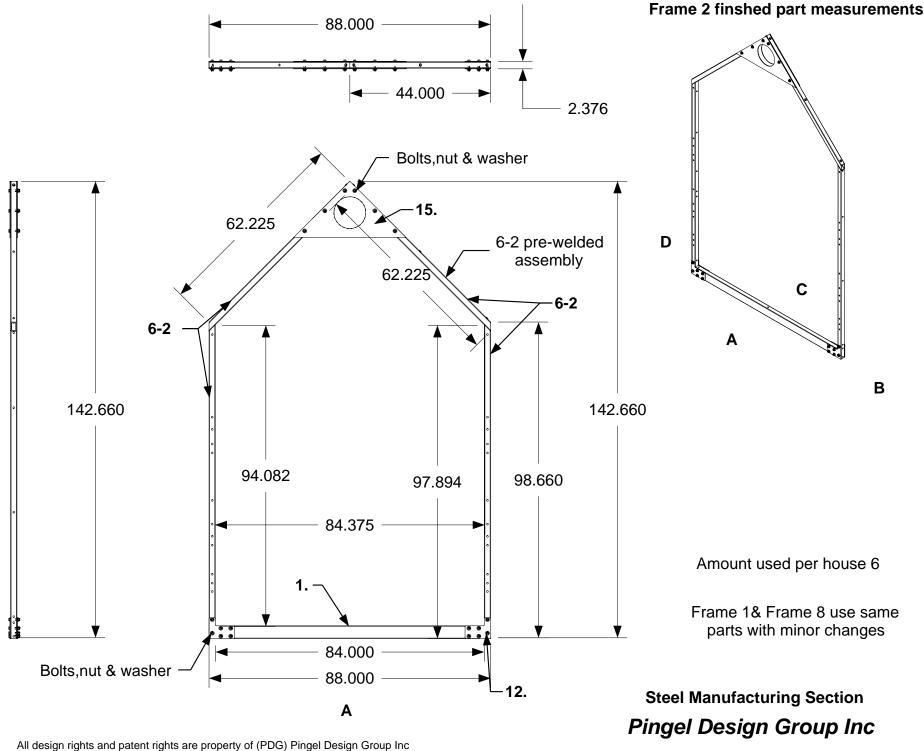
Steel Manufacturing Section

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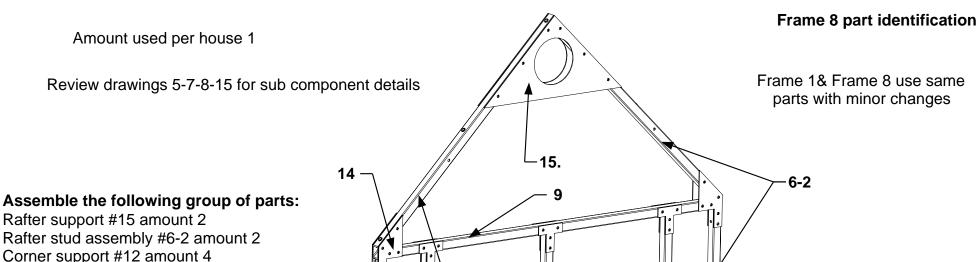
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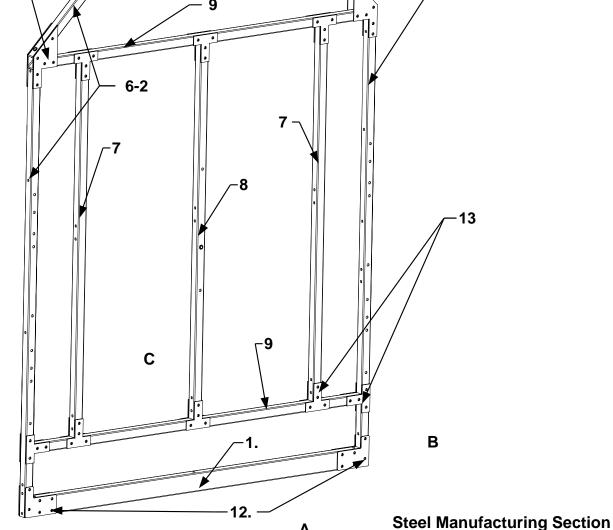


Rafter stud assembly #6-2 amount 2 Corner support #12 amount 4 Floor Joist #1 amount 1 Stud #3 amount 1 Stud #4 amount 1

Hardware: Bolt:Hex-0.5x3.0 Nut:Standard-0.5x0.4375 Washer:Plan-0.5x0.1 Amount used on Frame 8 - 44 sets

D

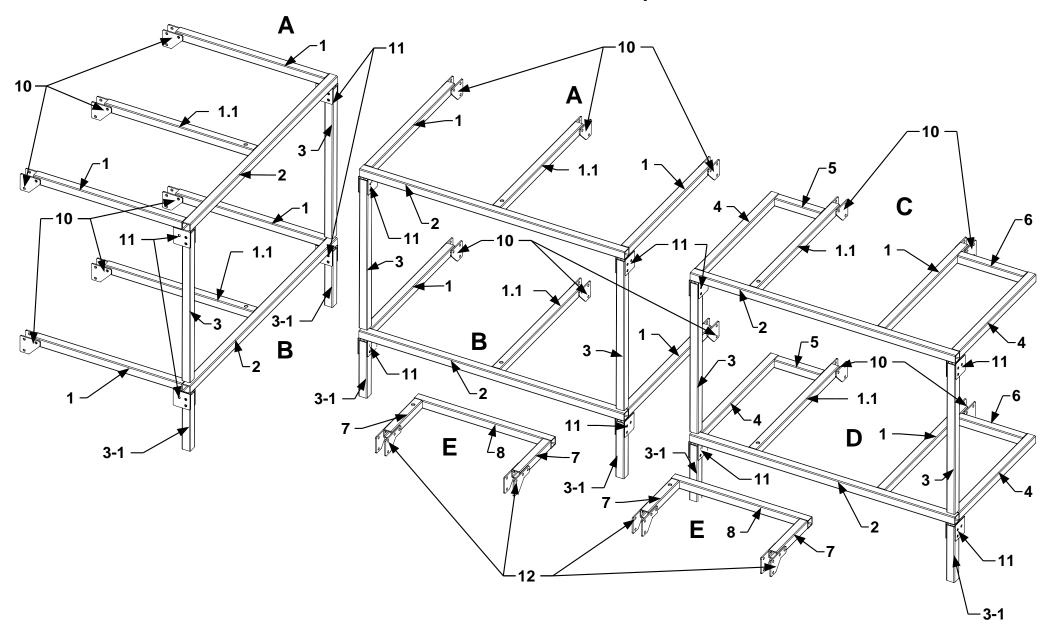
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Fold up Beds & Tables Part Identification 1-12

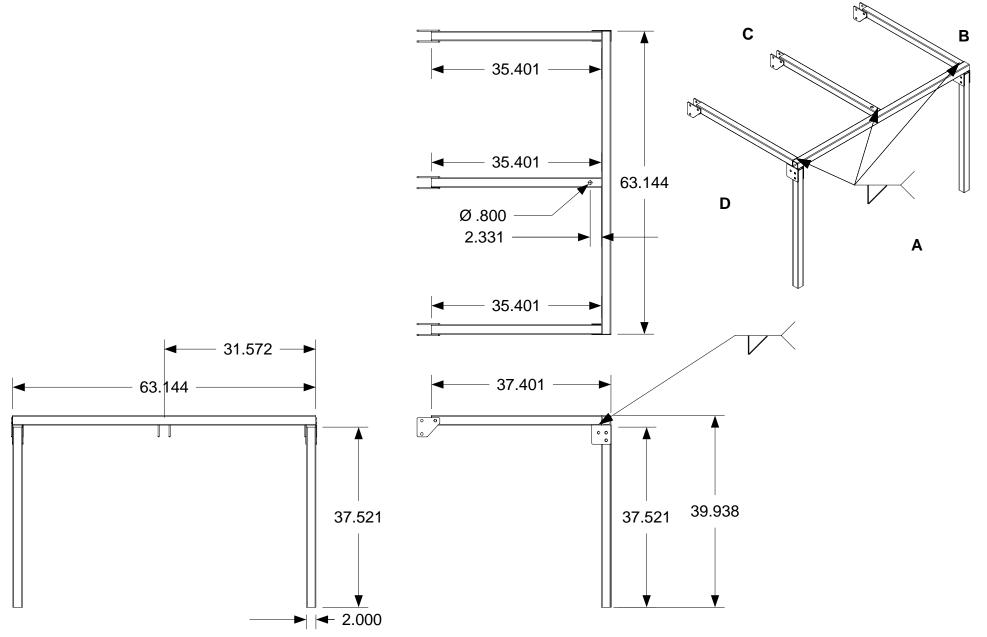


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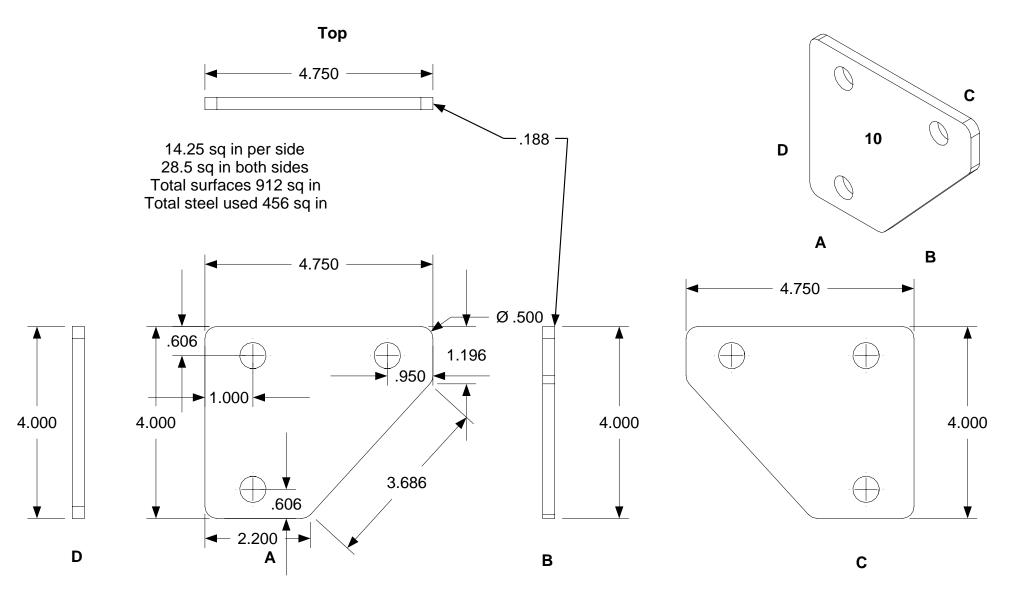


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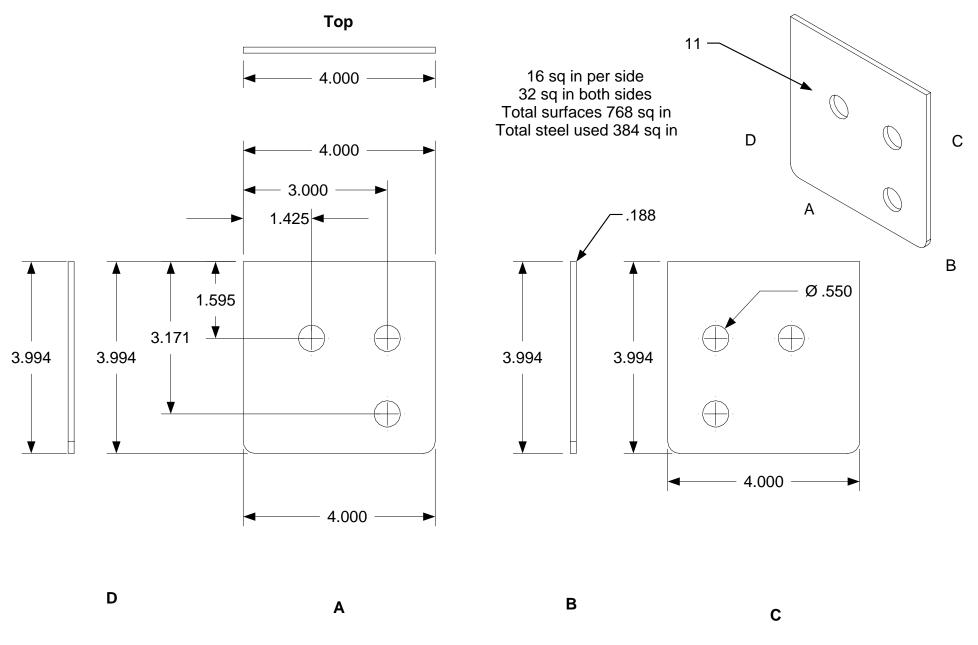


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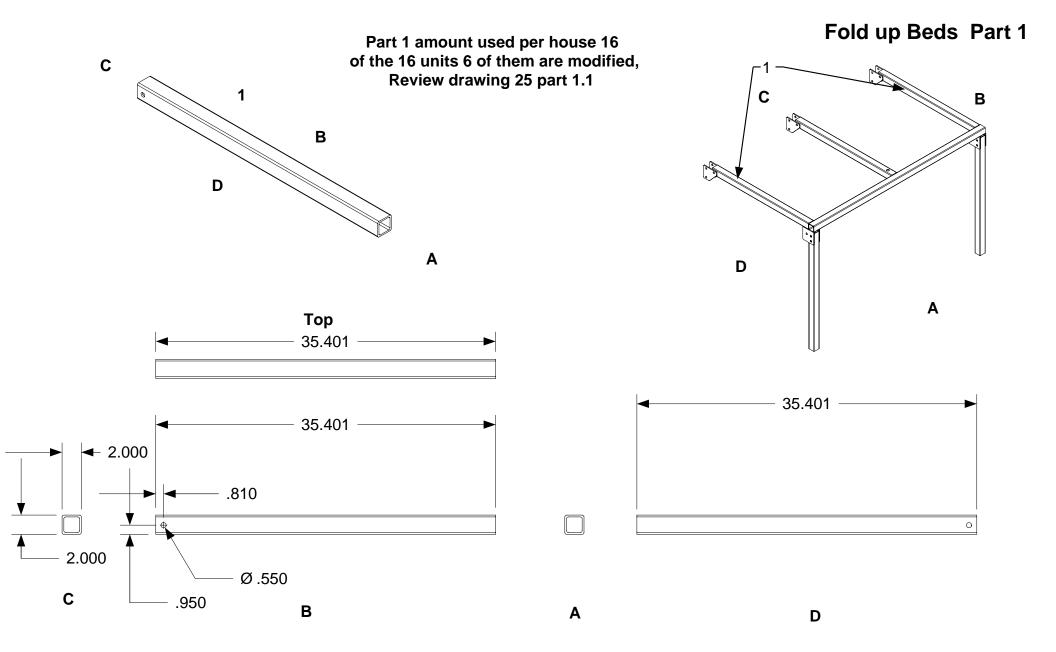


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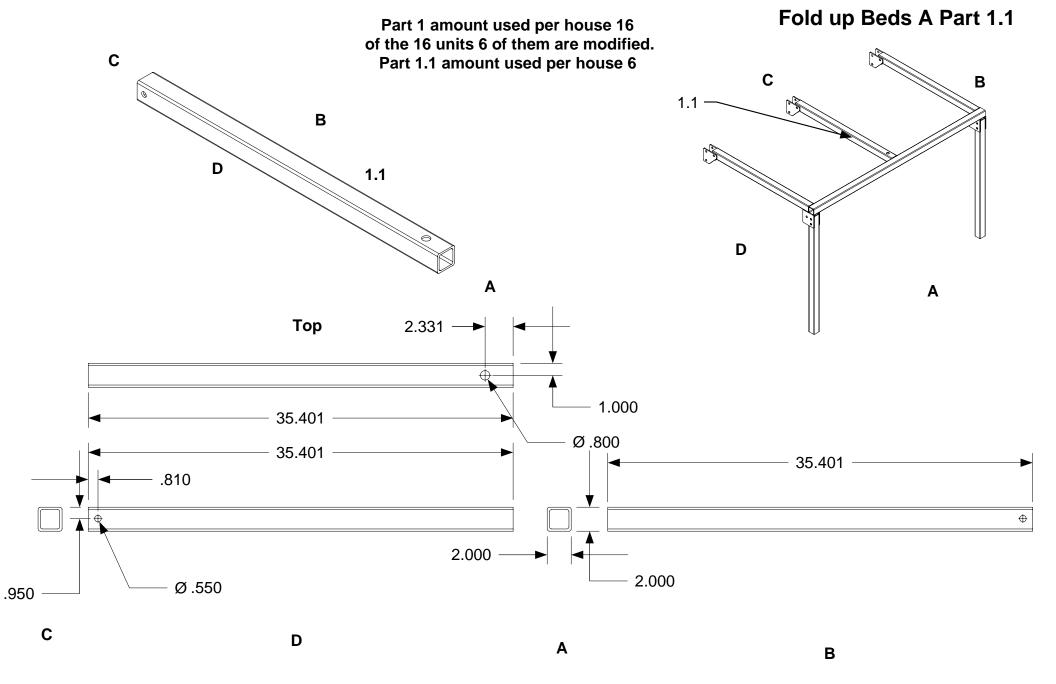
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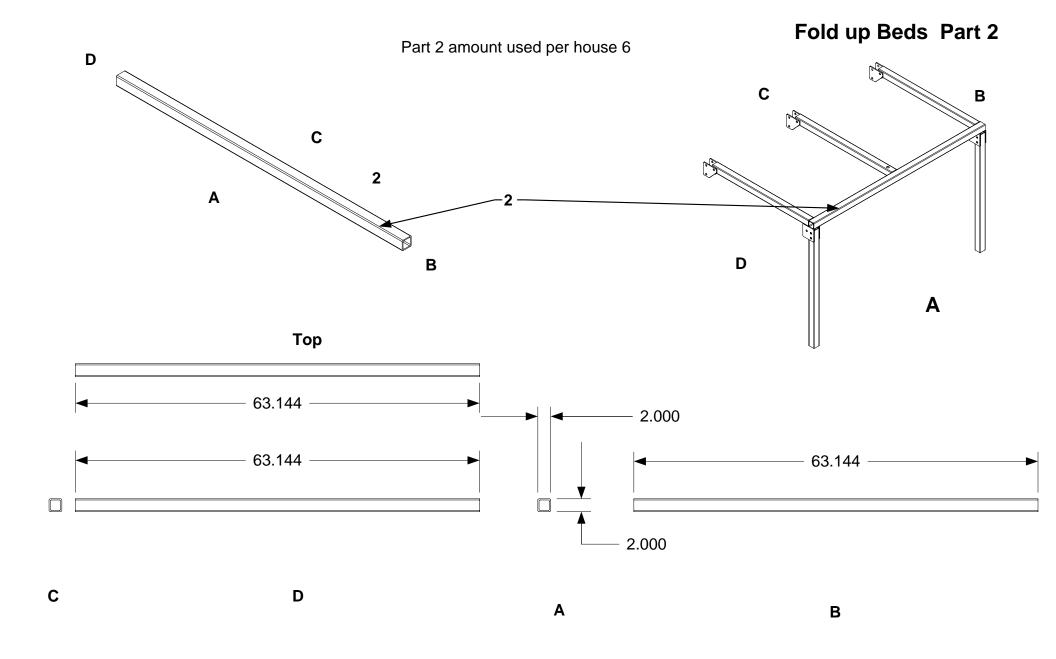


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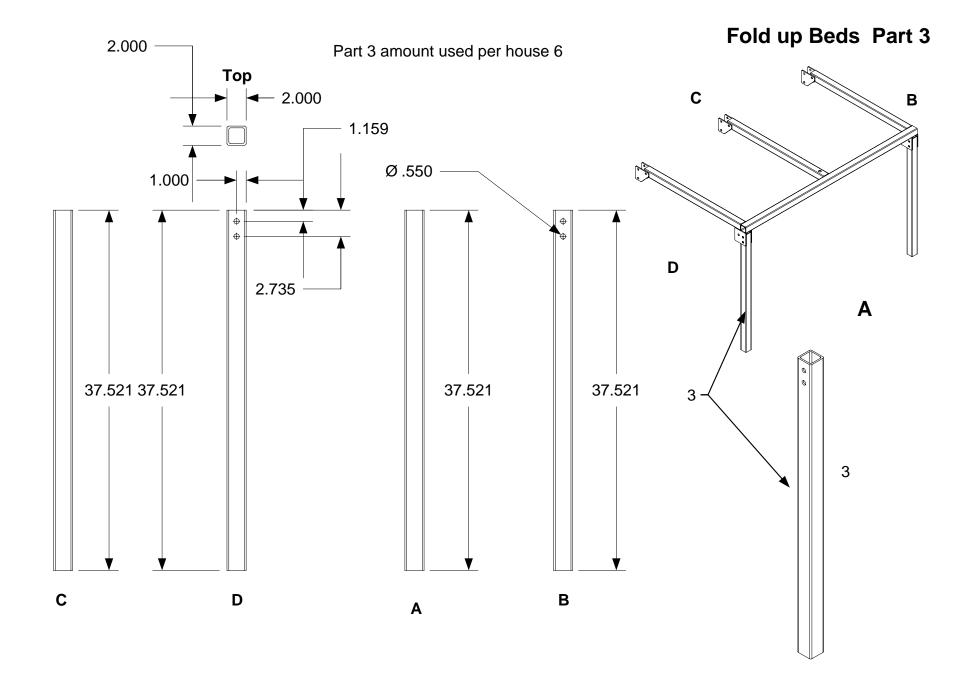
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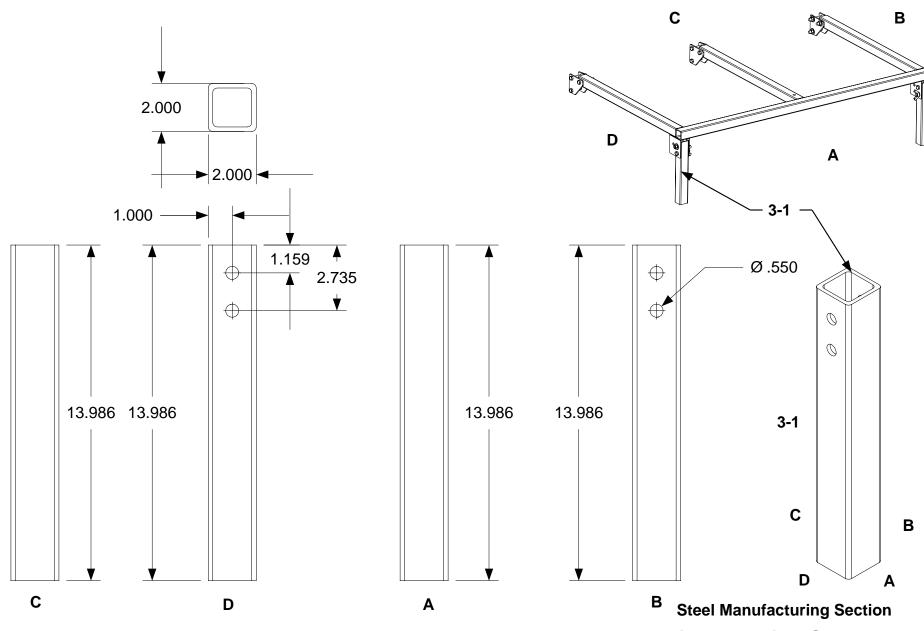
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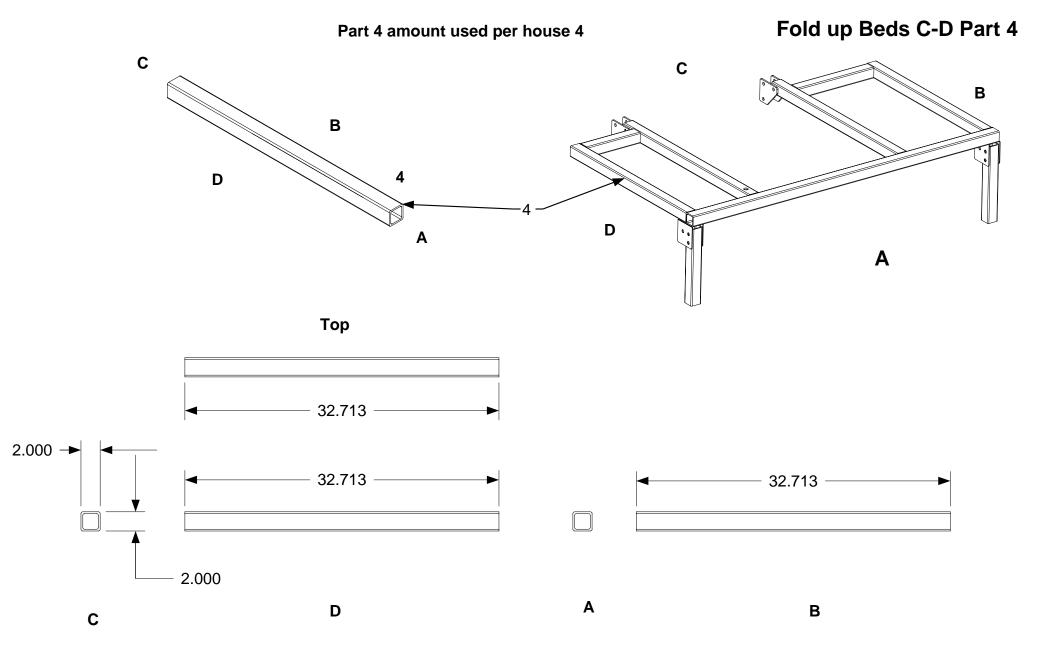
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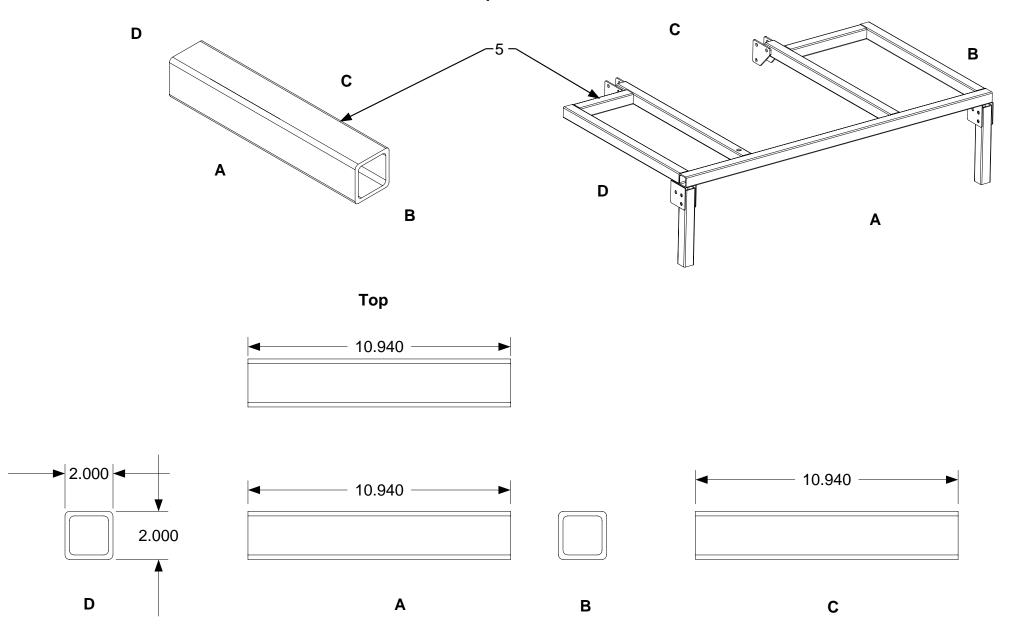
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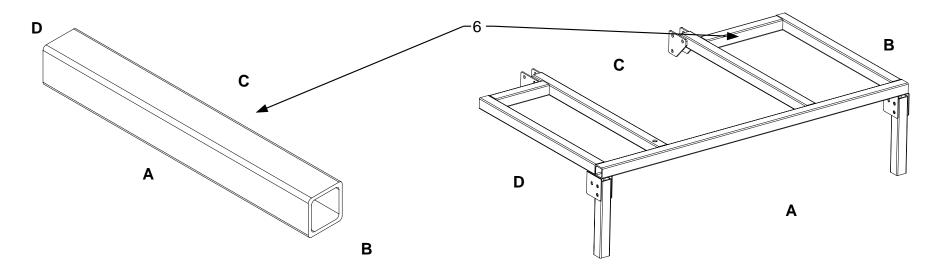


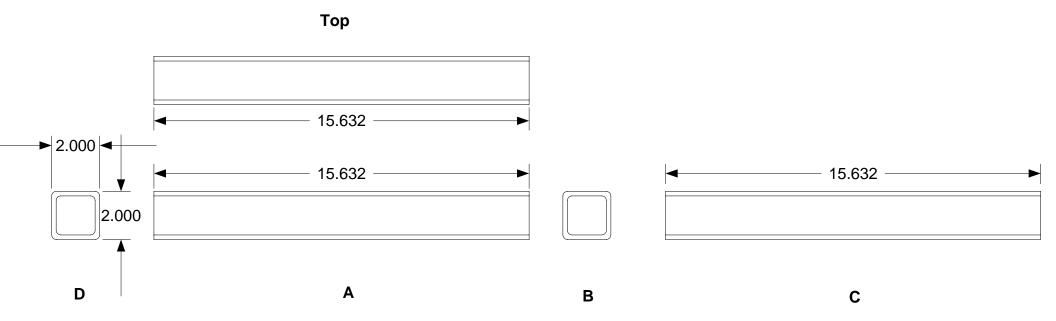
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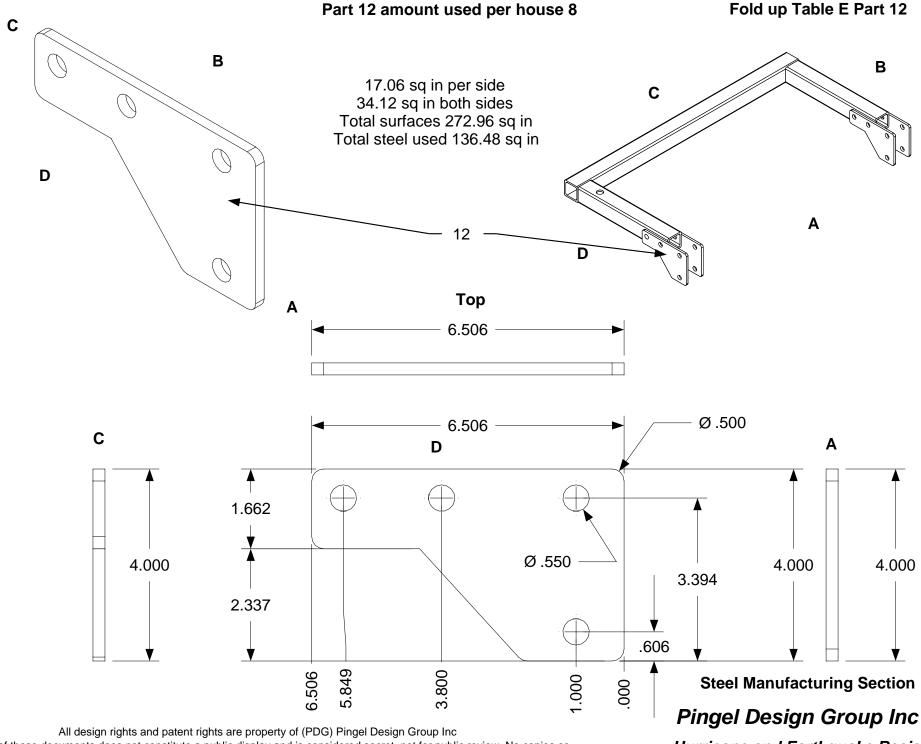


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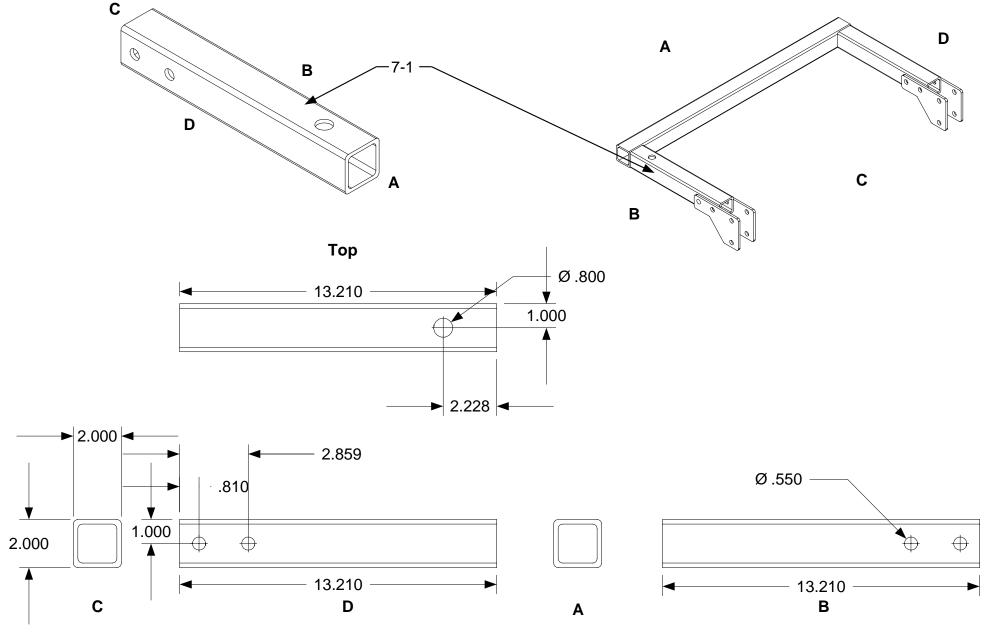


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Part 7-1 amount used per house 2

Fold up Tables E Part 7-1



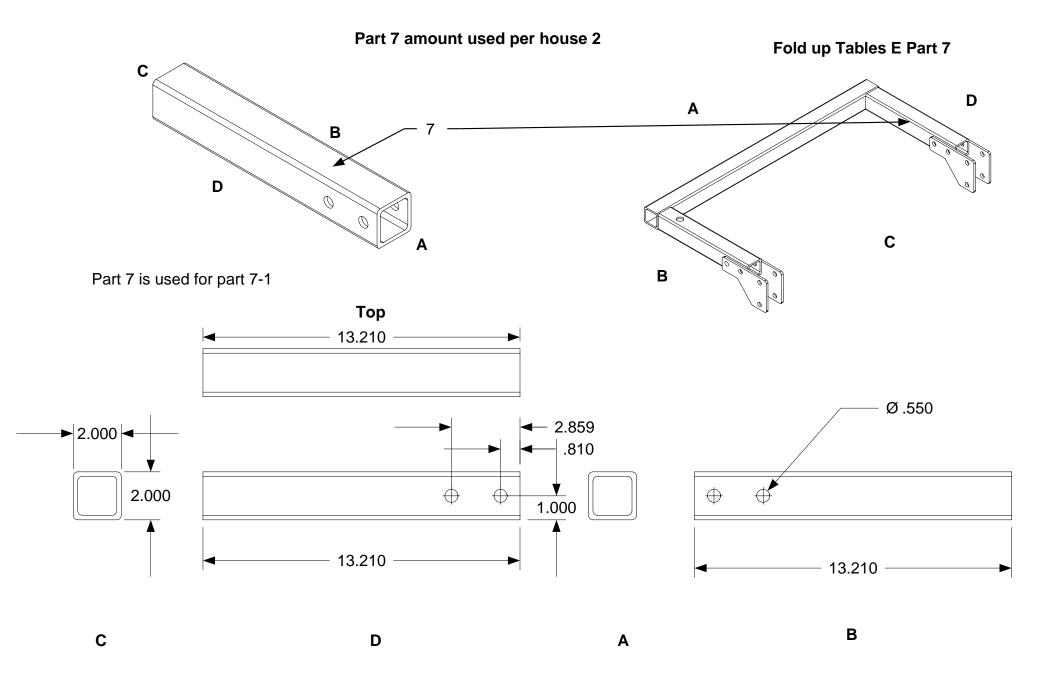
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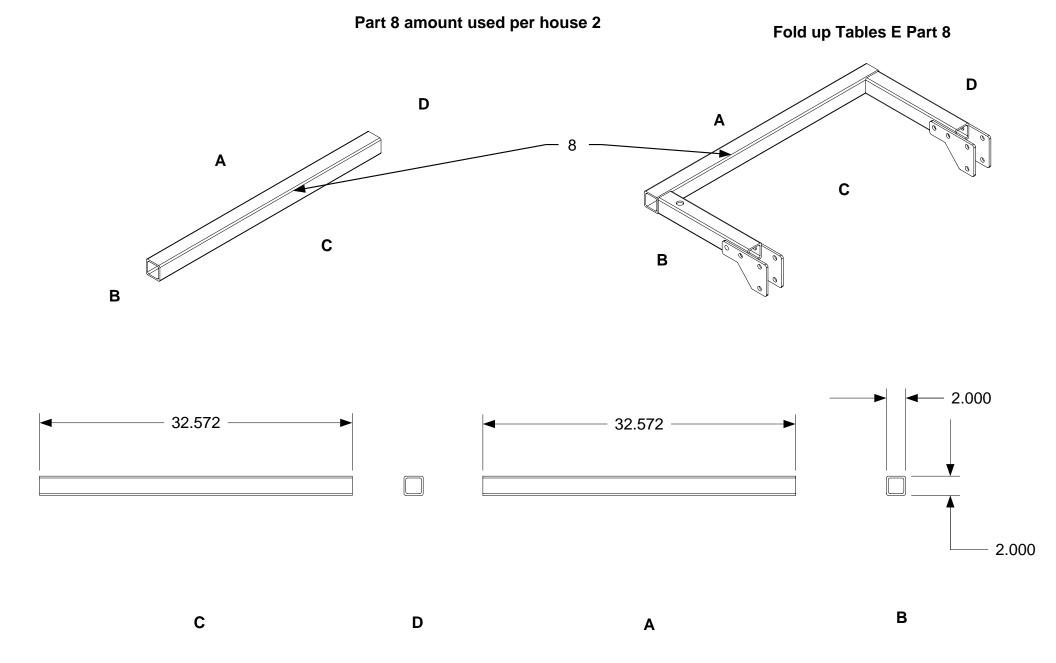
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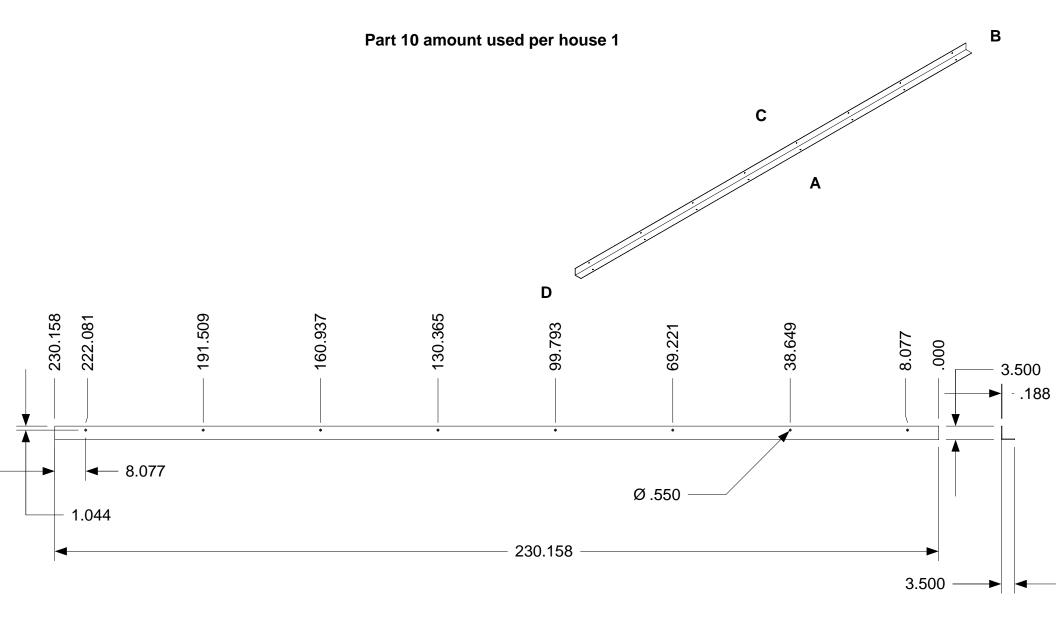
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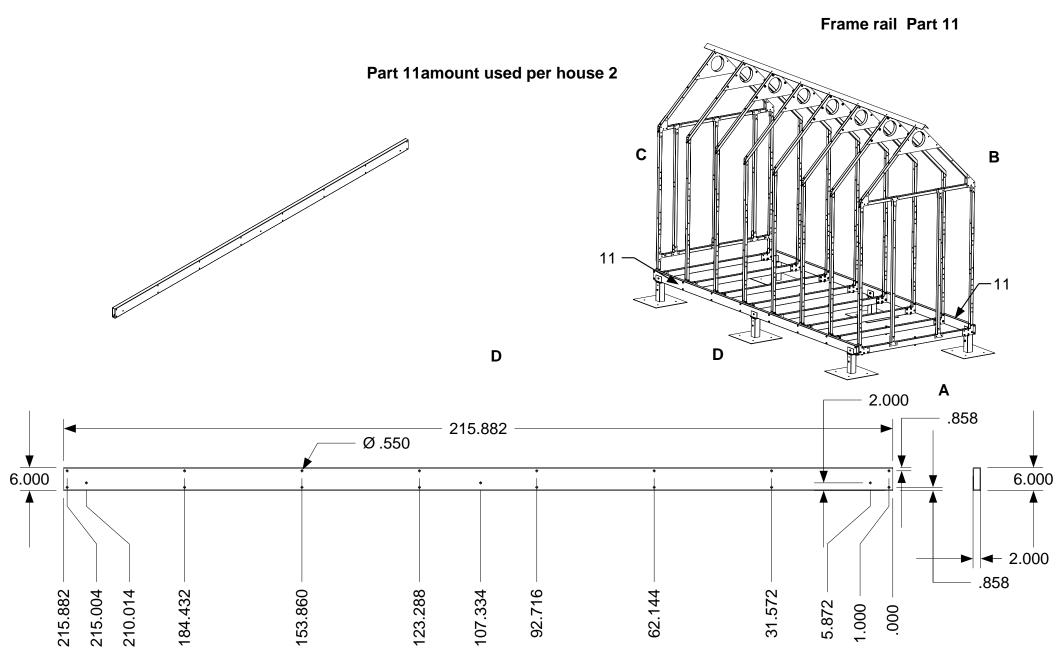
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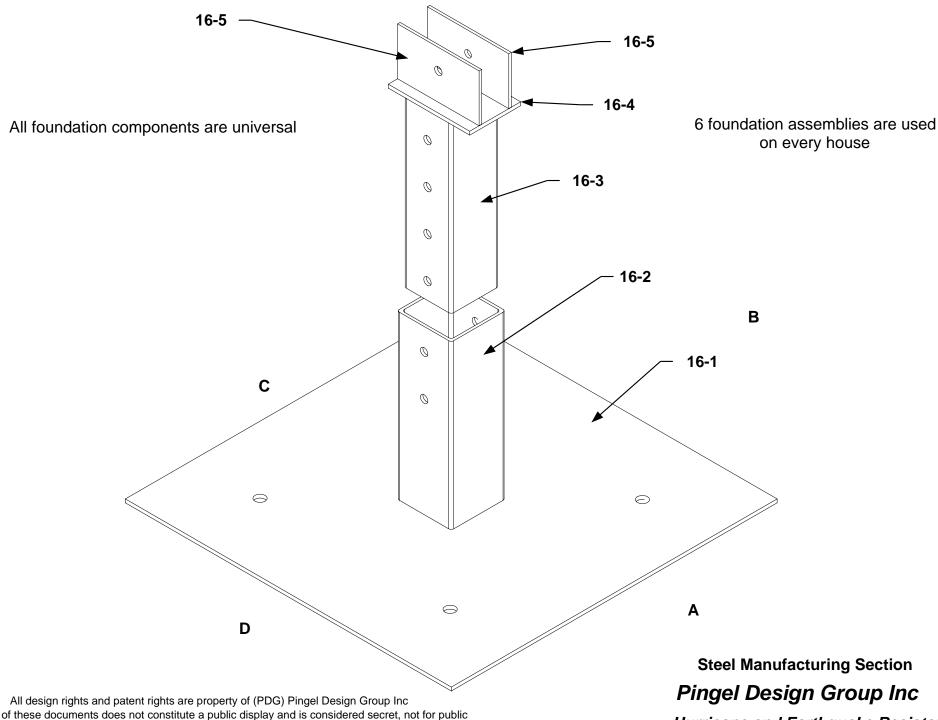
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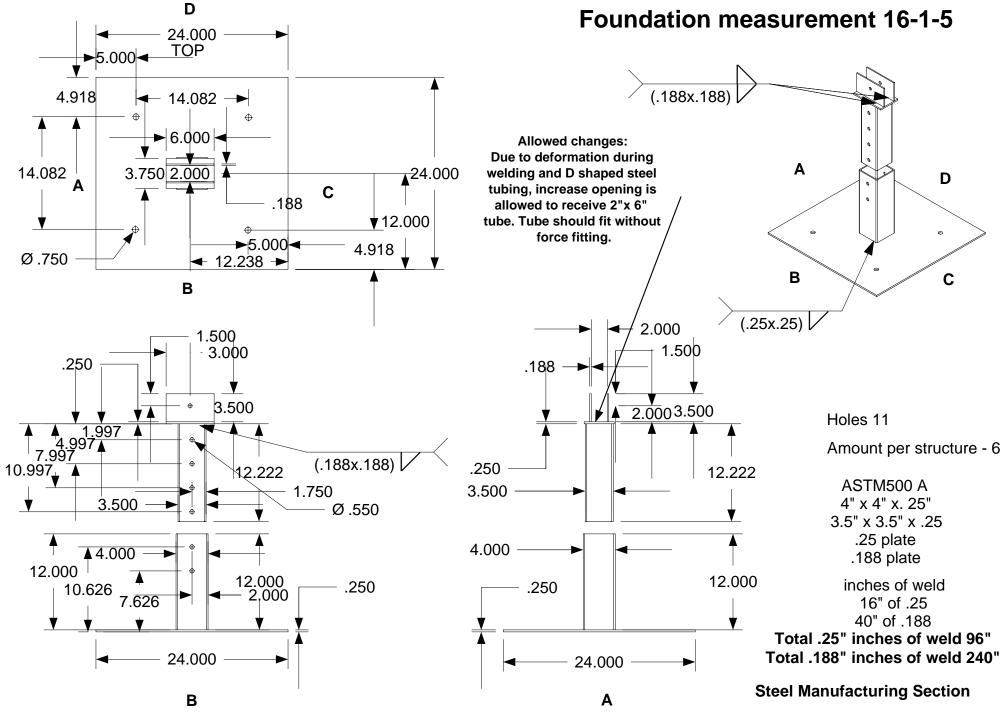
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Foundation Identification 16



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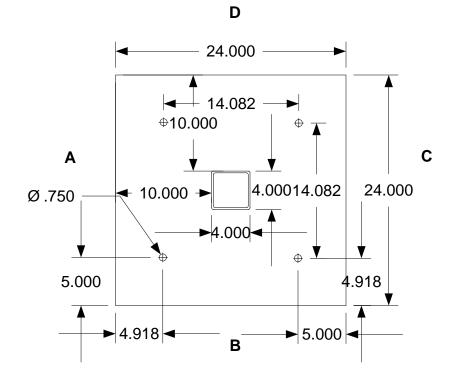
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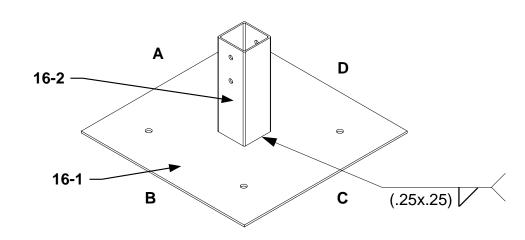
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Foundation Parts 16-1 & 16-2

All foundation components are universal

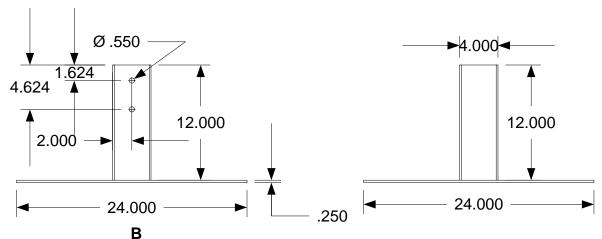


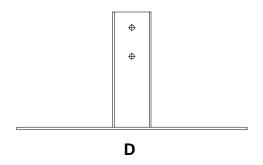


6 foundation parts 14 &15 are used on every house

24" x 24" x .25 Part 14 amount - 6

4" x 4" x .25" x 12" Part 15 amount - 6





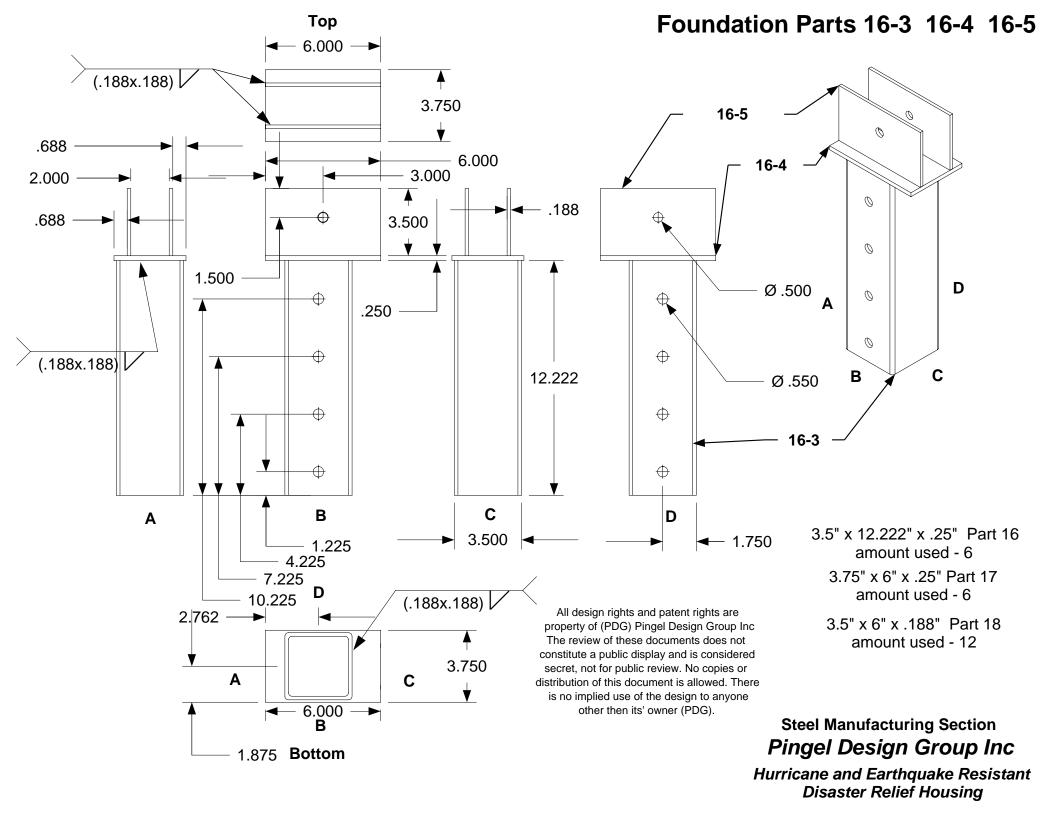
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Major components

Ridge beam (no coatings)

End frame 1 Frame 2 End frame 8

Side rails 2 Foundation 1-6

Bed & Table1-12

Panels 23

Totals materials

Welding at .188"=394.49" or 32.87'

Welding at.25"=96"or 8'

2"x2"x.188" tubing=5037.28"or 419.77'

2"x4"x.188" tubing=672" or 56' 2"x6"x.188" tubing=432" or 36'

L angle 3.5"x3.5" x.188"x 216" or 18'

.188" plate=23.368 sq ft .25" Plate=24.93 sq ft

4"x4"x.25" tubing=72" or 6' 3.5"x3.5"x.25" tubing=72" or 6'

Surface area to coat cover 474.57 sq ft

Bolts / Nuts / Washers

Floor

Bolts (Round) .5x5.5 Standard nut .5x.4375 Washer (Plain) .5x.1 Total assembled units **27**

Roof panel

Bolts (Round) .5x1.75
Standard nut .5x.4375
Washer (Plain) .5x.1
Total assembled units 16

Foundation

Bolts (Standard) .5x5.5 Standard nut .5x.4375 Washer (Plain) .5x.1 Total assembled units **6**

Door

Bolts (Round) .5x1.5
Standard nut .5x.4375
Washer (Plain) .5x.1
Total assembled units 4

Roof panel

Bolts (Round) .5x1.5 Standard nut .5x.4375 Washer (Plain) .5x.1 Total assembled units 32 Total 36

Spacer washer

Washer (Plain) .5x.188

Total assembled units 21

Screws

(Self taping) .125x.75
Total assembled units **76**

Rear panel

Bolts (Round) .5x3.5 Standard nut .5x.4375 Washer (Plain) .5x.1 Total assembled units 42

Rear & Front End gable

Bolts (Round) .5x3.5 Standard nut .5x.4375 Washer (Plain) .5x.1 Total assembled units 40

Side panel

Bolts (Round) .5x3.5 Standard nut .5x.4375 Washer (Plain) .5x.1 Total assembled units 48

Door

Bolts (Round) .5x3.5
Standard nut .5x.4375
Washer (Plain) .5x.1
Total assembled units **5**

Frames 2-7 (bolts/nuts/washers)

Bolts (Standard) .5x3.5
Standard nut .5x.4375
Washer (Plain) .5x.1
Total assembled units 108

Total 243

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Panels total sq ft

.5-Rear panel #9=	58.09 sq ft
.5-Front panel & Door / Table #4=	58.09 sq ft
.5-End Gable panels#5- 14.22 sq ft each =	28.44 sq ft
.5-Side panels #2-100.67 sq ft each =	201.34 sq ft
.5-Roof panel #1-129.35 sq ft each=	258.70 sq ft
.75-Floor panel #3-	125.62 sq ft
.5-Window support strip #8-6.75 sq ft each=	13.50 sq ft
.5-Window panel large #6-8.87 sq ft each=	17.74 sq ft
.5-Window panel Small #7-6.68 sq ft each=	13.36 sq ft
.5-Beds Panels #10-6-19.5 sq ft each =	117.00 sq ft

Total sq ft 891.88 sq ft

Total sq ft of .5- 766.26 sq ft

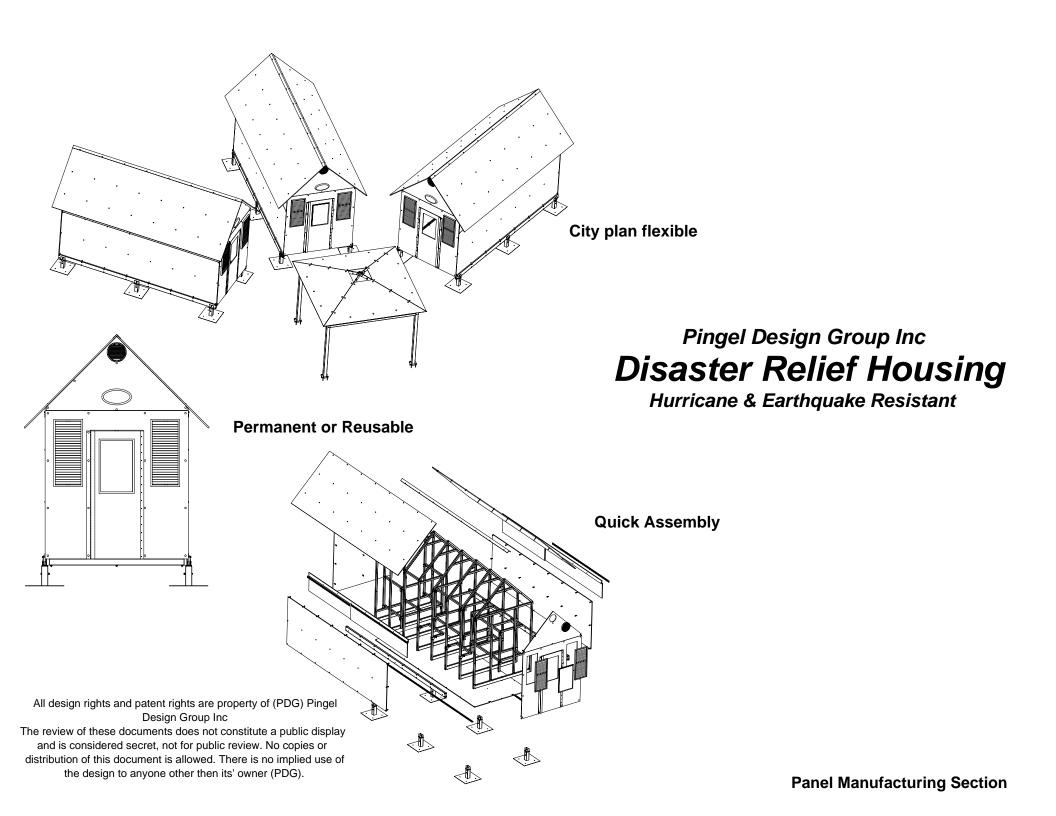
Total sq ft of .75- 125.62 sq ft

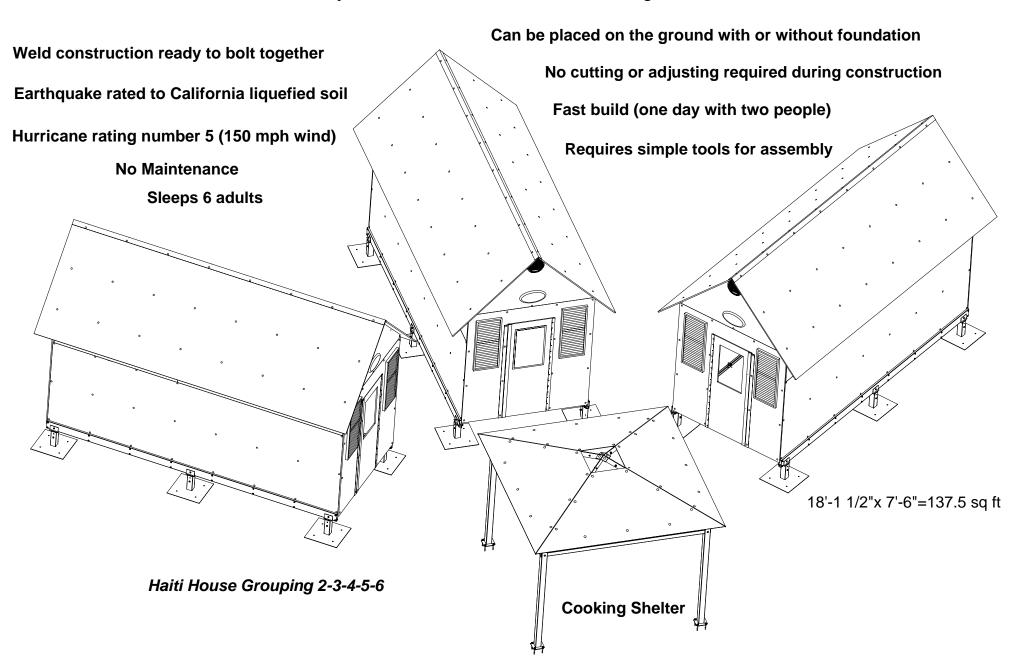
Totals Section

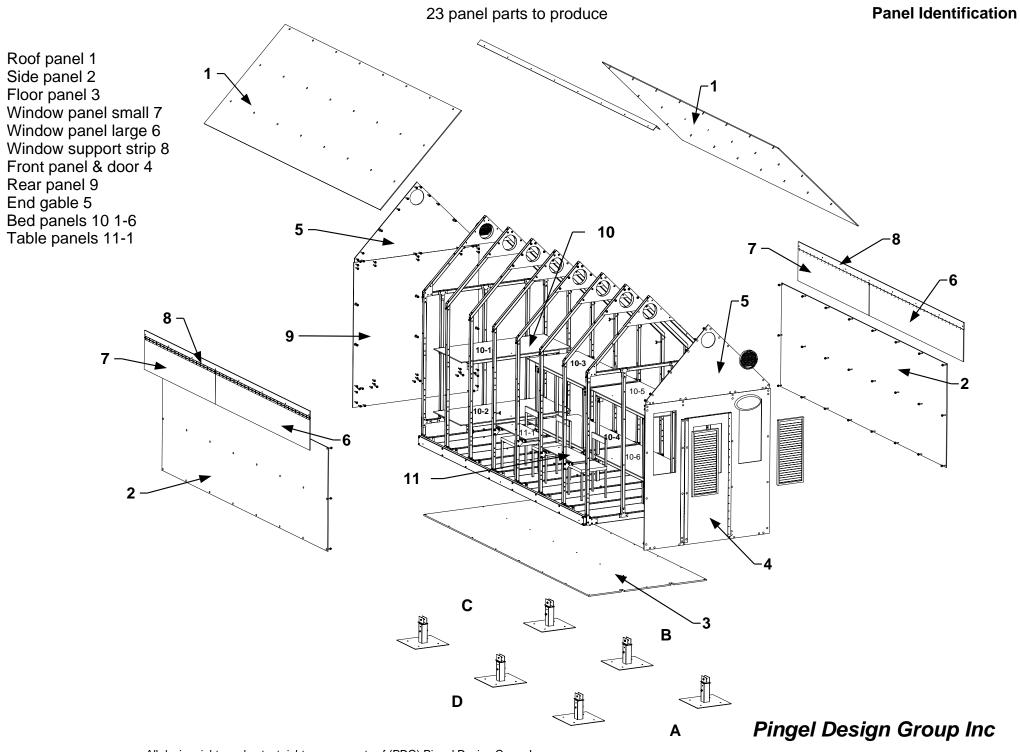
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Hurricane and Earthquake Resistant

Disaster Relief Housing

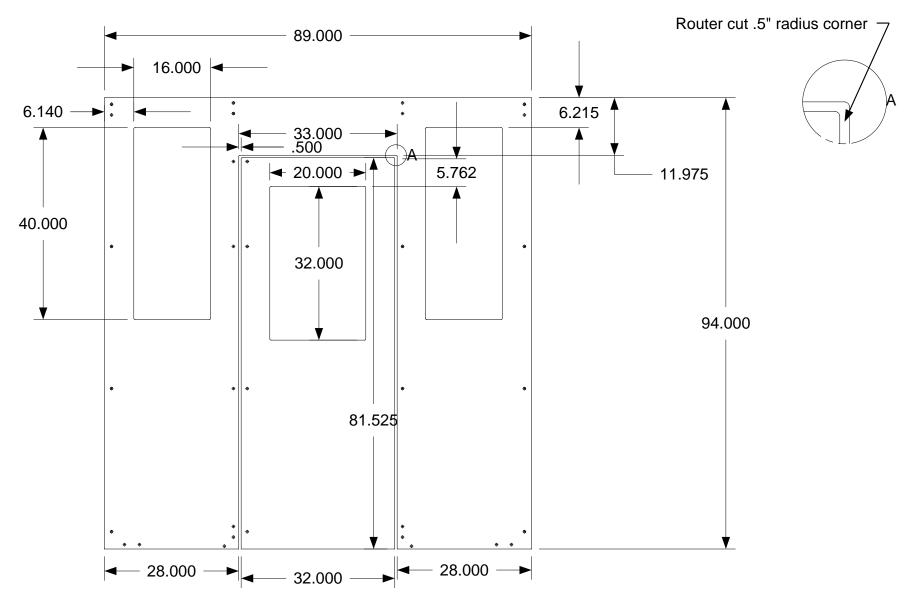


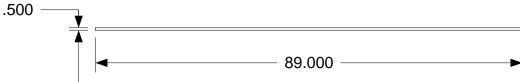




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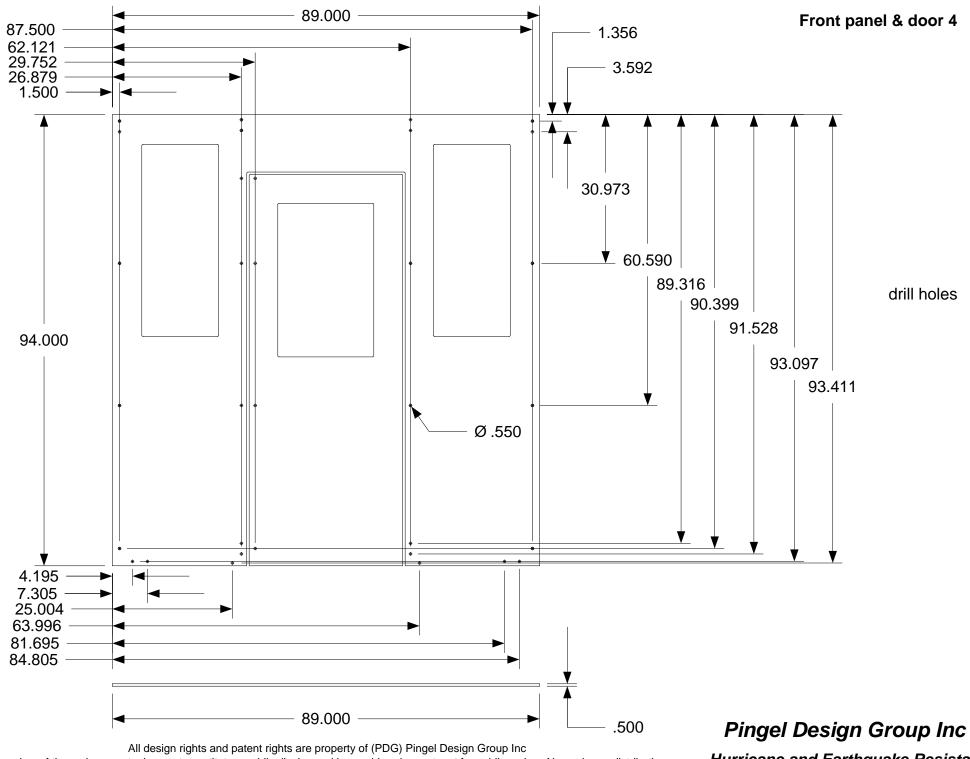


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Hurricane and Earthquake Resistant
Disaster Relief Housing



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End Gable panel 5 44.000 44.000 88.000 1.000 .500 9.812 Ø 10.000 46.563 .735

59.746

63.496

82.956

85.212

88.000

Amount of panels used per house 2

28.254

24.504

2.788

000

5.044

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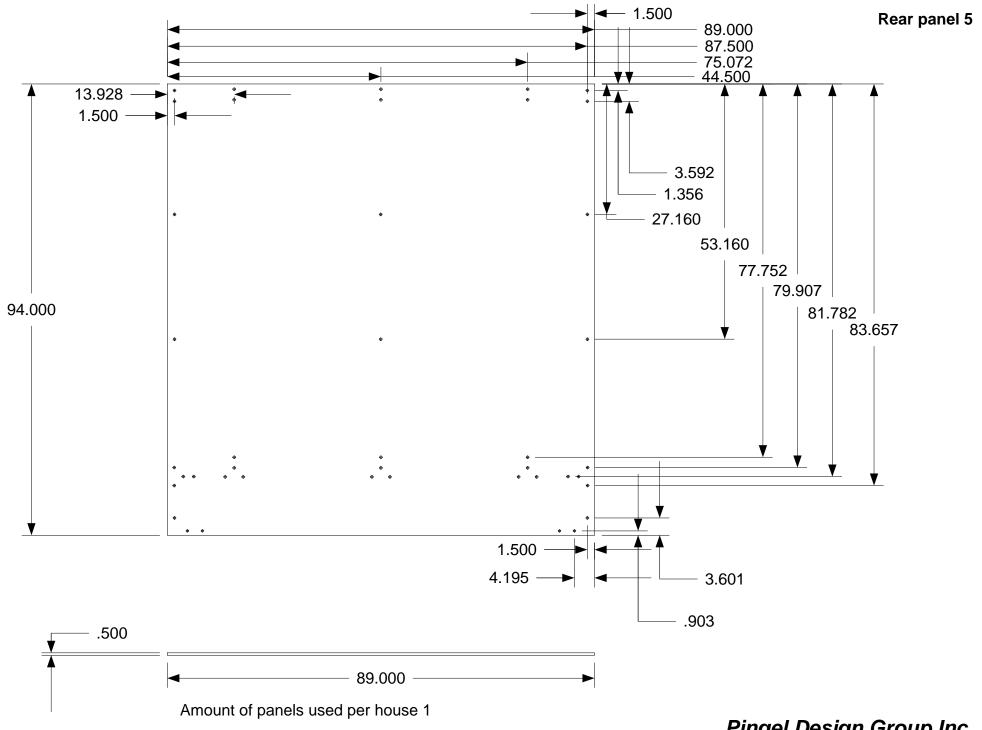
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Hurricane and Earthquake Resistant
Disaster Relief Housing

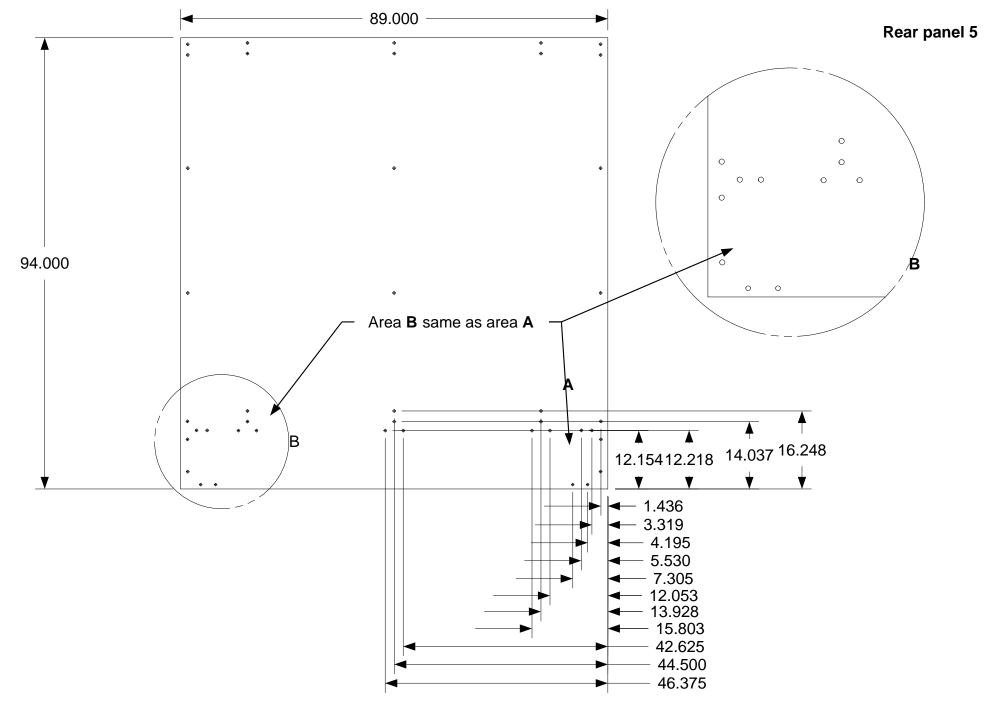
2.563

2.563



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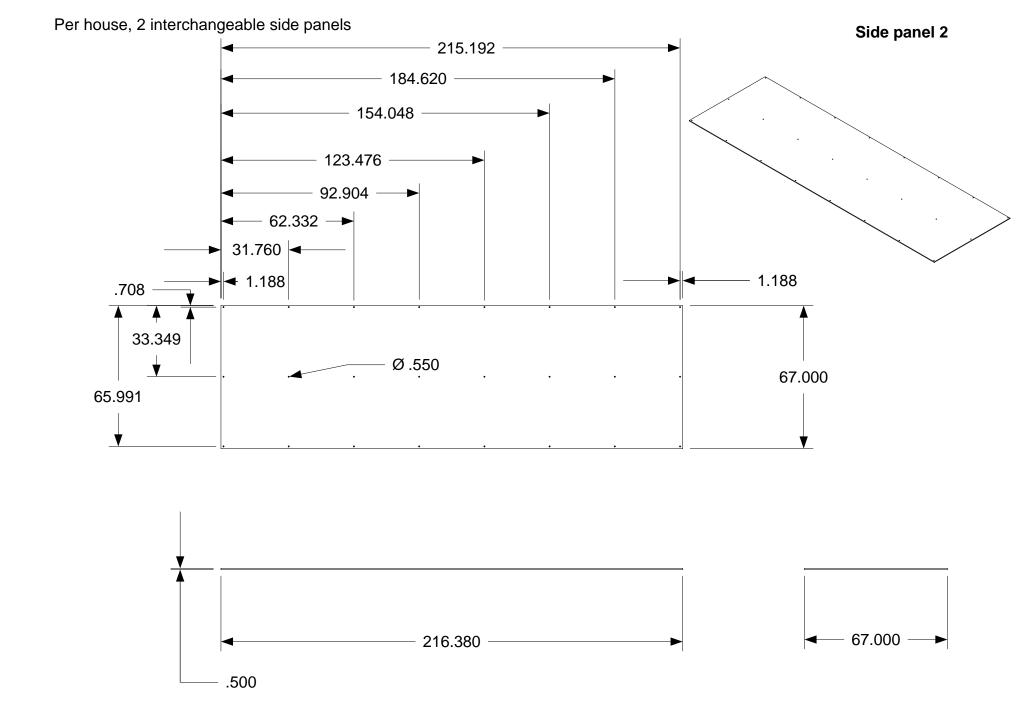


Amount of panels used per house 1

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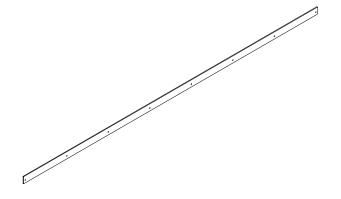
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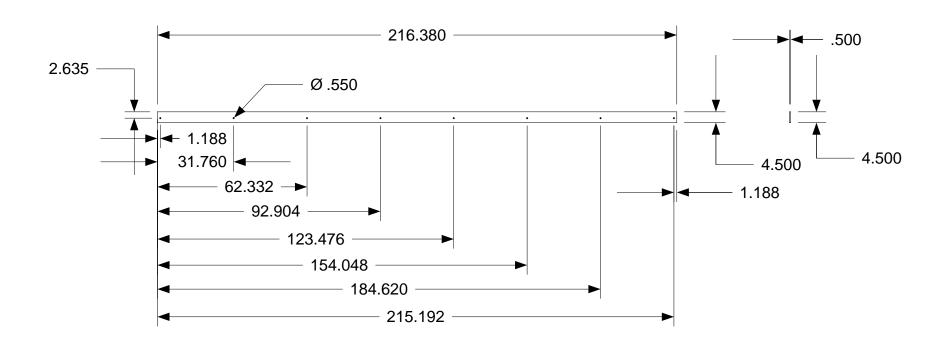
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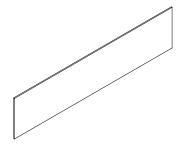


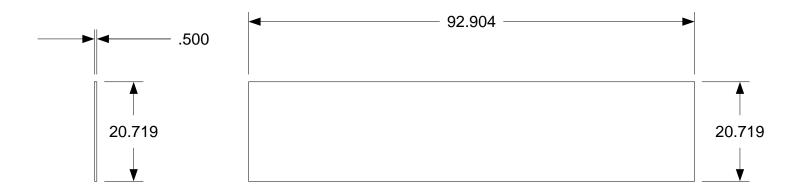


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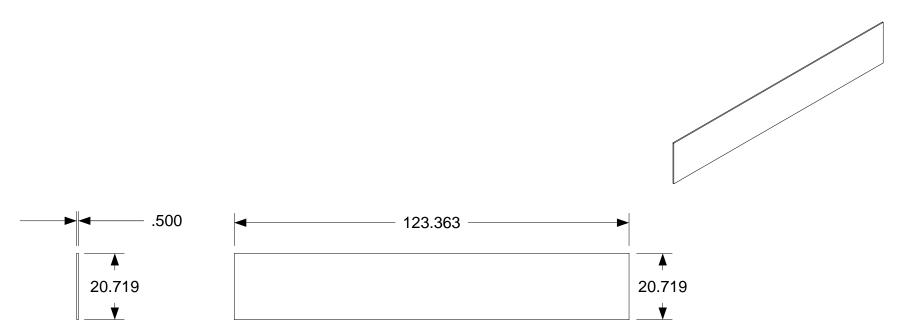
Window panel small 7

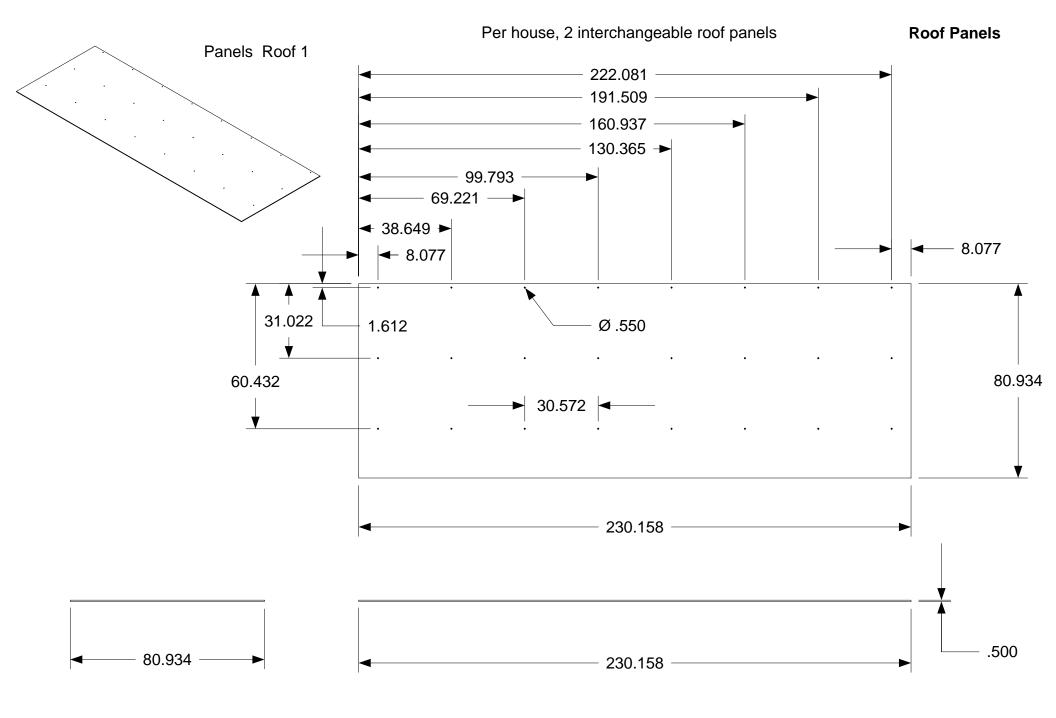
Per house, 2 interchangeable window small panels



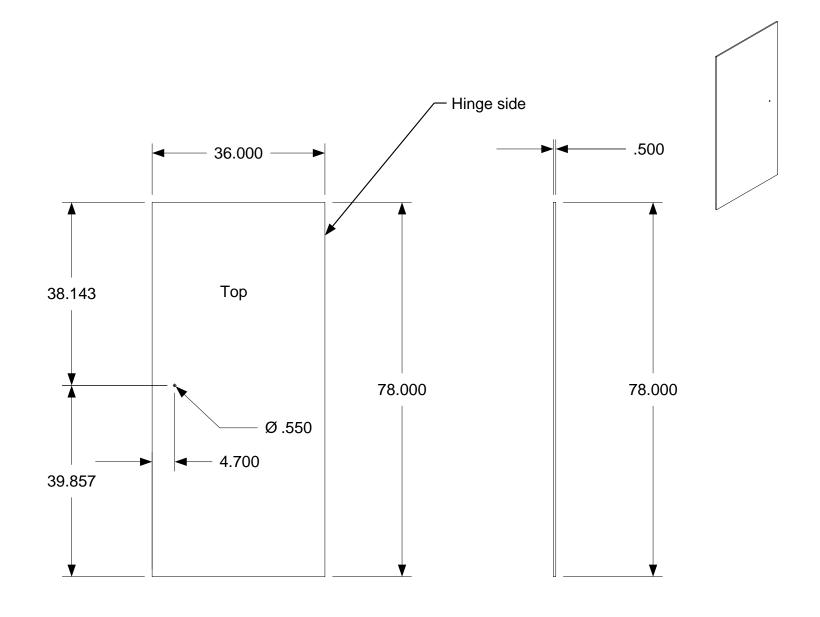


Per house, 2 interchangeable window large panels





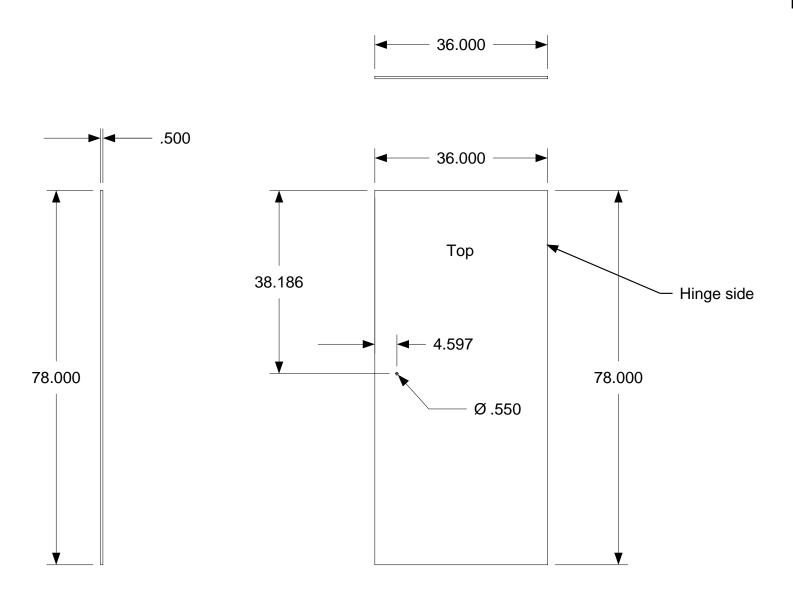
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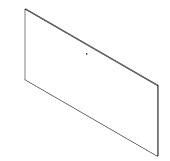
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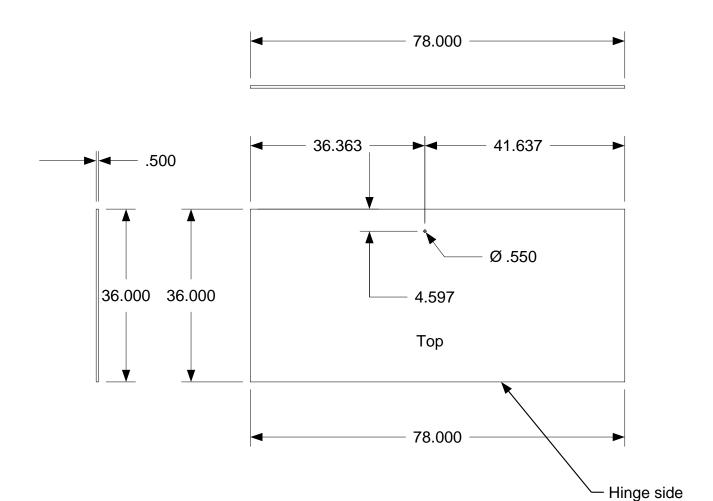
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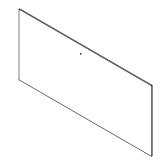


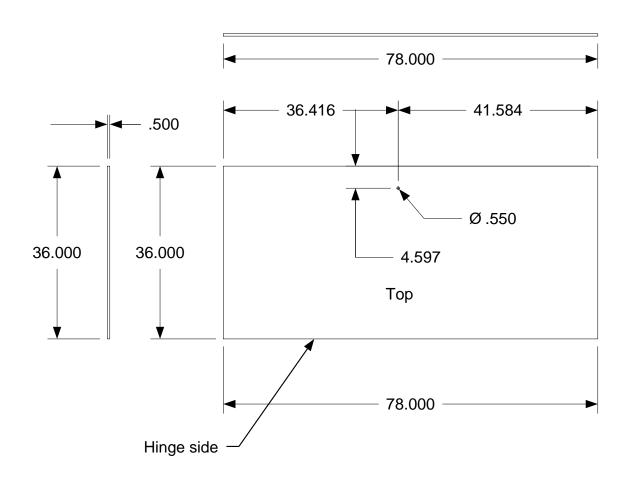






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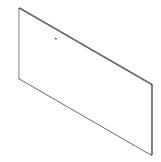


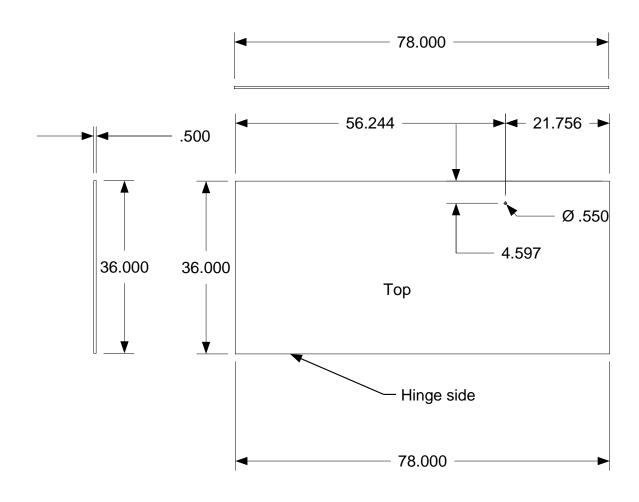


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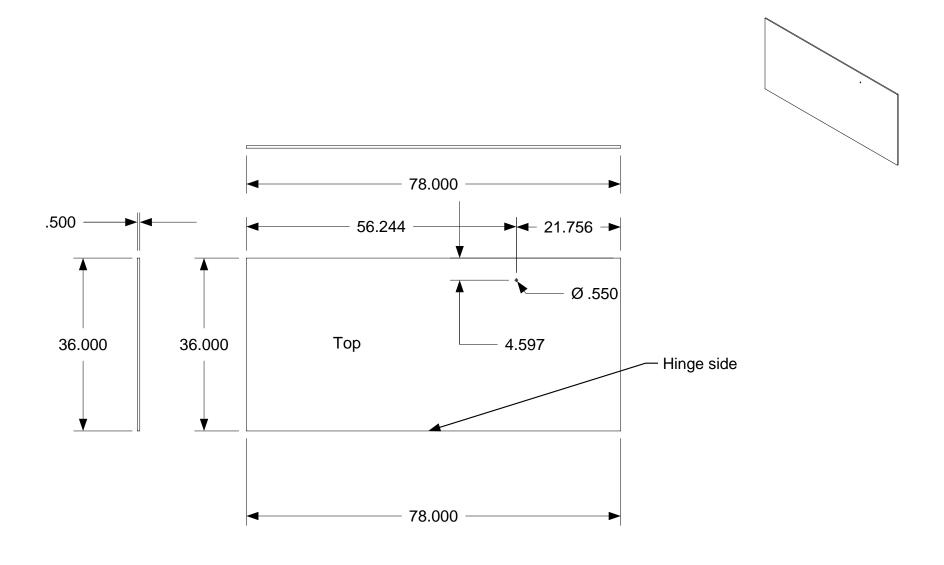
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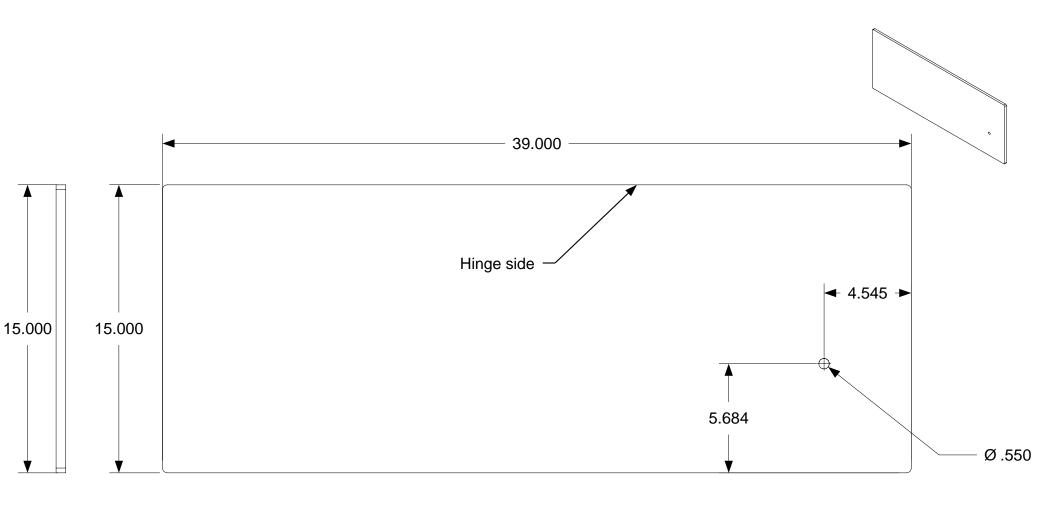
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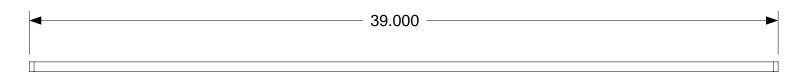
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Table 11 and 11-1

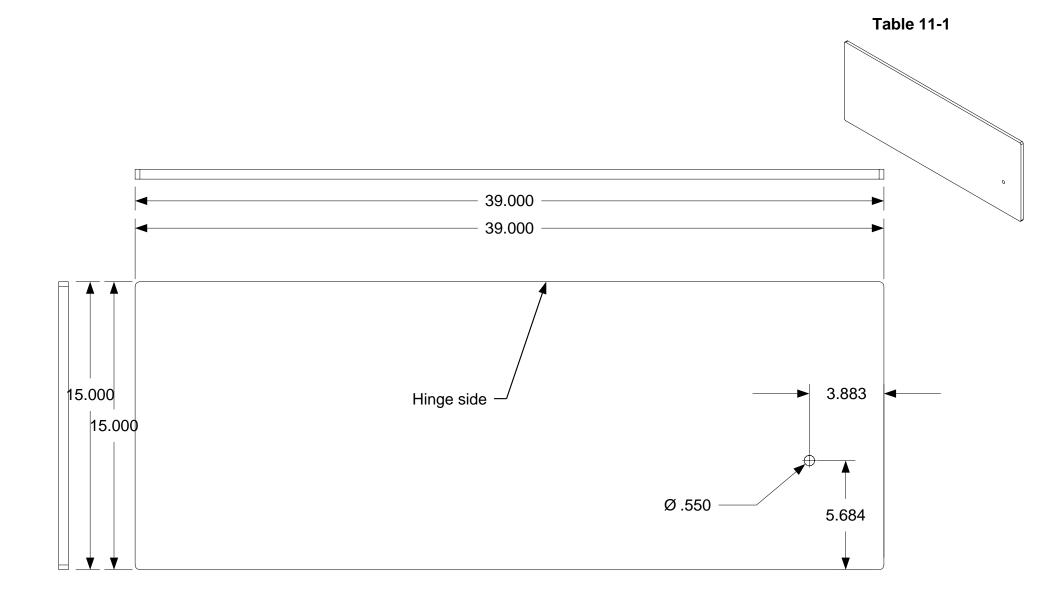


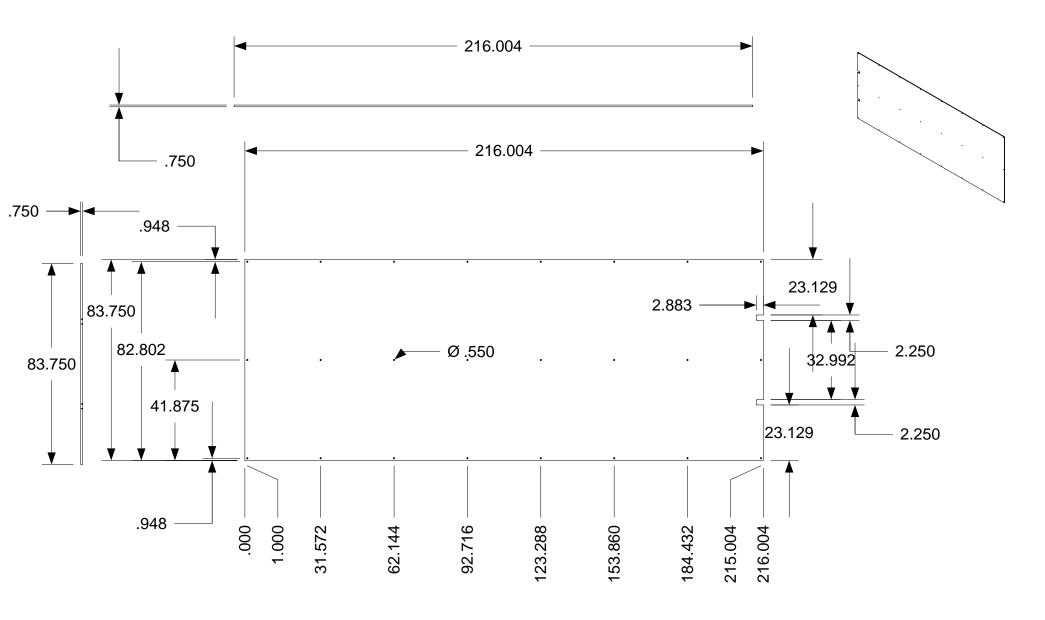


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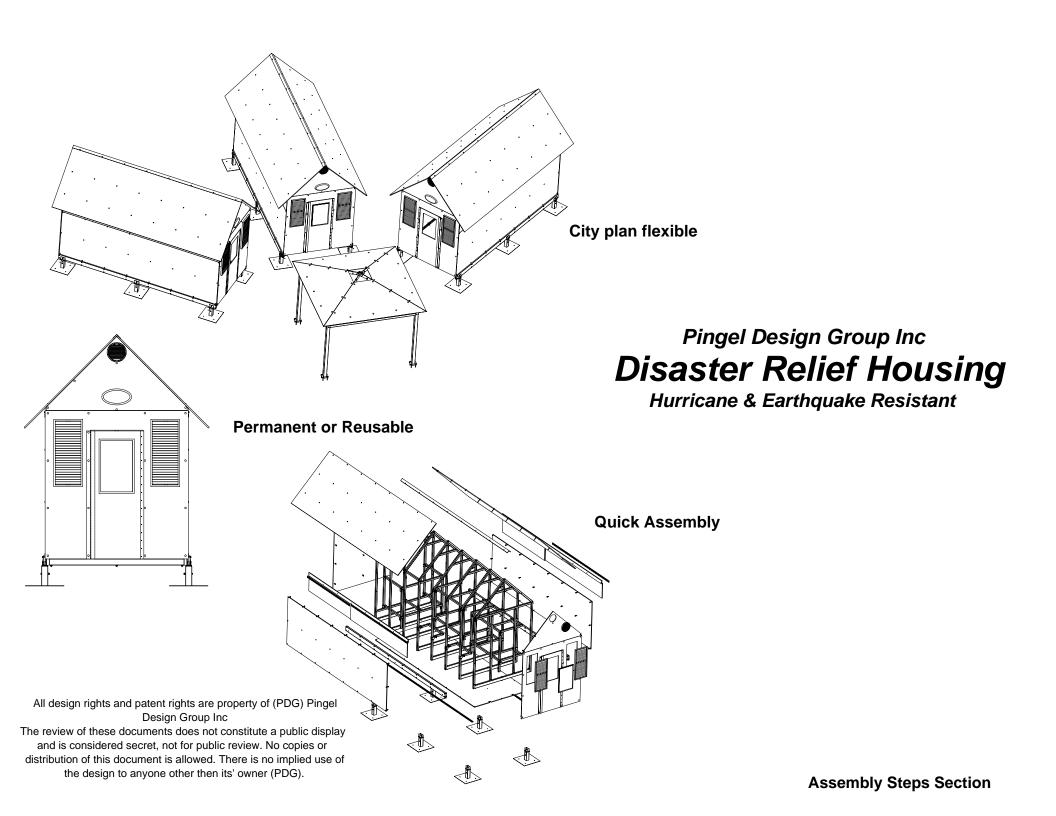
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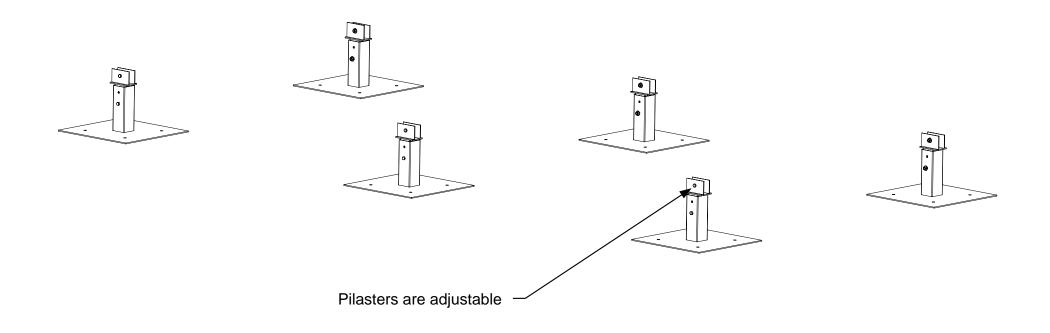




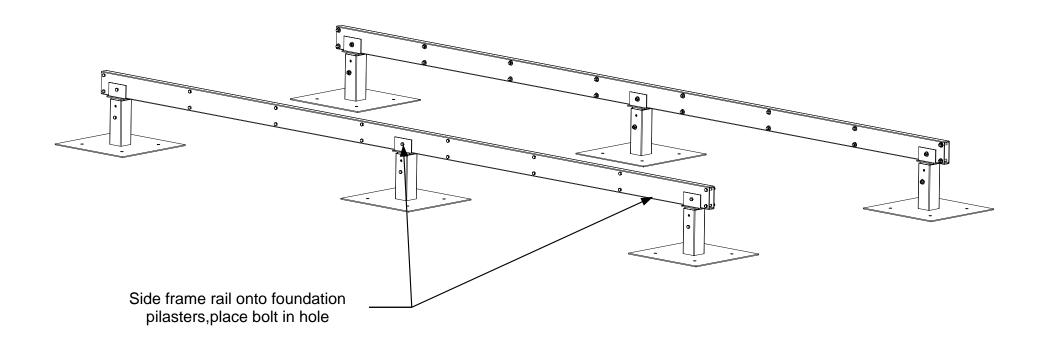
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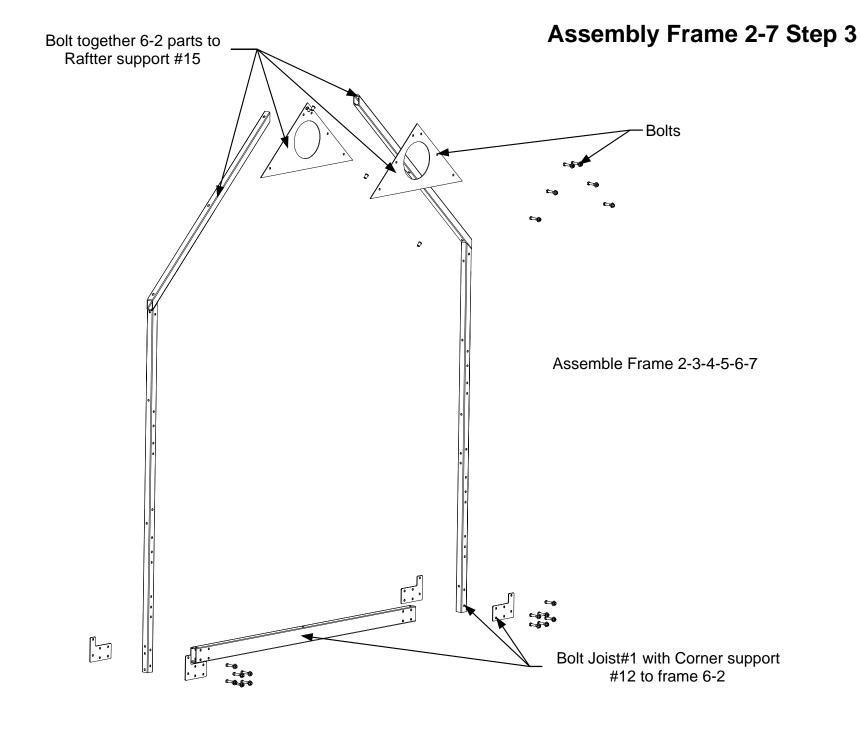


Foundation can be placed on the ground or mounted to concrete pilaster



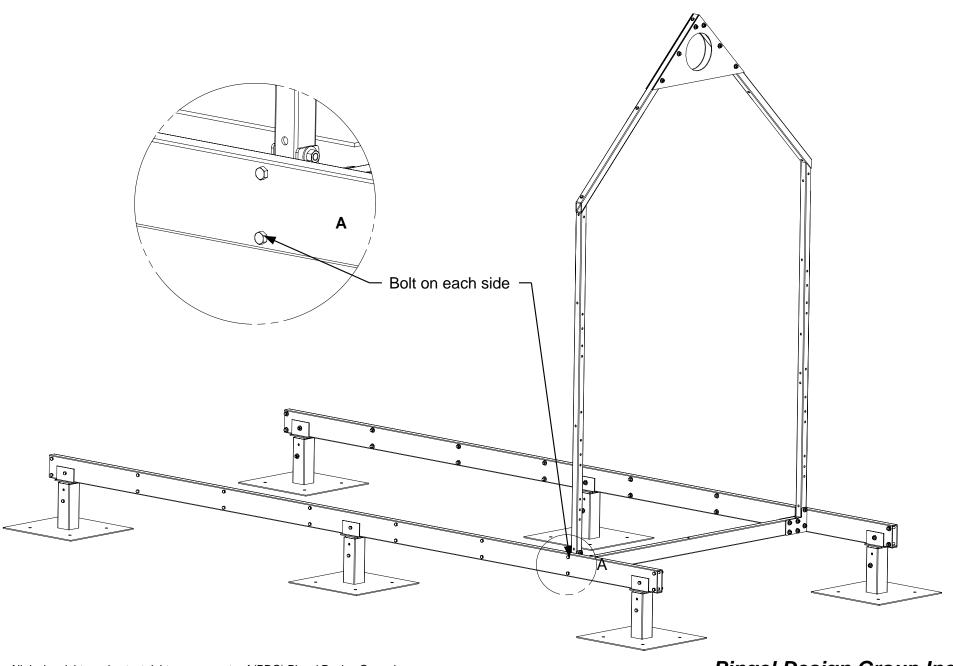
Foundation Frame Rail Assembly Step 2





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Frame 2 attached to frame rail step 4



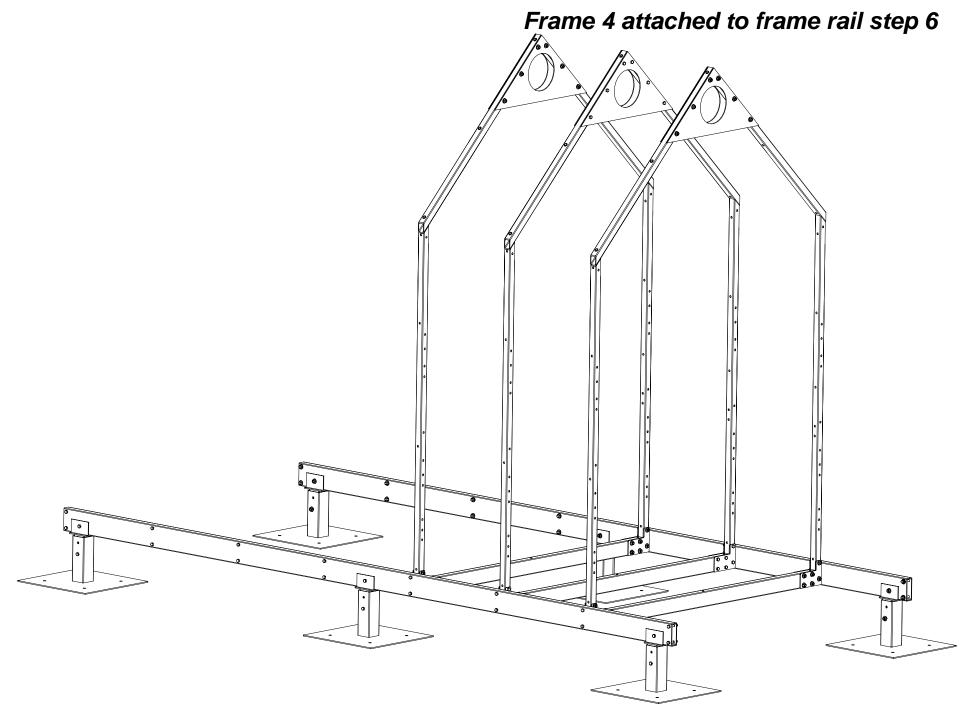
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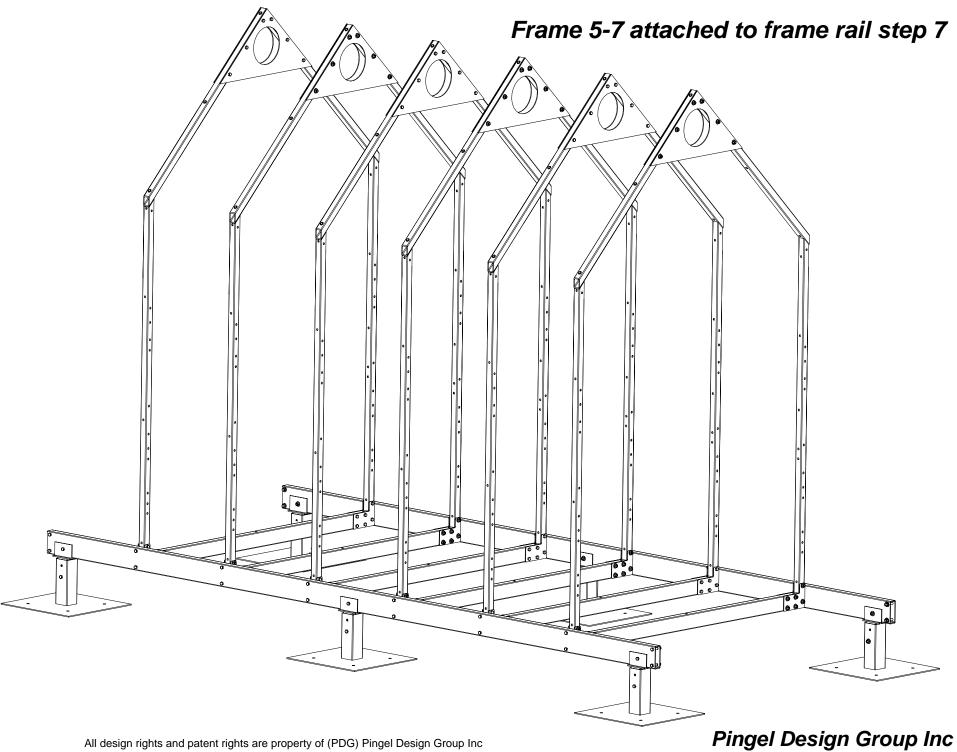
Frame 3 attached to frame rail step 5

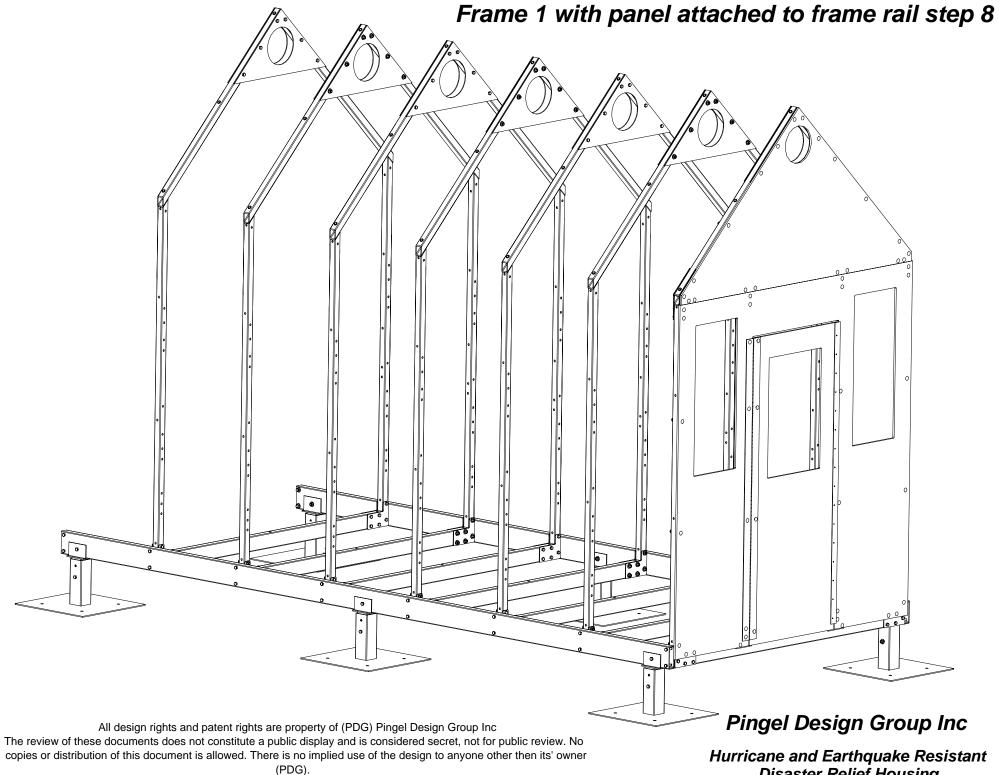
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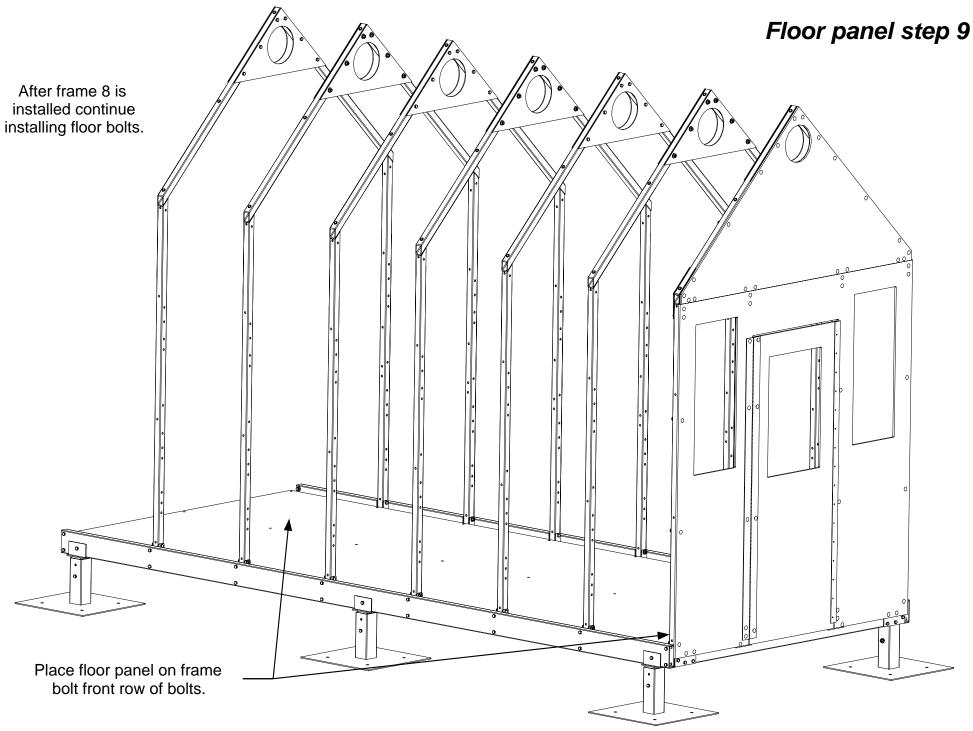
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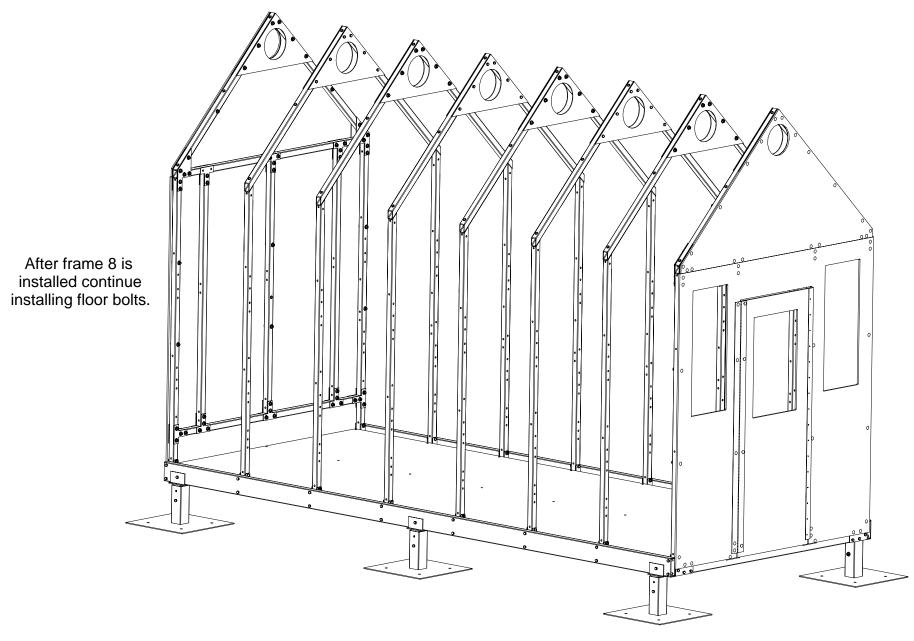
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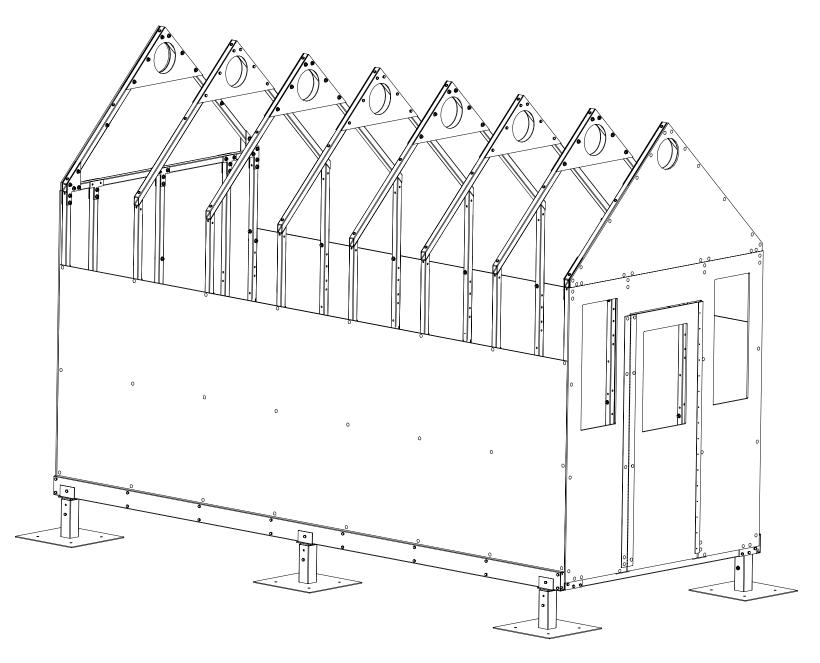


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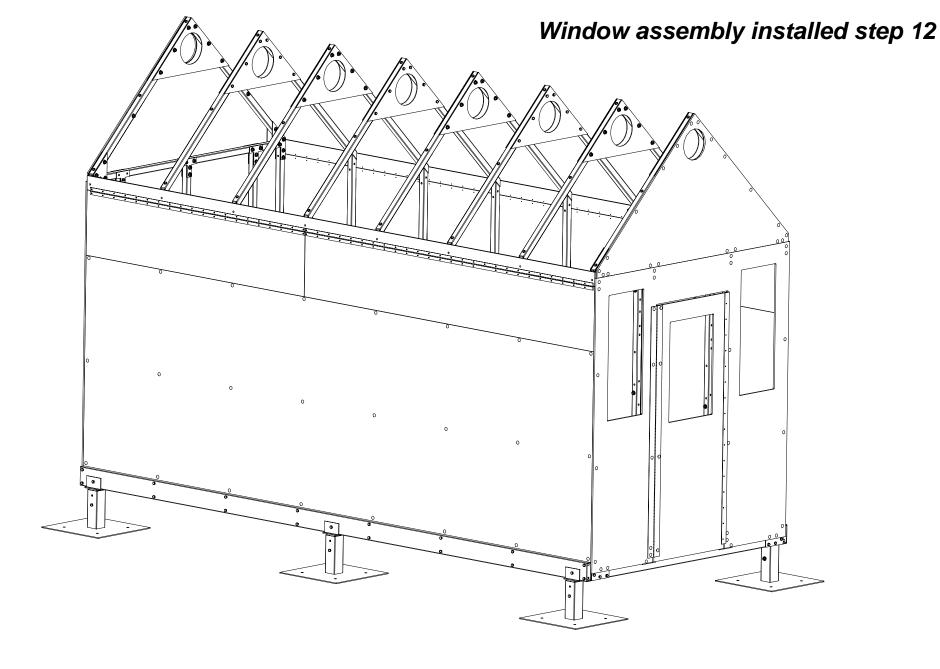
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Side panels step 11



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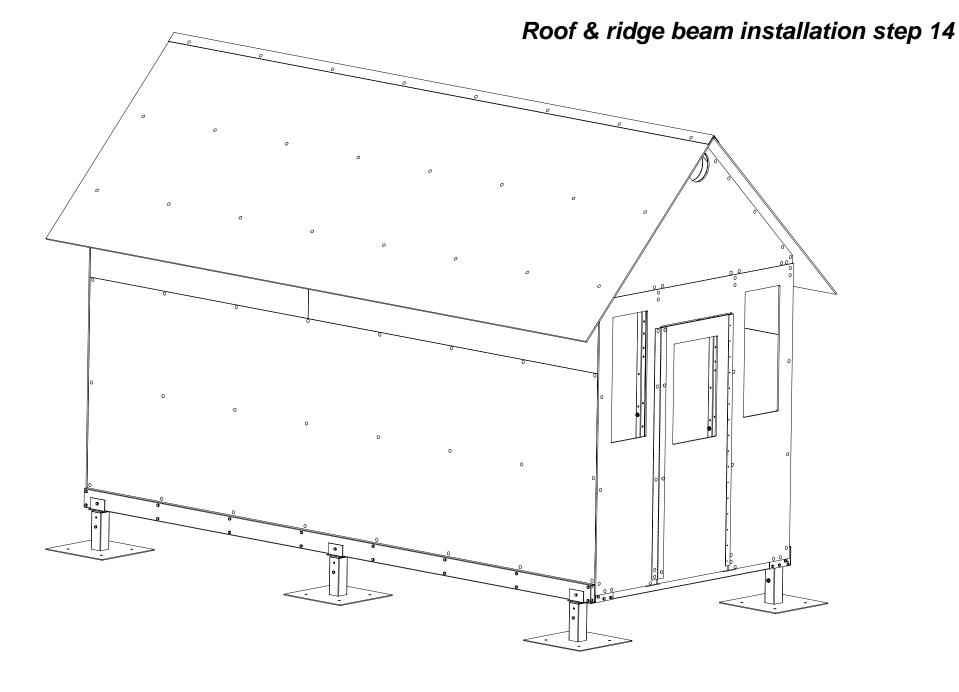


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Roof panel step 13

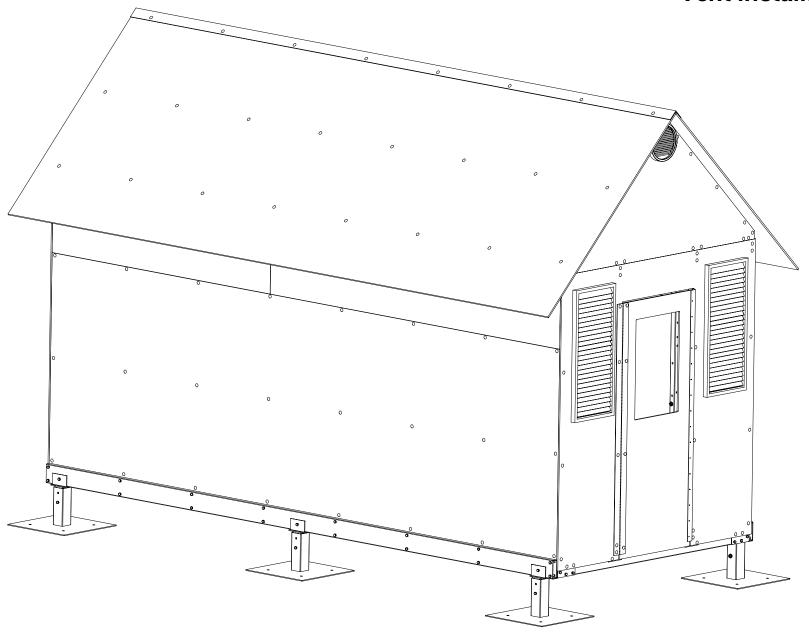
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Vent installation 15



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