Apra Grande F.U.N.™

Welcome to HEMP Acoustic's F.U.N.™ Loudspeaker Kit
full range driver floor-stander

Table of Contents

Getting Started

Tools

- ☒
- ☐ Wood Glue
- ☐ PVC Glue
- ☐ 16 X Large Rubber Bands / Hockey Elastics
- ☐ Multihead Screwdriver
- ☐ Rubber Mallet
- ☐ Hole Saw **OR** Jig Saw
- ☐ Glue Roller **OR** Paint Brush
- ☐ Cleaning Rag
- ☐ Solder
- ☐ Soldering Iron
- ☐ Square Ruler
- ☐ Pencil
- ☐ Router **(OPTIONAL)**

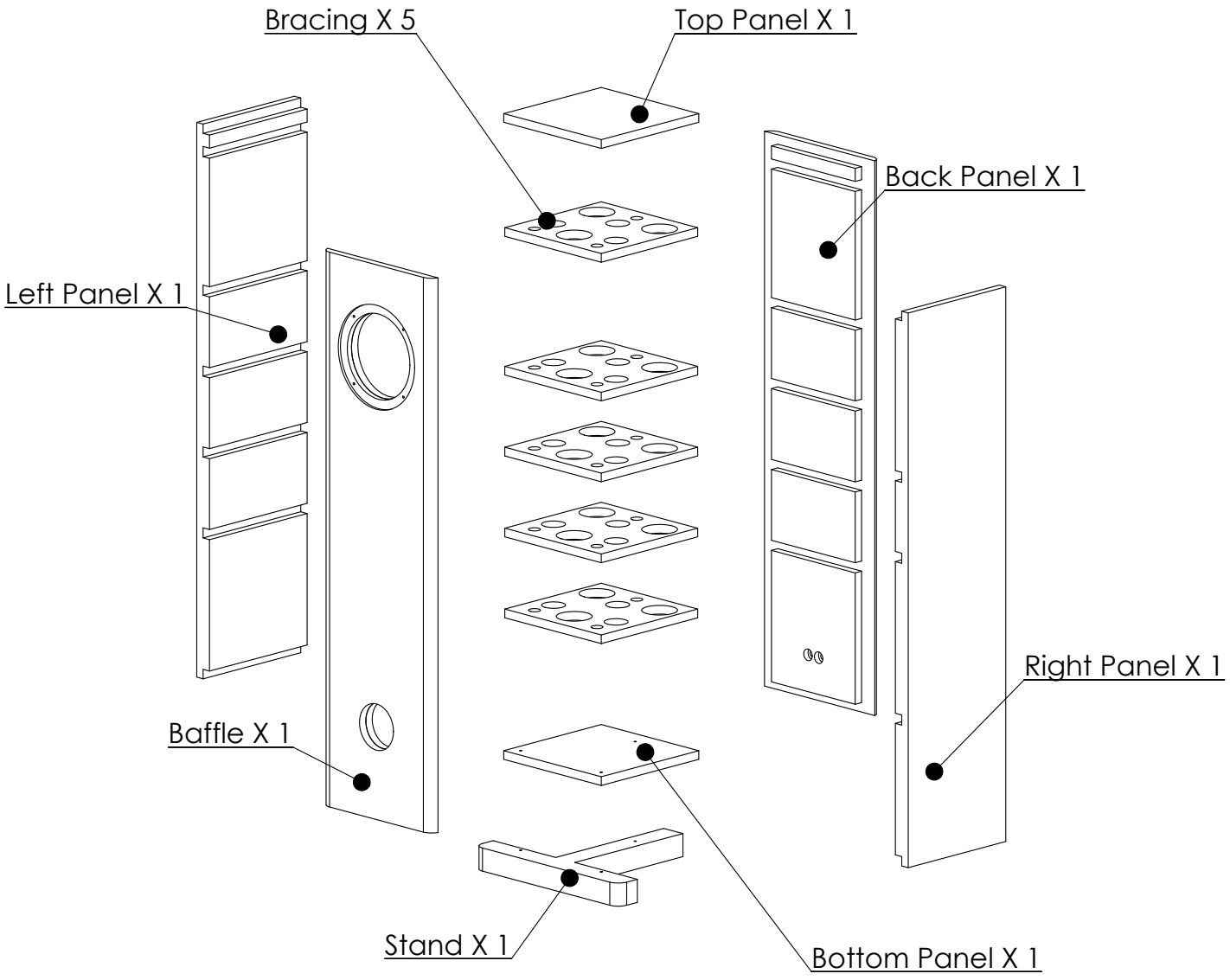
Components per Individual Loudspeaker

- ☐ 2 X MDF sheets **OR** high grade Plywood, 4’ X 8’ X 3/4” thick
- ☐ 1 X 8” Woofer (8” HEMP Acoustics FR8C)
- ☐ 1 X 4” Port Kit, 4” ID X 4” long (a dual flared port kit is suggested)
- ☐ 1 X Deflex Pads **OR** Black Hole **OR** Acoustic Foam 1” thick
- ☐ 1 X pair of Binding Posts (suggestions; www.cardas.com, www.wbtusa.com, www.eichmanncables.com)
- ☐ 1 X Hook-up Wire (high grade 0.999999 copper or silver)
- ☐ 3 X 1.5” Tip Toes
- ☐ 4 X 4 mm X 60 mm T-nuts **OR** Wood Screws (for mounting FR8C woofer)
- ☐ 4 X wood screws (for mounting Port maybe needed, depending on Port style)
- ☐ 1 X Custom T-Base / Stand from www.soundanchors.com **(OPTIONAL)**
- ☐ 2 X Damping Pad, see notes on page 17 (www.dynamat.com) **(OPTIONAL)**

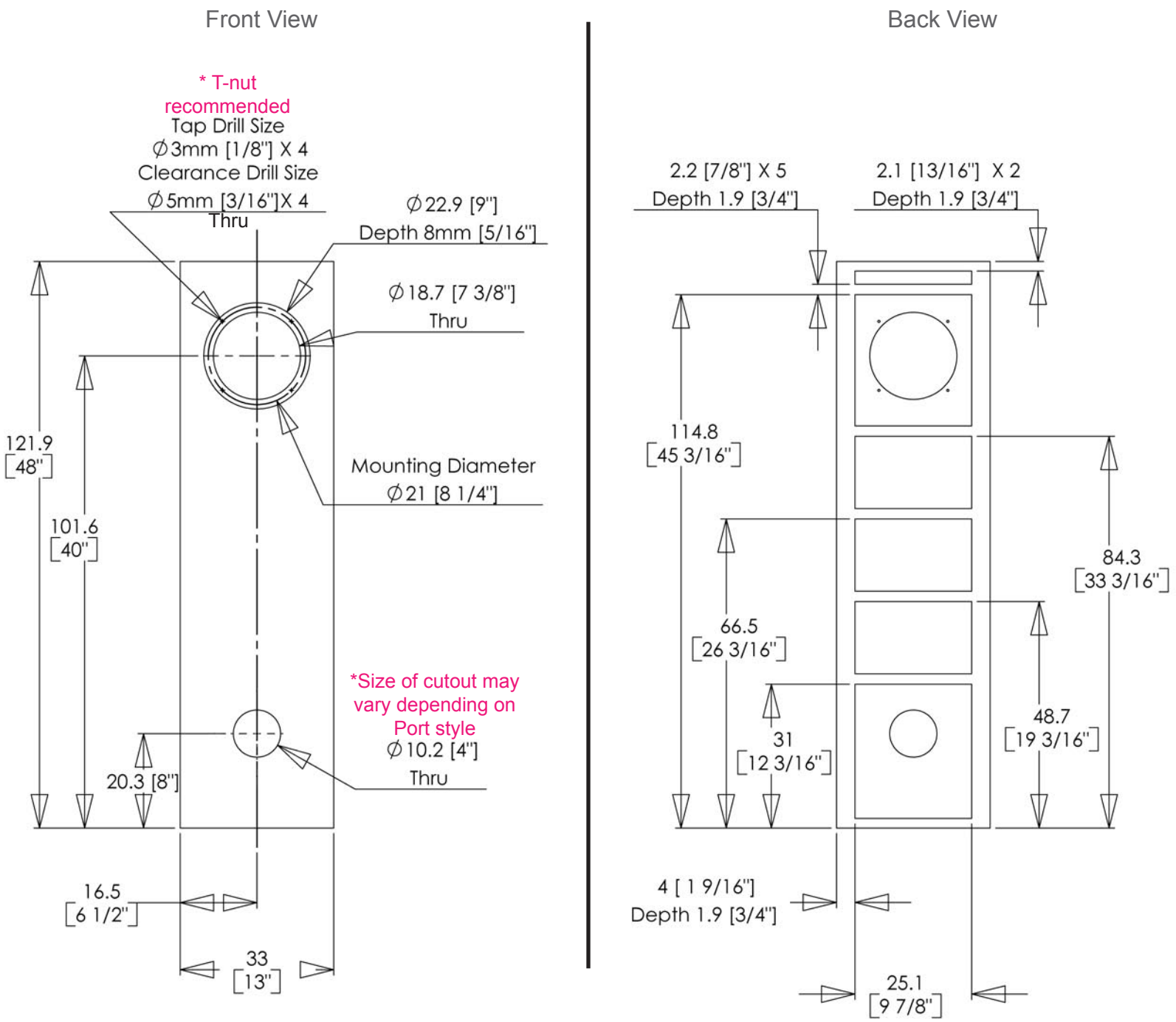
List of Suppliers within North America

- www.soundanchors.com
- www.madisound.com
- www.solen.ca
- www.e-speakers.com
- www.diycable.com
- www.alpiwood.com
- www.veneers.com

Cabinet Parts



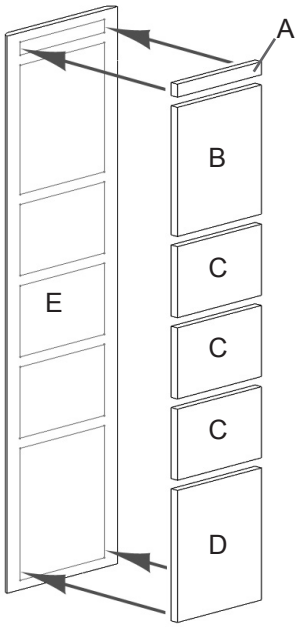
Baffle



Baffle, 1 piece 1-1/2” thick
Dimensions are in cm [inches]

Baffle Construction Steps

Back View



(No router needed)

* Option 1 & Option 2 apply to Baffle, Back Panel, Left Panel, and Right Panel

Option 1

-Draw outlines with a pencil onto panel E of where pieces A to D go

-Then glue pieces A to D onto panel E in their designated areas

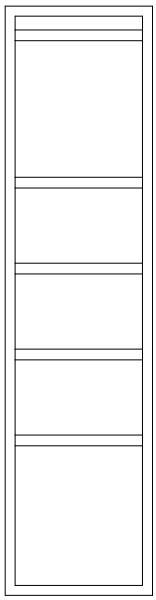
-Allow glue to set before proceeding to Step 2

OR

Option 2

-Start with a 121.9 cm (48”) H X 33 cm (13”) W X 1-1/2” TH sheet of MDF

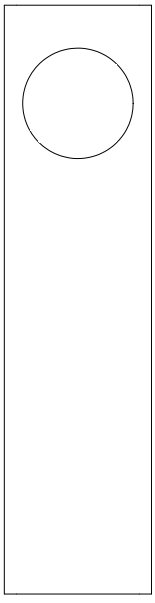
-Than router out grooves



(Router needed)

Step 1

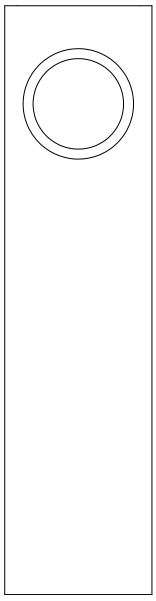
Front View



-Cut-out circular groove with router [Depth 8 mm (5/16”)]

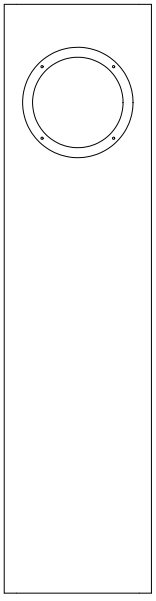
-This will allow woofer to be flush with baffle surface

Step 2



-Cut-out woofer mounting hole with a hole saw or a jig saw

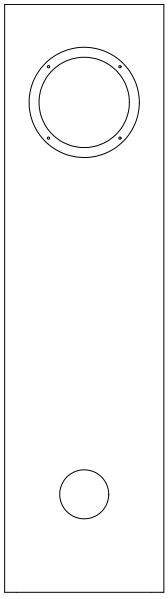
Step 3



-Drill 4 holes for wood screws or T-nuts

* T-nuts require clearance drill size and wood screws require tap drill size

Step 4

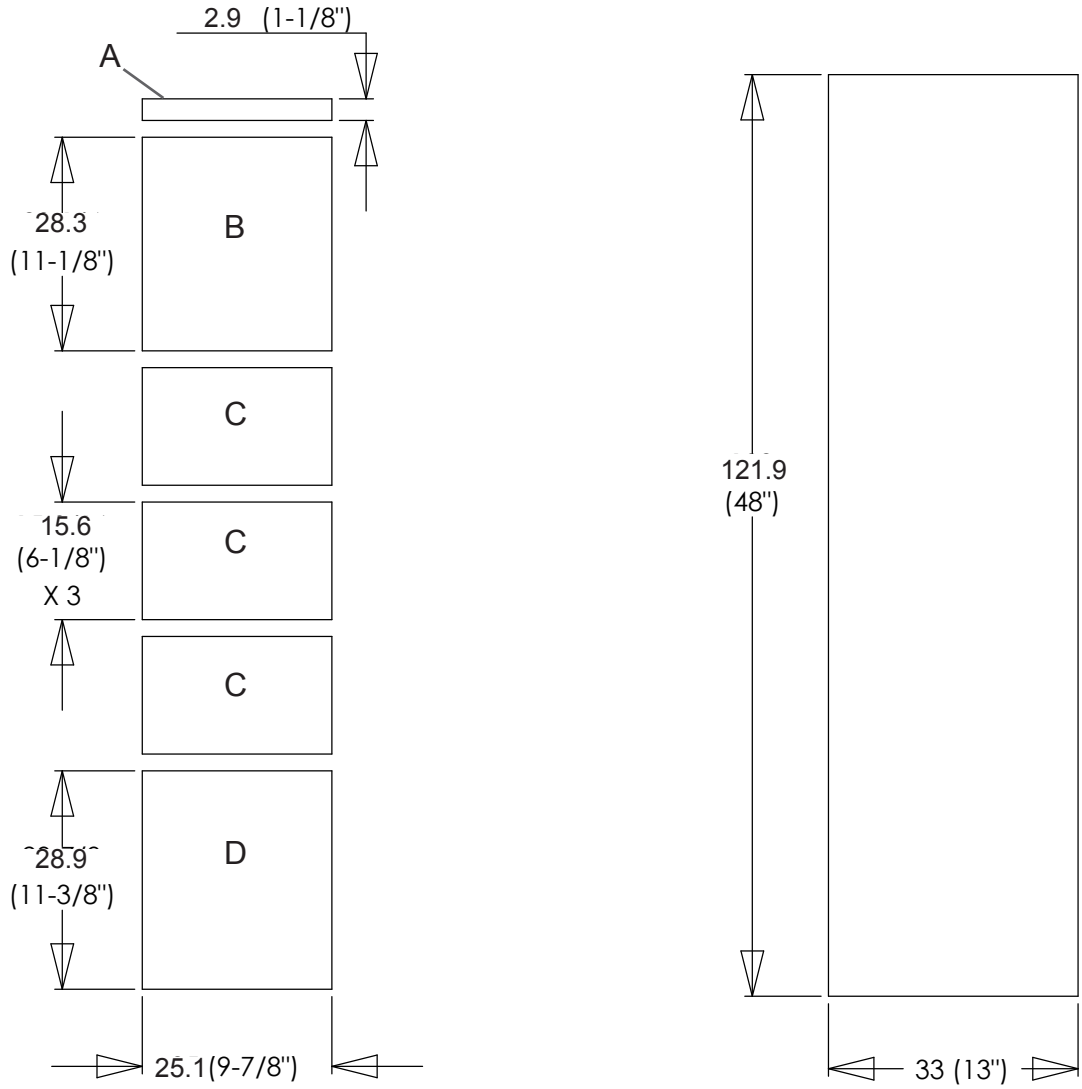


-Cut-out port hole with hole saw or jig saw

*Size of cutout may vary depending on Port style

Step 5

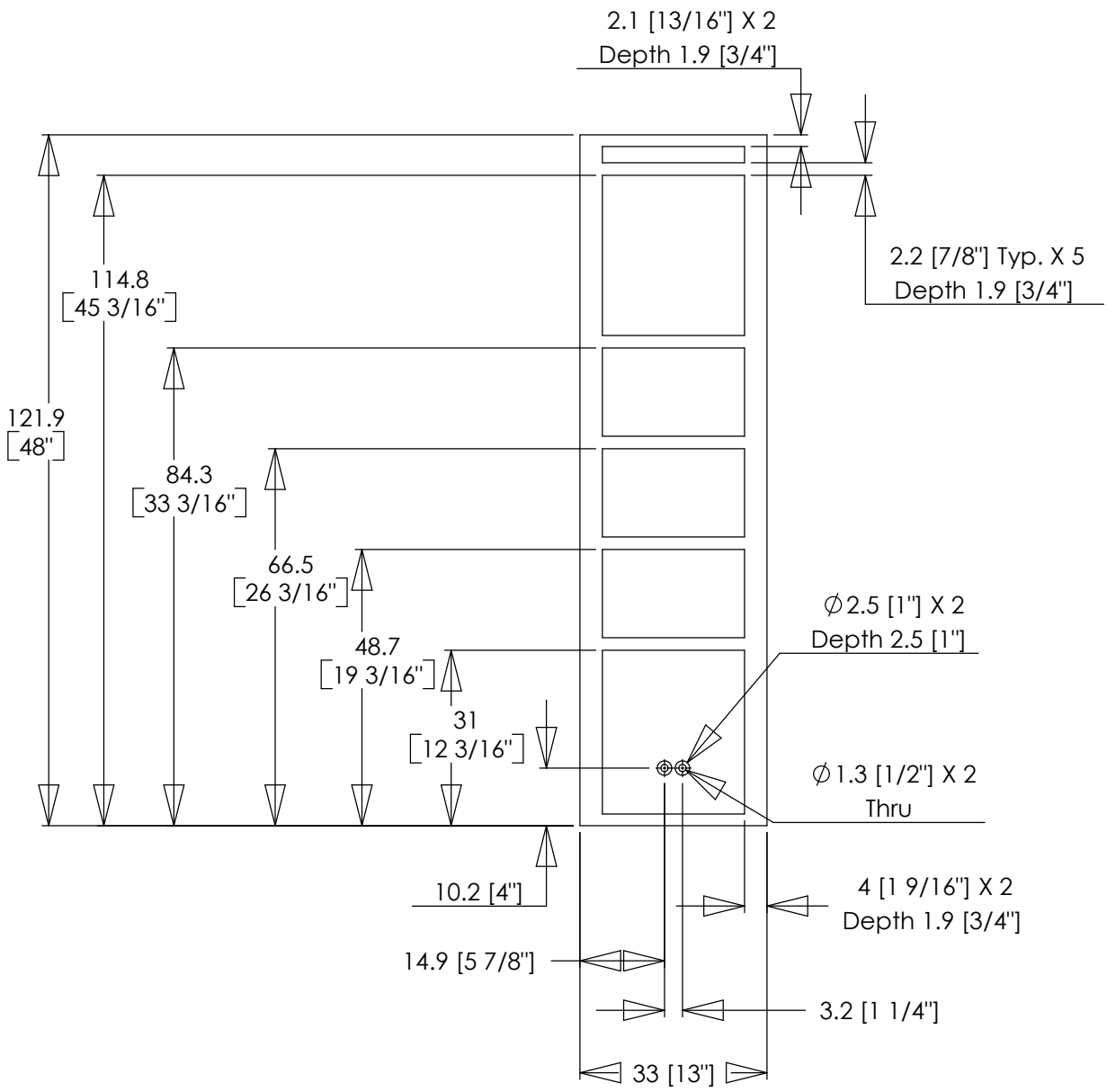
Baffle & Back Panel Raw Cuts
For Option 1



Pieces are 3/4” thick
Dimensions are in cm [inches]

Back Panel

Back View



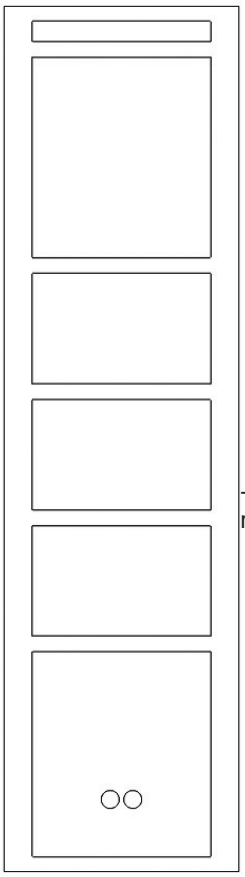
Back Panel, 1 piece 1-1/2” thick
Dimensions are in cm [inches]

Back Panel Construction Steps

Please refer back to Step 1 on Page 6
and page 7 for Raw Cuts

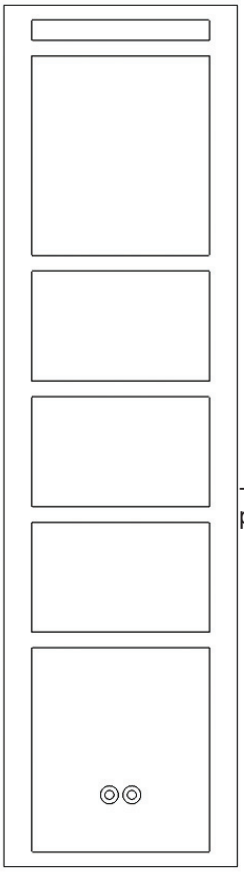
Step 1

Back View



-Cut-out circular groove with router [Depth 2.5 cm (1”)]

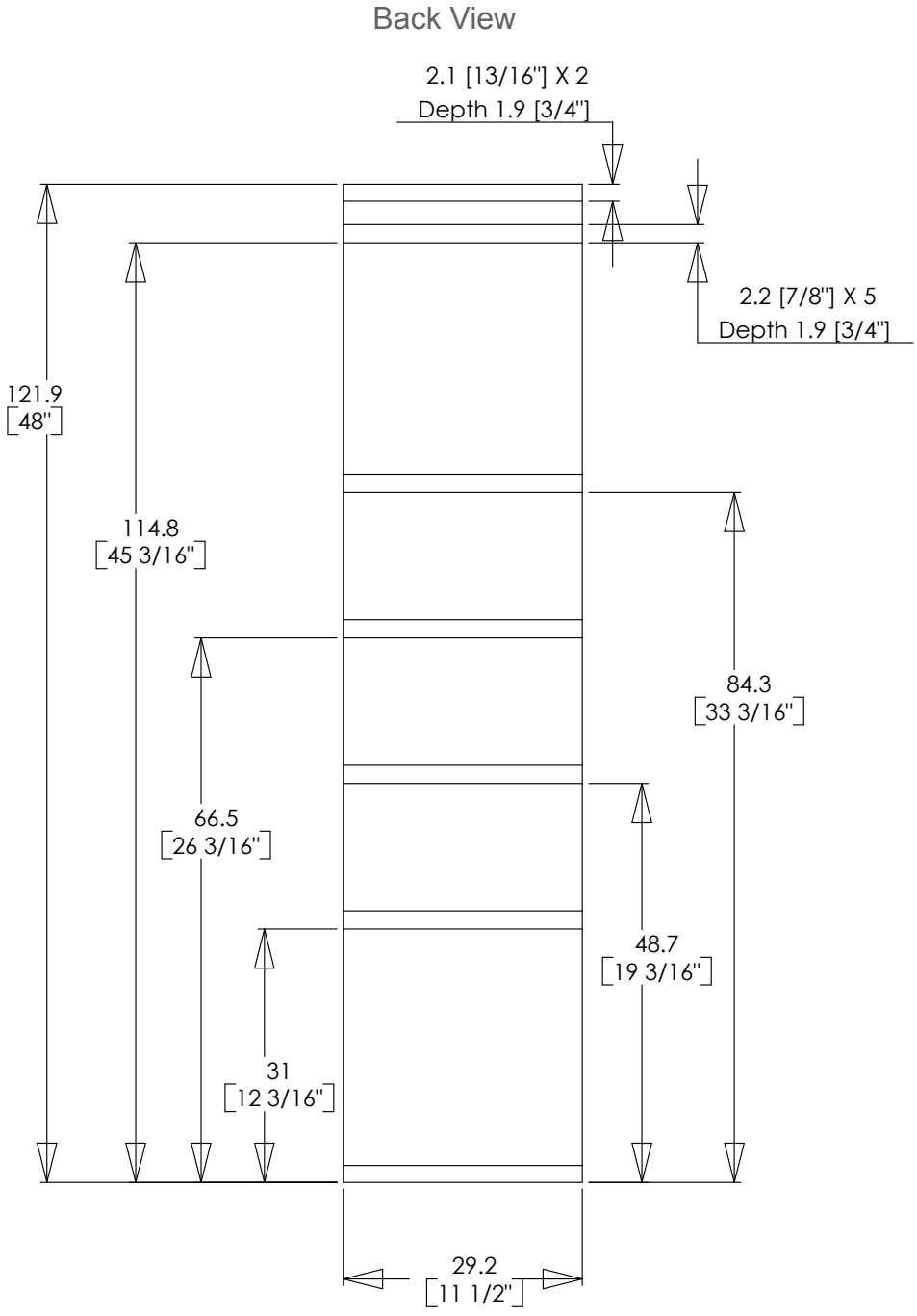
Step 2



-Drill holes for binding posts

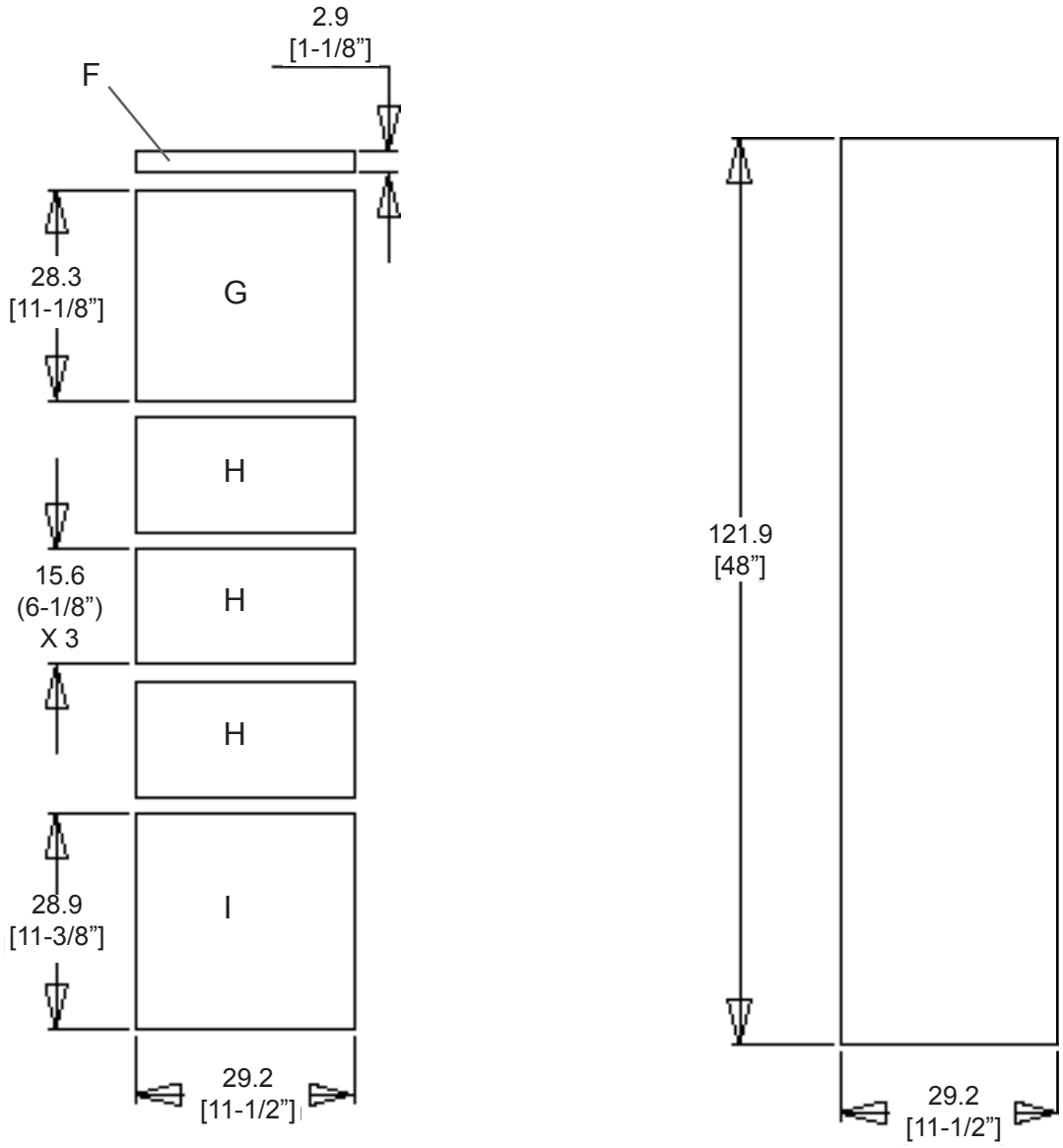
Step 3

Left & Right Panel



Left & Right Panel, 2 pieces 1-1/2” thick
Dimensions are in cm [inches]

Left & Right Raw Cuts
For Option 1 on Page 6



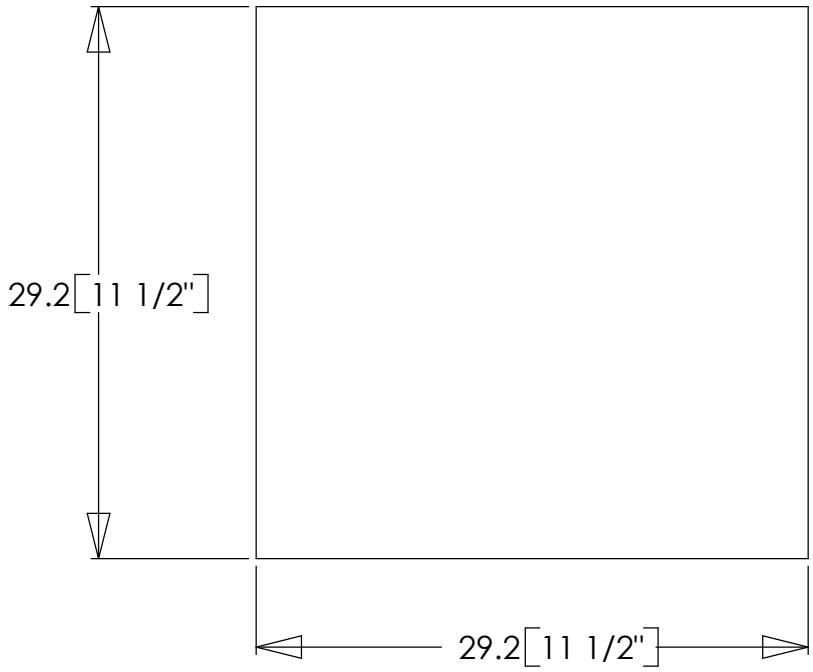
Pieces are 3/4” thick
Dimensions are in cm [inches]

Left & Right Panel Construction Step

Please refer back to Step 1 on page 6 for assembly instructions

Top Panel

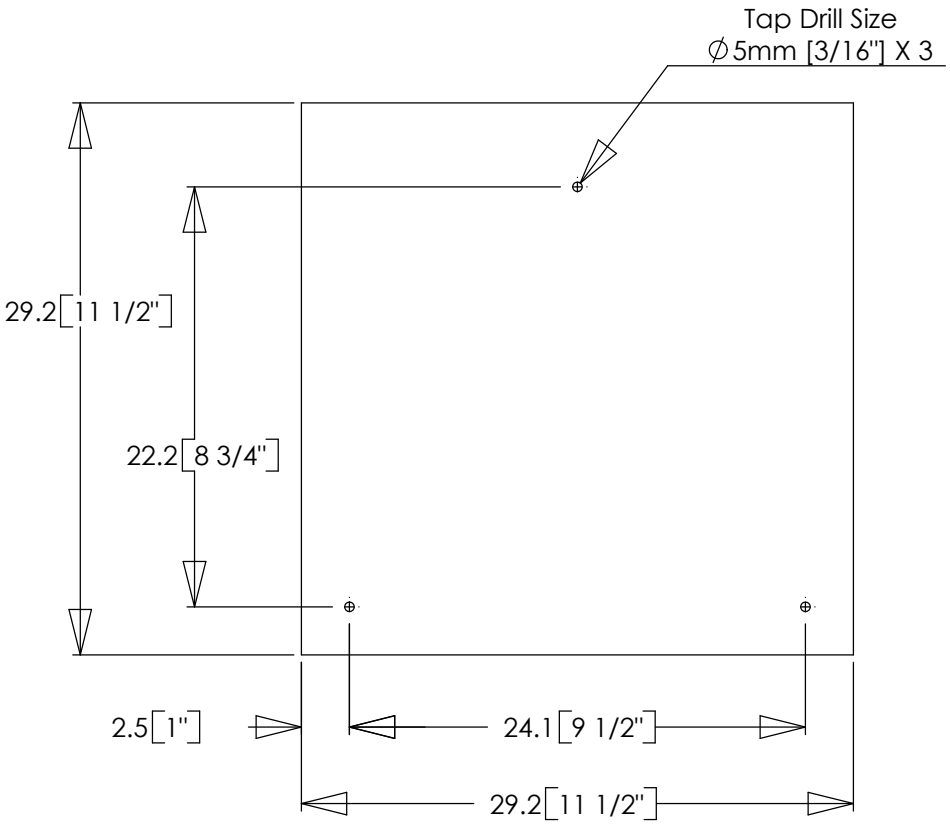
Top View



Top Panel, 1 piece 3/4” thick
Dimensions are in cm [inches]

Bottom Panel

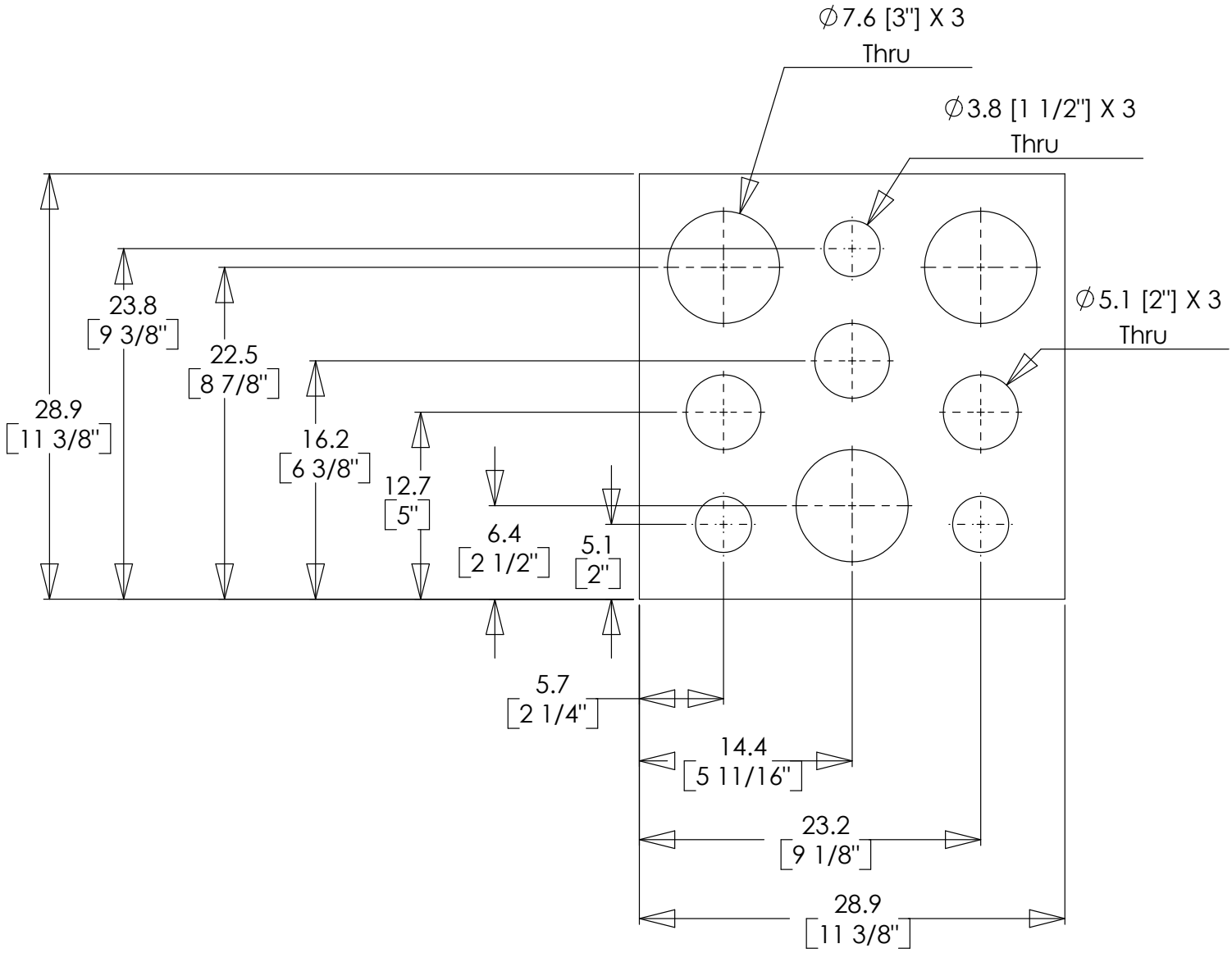
Top View



Bottom Panel, 1 piece 3/4” thick
Dimensions are in cm [inches]

Bracing

Top View



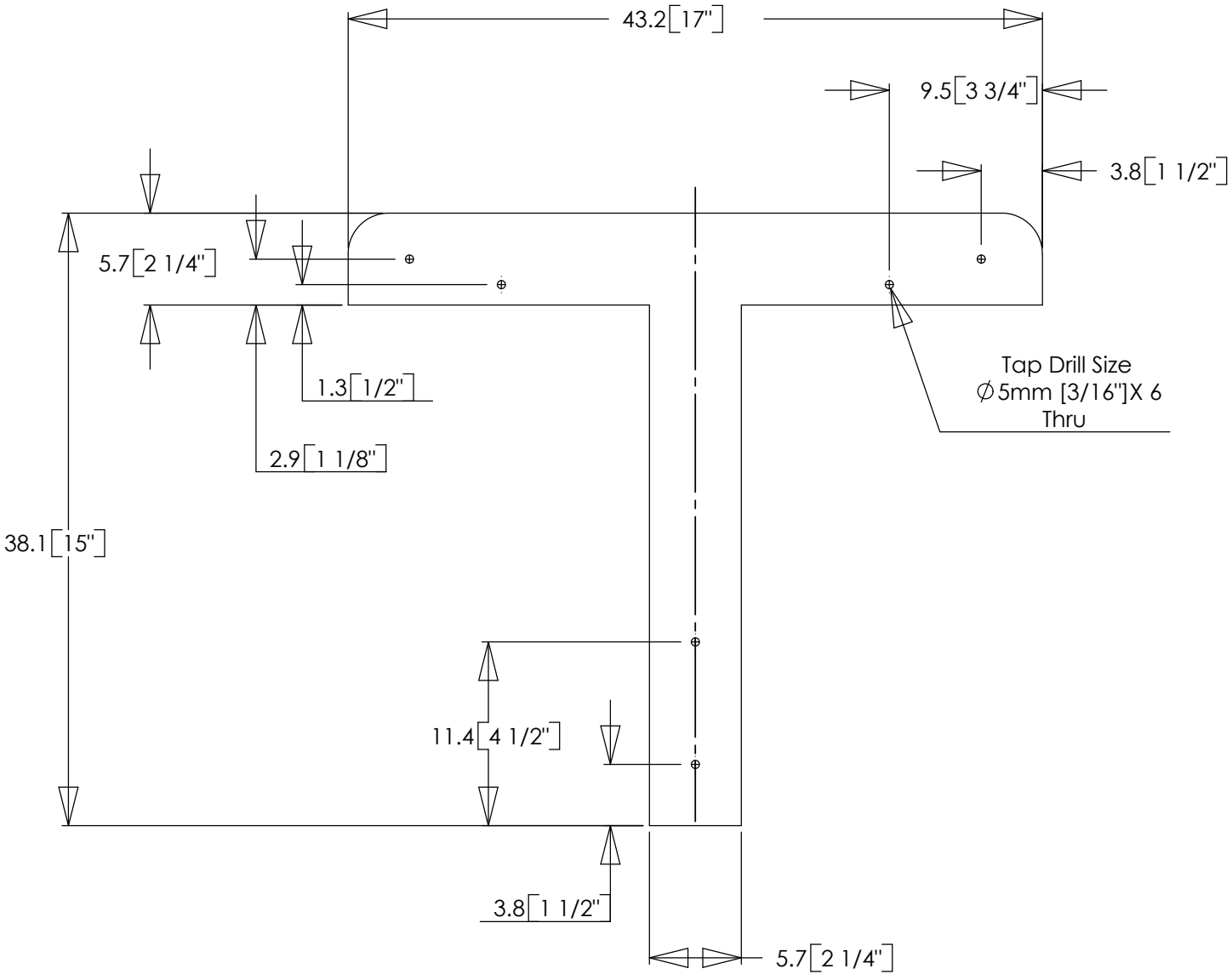
Bracing, 5 pieces 3/4” thick
Dimensions are in cm [inches]

Stand (OPTIONAL)

Options:

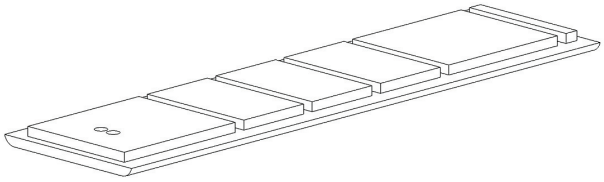
1. Build your own stand
2. Purchase a custom stand from Sound Anchor
3. Decide not to use a stand

Top View



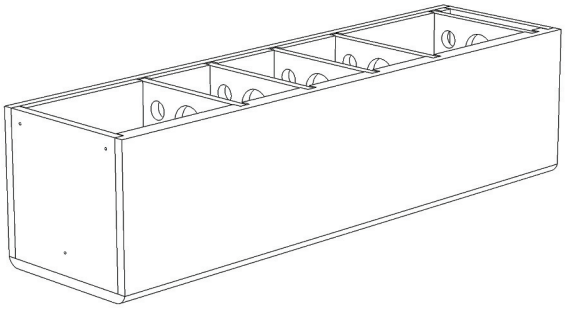
Stand, 1 piece 2-1/4” thick
Glue 3 pieces of 3/4” thick together
Dimensions are in cm [inches]

Cabinet Assembly



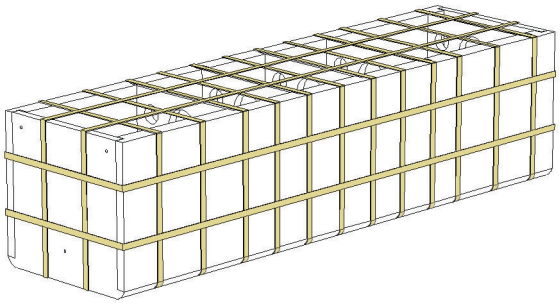
-Place back panel onto a flat clean sturdy surface

Step 1



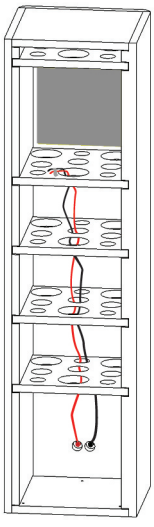
-This step requires two sets of hands
-Apply glue to grooves on back panel, left panel, and right panel in clean long beads
-Use damp cloth to wipe off excess glue

Step 2



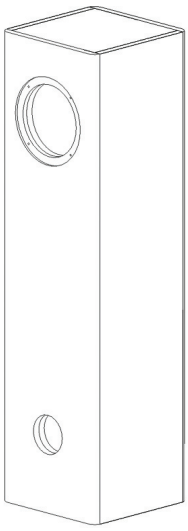
-Attach rubber bands around cabinet to hold panels in place
-Make sure everything is square
-Allow to dry before proceeding to Step 4

Step 3



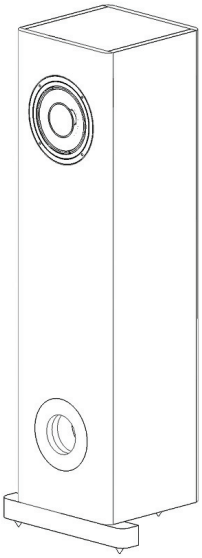
-Glue Deflex Pad or Black Hole or Acoustic Foam behind woofer on back panel
-Suggestion, add Damping Pads one under top panel and another over the bottom panel, see notes on page 17
-Attach Binding Posts and solder the Hook-up Wire to their corresponding terminals
-Pull wire through bracing
-Tape wire to bracing, for driver attachment later

Step 4



-Apply glue to baffle grooves in clean long beads
-Attach front baffle
-You may require slight tapping with rubber mallet
-Wipe off any excess glue with a damp cloth

Step 5



-Attach T-Base
-Attach Tip Toes
-Mount Port
-Mount Woofer

Step 6

Notes

Cabinet Specifications

- Internal volume is 70 liters
- Cabinet is tuned to 44 Hz within room response in the mid to high 30's depending on room gain.

Wood Selection

- We suggest either MDF, Birch Plywood, or solid wood or a blend of all three example: sides and rear panels in plywood with top, bottom and bracing in MDF and baffle in solid Mahogany. It's all up to you but we have found mixing different woods typically sound better due to variation in resonance frequencies.

Finishing

- For applying veneers, paint, varnish or waxes please consult your local woodworking expert for advice. You can also purchase pre finished panels of plywood or MDF with high quality environmentally friendly veneer from Alpi or Brookside veneers, contact and inquire about availability and resellers in your area.

Damping Pad

- Applying dampening material, this is completely experimental on your part and depends entirely on subjective taste between a live sounding and dead sounding cabinet and will have different results depending on wood choices. Suggestion do not over dampen the cabinet.

Wall Thickness

- Wall thickness dimensions can be altered so long as internal dimensions are respected.

Panels Construction Options

- You will notice option 1 and 2 for construction of panels. Option 1 is for someone with no router or less woodworking skills option 2 is for use with router for a higher skill level.

Notes

Room Placement:

Assuming your room is an average rectangle, sit as close to the rear of the room in front of the longest wall with your head positioned approximately 6 inches to 2 feet (closer is best) from back wall. Hang an absorption panel or drape or a pillow behind your head. The speakers placed equidistant from each other with approximately (start at 6 ft to 8 ft) between them in the center (halfway) of the listening room, sharply angled so that the center of the cones aim just behind your ears. You can also incrementally angle the baffle backwards at your discretion. Move the speakers incrementally (1 inch at a time) on the horizontal plane to adjust mid bass output and imaging. Move them front to back for bass output. This is as close to near field listening as possible, eliminating or reducing many problems associated with room acoustic issues including standing waves and secondary reflections.