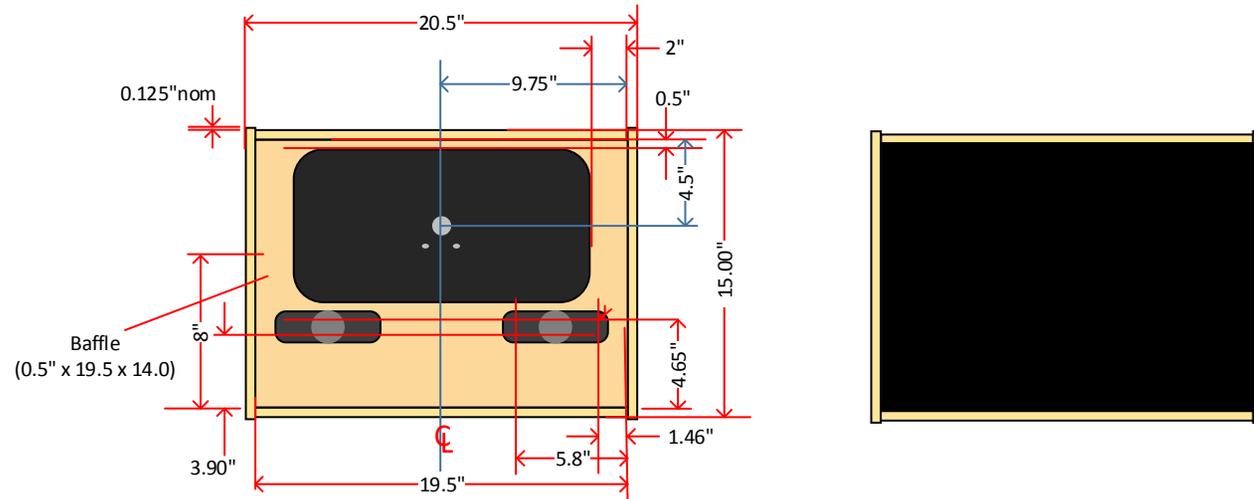


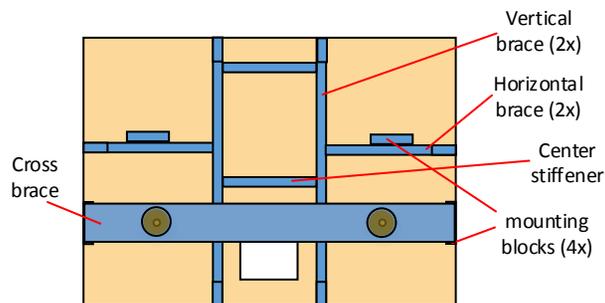
SmallSyns, sealed box version, general cabinet plan.

(more detailed drawings of each part to follow in later pages, with "better-than-Ikea" directions!)

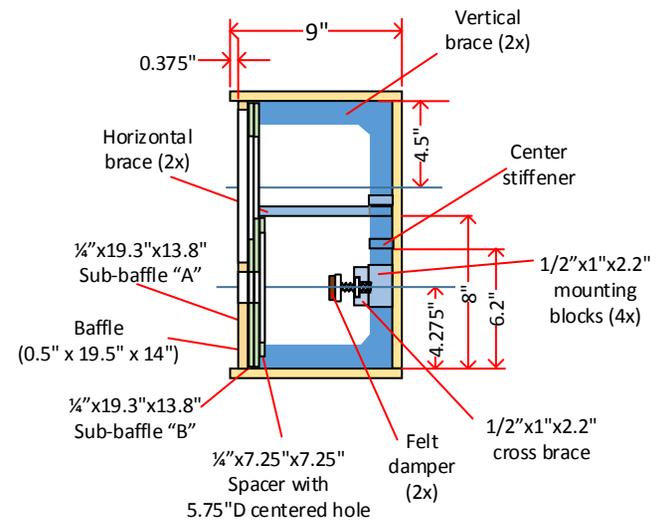
FRONT VIEWS (without/with grille):



BACK PANEL (as seen from front) showing locations of braces and stiffeners

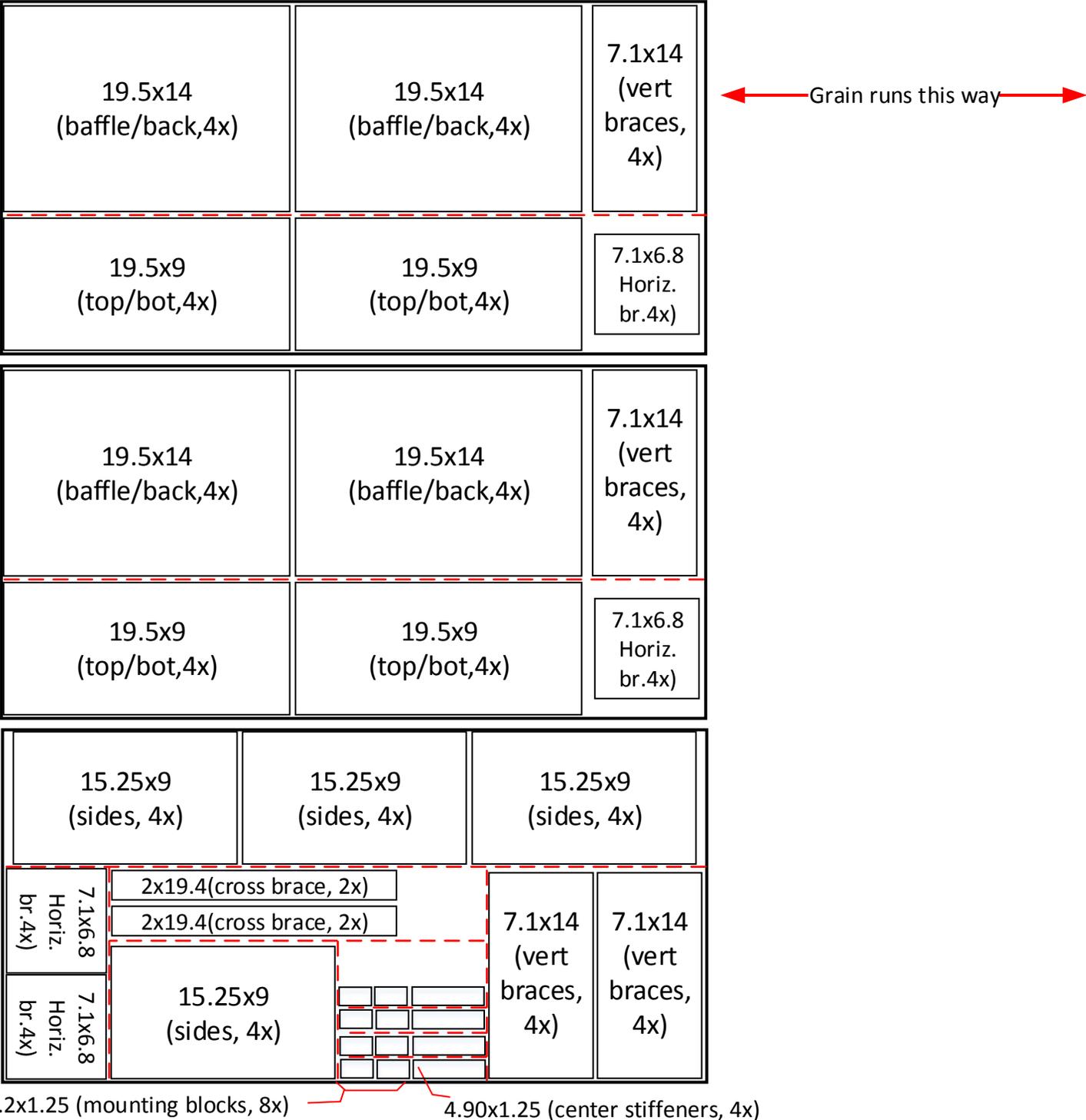


SIDE VIEW showing internal construction (without horn or drivers):



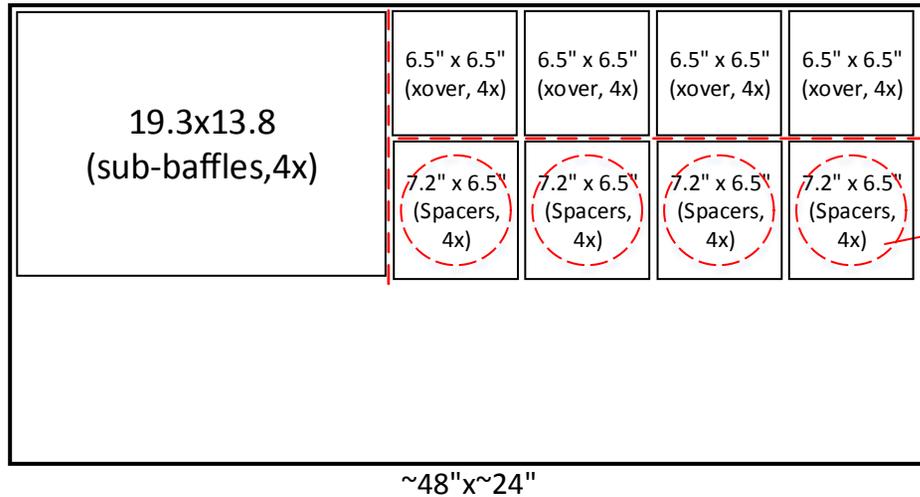
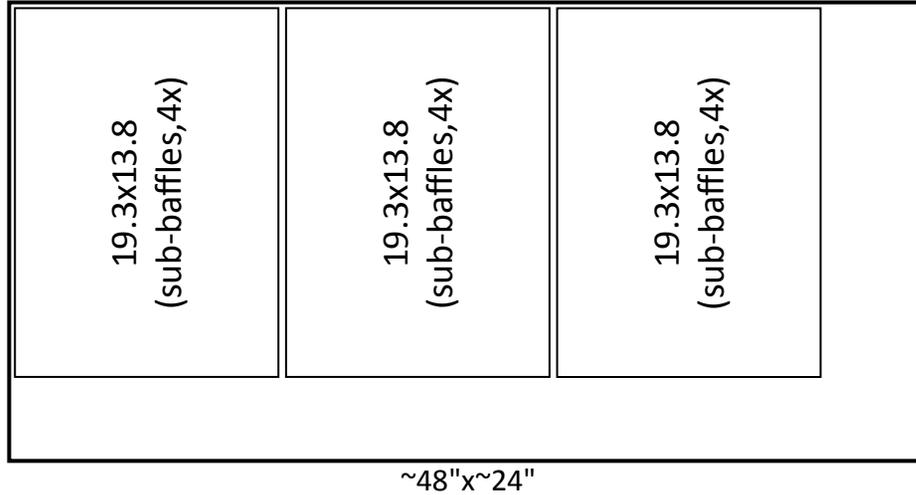
Dimensions shown assume that half inch nominal ply is 0.50" thick, quarter inch panels are 0.25" thick

SmallSyns, sealed version: 1/2" ply panel cuts (for two speakers, from three 24"x48" panels)



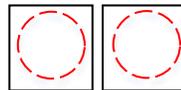
SmallSyns, sealed version: 1/4" and 1/8" panel cuts

For two speakers. 1/4" MDF or Plywood, from two 24"x48" panels:



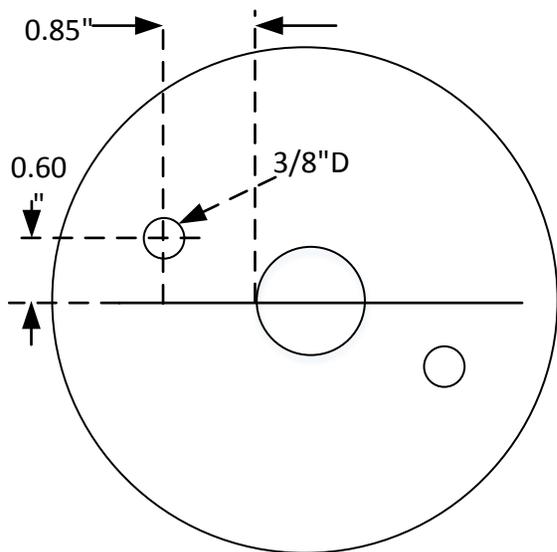
For spacers, cut out holes with jigsaw before cutting pieces from larger panel!

For two speakers. 1/8" ply or 0.063" FR4:

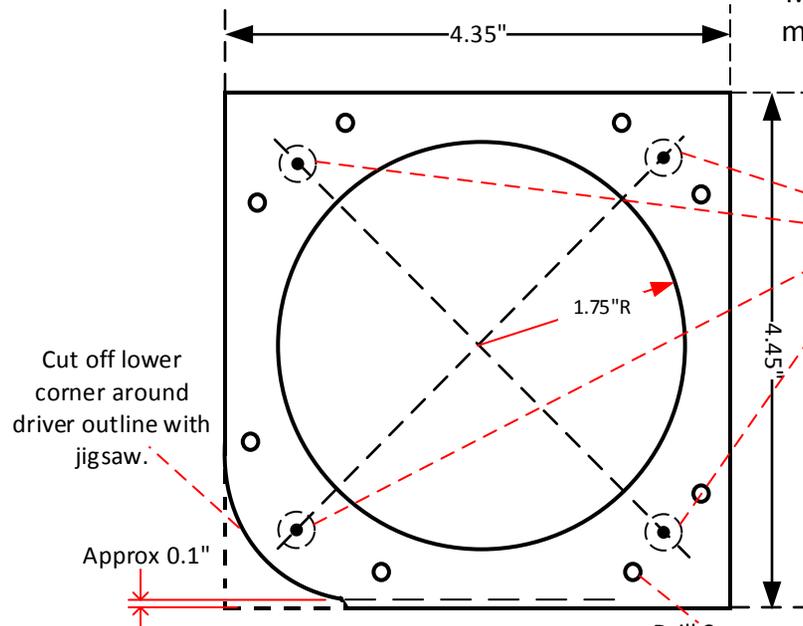


4.35"x4.45", 2x, for midrange mounting panels – cut out holes with jigsaw before cutting pieces from larger panel!

SmallSyns, sealed version: SEOS15 waveguide modifications

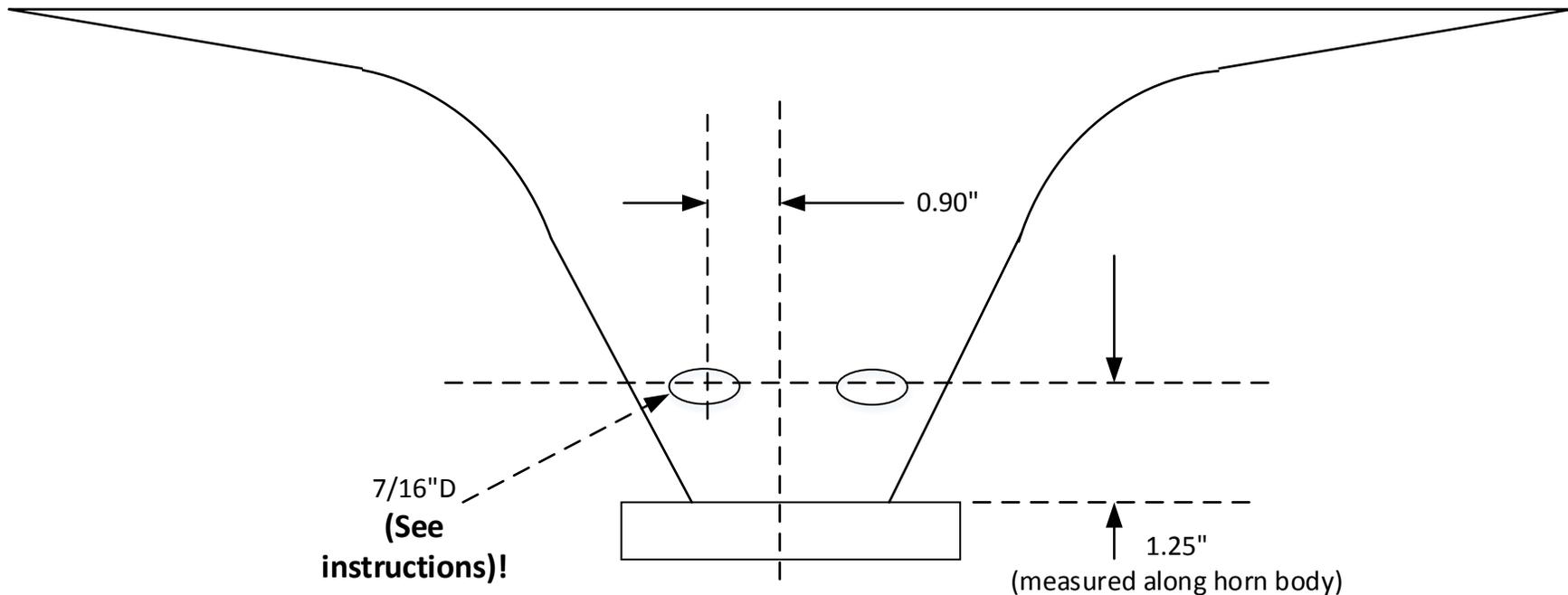


Relocation of tweeter compression driver mounting holes



Midrange Mounting Panel.
material: 1/8" ply or 0.062"
FR4 circuit board stock

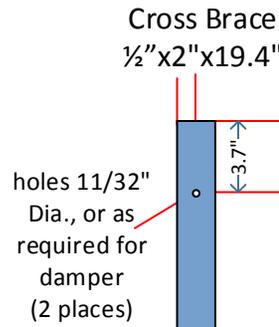
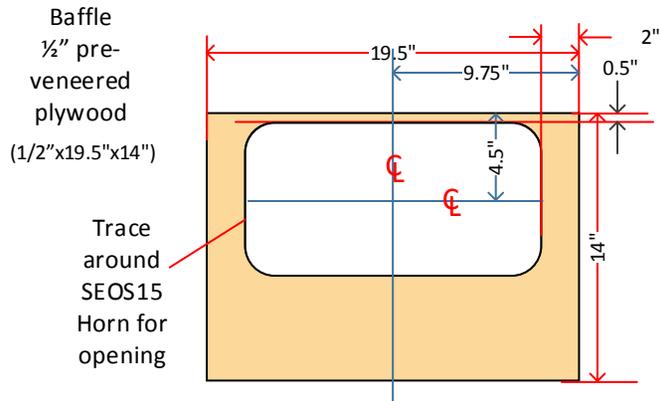
Center driver on upper end of panel, mark mounting holes positions with pencil. Draw cross lines between hole center locations to find the center. Draw 1.75" radius circle using compass. Cut out the circle using jigsaw. Drill small holes for sheet metal screws for driver mounting



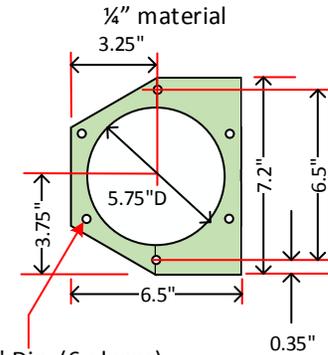
7/16"D
(See instructions)!

1.25"
(measured along horn body)

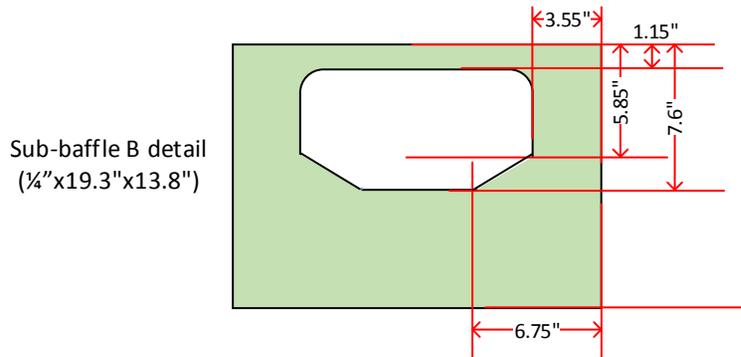
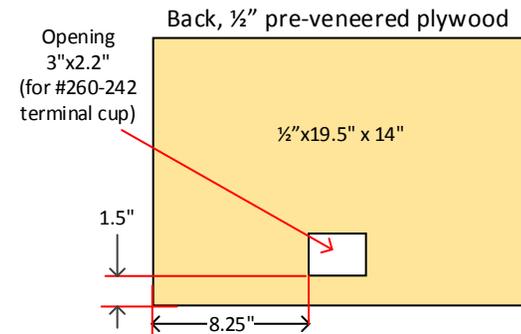
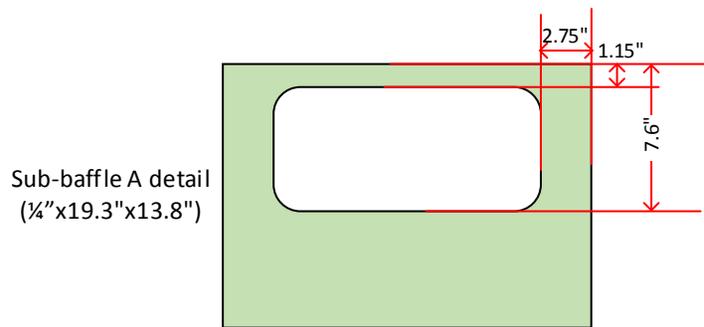
SmallSyms, sealed version: Machined wood piece details



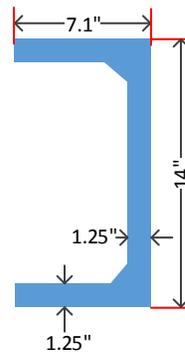
Spacer detail (2 per speaker)



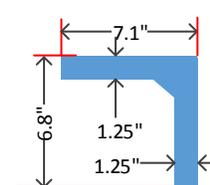
holes 7/32" Dia. (6 places)
 Hole positions and outline to be traced from woofer



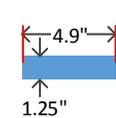
Vertical Brace detail
 (2 per speaker)
 1/2" material



Horizontal Brace detail
 (2 per speaker)
 1/2" material

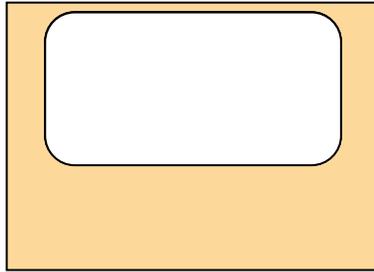


Center Stiffener
 (1 per speaker)
 1/2" material

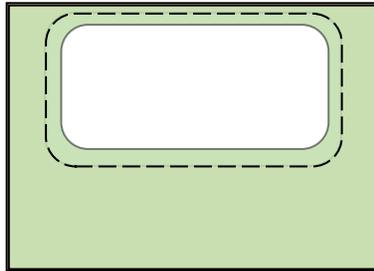


SmallSyns, sealed version: Baffle Assembly

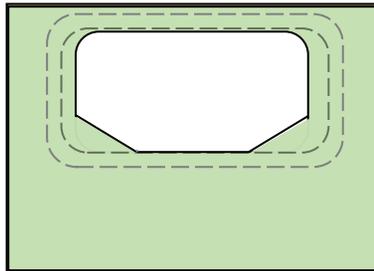
1) Place baffle face down



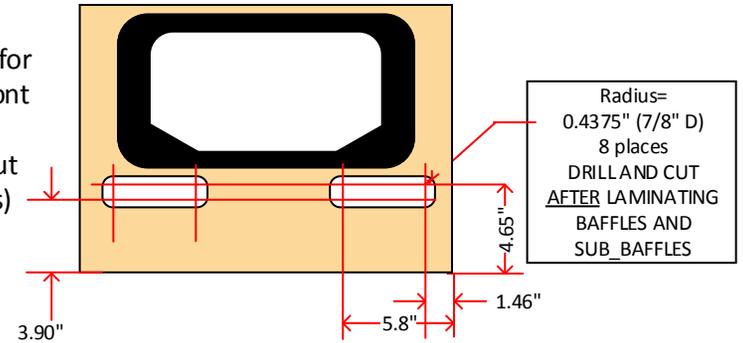
2) Glue sub-baffle A to back of baffle. Make sure that sub-baffle A doesn't extend beyond outside edges of the main baffle.



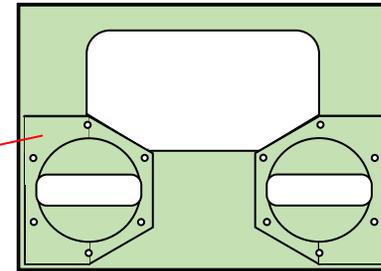
3) Glue sub-baffle B to back of sub-baffle A, making sure that sub-baffle B doesn't extend beyond outside edges of the main baffle. Clamp all three panels together (using wax paper on sensitive outside surfaces) until the glue cures.



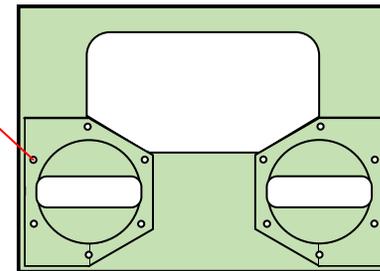
4) Mark and drill holes for woofer apertures on front of baffle, cut aperture outlines with jigsaw. (Cut through all three panels)



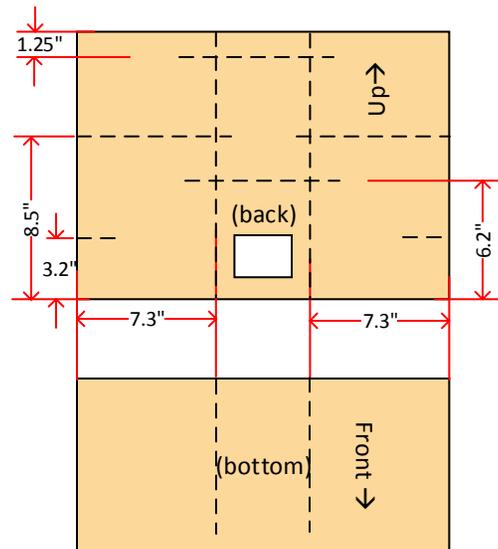
5) Glue the two spacer panels on the back of sub-baffle B, so they center on the woofer apertures



6) Drill with 1/16" Dia bit from the back, through baffles, centered at spacer holes (12 places). Drill with baffle face against a scrap surface to avoid splintering. Then inset holes from front (or bevel to use flathead screws). Finally, drill through with 7/32" Dia bit to for woofer mounting screws.

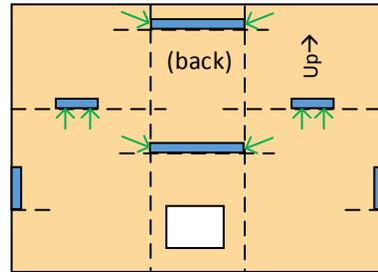


SmallSyns, sealed version: Pencil guideline marking

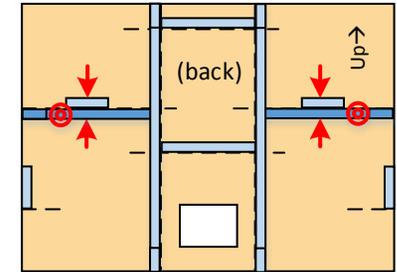


SmallSyns, sealed version: Mounting blocks and Braces Assembly

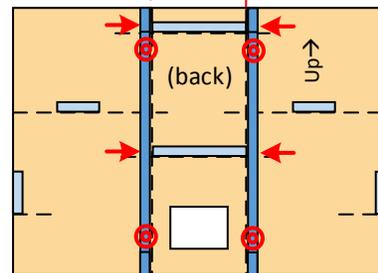
1) Glue 2x center stiffeners and 4x mounting blocks above guide lines where shown. All these stand on 0.5" thick sides, to 1.25" from the surface of the back panel. Avoid glue beads at ends of the stiffeners and at lower edges of blocks where marked. Keep the two side mounting blocks to just inside the edges of the back panel. Allow glue to set.



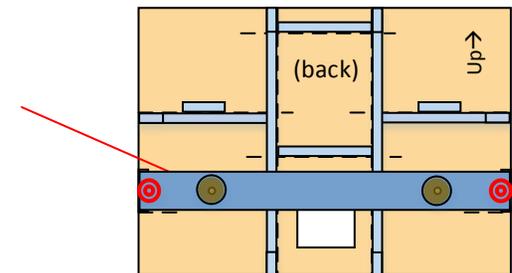
3) Glue 2x horizontal braces to the back panel, vertical braces, and mounting blocks as shown. If necessary, trim or sand the inside ends of the horizontal braces to assure that the outer ends align with the outer edges of the back panel! Clamp the braces to the blocks where shown, keeping them firmly against the back panel until glue sets. (If deep enough clamps are available, also clamp the braces to the back panel where marked with bullseyes).



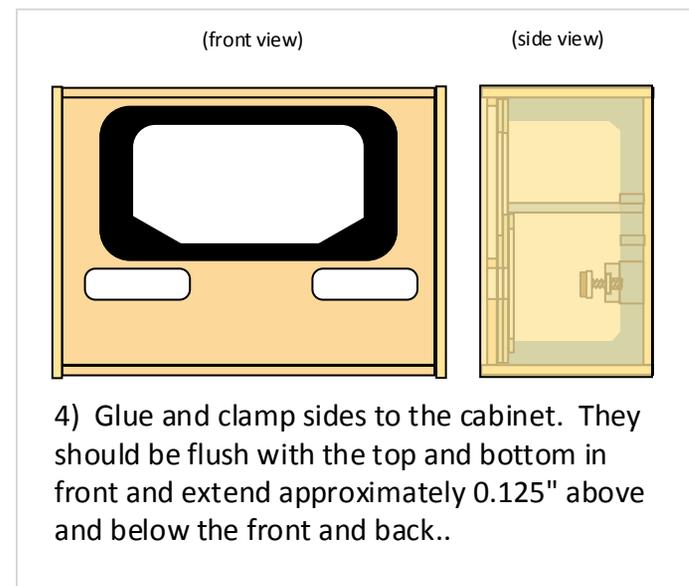
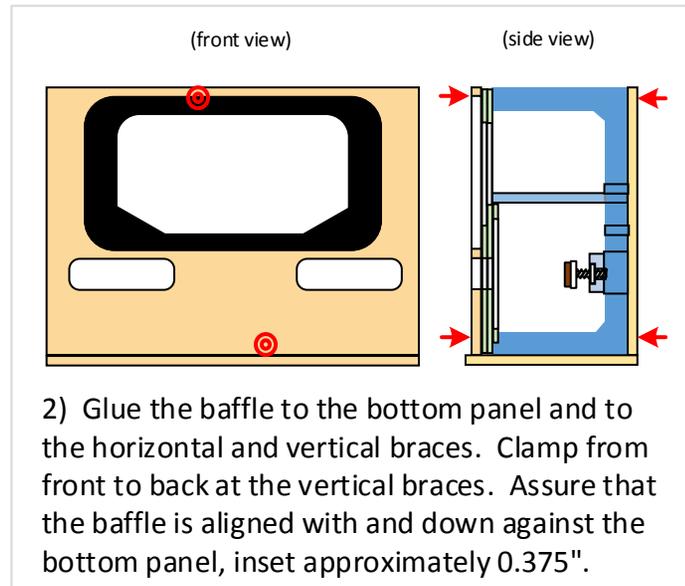
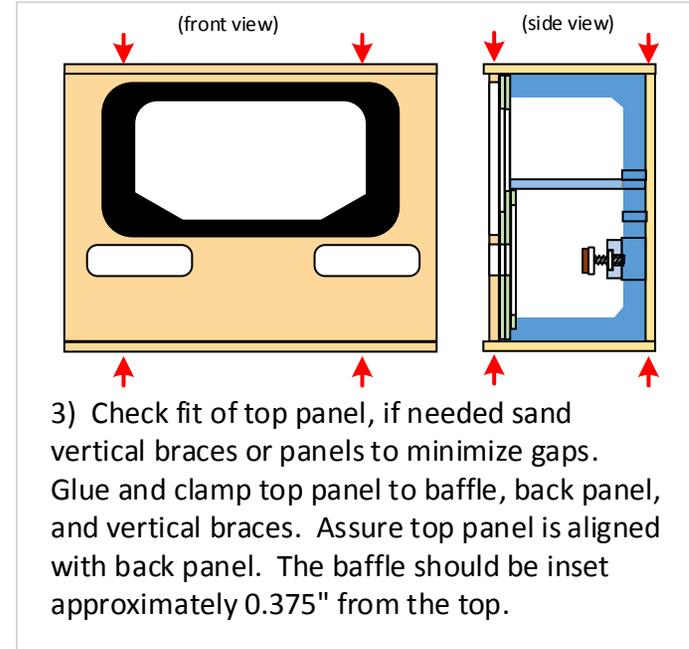
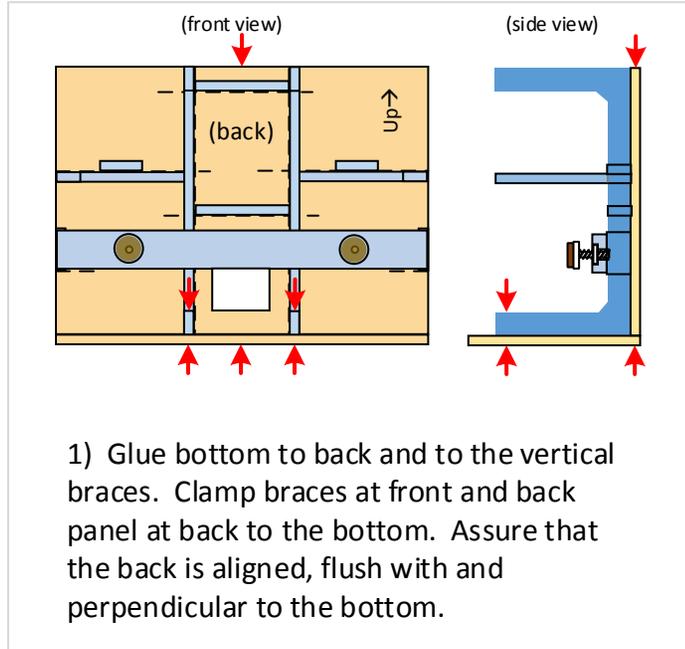
2) Glue 2x vertical braces to the back panel and to the center stiffeners. Make sure the ends of the braces align with the outer edges of the back panel! Clamp the braces to the stiffeners where shown, keeping them firmly pressed to the back panel until glue sets. (If deep enough clamps are available, also clamp the braces to the back panel where marked with bullseyes).



4) Install felt dampers (2x), then glue Cross Brace at 4 places, and clamp. Assure the cross brace does not extend beyond outer edges of back panel.

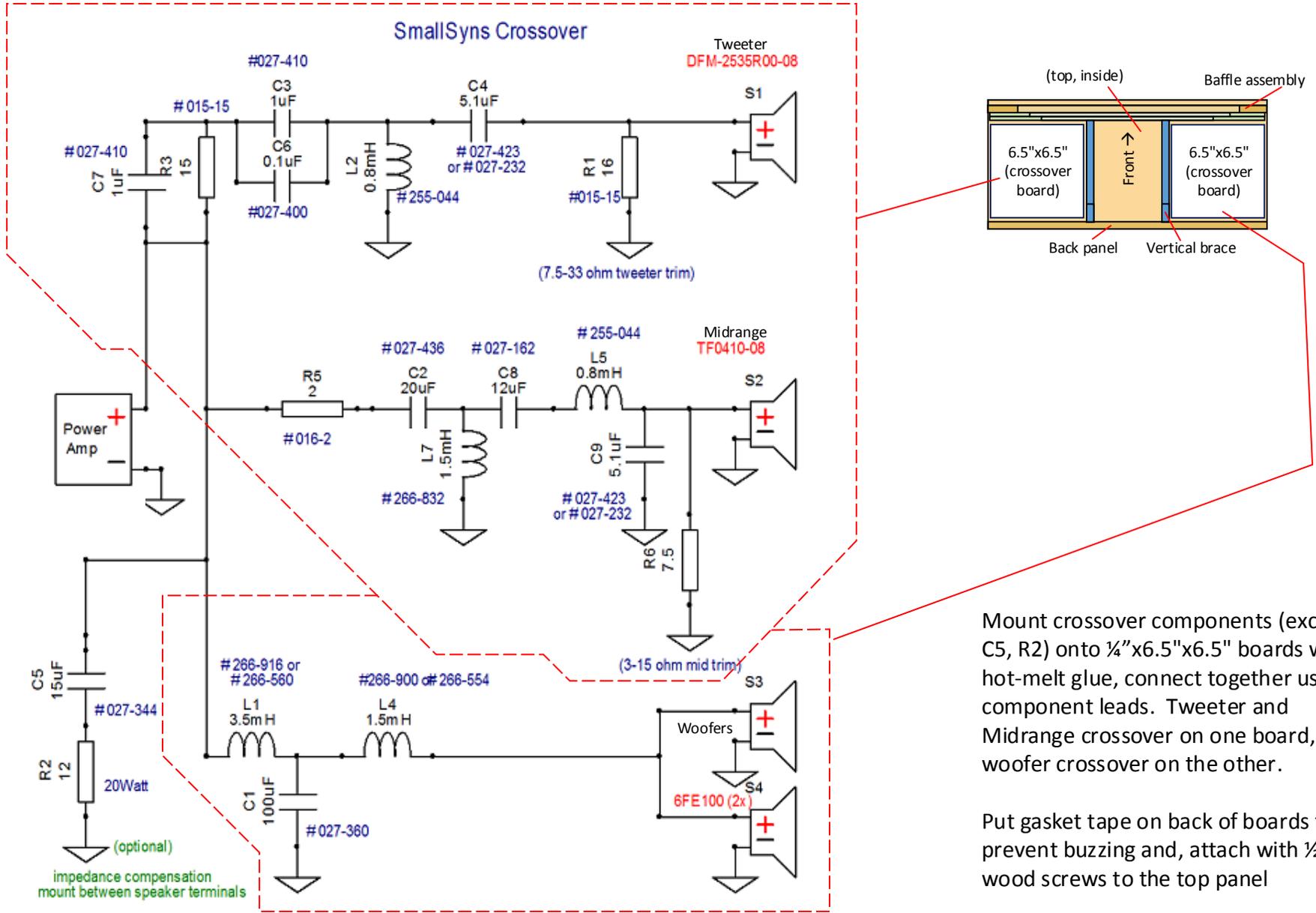


SmallSyms, sealed version: Outside Panel Final Assembly



SmallSys, sealed version: Passive Crossover

#XXX-XX numbers are Parts Express part numbers



Mount crossover components (except C5, R2) onto 1/4"x6.5"x6.5" boards with hot-melt glue, connect together using component leads. Tweeter and Midrange crossover on one board, woofer crossover on the other.

Put gasket tape on back of boards to prevent buzzing and, attach with 1/2" wood screws to the top panel

If additional voicing is desired: Tweeter output will increase with increasing R1. Midrange output will increase with increasing R6. Presence region will increase with increasing C3, C6 ---- SEE NEXT PAGE

SmallSyns: Crossover Voicing Adjustment Effects

These parts can be varied to adjust for driver sensitivity variations or listener preference

Changes shown are 0.5dB/division, relative to crossover parts as listed in the schematic

