

Access Media Centre

Two Sheets of Plywood Make One Great Media Centre

Project Skill Level: INTERMEDIATE

Recommended plywood: CANPLY EXTERIOR Good Two Sides (G2S)

Materials list

Plywood:

- (2) Sheets 3/4" x 4 ft x 8 ft Good Two Sides (G2S)

Other Materials:

- (12) #8 x 1/2" Robertson or Phillips wood screws
 (50) #8 x 1-1/2" Robertson or Phillips wood screws
 (60) #8 x 2" Robertson or Phillips wood screw
 (50) Flat head wood plugs 5/16" diameter x 1/4" deep
 (50) Lineal feet - iron on shelf edge banding - (optional)
 (6) Fluted dowels 3/8" diameter x 1-1/2" long

Tools Required

Power Tools: table-saw; hand drill; jigsaw; plywood cutting table-saw and jigsaw blades; electric palm sander or block plane.

Hand Tools: tape measure; 1/8" drill bit; #8 Countersink bit; nail set; multi-head screwdriver; carpenters square; 180/220/320 grit sandpaper; wood glue; 48" straight edge; paper for drawing graph; pencil.

Before Starting

1. Study the plan carefully to make sure you understand all the details.
2. For best results use plywood-cutting blades on the table-saw and jigsaw.
3. All screw holes to be pre-drilled to prevent the wood from splitting
4. Clamp a scrap piece of wood to the back of all pieces to be drilled to prevent chip-out.
5. Glue all contact surfaces unless noted.
6. Remove excess glue with a damp cloth.
7. Insure plywood panels are well supported and level before cutting.
8. Remove sharp edges and corners with sandpaper.
9. Use fine sandpaper and sand with the grain, not against it.
10. Follow all power tool and hand tool safety precautions.

Building Instructions

1. PRIOR TO CUTTING

- To save yourself work in the finishing stages of the project, sand the whole plywood panel, both sides prior to cutting. First sand with 180-grit sandpaper, followed by 220 grit. When



finishing the project (painting, staining or a natural finish) you will only require final sanding with 320-grit sandpaper.

2. MAKE A PATTERN LAYOUT

- Following the layout shown in Figures no.1 and 2, draw all parts onto the plywood panel.
- Transfer all markings relevant to cutting and assembly (ie: center lines).
- Label all pieces with the letter indicated.
- Remember to allow at least 1/8" for the width of the saw blade.

3. CUT OUT THE PIECES

- Refer to Figure no. 1 for illustration of cutting lines 'A', 'B', 'C' on plywood sheet #1.
- Cut straight edges on the table saw.
- When setting the table saw to cut your dimensions, measure from the side of the blade facing the fence to the fence itself. This will ensure your dimensions are accurate and aren't affected by the 1/8" of material removed by the saw blade.
- Information on table saw safety and handling techniques can be found in your Owner's Manual or at your local library or bookstore.

1. Cut along lines "A", "B", and "C" in that order.
2. Cut the remaining pieces, running perpendicular to the wood grain. Use the table saw slide or float to do 'cross-cuts'.
3. Cut plywood sheet #2, first lengthwise, then cut panels into separate pieces.

When you are finished cutting you should have the following pieces:

A	SHELF (1)	21" x 46-1/2"
B	SHELF (1)	21" x 46-1/2"
C	SHELF (1)	22" x 48"
D	SHELF (1)	21" x 46-1/2"
E	KICK PLATE (2)	2" x 16-1/2"
F	KICK PLATE (1)	2" x 16"
G	SUPPORT (2)	6" x 20-1/2"
H	END (2)	15-1/2" x 15-1/2"
I	UPRIGHT (2)	16" x 31-3/4"
J	SHELF (6)	7-1/2" x 15-1/2"
K	BACK (2)	20' x 48"

3. HOW TO...

TRANSFER A CURVED LINE FROM THE PATTERN LAYOUT TO THE PLYWOOD:

- Figure no. 3 illustrates the grid you will use to chart out the curved lines on the shelf pieces.
 - Each square in the diagram equals 2 inches x 2 inches square.
- a. Draw the grid full size onto a large piece of paper, at least 48" X 6".
 - b. Refer to the diagram and its corresponding square on your hand drawn grid.
 - c. Transfer the curve by making a mark on the large grid where the curved line passes over the grid lines.
 - d. Repeat this till you have mapped out the full length of the curve.
 - e. Connect all markings in one continuous, smooth line.
 - f. Cut the pattern piece and place it on top of the appropriate piece of plywood, aligning the straight edge of the paper with the straight edge of the plywood.
 - g. Secure the pattern piece in place, either taping it down or weighting it down.

- h. Trace the curved edge onto the plywood with pencil.
- i. Repeat steps 'a' through 'e' three times: one pattern for SHELVES "A, B, and D" (46-1/2" wide); one pattern for SHELF "A" (48" wide); and one pattern for SHELVES "J".
- j. Repeat steps 'f' through 'h' for all three patterns you've drawn.

4. CUTTING THE CURVED EDGES:

- Use the jigsaw to cut along the curved lines.
- Smooth the curved edges with a block plane or power sander.

5. APPLY EDGE BANDING (optional):

- Iron-on edge banding is recommended.
- Before applying edge banding, ensure that all edges are sanded and free of irregularities.
- To ensure satisfaction and performance, apply edge banding as per the manufacturer's instructions
- You will require 35 lineal feet of edge banding to edge band the following pieces:
 - Curved and end edges of all the **LARGE SHELVES**.
 - Curved and outside edges of the **SMALL SHELVES**.
 - Front edges of the **ENDS, SUPPORTS** and **UPRIGHTS**.
 - Side edges of the **BACKS**.

6. ATTACH THE KICK PLATE TO SHELF "A"

- On the underside of SHELF "A" draw the placement of the KICK PLATE as illustrated in Figure no.4.
- Refer to Figures no. 4 and 4a for details on cutting the ends of KICK PLATES "E". Cut the ends of the two pieces at 20 degrees. When making the second cut on each piece, flip the piece end over end to ensure the second cut is parallel to the first cut.
- Place KICK PLATE pieces "E" and "F" in position on the underside of SHELF "A". Ensure the pieces are flush with the edges of the shelf.
- Attach KICK PLATES using the 1-1/2" angle brackets. SHELF "A"

7. PRE-DRILL HOLES IN SHELVES "A and B"

- Drill (3) 1/8" holes through SHELF "A" and SHELF "B", as shown in Figure no. 4a.

8. DRILL DOWEL HOLES IN SHELVES "B and C"

- Refer to Figure no. 5 for location of dowel holes on the under side of SHELVES "B and C".
- On SHELVES "B and C" draw the centerline on the underside of the shelf, as illustrated.
- Measure from the back of the shelf.
- Mark the location of the dowel holes to be drilled, with an 'x'.
- Drill dowel holes 3/8" in diameter by 1/2" deep.
- DO NOT insert dowels into these holes at this time.

9. INSERT DOWELS INTO SUPPORTS

- Refer to Figure no. 6 for location of dowel holes in top edge of supports.
- With a heavy pencil mark "BACK" on one of the 6" edges of both SUPPORTS.
- Measure from the back of the shelf.
- Mark the location of the dowel holes to be drilled, with an 'x'.
- Drill two holes 3/8" in diameter by 1" deep into the SUPPORTS as shown in Figure no.5.

- Put a small amount of wood glue into the holes and insert the 3/8" X 1-1/2" fluted dowels.
- With a hammer carefully tap the dowels down so only 1/2" remains above the surface.

10. ATTACH SUPPORTS TO SHELVES "A and B"

- Refer to Figure no. 7.
- On a flat and level work surface place SHELF "A" and one SUPPORT upright on their back edge as illustrated.
- Ensure the SUPPORT is centered and the back edges are flush to each other.
- Using (3) #8 X 2" wood screws in the pre-drilled screw holes, attach the SUPPORT to the topside of SHELF "A".
- Repeat the process with SHELF "B" and the remaining SUPPORT.

11. ATTACH ENDS TO SHELVES "A and B"

- Orient the two END pieces so the grain direction runs vertically.
- With a heavy pencil, mark the back edges of both END pieces.
- Refer to Figure no. 7 for location of pre-drilled screw holes to attach ENDS.
- Measure from the back edge of the shelf.
- Mark the location of the screw holes to be drilled.
- Using a #8 Countersink drill bit, pre-drill the holes through the END pieces as shown in Figure no. 7a.
- On a flat and level work surface, place SHELVES "A and B" upright on their back edge.
- Taking a SUPPORT with dowels, insert the dowels into the pre-drilled dowel holes on the underside of SHELF "B".
- Using wood glue and #8 x 1-1/2" wood screws in the pre-drilled screw holes, attach the END pieces to SHELVES "A and B". Ensure the shelves are parallel to each other. If everything aligns squarely proceed.

12. ATTACH SMALL SHELVES TO UPRIGHTS

- With a heavy pencil, mark 'BACK' one of the lengthwise edges of each UPRIGHT.
 - Refer to Figure no. 8 for location of pre-drilled screw holes in UPRIGHT pieces.
 - Measure from the back and top edges.
 - Mark the location of the screw holes to be drilled.
- Prior to drilling it is important to note that the SHELVES on the RIGHT UPRIGHT are screwed into from the left side and the SHELVES of the LEFT UPRIGHT are screwed into from the right side.
- Using a #8 Countersink drill bit, pre-drill the holes through the UPRIGHTS as shown in Figure no. 8a.
 - On a flat and level work surface, place the UPRIGHTS on their back edge.
 - Using wood glue and #8 x 1-1/2" wood screws attach the (3) SHELVES to each UPRIGHT.

13. ATTACH THE UPPER SHELF ASSEMBLY TO THE BACKS

- Place BACK pieces beside each other, right side facing out.
- Refer to Figure no. 9 for location of pre-drilled screw holes in BACKS.
- Measure from the top and outside edges.
- Mark the location of the screw holes to be drilled.
- Using a 1/8" drill bit, pre-drill the holes through the BACKS.
- Refer to Figure no. 9a for the assembly of UPRIGHTS to BACKS.
- On a flat and level work surface, place the RIGHT BACK upside down, on its top edge.
- Place the RIGHT UPRIGHT shelf assembly upside down, on its top edge.
- Align the two pieces on the right where the edges of the SHELVES meet the edge of the BACK

- Using wood glue and #8 x 2" wood screws in the pre-drilled screw holes, attach the RIGHT UPRIGHT to the RIGHT BACK.
- Make sure the panels are attached accurately as shown in fig. #9.

14. ATTACH SHELVES "C and D" TO UPPER SHELF ASSEMBLY

- Refer to Figure no. 10 for location of pre-drilled screw holes
- Measure from back edge of shelf.
- Mark the location of the screw holes to be drilled on SHELVES "C and D".
- Using a 1/8" drill bit, pre-drill the (6) holes for the UPRIGHTS through SHELF "C".
- Using a #8 Countersink bit, pre-drill the (6) holes for the ENDS on the topside of SHELF "C" and the (12) holes on the topside of SHELF "D".
- Refer to Figure no. 10a with the following instructions.
- ON a flat and level work surface lay three pieces of 3/4" x 2" x 48" plywood scrap down at 24" apart.
- Lay the UPRIGHT SHELF assemblies down on the scrap as shown.
- Align the tops at one end.
- Position backs 5" apart with shelves facing outward.
- Position SHELF "C" at the base of the UPRIGHT SHELF assemblies.
- Center the pre-drilled screw holes on the lower edges of the UPRIGHTS.
- The previously drilled dowel holes on the underside of SHELF "C" should be facing outward.
- Using wood glue and #8 x 2" wood screws pre-drilled screw holes, attach SHELF "C" to the UPRIGHT SHELF assembly.
- Position SHELF "D" at the top of the UPRIGHT SHELF assemblies. It is important to note in Figure no. 11 that SHELF "D" extends below the BACKS and the wood scraps placed under the unit. It rests on the work surface, which creates an overhang on the top shelf.
- Measure between the BACKS at the center opening to ensure they are still 5" apart and parallel.
- Using #8 x 1-1/2" wood screws in the pre-drilled screw holes, screw through the top of SHELF "D" into the UPRIGHTS.

15. ATTACH THE UPPER ASSEMBLY TO THE LOWER ASSEMBLY

- Refer to Figure no. 11 with the following instructions.
- With the upper SHELF assembly still laying flat, carefully turn the lower SHELF assembly over onto its back and position it on the BACK extensions of the upper SHELF assembly.
- Align the two units. The pre-drilled dowel holes in the underside of SHELF "C" will align with the dowels extending from the middle SUPPORT of the lower SHELF assembly.
- Push the lower unit flush against the upper unit.
- Using #8 x 2" wood screws in the pre-drilled screw holes, screw through the top of SHELF "C" into the ENDS.

16. SECURE THE BACK TO THE SHELVES

- With the upper and lower SHELF assemblies partially attached, two people are needed to carefully stand the Media Centre upright.
- From this upright position the BACK will be secured to the SHELVES to stabilize the unit.
- Refer to Figure no. 12 for the location of pre-drilled screw holes on the BACKS.
- Measure from the top, bottom and outside edges as indicated by the dimensions.
- Mark the locations of the screw holes to be drilled.
- Using a 1/8" drill bit, pre-drill the holes through the backs.
- Using #8 x 2" wood screws in the pre-drilled screw holes, secure SHELVES "A, B and C" to the BACKS.

- Ensure SHELVES “J” are level.
- Using #8 x 2” wood screws, in the pre-drilled screw holes, secure SHELVES “J” to the BACKS.

17. APPLY A SURFACE FINISH

Surface Preparation

- Plywood for interior applications will usually be one of the sanded or textured grades and will require little surface preparation other than to ensure that the surface is thoroughly clean and that all blemishes have been filled with wood filler and sanded smooth.
- Whenever practical, fill the plywood edge grain before painting.
- Always use fine sandpaper and sand with the grain, never across it.
- Do not paint over dust or spots of oil or glue.
- When painting plywood, all knots and pitch streaks should be spot-primed with sealer.
- For best results use good quality paints and follow the paint manufacturer’s instructions.

Paint and Enamel

- Conventional wall and woodwork paints and enamels may be used.
- For surfaces which will be cleaned frequently, use washable paints or enamels.
- First, brush on flat paint or enamel undercoat. Thin if desired.
- Second, apply a second coat of undercoat tinted to shade of finish coat.
- For gloss finish mix equal parts flat undercoat and gloss enamel for second coat.
- Third, apply final coat as it comes from can.
- A two-step finish without second undercoat may be used as an alternative.
- Interesting textured surfaces may be obtained by priming as above, followed by a heavy coat of stippling paint.
- Use brush, roller or sponge to texture.
- When using water-thinned paint, first seal plywood with clear resin sealer, shellac or flat white oil paint, then paint according to manufacturers’ instructions for a sealed surface.

Natural Finishes

- For an easy, inexpensive blonde finish, first apply interior white undercoat thinned so grain pattern shows through.
- Tint if colour is desired.
- Second, apply clear shellac, flat varnish or lacquer.
- Attractive and economical one-coat stain waxes are also available in various colours.
- If a dark stain is preferred, first apply coat of clear resin sealer to subdue grain contrast.

A luxurious light stain glaze can be obtained as follows:

- First apply white undercoat thinned with an equal part of paint thinner.
- Wipe or dry brush for more grain show through.
- Second, apply one coat thinned white shellac or clear resin sealer.
- Third, to provide colour, apply interior undercoat or enamel thinned as in step one.
- Wipe or dry brush to proper colour tone.
- Fourth, apply one coat of flat varnish.
- Rub down with steel wool for added luster.

Congratulations! You did it!

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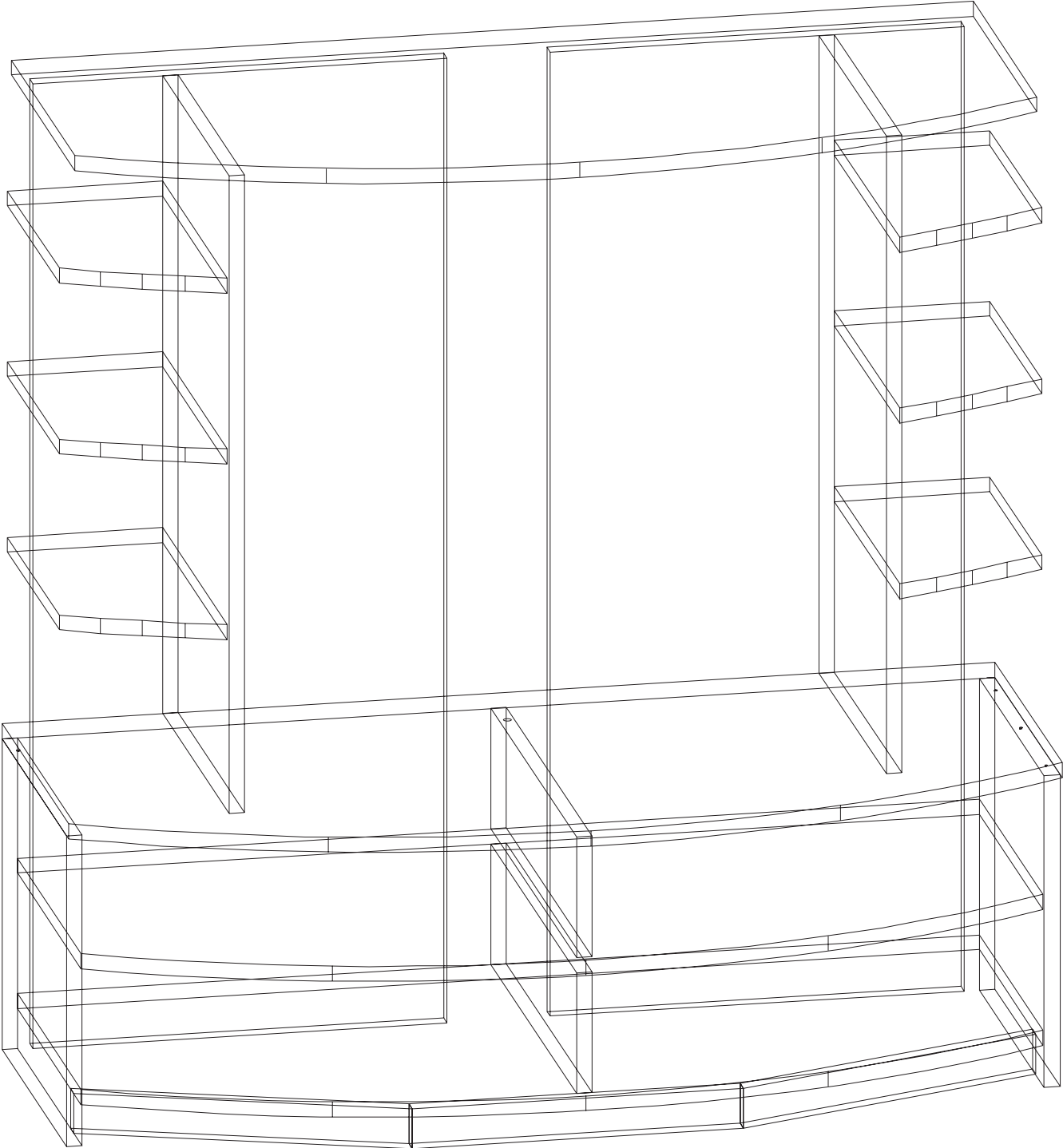
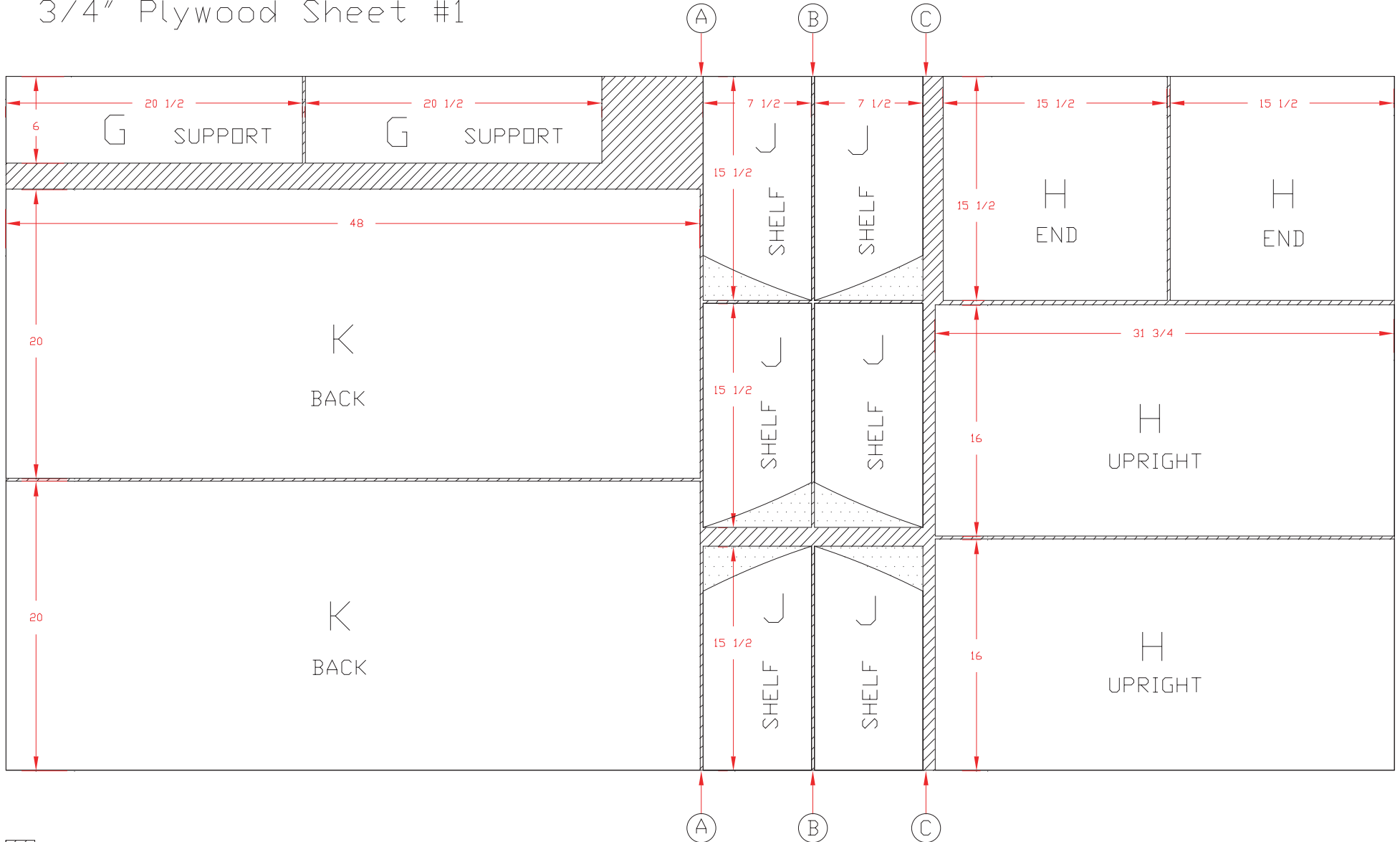


Figure no. 1

PATTERN LAYOUT

3/4" Plywood Sheet #1



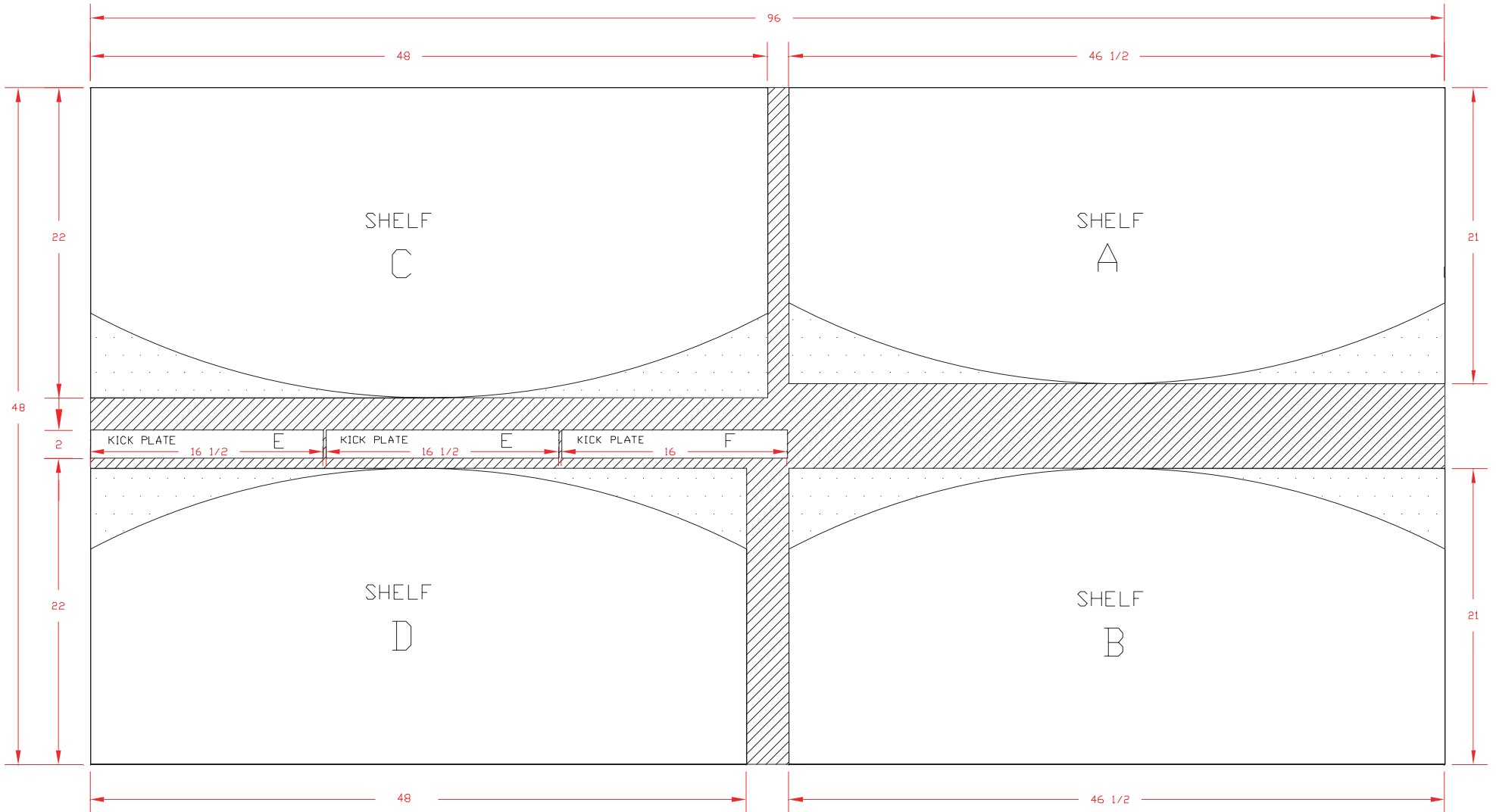
 - indicates material to be removed

 - refer to Fig #3 before cutting curves

Fig #1

Figure no. 2

PATTERN LAYOUT 3/4" Plywood Sheet #2



 - indicates material to be removed

 - refer to Figs #4 and #5 before cutting curves

Fig #2

Figure no. 3

GRID PATTERN LAYOUT FOR CURVED SHELVES

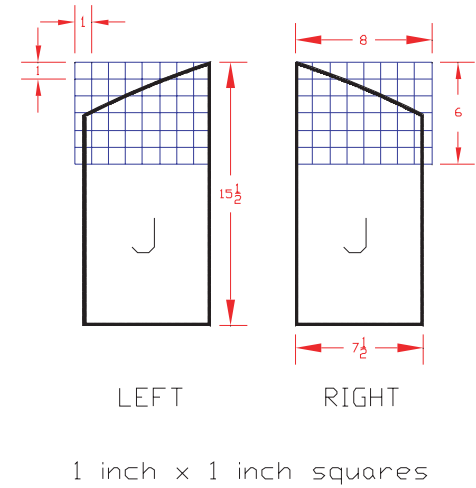
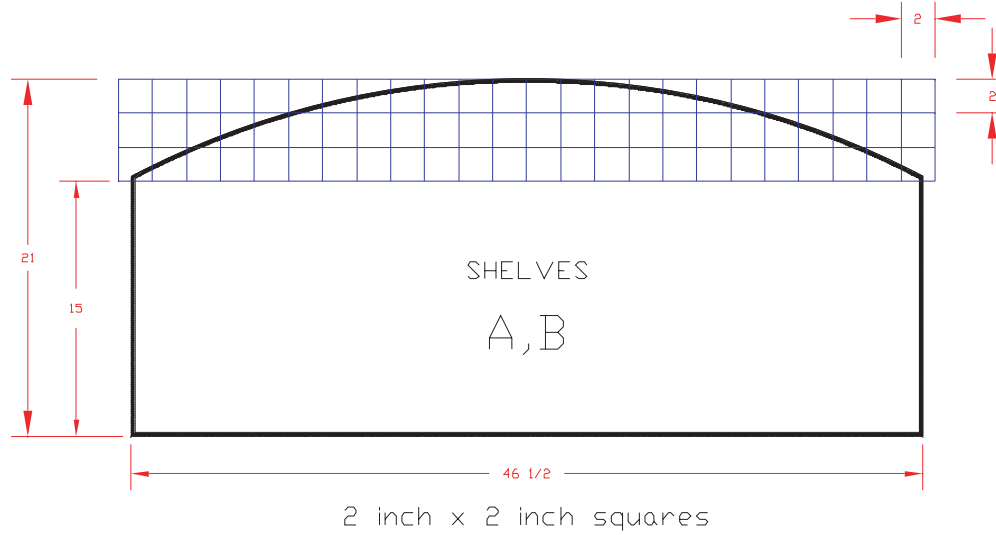
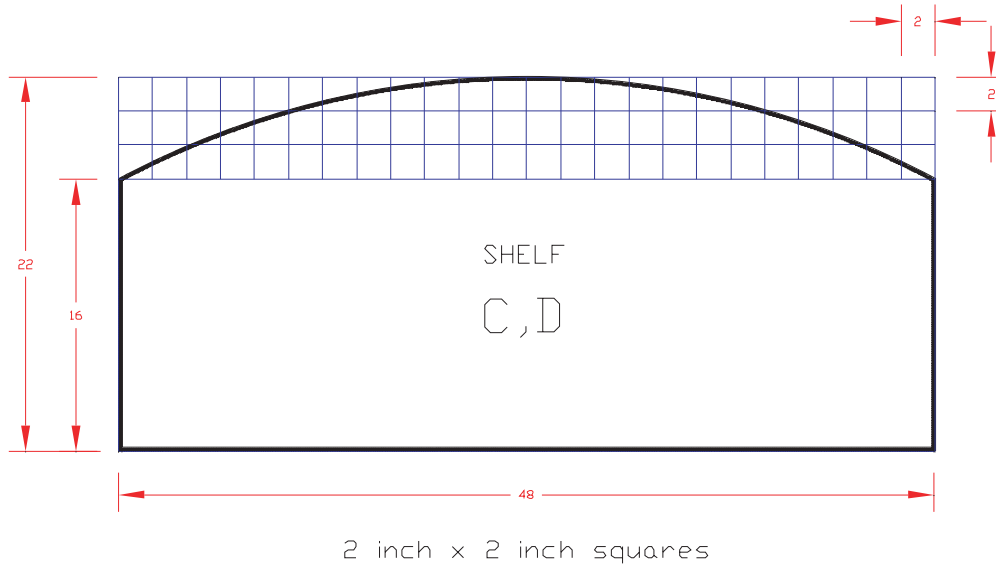
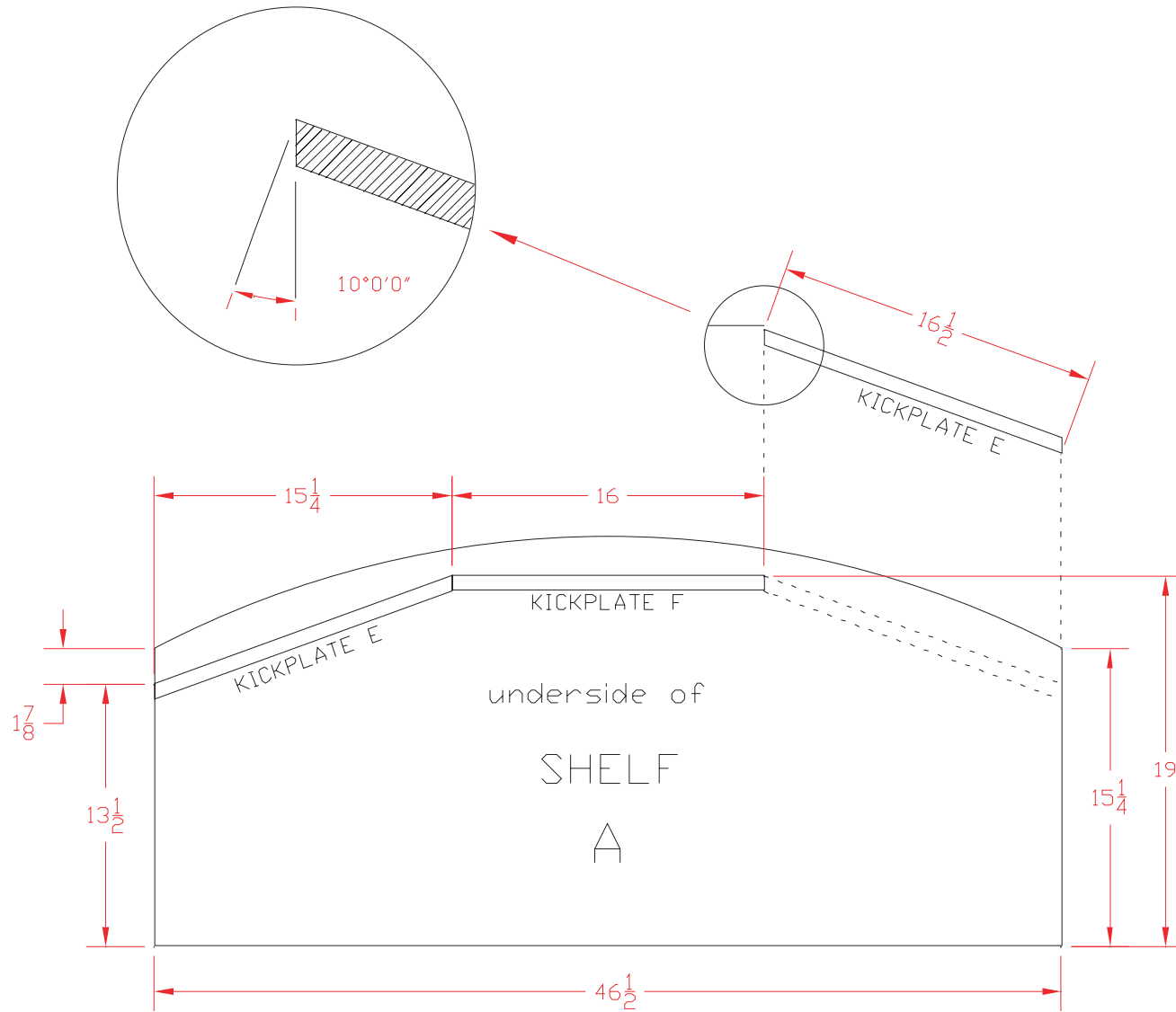


Fig #3

Figure no. 4

LAYOUT FOR KICKPLATE ON UNDERSIDE OF SHELF "A"

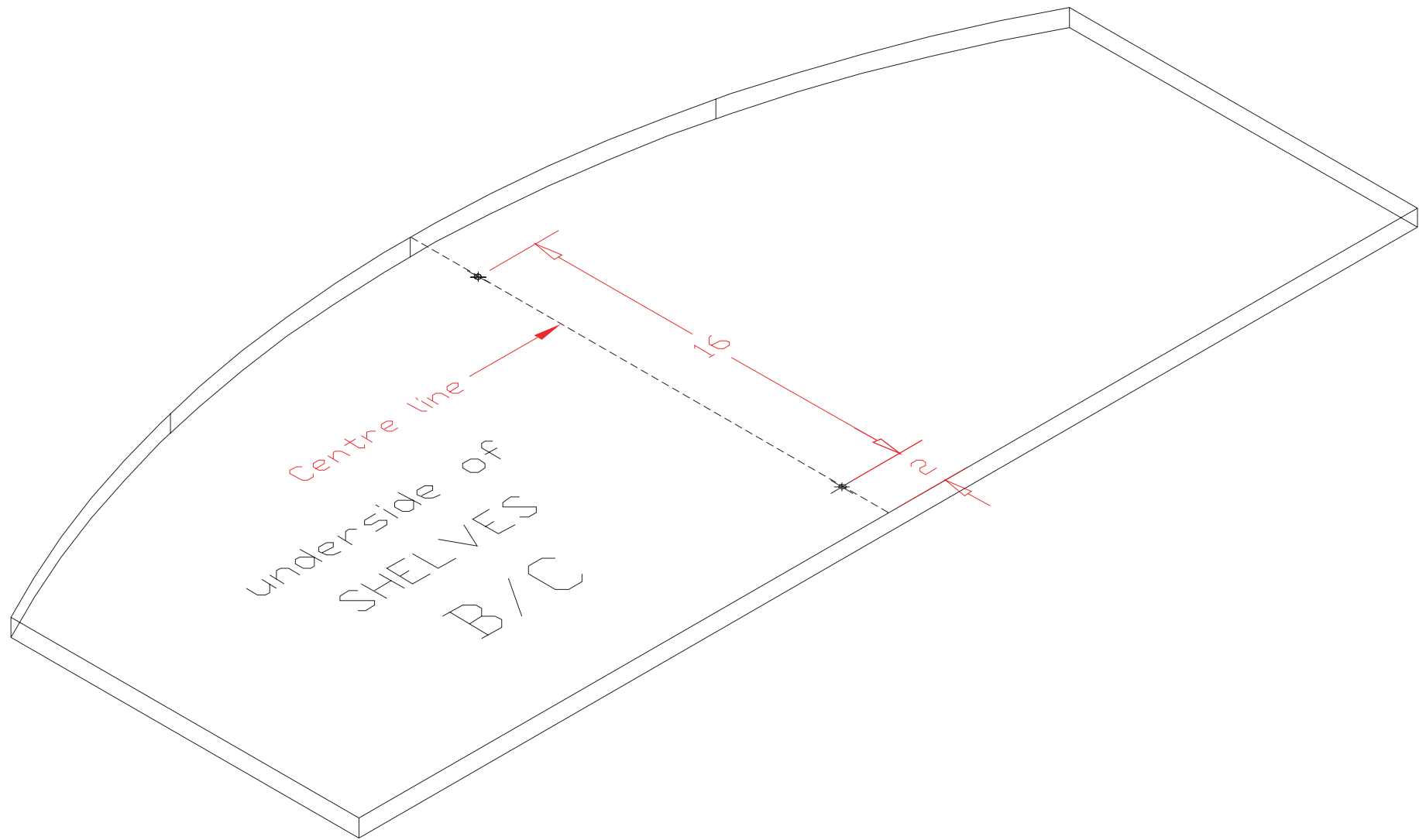


Both ends of KICKPLATES "E" to be cut at 10 degree angles.

Fig #4

Figure no. 5

LOCATION OF DOWEL HOLES ON THE UNDERSIDES OF SHELVES "B and C"

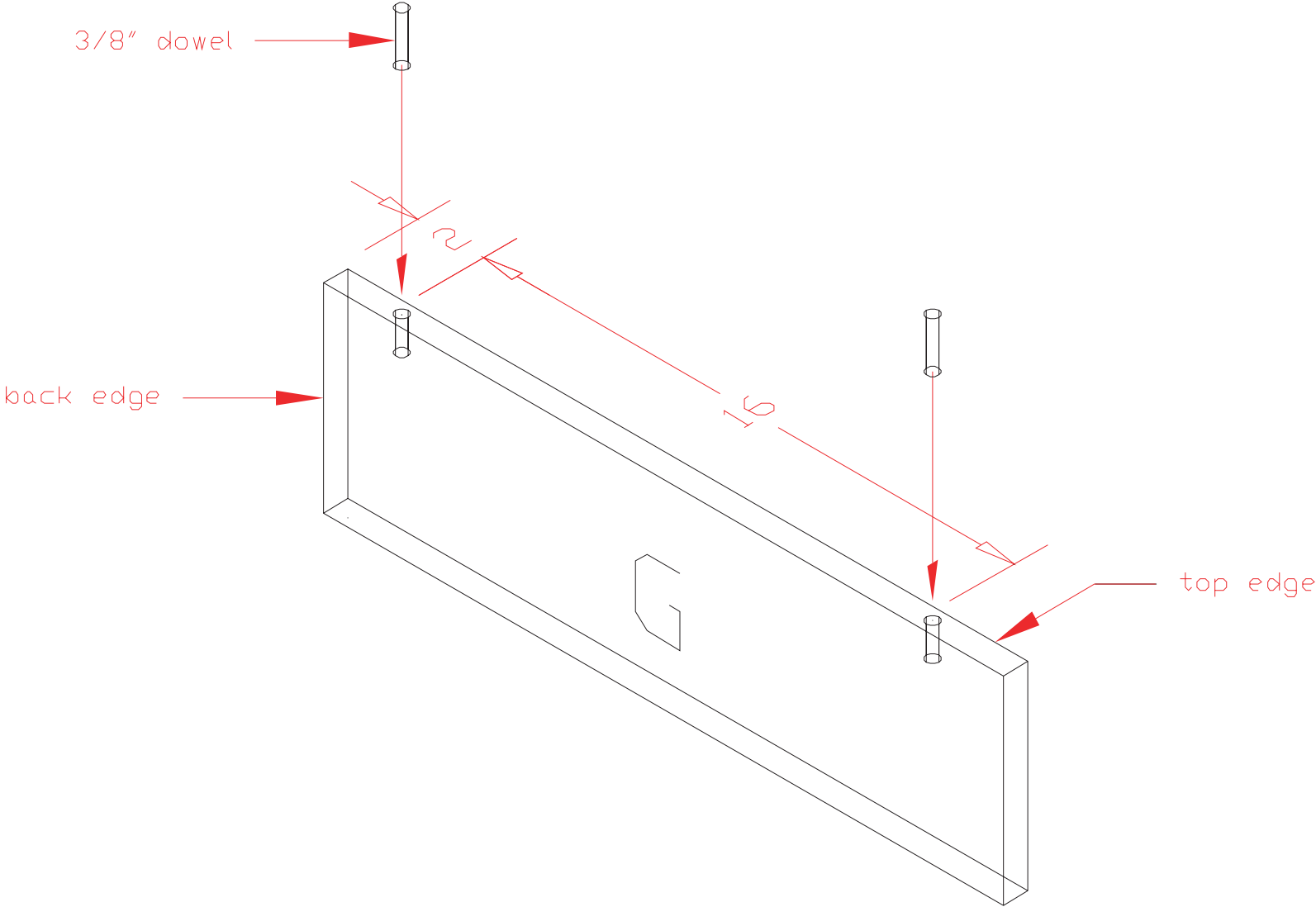


Drill (2) 3/8" diameter x 1/2" deep holes on the underside of SHELVES "B and C".

Fig #5

Figure no. 6

LOCATION OF DOWELS IN SUPPORTS

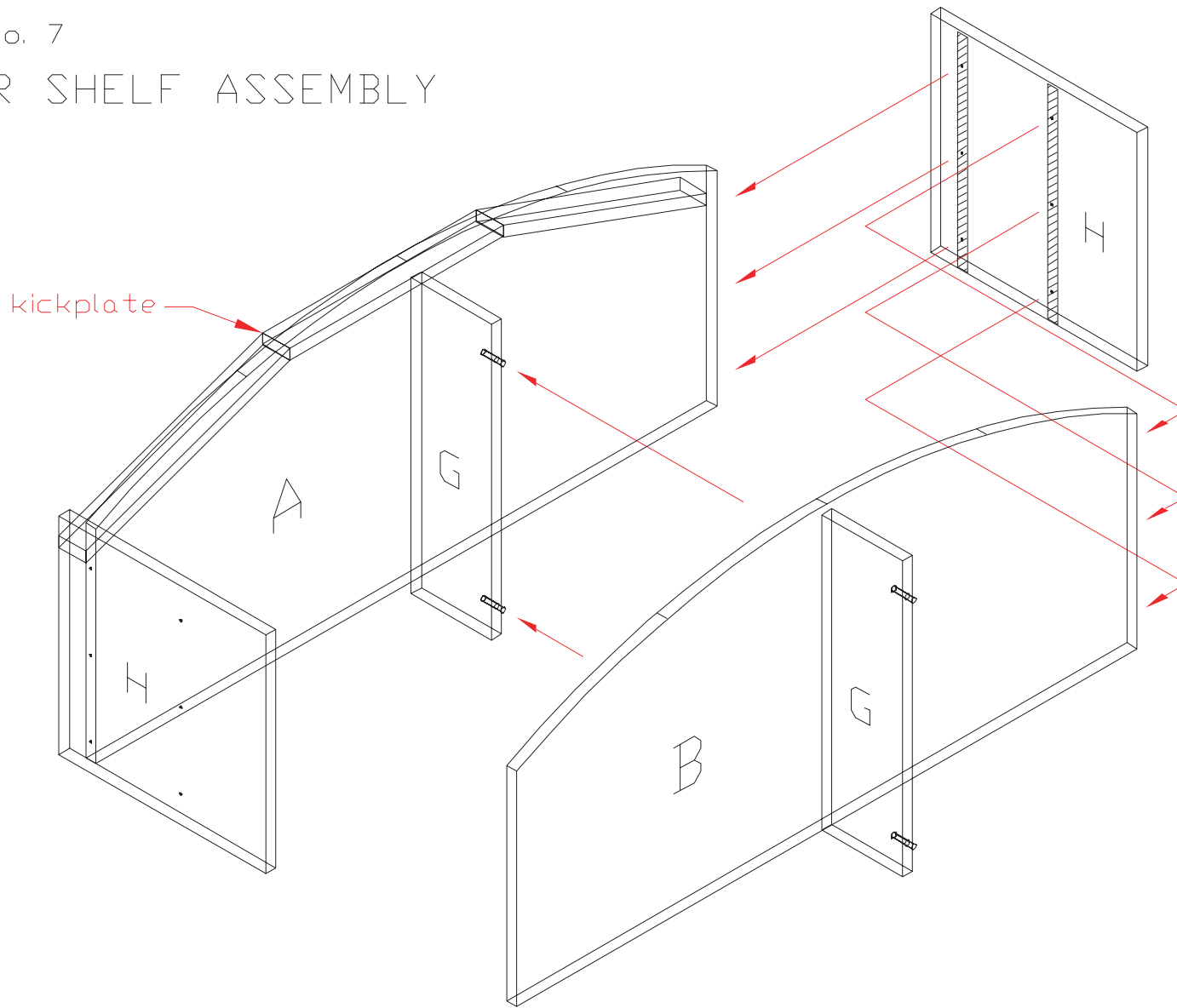


Drill (2) 3/8" diameter x 1-1/4" deep holes in top edge of both SUPPORTS.
Place 3/8" diameter dowels into holes.

Fig #6

Figure no. 7

LOWER SHELF ASSEMBLY



Attach SUPPORTS to topsides on SHELVES "A and B"

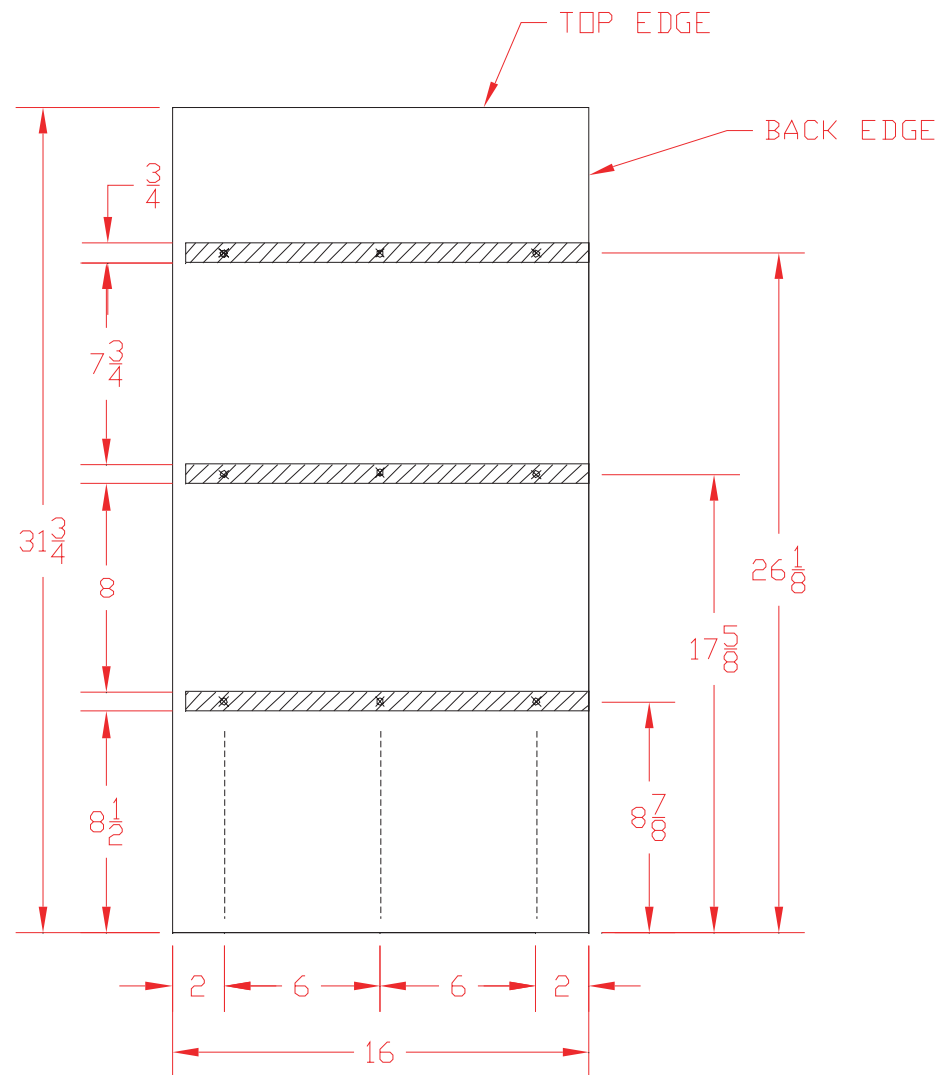
Fit the dowels into the the 3/8" holes on the underside of SHELF "B".

Attach the ENDS to SHELVES "A and B".

 - indicates location of SHELVES "A and B" on ENDS

Figure no. 8

LOCATION OF PRE-DRILLED SCREW HOLES ON UPRIGHTS



-indicates location of small SHELVES "J" on UPRIGHTS

Fig #8

Figure no. 8a

CROSS SECTION OF COUNTER-SUNK SCREW HOLE

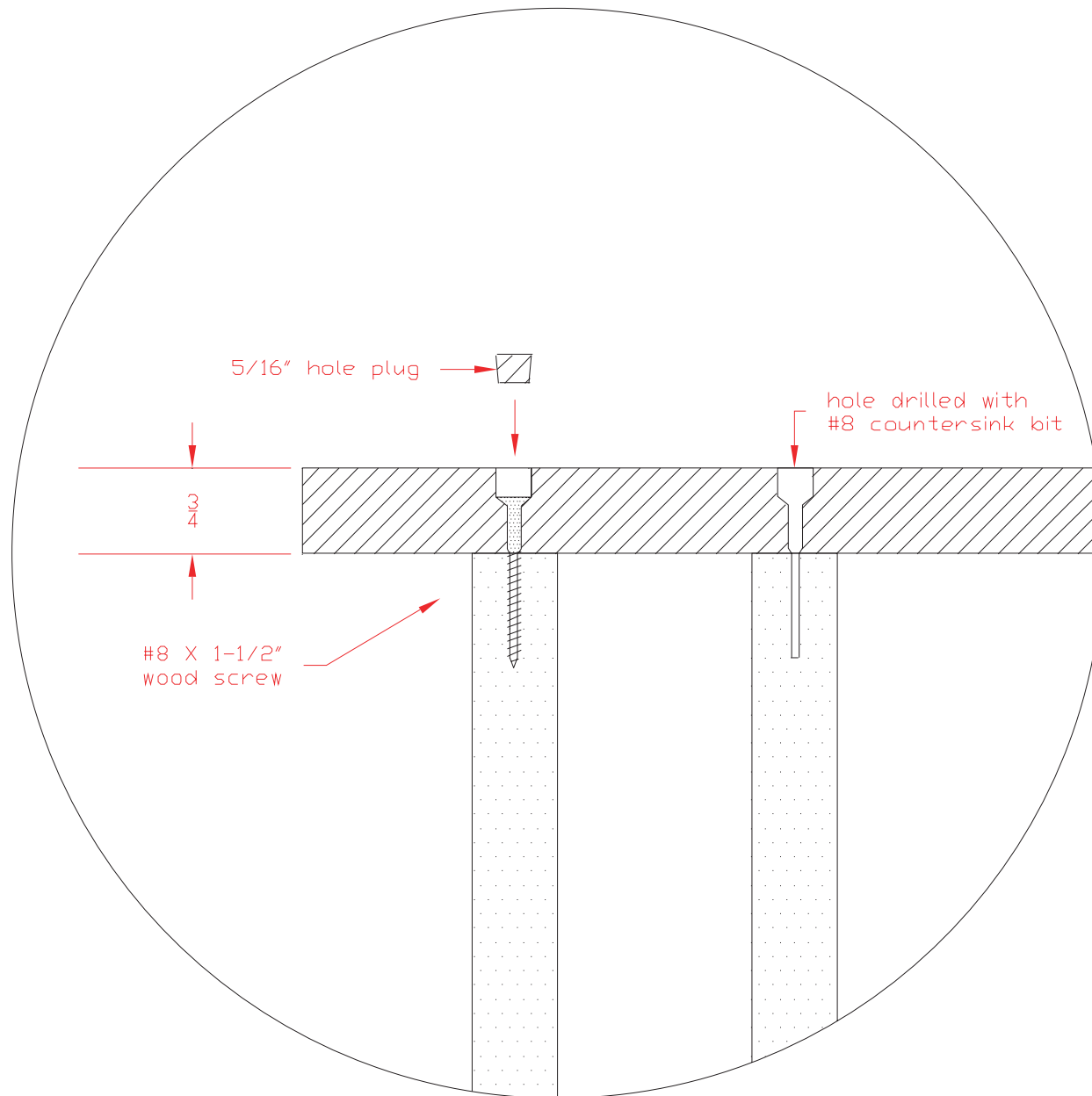
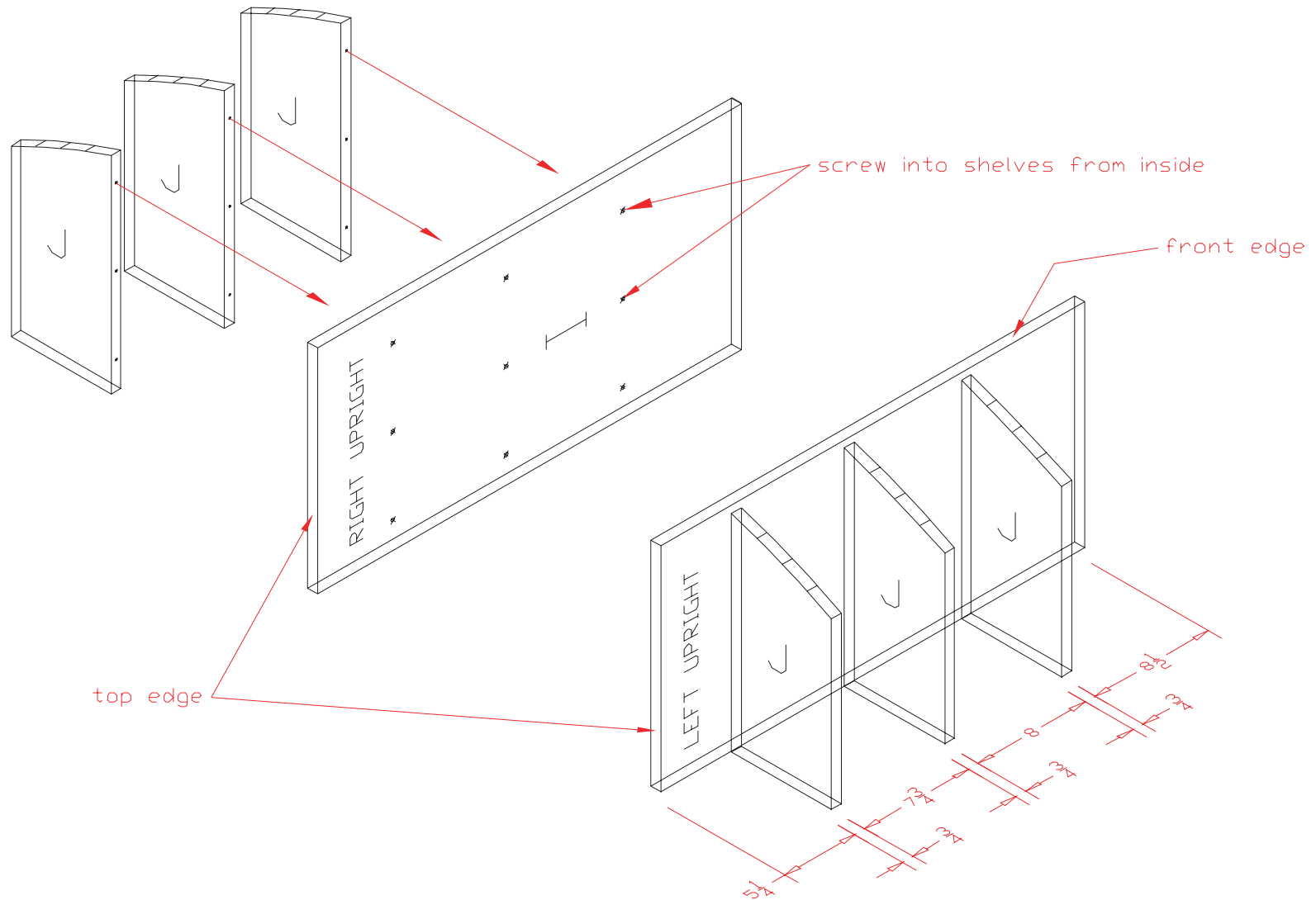


Fig #8a

Figure no. 8b

ATTACHMENT OF SMALL SHELVES "J" TO UPRIGHTS

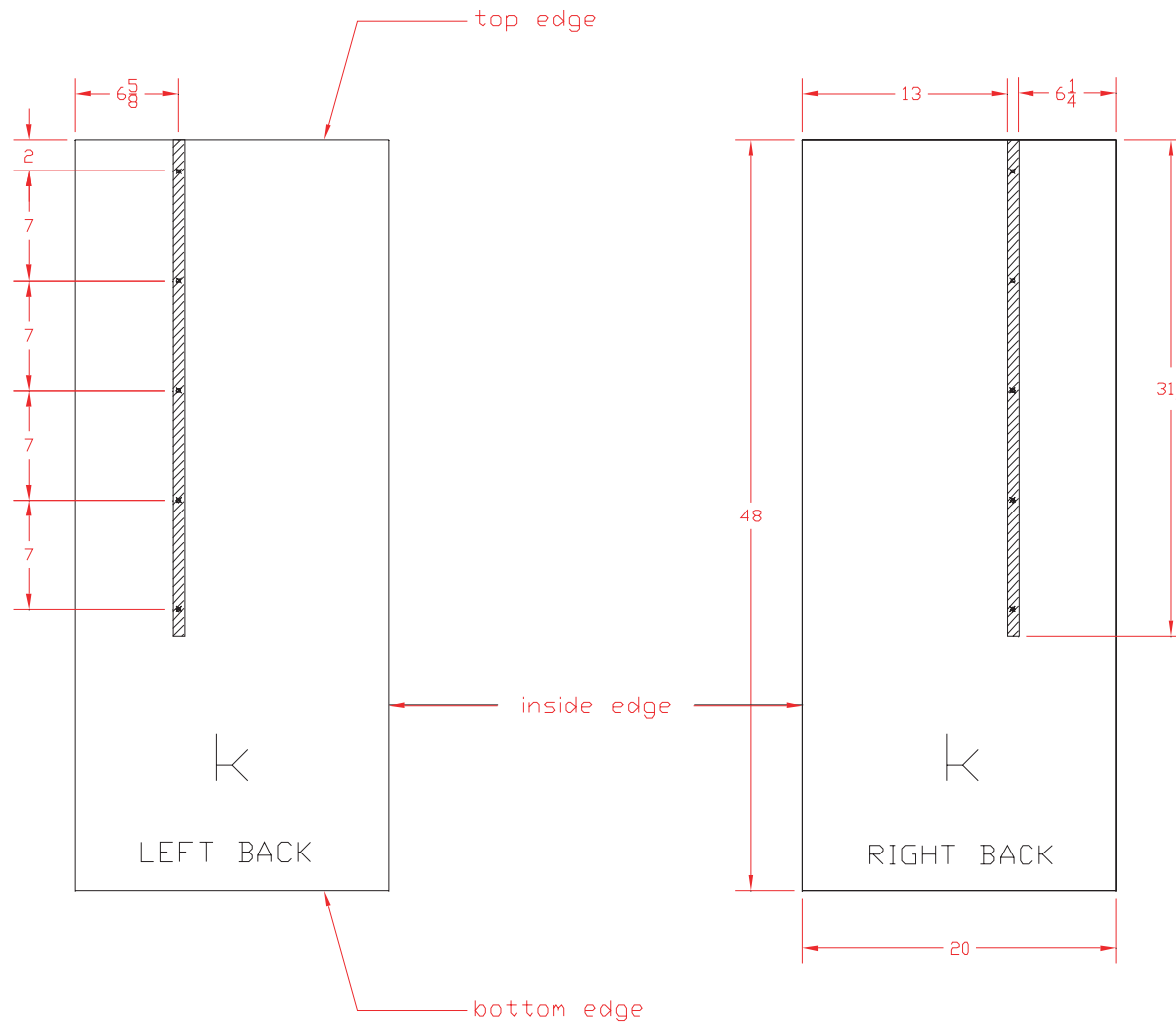


x indicates location of pre-drilled screw holes

Fig #8b

Figure no. 9

LOCATION OF PRE-DRILLED SCREW HOLES ON BACKS



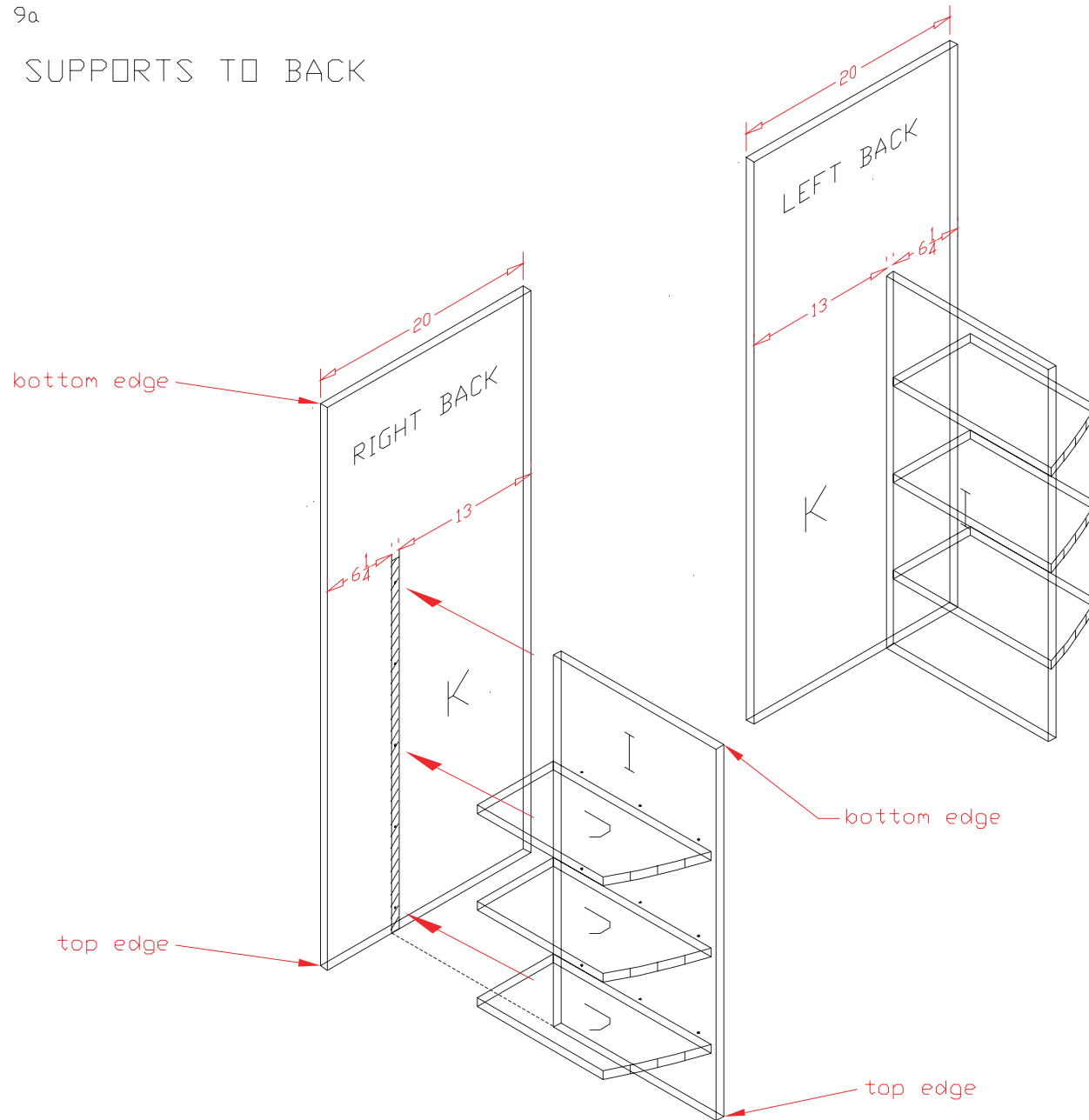
Dimensions apply to both LEFT and RIGHT BACKS.

▨ - indicates location of UPRIGHTS on BACKS

Fig #9

Figure no. 9a

ATTACH SUPPORTS TO BACK

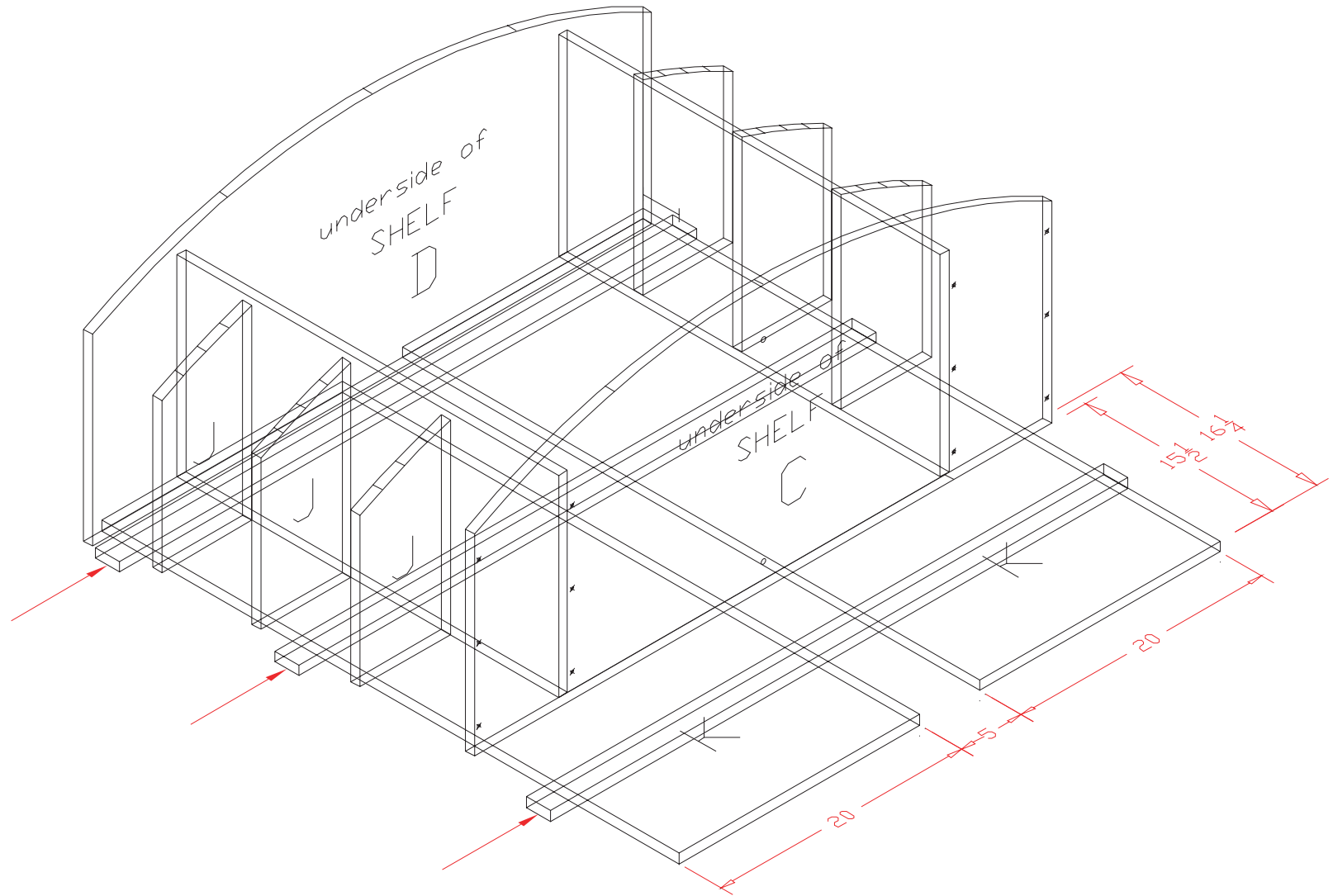


NOTE: BACKS and UPRIGHTS are turned upside down, resting on top edges for assembly.

Fig #9a

Figure no. 10a

ATTACH SHELVES "C and D" TO UPPER ASSEMBLY



Place 3/4" strips of plywood placed under the UPPER ASSEMBLY.

Fig #10a

Figure no. 11

ATTACH LOWER ASSEMBLY TO UPPER ASSEMBLY

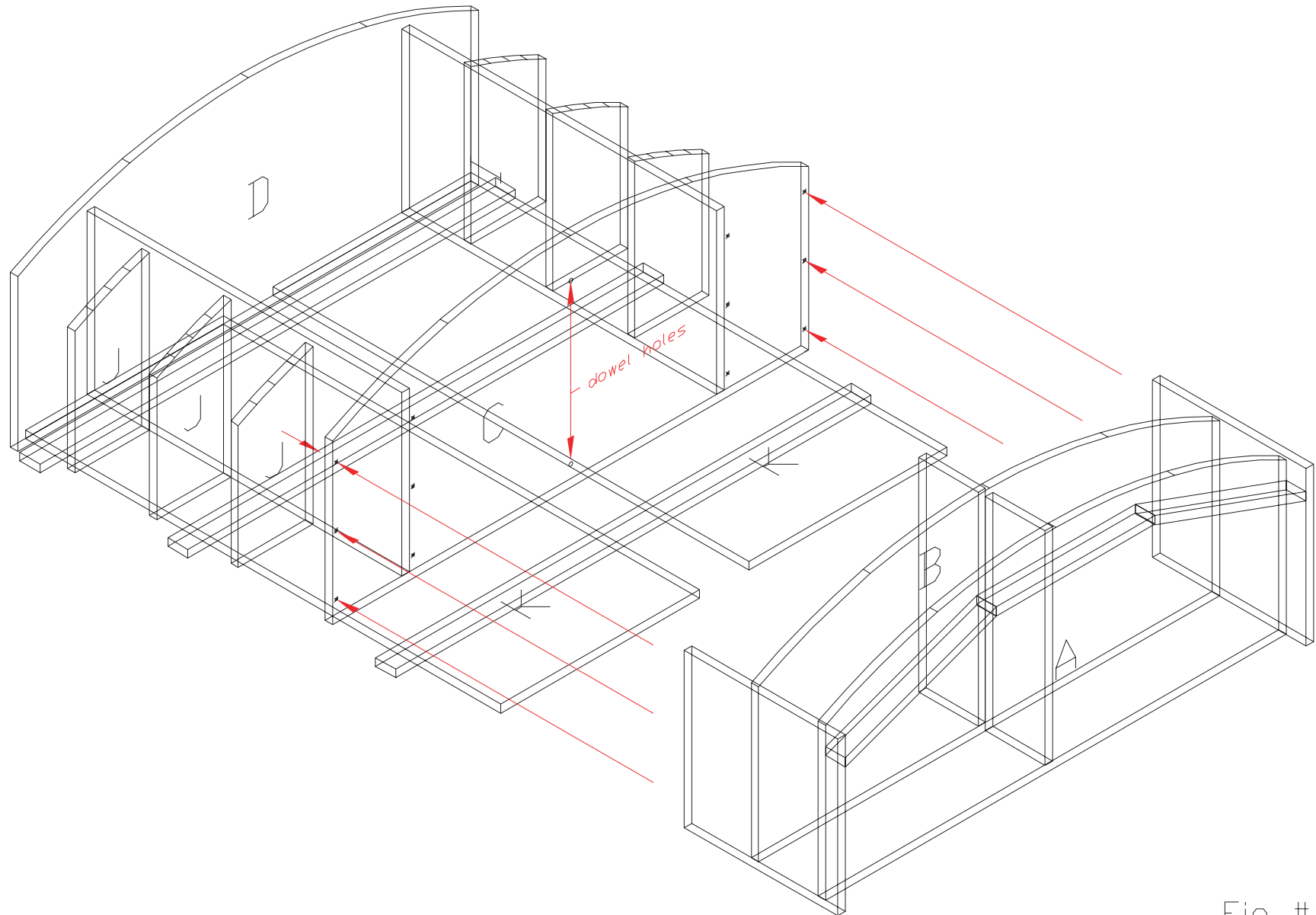
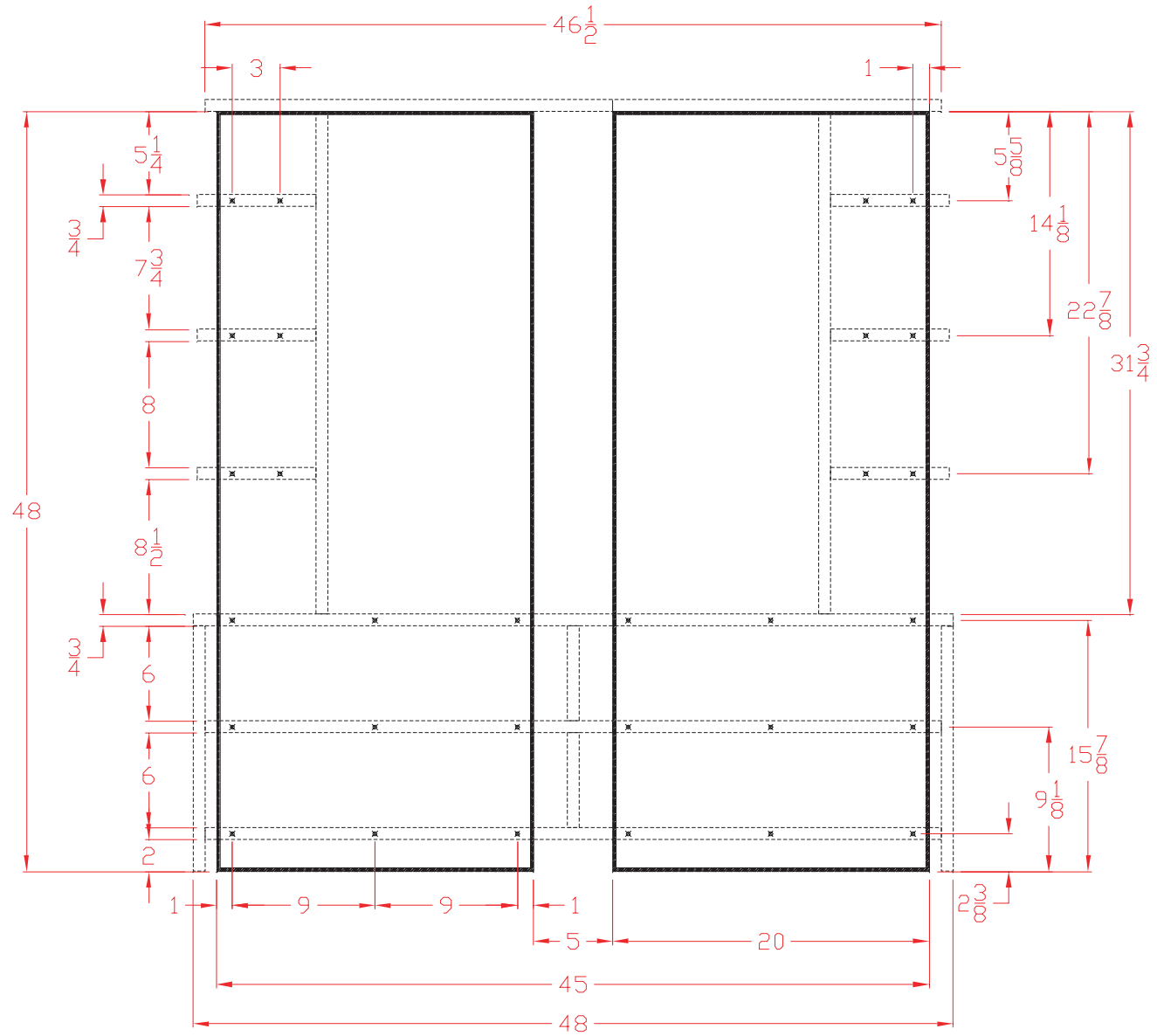


Fig #11

Figure no. 12

LAYOUT FOR LOCATION OF SCREWS ON BACKS



* indicates location of screws

Fig #12