

WAVE SHELF



Project Skill Level: INTERMEDIATE

Plywood Used: CANPLY EXTERIOR Good Two Sides (G2S) or precision sanded Aspen

MATERIALS LIST:

- | | | |
|------|---|-------------------|
| (1) | ¾" x 4 ft x 8 ft plywood panel | Wood Glue |
| (20) | #8 x 2" Robertson or Phillips wood screws | Wood Patch/Filler |
| (44) | Lineal feet - iron on shelf edge banding - (optional) | |

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; 1 ½" hole saw- drill bit; #8 Countersink bit; nail set; multi-head screwdriver; carpenters square; 180/220/320 grit sandpaper; ½" wide medium tooth wood file; 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. All screw holes are to be pre-drilled to prevent the wood from splitting.
3. Clamp a scrap piece of wood to the back of all pieces to be drilled to prevent chip-out.
4. Glue all contact surfaces unless noted and remove excess glue with a damp cloth.
5. Insure plywood panels are well supported and level before cutting.

INSTRUCTIONS:

1. PRIOR TO CUTTING

- Sand the whole plywood panel: 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. MAKING A PATTERN LAYOUT

- Follow **Figure no. 1** for the pattern layout

3. CUTTING OUT THE PIECES

- Cut out pieces according to the pattern layout (**reminder: leave 1/8" for width saw blade.**)
- Label all pieces with the letter indicated, referring to **Figure no. 1.**
- Refer to **Figure no. 2** for details on the pattern layout of SIDES A and B.
- Refer to **Figure no. 3** for details on the pattern layout of the SHELVES.
- Refer to **Figure no. 4** for details on the pattern layout of the BACKS.

When finished with the table saw, you'll have the following square pieces:

(1) SIDE piece containing SIDES A and B	24" x 72"
(1) BACK piece containing BACKS A/B	23-3/4" x 11-3/4"
(1) BACK piece containing BACKS C/D	23-3/4" x 6-1/4"
(1) BACK piece containing BACK E	23-3/4" x 3-3/4"
(3) SHELF pieces containing SHELVES A/B/C/D/E/F	31-3/8" x 20"

4) TRANSFERRING A CURVED LINE FROM THE PATTERN LAYOUT TO THE PLYWOOD:

- **Figure no. 2, 3, and 4** illustrate grids needed to chart out the curved lines for the shelf pieces.
 - Each square in the diagram equals 1 inch x 1 inch square.
- a. Draw the grid full size onto a large piece of paper.
 - 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 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 centerline of your drawing with the centerline marked on the plywood.
 - g. Secure the pattern piece in place, with tape or a weight.
 - h. Trace the curved edge onto the plywood with pencil. On SIDES "A and B" lift the pattern piece and position it along the reference marks as noted in **Figure no. 2**. Continue down the length of the SIDE until you have the full wave drawn.
 - i. Repeat steps 'a' through 'e' three times: one pattern for SIDES "A and B"; one pattern for BACKS "A through E" and one pattern for SHELVES "A through F".
 - j. Repeat steps 'f' through 'h' for the BACKS and SHELVES.

5) CUTTING THE CURVED EDGES:

- Use the jigsaw to cut along the curved lines.
- One cut along the wave line creates two parts, except for BACK "E", as shown in **Figure no. 1**.

Note: The excess material from BACK "E" may be used as BACK "F" for the top shelf.

6) CUTTING THE SLOTS

- The fit of the slots is important - follow the instructions carefully and test the fit frequently.
- Ensure slots are drawn, based on dimensions of **Figures no. 2 and 3**.
- Using a 3/4" Forsener bit or 3/4" hole saw bit, drill out the ends of the slots. Ensure the bit is centered in the slot between the bottom line and the two sidelines.
- Using the jig saw, cut the straight lines on each slot. Cut with the blade on the inside of the line.
- Using a 1/2" wood file, remove the excess material from the corners. Be careful not to 'bite' into the surrounding wood with the file. File along length of slot to ensure uniformity.
- Test the size of the slots by trying to insert a piece of 3/4" plywood scrap.

Note: Ensure tight fit and use a rubber mallet if required.

7) ATTACHING BACKS TO SHELVES

- Refer to **Figure no. 5** for the assembly of BACKS to SHELVES.

IMPORTANT NOTES FOR ESTABLISHING THE WAVE PATTERN DURING ASSEMBLY:

- Mark the locations of the screw holes to be drilled.
- Using a #8 Countersink drill bit, pre-drill holes on the underside of the SHELF, as shown.
- Using a 1/8" drill bit, pre-drill holes into the bottom edge of the BACK.
- On a flat and level work surface, lay the BACK flat, right side up.
- Stand the SHELF upright on its back edge.
- Place the SHELF against the lower edge of the BACK, aligning pre-drilled holes and centerlines.
- Using wood glue and #8 x 2" wood screws into pre-drilled holes, attach the SHELF to the BACK.
- Repeat above steps for SHELVES and BACKS "B through E". Match SHELVES to BACKS.

8) APPLYING SURFACE FINISH BEFORE ASSEMBLING

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)!
- When painting plywood, all knots and pitch streaks should be spot-primed with sealer.

Paint and Enamel

- a. Brush on flat paint or enamel undercoat. Thin if desired.
- b. 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.)
- c. Apply final coat from the can (or a 2-step finish without second undercoat is another alternative).

Note: 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

- a. For an easy, inexpensive blonde finish, first apply interior white undercoat thinned so grain pattern shows through. (Tint if colour is desired.)
- b. Apply clear shellac, flat varnish or lacquer (or economical one-coat stain waxes are also available in various colours).

Note: When using a dark stain, first apply coat of clear resinsealer to subdue grain contrast.

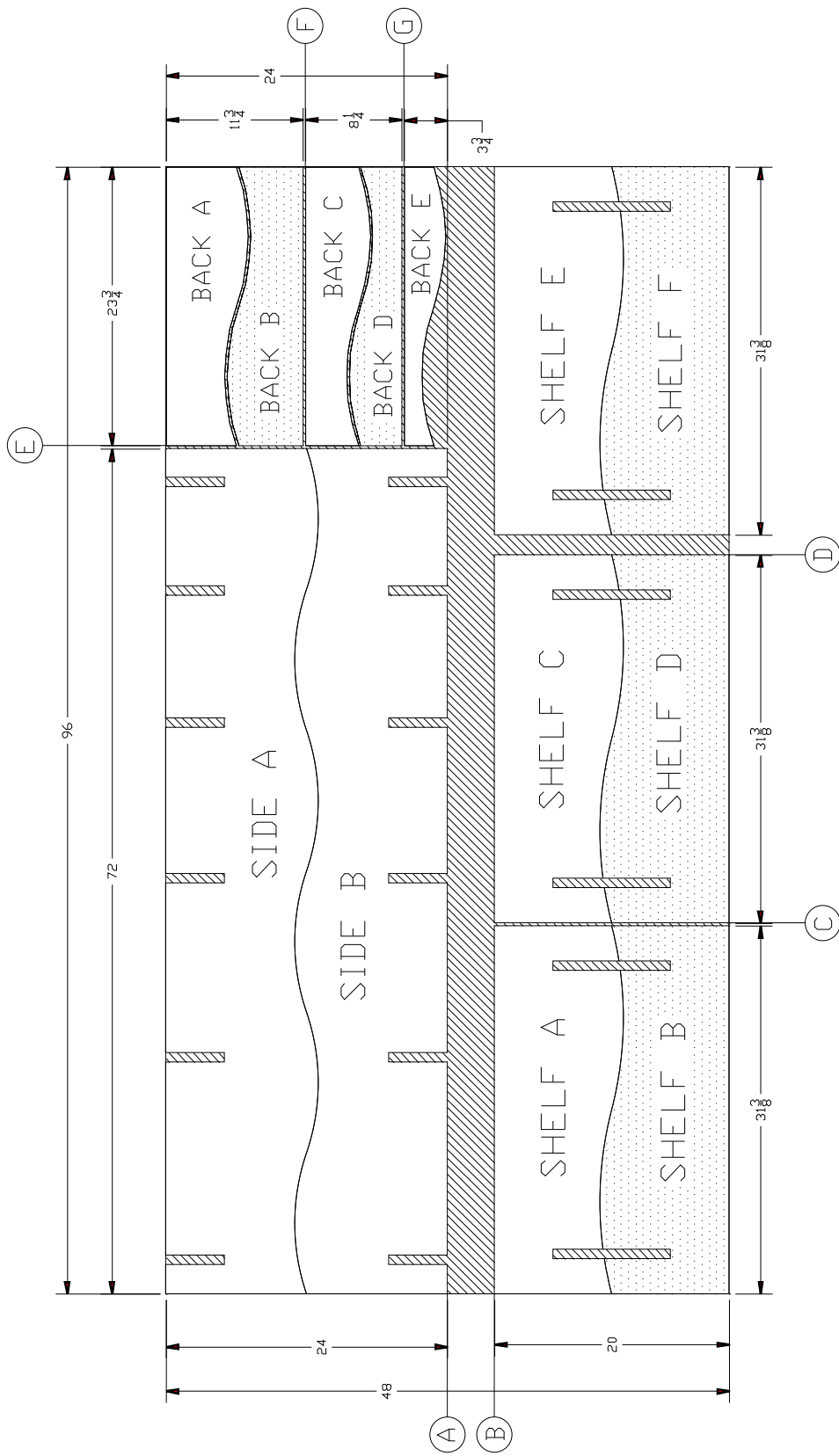
9) ASSEMBLING THE WAVE SHELF

- Using #8 x 2" wood screws in the pre-drilled holes, fasten the shelves to each side as shown in **Figure no. 7**.

Congratulations! Assembly is complete.

Figure no. 1

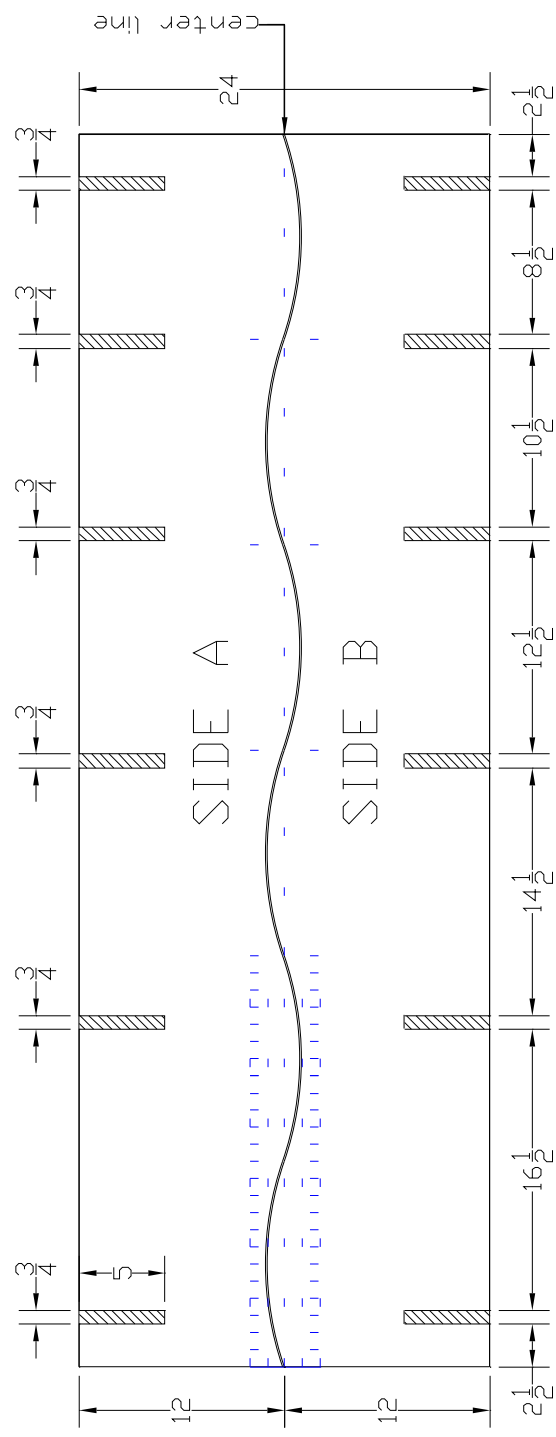
PATTERN LAYOUT
3/4" Plywood Sheet #1



- indicates material to be removed
- indicates parts to be flipped over, as per Assembly Instructions

Fig #1

Figure no. 2
 PATTERN LAYOUT FOR SIDES "A and B"
 ONE CUT CREATES THE WAVE ON BOTH SHELVES



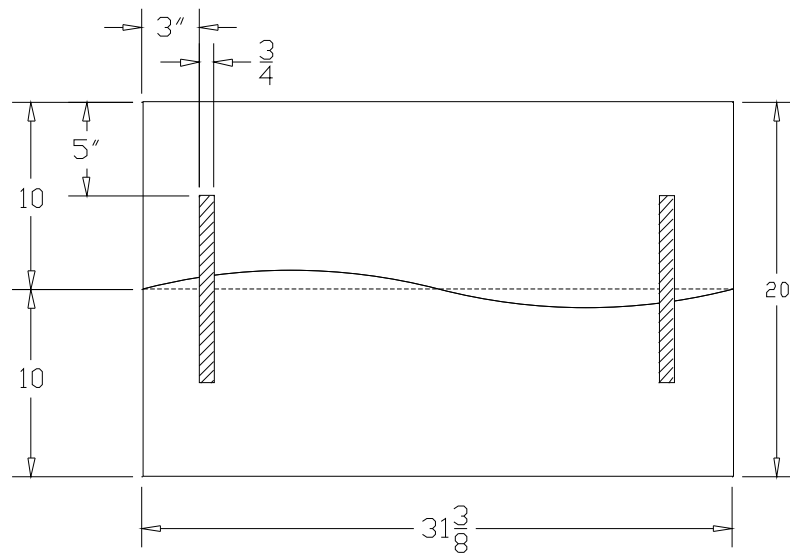
 - indicates material to be removed

Fig #2

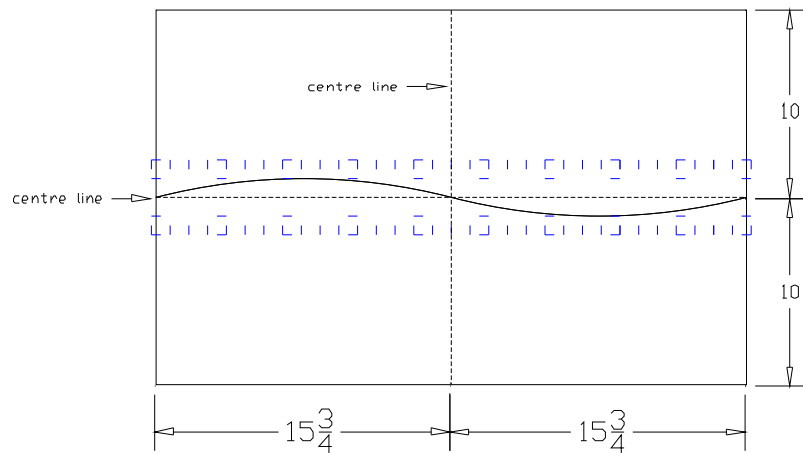
Figure no. 3

PATTERN LAYOUT FOR SHELVES

ONE CUT CREATES THE WAVE ON BOTH SHELVES



 - indicates material to be removed



Each square = 1" x 1"

Fig #3

Figure no. 4

LAYOUT FOR SHELF BACKS

ONE CUT CREATES THE CURVE IN TWO SHELF BACKS

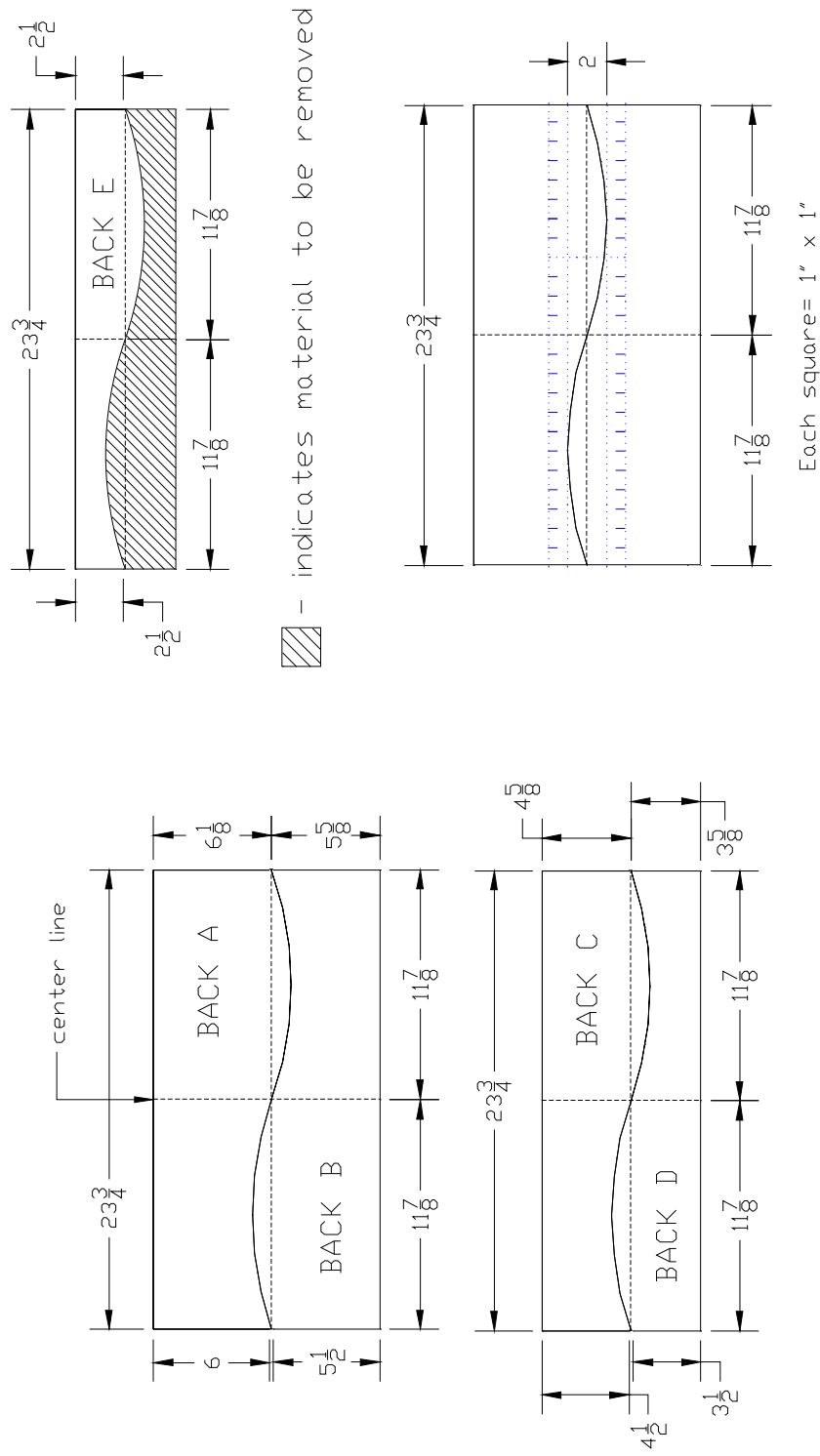
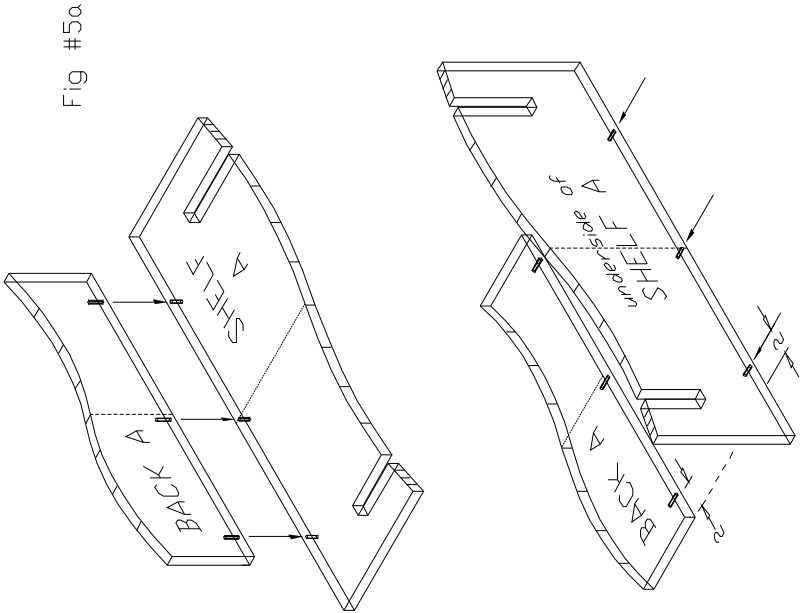
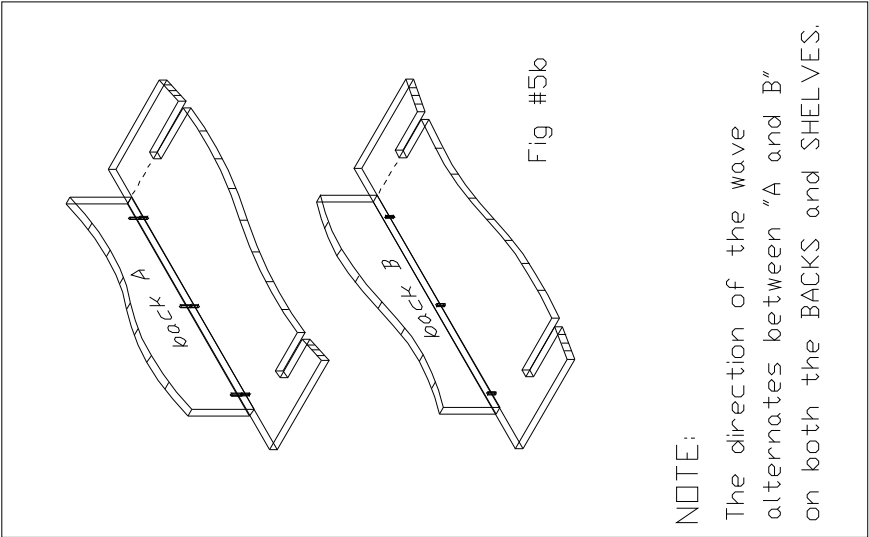


Fig #4

Figure no. 5
SHELF and BACK ASSEMBLY



Align center lines.
Check that BACKS fit between slots on SHELVES.

Fig #5

Figure no. 6
WAVE SHELF ASSEMBLY

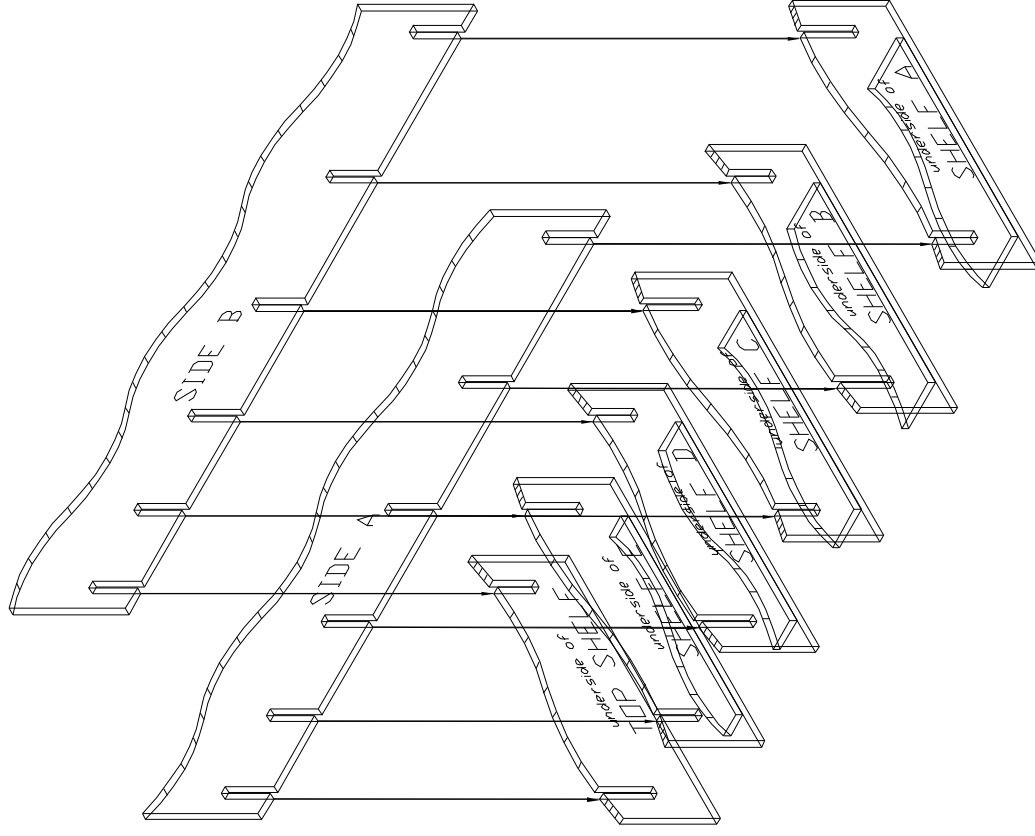
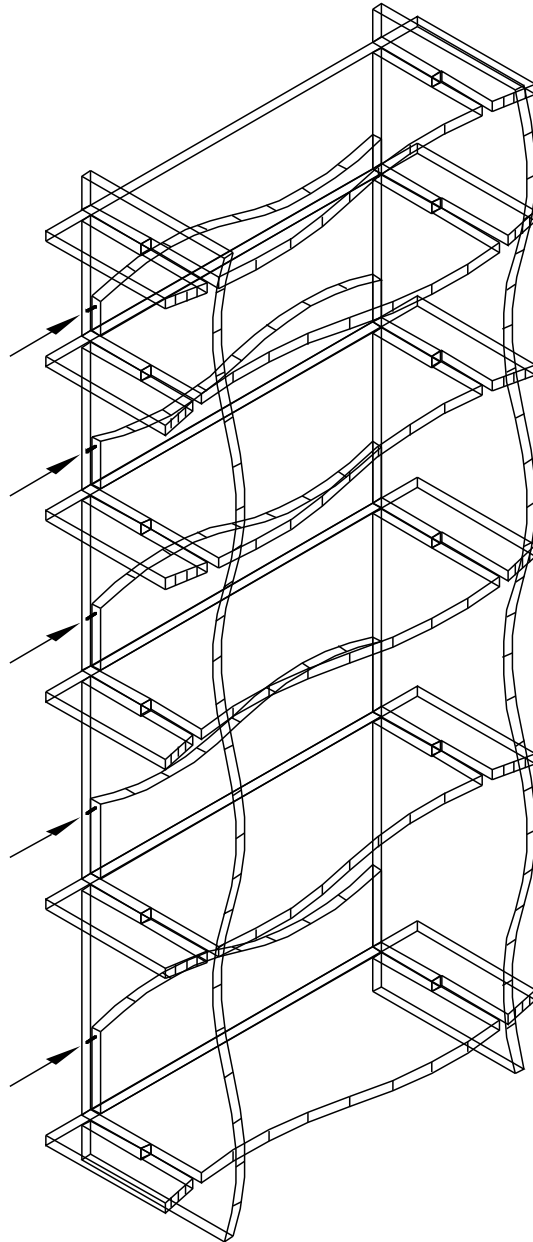


Fig #6

Figure no. 7
SECURING THE WAVE BOOKSHELF



Mark screw holes $1/2$ " down from top on each BACK, $3/8$ " in from back edge.


Fig #7

CANADIAN PLYWOOD

SUPERIOR QUALITY & PERFORMANCE

WHY CANADIAN PLYWOOD?


OUTSTANDING QUALITY

 CANPLY plywood will meet your highest standards of quality. Our panels have all the features expected from a premium structural panel.

SMALLER KNOTS

 Long, cold, Canadian winters produce quality tight-knotted, fine grained wood.

SUPERIOR WET PERFORMANCE

 CANPLY plywood continues to perform even when wet and our Canadian wood species have shown superior resistance to warp.

VERSATILITY

 CANPLY member companies can produce a vast range of products to meet your specifications or we can supply our patented T&G roof and floor sheathing for easy installation.

Canadian Plywood is the choice of builders worldwide for over 50 years.



Benefits of Using Plywood:

Plywood outperforms all substitute wood-based panels on the market today.

Highly Stable

Plywood is a highly stable panel. When exposed to moisture or high humidity, plywood is up to seven times more resistant to thickness swell than substitute wood-based panels. Plywood also returns to its original dimensions when it dries.

Stronger and Lightweight

Plywood is stronger than substitute wood-based panels in the four important engineering strength properties of bending, tension, compression and planar shear and plywood weighs up to 40% less than substitute wood-based panels of equivalent thickness.

Impact Resistant

Plywood is a highly impact-resistant panel and continues to perform even when wet.

Proven Performance

Plywood has over 50 years of proven service as a structural panel for homes and construction and remains, according to surveys, the panel of choice by home buyers, contractors, architects and engineers.

Environmentally Responsible

Plywood is manufactured from logs averaging 25cm (10 inches) in diameter from managed sustainable forests. 100% of the log is utilized for either veneer, or by-products, such as 2x4 lumber, landscaping ties or chips for pulp and paper. Nothing is wasted.

Value Added

Plywood manufacturing, because it is a value added process, employs four times as many people compared to the manufacture of substitute wood-based panels - using the same volume of logs.

Please visit our website for more information:
www.canply.org