Bakersfield College
Industrial Technology

Woodworking Technologies
Intermediate Cabinetmaking
Wood B5

Instructor: Steve J. Hageman, M.A.

Project/Procedure Booklet

Magazine End Table

Plan borrowed with permission from:
Gary E. Cox, M.A

Revisions/Additions by S. J. Hageman
Revised 04/12/07
Project Sheet

Magazine End Table

Student Performance Goal [Bottom Line!!]:

Given: Necessary equipment, materials, supplies, and all related instruction.

Performance: To construct a Magazine End Table from raw materials to finish product, utilizing all hand tools and machines.

Standard: All measurements to be within reasonable accuracy, quality, or finish appearance to meet with the acceptance of the Instructor. Length of time should not exceed one (1) semester.

Motivation [Why?] :

The following pages of this procedure/packet contain most of the information to construct a Magazine End Table. This project has been selected for the intermediate machine woodworking student because of the variety of experiences gained. Among these are: measuring, layout, joinery preparation, gluing, clamping, and finishing.

It is our belief that you will receive the maximum benefit from this course by adhering to the guidelines within this packet. There will be time for short cuts and self-expression at a later date during this course.

Evaluation:

- The Magazine End Table will be one of the major projects for our furniture and cabinet making students. This project is required and reflects a significant percentage of your final grade.

- The evaluation will be based upon: joinery, preparation, adherence to plans, over-all construction quality, Bill of Materials, and your Daily Work Performance Evaluation.

Safety:

- All safety tests shall be completed with 100% accuracy and all required signatures obtained prior to the student starting any laboratory work.
## ROUGH CUTTING LIST
### MAGAZINE END TABLE

**Wood B5**

<table>
<thead>
<tr>
<th>PROJECT PIECES</th>
<th>ROUGH CUTTING DIMENSIONS</th>
<th>NET B.F.</th>
<th>ROUGH B.F. (Round Up)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right/Left Side</td>
<td>2 ea - 1” X 26” X 22”</td>
<td>7.9 B.F.</td>
<td>8 B.F.</td>
</tr>
<tr>
<td>Bottom</td>
<td>1 ea - 1” X 15” X 25”</td>
<td>2.6 B.F.</td>
<td>3 B.F.</td>
</tr>
<tr>
<td>Back / Divider</td>
<td>1 ea - 1” X 26” X 22”</td>
<td>3.9 B.F.</td>
<td>4 B.F.</td>
</tr>
<tr>
<td>Slant Panel</td>
<td>1 ea - 1” X 15” X 24”</td>
<td>2.5 B.F.</td>
<td>3 B.F.</td>
</tr>
<tr>
<td>Top [Solid]</td>
<td>1 ea - 1” X 18” X 26”</td>
<td>3.5 B.F.</td>
<td>4 B.F.</td>
</tr>
<tr>
<td>Face Frame Panel &amp; FF Rails/Stiles</td>
<td>1 ea - 1” X 13” X 24”</td>
<td>2.2 B.F.</td>
<td>2.5 B.F.</td>
</tr>
<tr>
<td>Case Sub-Frames</td>
<td>4 ea - 1” X 3 ¼” X 15”</td>
<td>3 B.F.</td>
<td>4 B.F.</td>
</tr>
<tr>
<td></td>
<td>4 ea - 1” X 3 ¼” X 21”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Sub-Frames</td>
<td>1 ea - 1” X 7” X 22”</td>
<td>2.4 B.F.</td>
<td>3 B.F.</td>
</tr>
<tr>
<td></td>
<td>1 ea - 1” X 7” X 28”</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bracket Feet Base</strong></td>
<td>2 ea - 1” X 4” X 48”</td>
<td>2.6 B.F.</td>
<td>3 B.F. OR 7 B.F.</td>
</tr>
<tr>
<td>Door Panel</td>
<td>1 ea - 1” X 10” X 15”</td>
<td>1.1 B.F.</td>
<td>2 B.F.</td>
</tr>
<tr>
<td>Door Frame Pieces</td>
<td>2 ea - 1” X 5” X 8”</td>
<td>1 B.F.</td>
<td>2 B.F.</td>
</tr>
<tr>
<td></td>
<td>2 ea - 1” X 5” X 15”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawer Front</td>
<td>1 ea - 1” X 6” X 14”</td>
<td>.6 B.F.</td>
<td>1 B.F.</td>
</tr>
<tr>
<td>Drawer Sides/Back</td>
<td>2 ea - 1” X 6” X 30”</td>
<td>2.5 B.F.</td>
<td>3 B.F.</td>
</tr>
<tr>
<td>Drawer Guide/Runner</td>
<td>2 ea - 1” X 3” X 24”</td>
<td>1.0 B.F.</td>
<td>1 B.F.</td>
</tr>
<tr>
<td><strong>TOTAL B.F.</strong></td>
<td></td>
<td><strong>36.8 B.F.</strong></td>
<td><strong>48 B.F.</strong></td>
</tr>
</tbody>
</table>

**ORDER 50 B.F.**

**2007-2008 Costs:** $ 1.20 / B.F. X 50 B.F. = $ 60.00

**Note:** Begin laying out on the 14 ft PSP planks the panel pieces for the R/L sides; (i.e. 5 ea @ 1 X 12 X 22”). Proceed to machine these pieces into glued panels and then scrape and sticker. Next steps would be for project BOTTOM and BACK, etc.

**Note:** Your choice of base moulding may differ. Refer to your Project Booklet and/or your Instructor for your options.
**Note:** Number values in the following rubric are represented as plus-or-minus parts of an inch. For instance: 1/64 represents plus or minus one sixty-fourth of one inch.

<table>
<thead>
<tr>
<th>Magazine end Table</th>
<th>Percent Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sizes are NET</td>
<td>100 95 90 85 80 70 60</td>
</tr>
<tr>
<td>Top: ¾+ X 15-1/2 X 24</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Sides: 2 ea. ¾+ X 21 X 19-1/2</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Bottom; Type I and II Sub-Frames: ¾ X 11-1/2 X21</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Slant Panel: ¾+ X 11 X 21</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Raised Panel Door: ¾+ X 10 X 13</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Drawer Front: ¾+ X 4-1/2 X 10</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Drawer Sides: ½ X 3-3/4 X 21</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Drawer back: ½ X 3-3/4 X 9-1/4</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Base Unit: 1-1/2 X 3-1/2 X N/A</td>
<td>0 1/32 1/16 3/32 1/8 5/32 ¼</td>
</tr>
<tr>
<td>Fit of all joinery: including glue joints, dovetails, drawer dado/grooves, dowel, dado, rabbet, plugs/buttons, miters and profile edge - door.</td>
<td>Accurately machined with tight fits.</td>
</tr>
<tr>
<td>Accuracy of all router machined details: including top detail, edge breaks, profile edges – door, raised panel and base unit.</td>
<td>Machined as per Project Booklet.</td>
</tr>
</tbody>
</table>
Accuracy of all bandsawed profiles:
Back panel, face-frame panel, slant side panel, divider panel and bracket feet on base unit (optional).

<table>
<thead>
<tr>
<th>Machined as per Project Booklet and templates.</th>
<th>95% machined as per project templates.</th>
<th>90% machined as per project templates.</th>
<th>85% machined as per project templates.</th>
<th>80% machined as per project templates.</th>
<th>70% machined as per project templates.</th>
<th>60% machined as per project templates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. H would place in his home.</td>
<td>Mr. H would place in his home.</td>
<td>Mr. H would place in his home in a key location.</td>
<td>Mr. H would consider placing in a key location.</td>
<td>Mr. H would check with wife RE placement in home.</td>
<td>Mr. H would place in his garage.</td>
<td>Mr. H would ask neighbor if interested in having project.</td>
</tr>
</tbody>
</table>

Overall appearance/impression of the project assembly (based on the knowledge gained as a result of this course and as an informed consumer).

Project Assembly: 100 Percent Completed

Incomplete: (Notate the percent completed)
### Woodworking B5

**Magazine End Table**

**Evaluation Rubric**

**Student Score: ____________**

**Note:** Utilizing the appropriate measurement tools, accurately notate the following dimensions relative to the required project “Magazine End Table” by measuring to the nearest 1/64-inch. Two sets of measurements will be recorded. One set from the actual woodworker who manufactured the piece of furniture and the second set from a colleague in the class. Measurements in the following table will be recorded in inches.

<table>
<thead>
<tr>
<th>Magazine End Table</th>
<th>Actual project dimensions and/or observations/notes</th>
<th>Actual Score: 1 (Woodworker)</th>
<th>Actual Score: 2 (Colleague)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top: ( \frac{3}{4} + X \ 15-1/2 \times 24 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sides: 2 ea. ( \frac{3}{4} + X \ \ 21 \times 19-1/2 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom: Type I and II Sub-Frames: ( \frac{3}{4} \times 11-1/2 \times 21 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slant Panel: ( \frac{3}{4} + X \ \ 11 \times 21 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face Frame/Back Panel ( \times 2 ) ea. ( \frac{3}{4} + X \ \ 14-1/8/17-1/8 \times 19-1/2 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raised Panel Door: ( \frac{3}{4} + X \ \ 10 \times 13 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawer Front: ( \frac{3}{4} + X \ \ 4-1/2 \times 10 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawer Sides: ( \frac{1}{2} \times 3-3/4 \times 21 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawer back: ( \frac{1}{2} \times 3-3/4 \times 9-1/4 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Unit: ( 1-1/2 \times 3-1/2 \times \text{N/A} )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fit of all joinery: including glue joints, dovetails, drawer dado/grooves, dowel, dado, rabbet, plugs/buttons, miters and profile edge - door.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy of all router machined details: including top detail, edge breaks, profile edges – door, raised panel and base unit.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy of all bandsawed profiles: Back panel, face-frame panel, slant side panel, divider panel and bracket feet on base unit (optional).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall appearance/impression of the project assembly (based on the knowledge gained as a result of this course and as an informed consumer).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Evaluation No. 1 (Woodworker):
Project Assembly: _________________ 100 Percent Completed
_______________ Incomplete: (Notate the percent completed)

Surface Finish [As achieved vis-à-vis scrapers and/or abrasive papers]: (Circle One)

100%  95%  90%  85%  75%  65%

Bill of Materials: To what level of detail has the Project Bill of Materials been completed and figures calculated. All solid lumber, masonite, hardware, adhesives, abrasive paper, biscuits, dowels, splines, finishes, etc. must be listed and accounted for in order to have a COMPLETE Bill of Materials. A total cost MUST be arrived at based on all data and listed on your Bill of Materials.

100%  95%  90%  85%  75%  65%

Observations/comments:

Evaluation No. 2 (Colleague):
Project Assembly: _________________ 100 Percent Completed
_______________ Incomplete: (Notate the percent completed)

Surface Finish [As achieved vis-à-vis scrapers and/or abrasive papers]: (Circle One)

100%  95%  90%  85%  75%  65%

Bill of Materials: To what level of detail has the Project Bill of Materials been completed and figures calculated. All solid lumber, masonite, hardware, adhesives, abrasive paper, biscuits, dowels, splines, finishes, etc. must be listed and accounted for in order to have a COMPLETE Bill of Materials. A total cost MUST be arrived at based on all data and listed on your Bill of Materials.

100%  95%  90%  85%  75%  65%

Observations/comments:
Steps of Procedure
Magazine End Table

1. Sign, date, review, and demonstrate all machines and safety tests reflected in the Student Safety Portfolio.

2. Rough cut materials: [Instructor will assign chop saw/table saw teams and panel arrangement teams to rough machine the pieces for your 8 panels listed below. LABEL, LABEL, LABEL!!!]

   (See Process for Squaring Lumber on page 19)
   As close as possible to the following:
   - 3 each 1” x 26” x 22” (right/left sides & back panel / divider panel)
   - 2 each 1” x 15” x 25” (bottom/slant side panels)
   - 1 each 1” x 18” x 26” (top panel)
   - 2 each 1” x 13” x 25” (face frame (FF) panel and FF rails / stiles)

   Note: It is not necessary to find material that is exactly 13” wide or 24” wide. Keep in mind the over-all width of the panel and any widths can make up this total. Before rough cutting these pieces blindly, determine what they represent.

   Note: Discuss defects and arrangements. Have students brainstorm NET sizes from plans to “ROUGH” – Why? Discuss labeling “ENDS” (i.e., Top 26” etc.)

   **THINK THICK**

ARE YOU STICKERING YOUR PROJECT PIECES?

3. Rip stock to narrow widths (no less than 3” and no more than 6”: Be advised that widths of 3” to 4-1/2” are preferred). THINK CONSERVATION OF OUR RESOURCES
   a. Make sure the cupped (concave) face is down for more stability.
   b. Do not attempt to rip all widths the same...too much waste.
   c. Avoiding checks, cracks, splits, pits and other degrades will dictate the widths of your pieces.

   Students should be jointing most stable faces on the aforementioned panel pieces by the third class session.

4. Joint one face (the most stable face, which should be the concave face), and then place an “X” on this face lightly in pencil, as per instructor demonstration.
   a. “THINK THICK”
   b. Joint face to 75% clear...this usually requires the removal of 1/32”.
Note: Be sure that all pieces for **ANY GIVEN PANEL** are surfaced at the same time!

5. Surface stock to as close to 1" as possible (NET thickness of all panels will be no less then 13/16"), as per instructor demonstration. Be certain that the face with the “X” is placed face down on the planer table for the first pass through the cutter head ... then alternate faces as per instructor demonstration.
   a. Materials should be 75% clean on both surfaces. **Planer does NOT have to clean both faces entirely.**
   b. Think thick!!
   c. Adjust planer bed to desired thickness on the up stroke to remove slack in the threads.

6. Joint your best edge as per instructor demonstration (**pay attention to the direction of the grain**) and place an “X” on this edge lightly in pencil. Rip each board as wide as possible, removing unwanted defects. Be sure to place the “X” face down on the circular saw table and the “X” edge against the rip fence during this operation as per instructor demonstration. **After this ripping process – joint the ripped edge.**

7. Arrange materials into panels for the top, bottom, right/left sides, back, slant side and divider panel/face frame components as per instructor demonstration.
   a. Alternate annular rings.
   b. Arrange knots and grain pattern of your boards for desired effect...**THINK BALANCE AND HARMONY.** Remember the lumber that you are using is 75 to 100 years old ... be responsible with your choices.
   c. Number all pieces in the panel consecutively for either machining the glue joint on the shaper or using the plate jointer (as demonstrated by the instructor).

**Note:** Your instructor will demonstrate either the plate jointer for a biscuit cut and/or the shaper for the glue joint cut. Pay close attention to this demonstration and layout sequence.

8. Machine glue joint using the shaper (or the biscuit cut utilizing the plate jointer), on all of your panels.
   a. Pay particular attention to this process when demonstrated.
   b. Hold material flat on table and machine the glue joint at a steady rate of speed.
   c. Check for excessive stair-step after machining the first two pieces (1/32” is maximum tolerance).

**Note:** Use #20 biscuits on any plate jointer machined joints.
9. Glue materials into individual panels. **Pay close attention to this process when demonstrated.**
   a. Dry-clamp, using bar clamps. **Be certain to place ¼” plywood and paper underneath your pieces being clamped/glued.**
   b. Check for excessive stair step and any gaps along all edges of your panel glue joints.
   c. Remove clamps, apply plastic resin glue and re-clamp using 25 psi.
   d. Do not wipe off excess glue.
   e. Allow glued panels to dry overnight.

   **Note:** Be sure to label your glued panels with your NAME, DATE, TIME and CLASS!

10. Scrape/sand dried glue from all panels as per instructor demonstration.
   a. Remove all dried glue with glue scraper and 50 grit abrasive paper, utilizing a wooden sanding block before surfacing panels to net thickness.
   b. Glue scrapers **EAT PROJECTS and can cause serious injury if used improperly. Wear safety glasses!!**

   **Note:** Instructor must check all panels before next procedure.

   **Note:** Be sure to transfer any template measurements and/or biscuit joints from the face of all panels to the edge or end-grain of each panel ... once panels are surfaced to net thickness, all markings on the panel faces will be all GONE!

11. Surfice panels to **NET THICKNESS (13/16” Minimum)** as per your plans and instructor demonstration (REMEMBER to measure/check twice and cut once to avoid any disappointment.)
   a. Maintain maximum thickness possible. [One advantage of having all of your panels @ a uniform ¾” or 13/16” thickness is that your short end pieces as a result of machining your panels to NET can then be utilized for face frame rails/stiles and/or extra pieces,
   b. For those of you with “skinny” panels – you DO NOT need to have both faces clean and may reduce your panel size to ¾” thickness. **Check with your instructor for clarification.**
   c. Check grain direction prior to surfacing panels.

   **Note:** Once all your panels are surfaced to net thickness, transfer your edge reference markings back onto the face of each panel so that your project
templates can be redrawn. **This step is ONLY for those panels where biscuit joinery has been utilized.**

12. Stain knots with desired oil stain as per instructor demonstration.
   a. Apply and remove oil stain with a cotton rag.
   b. Let dry approximately 4-5 hours. **THEN** …
      - Tape the back side of panel knots/defects with masking tape.
   c. Fill porous knotholes and cracks with casting resin and allow to dry over-night.
   d. Remove dried resin with glue scraper and/or coarse grit abrasive paper (50 or 60 grit).

   **Note:** This aforementioned procedure applies to all project pieces, not ONLY your panels.

   **Note:** An alternative is to cabinet scrape and sand all panels through 80 grit abrasive paper (as per instructor demonstration) and THEN apply oil base stain to defect areas … **THEN** tape and resin.

13. Proceed to Step 15 and make both Type 1 sub-frames and rough cut pieces for face frame.

14. Square all panels to “net” sizes as per instructor demonstration.
   a. Joint one edge of all panels and place an “X” lightly in pencil on this edge.
   b. Rip panel to NET width.
   c. Square one end of all panels.
   d. Cut to net length and width utilizing the rip fence setup and sliding crosscut table.

   **Note:** Remember that once a set-up has been made with the table saw fence, all pieces of that dimension MUST be cut. This is a rule to follow for future projects as well.

15. **PAUSE!!!!**

At this time you should have eight (8) panels. As mentioned before, these panels are made from the pieces that you ripped into narrower widths when you began this project.

From the detailed drawing you should have located the correct “net” sizes. Let’s see!!

- 2 pieces 13/16” X 21” X 19 ½” Right/left sides
- 1 piece ¾” X 11 ½” X 21” Bottom / 2 Subframes
- 1 piece 13/16” X 21” X 19 ½” Back / Divider Panels
- 1 piece 13/16” X 11” X 21” Slant side panel
- 1 piece 13/16” X 15 ½” X 24” Top
- 2 pieces 13/16” X 8 ½” X 19 ½” Face Frame Panel & Face Frame Rails/Stiles

**Note:** You may want to consider adding a drop leaf and rudder to your top and/or a small drop-leaf with two dado slide supports machined into your top subframe. This small drop-leaf over the magazine area would be bandsawed to a similar design as your slant panel. **This project also may be designed with three (3) drawers rather than with one**
(1) drawer and one (1) door; however, you must check with your Instructor prior to making this decision.

**Suggested Order of Steps for NET Cutting:**

1. **Top Panel to NET:**
   Joint edge; rip to NET width; square end on sliding crosscut table (check with square for 90°); crosscut to NET length on sliding crosscut table.

2. **Slant Side Panel to RGH NET:**
   Same procedure as above, but add ½” – 1” to both width and length. This is called RGH NET.

3. **Divider / Face Frame Panel to RGH NET:**
   This panel will be divided into its two separate components AFTER the basic case is glued and assembled. This will ensure that the length of the divider and face frame panels are to EXACT size and are custom fit to your case.

4. **Right / Left Side Panels; Back Panel; Bottom Panel; and Subframes:**
   - Joint best edge on each of these panels.
   - Square one end of both subframes and bottom.
   - Rip R/L side and back panels to NET width AND on this SAME RIP SET-UP @ 21”, CAREFULLY crosscut the bottom panel and both sub-frames to NET LENGTH with previously squared end next to rip fence. GET DEMO FROM YOUR INSTRUCTOR.
   - Square one end of R/L side and back panels utilizing the sliding crosscut table (check for 90°), THEN …
   - Cut R/L side and back panels to NET length using the rip fence. Be sure your squared edge (“X”) is against the fence.

- Once your panels are surfaced to NET (as thick as possible), perform the following steps:
  - Instructor to belt sand panels as needed.
  - “Wet” any defects and allow to dry. This raises the defect so it can be cabinet scraped.
  - Stain all defects.
  - Resin all defects.
  - Final cabinet scrape all panels.
  - Hand sand all seven (8) panels with appropriate abrasive papers in their sequential order.

**Note:** The next few steps of procedure have no particular order or priority, but students will follow the order as demonstrated by your instructor. **DO NOT cut these without checking plans and making a materials cutting list.** Never cut blindly, especially finished cuts.

**Note:** Students should be at this point by WEEK 6!
16. **SUB-FRAMES AND FACE FRAMES:**
Machine all of the parts for the two (2) Type 1 Sub-frames required for this project.
   a. Using knowledge previously gained, machine these pieces to net sizes.
   b. Take note that these components are not part of the glued-up panels.
   c. Remember to think conservation!
   d. Obtain measurements from the plans and make a written cutting list for these components…**finalise this list with the instructor before proceeding.**
   e. Machine components as per the aforementioned cutting list … lay out and mark for dowels as per instructor demonstration.
   f. Bore holes with portable electric drill motor and 5/16” jobber bit in conjunction with doweling jig – as per instructor demonstration. (Utilise the horizontal boring machine as available).
   g. Glue (utilise aliphatic resin) and clamp two (2) Type 1 Sub-frames utilizing bar clamps. **Check frames for square and twist.**

**Note:** Instructor to belt sand subframes as needed.

**Note:** Utilizing previously learned methods – square both Type 1 Sub-frames to their NET size. **If your sub-frame holes are bored/glued carefully, then you should little to no stair-step sanding.**

**Note:** Check the following measurements in the boxes below against those in your plans and then machine these pieces to their respective NET sizes.

### CUTTING LIST

<table>
<thead>
<tr>
<th>TYPE 1 SUB-FRAMES</th>
<th>FACE - FRAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ea – ¾” X 3” X 15”</td>
<td>1 ea – ¾” X 1” X 9 ½” Top rail</td>
</tr>
<tr>
<td>4 ea – ¾” X 3” X 11 ½”</td>
<td>1 ea – ¾” X 1 ¼” X 9 ½” Center rail</td>
</tr>
<tr>
<td><strong>Note:</strong> Cut rough width to 3 1/16” to allow for squaring.</td>
<td>1 ea – ¾” X ¾” X 9 ½” Bottom rail</td>
</tr>
<tr>
<td><strong>Note:</strong> May want to consider making the lower sub- frame a dust panel … inquire with your instructor.</td>
<td>1 ea – ¾” X 1 5/8” X 19 ½” Left stile</td>
</tr>
<tr>
<td><strong>Note:</strong> Double check these NET sizes to YOUR PROJECT SPECIFICALLY !!</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** These pieces are cut from the extra lumber in the face frame panel. Leave stile and FF Panel @ plus 1/6” … to be flush trimmed later.

17. **Machine Divider Panel:** Machine your previously glued divider panel to NET size utilizing the instructor’s template THEN assemble your face frame as per your instructor’s demonstration.

**Note:** After machining your BACK PANEL to NET dimensions, trace both your BACK PANEL and DIVIDER PANEL, then bandsaw and sand to final shape.
Note: Back Panel and Face Frame Panel MUST be mirror images. DOUBLE CHECK YOUR LAYOUT!

18. **RESAW [upper sub – frame for cabinet base]: Option No. 1**

Rough cut the following:

- 1 piece 3/8” x 15” x 21” (or the equivalent) Upper sub – frame base.

**Note:**
- This panel is laminated to a piece of 1/2” super light MDF and then surfaced to 3/4” to make up the interior section of your upper sub – frame for the cabinet base ... **AS PER INSTRUCTOR DEMONSTRATION.**
- **Note:** Consider utilizing a web frame construction with a 3/8” thick by approx. 4-inch wide rabbeted insert; at this juncture check with your Instructor.

- a. Rip to smaller widths (follow the same process as before).
- b. Joint one face and one edge of all pieces.
- c. Set up the bandsaw to re-saw all pieces ... as per instructor demonstration.
- d. Joint all edges and butt glue ... as per instructor demonstration. **Note: The rough panel should be 3/8” x 15” x 21**
- e. When dry, surface panel to 3/8” thick and wait for further instructions prior to cutting this panel to “NET” size.
- f. Cut a piece of 1/2” superlight MDF to rough size and then laminate your 3/8” solid lumber panel to it utilizing plastic resin glue applied with a roller and the clamping caul set-up.
- g. Machine the stiles and rails for your upper sub – frame to rough dimensions **THEN surface to a NET thickness of 3/4” ALONG WITH YOUR LAMINATED PANEL UTILIZING THE EXACT SAME SET- UP ON THE SURFACER.**
- h. Miter components to NET width and length.
- i. Spline joints utilizing the plate jointer as per instructor demonstration.
- j. Assemble the upper sub – frame for your cabinet base utilizing alphatic resin and15’ web clamp as per instructor demonstration. Unclamp after dry and proceed to finish sand.

**Note:** Be sure to dry clamp for fit prior to gluing.

- k. Select detail for edges of top and upper sub-frame for base panels by utilizing the shaper and/or router table. Your panels must be sanded to 120 grit prior to routing your edge detail.
- l. Run detail on two ends and one edge **being sure to start with the end-grain.**

**Note:** Your edge detail MUST NOT exceed 5/8” in width ( 1/2” is preferred) or else your cabinet will not have a solid support base. **PRE-MARK** with a combination square prior to matching.

**Note:** DO NOT take your full cut at one time ... **BE SURE** that your final cut is set to take a “fine” cut – this will help avoid chipping of your detail.

**Note:** The bottom surfaces of the TOP/BOTTOM Panels only need be sanded with 80 grit since they will not be seen. After machining your TOP/BOTTOM edge details, final sand finish surfaces through 220 grit.
19. **Machine dado and rabbet joints on side panels:**
   
a. See sheet two (2) of four (4) in your project plans for specifications.
b. All dado and rabbet joints are ¼" in depth.
c. Utilize the dado head set-up on the 10" table saw. **Be certain to utilize the auxiliary fence when machining the rabbet joints.**

20. **Bracket Feet [Pedestal Feet]:** *Option: Consider utilizing 8/4 stock for the base.*
Rough machine and glue pine to: [dimensions will be different with 8/4 stock].
   
a. 2 pieces 3/4" X 4" X 41"  OR  4 pieces ¾" X 4" X 24"
b. Joint one face and one edge.
c. Machine to net size:
   
a. 2 pc. 1 ½" X 3 ½" X 40"  

Note: **NET width of base pieces will be 3-inches IF you are NOT going to utilize the W&H Moulder to machine the ogee profile. RGH width will be 3 ½” utilizing 8/4 stock.**

Note: Refer to attached article from Woodsmith Magazine Issue No. 139 titled “Bracket Feet”. Read and synthesize the information contained within this article coupled with the lecture/demonstration from your instructor to machine the aforementioned materials into the bracket feet for the Magazine End Table.

Note: We will be utilizing the Williams and Hussey Moulder with special knives that were designed specifically for these bracket feet' however. Following is the procedure to machine these bracket feet **WITHOUT** the aid of the moulder. This process is what you would follow in a lab setting in which you had only a table saw.

Note: **For a FULL BASE, you will need:**
   
<table>
<thead>
<tr>
<th>Parts</th>
<th>Dimensions</th>
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<tbody>
<tr>
<td>4 pcs</td>
<td>¾&quot; X 4&quot; X 24&quot;</td>
</tr>
<tr>
<td>4 pcs</td>
<td>¾&quot; X 4&quot; X 30&quot;</td>
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★NET width is 3 ½″. Trim ends square and leave as long as possible.

Note: **Full Base Subframe RGH cut pieces:**
   
<table>
<thead>
<tr>
<th>Parts</th>
<th>Dimensions</th>
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<tbody>
<tr>
<td>2 ea</td>
<td>¾&quot; X 2 3/8&quot; X 19&quot;</td>
</tr>
<tr>
<td>2 ea</td>
<td>¾&quot; X 2 3/8&quot; X 20&quot;</td>
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**PROCEDURAL STEPS:**
Follow these steps if you DO NOT have access to a Williams and Hussey Moulder with a set of custom base profile knives.

1. Cut to NET T” X W” X L”
2. Machine cove ½” D X 1 ½” W
3. Machine Bead; leave 7/8” Width on edge. **BE SURE** to place 1 ½” Width DOWN.
4. Layout 25° bevel from 3/8” below round and tangent to cove. Cut bevel on table saw. **BE CAREFUL** !!
5. Machine 25° bevel cut on ½” wide flat below cove.

Note: Machine the base moulding pieces on the EXACT SAME SET-UPS!
Note: Sand base cove with 1 ½" diameter birch dowel – see instructor!

Note: There exists several methods for attaching bracket feet to the upper sub-frame on your cabinet base so pay careful attention to your text readings, the article and your instructors lecture/demonstration.

21. Design provincial base utilizing suggestions from the lecture/demonstration:
   a. Machine base from the previously machined blank.
   b. Design detail and machine utilizing the bandsaw and the 1 ½" Forstner bit.
   c. Miter to fit the dimensions of the lower frame.
   d. Once base moulding pieces are to NET size, reinforce the miter joint which was cut on the chop saw with a #20 biscuit utilizing the Biscuit Jointer.
   e. Machine ¼" X ¾" rabbet joint on the top edge of base moulding pieces utilizing the table saw and dado head set-up.
   f. Assemble “BASE UNIT” (moulding, subframe, brace) as per instructor demonstration.
   g. ALSO reinforce the inside miters with the corner blocks.

Note: Net length of your bracket feet will be determined by your instructor’s lecture/demonstration and you will utilize the template which will be provided for your use.

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PAUSE
TIME TO RE-GROUP...RIGHT NOW YOU MAY BE FEELING DISCOURAGED DUE TO THE ARRAY OF FURNITURE PIECES IN YOU PRESENCE. BRACE AND CONSOLE YOURSELF WITH THIS: TO ASSEMBLE PROJECT PIECES THAT HAVE NOT BEEN PROPERLY PREPARED INCREASES THE TASK TWO-FOLD AND INSURES A SECOND OR THIRD RATE FINISHED PRODUCT....WHAT CHOICES WILL YOU MAKE?

22. Scrape all components utilizing a flat scraper to remove all mill marks:
   a. Finish sand your furniture pieces utilizing 100 grit through 220 grit abrasive papers progressively.
   b. After preparation take special care to avoid dents and scratches.
   c. Be sure to keep your project pieces stickered.

23. Counter-bore and drill all applicable components as per instructor demonstration:
   a. Counter-bore at 3/8" diameter and ¼" depth.
24. Assemble the Magazine End Table in the following order:
   a. Glue sub-frames and bottom to sides as per instructor demonstration.
   b. Attach face-frame panel and back panel to the case with 1 ½” #8 FH wood screws.
   c. Utilize the portable electric router with flush trim bit to flush trim front and back panels to the assembled case unit.
   d. Assemble lower sub-frame and the four (4) bracket feet units THEN attach this base unit to case unit with 1 ½” #8 FH wood screws.
   e. Attach base and top assembly to case.
   f. Fit and attach the divider panel to the Magazine End Table unit.
   g. Attach the slant magazine side panel to the semi-assembled case unit utilizing 1 ½” #8 FH wood screws.
   h. Attach the top panel to the Magazine End Table with 1 ¼” #8 FH wood screws.

   **Note:** Prior to attaching BACK, FACE FRAME and TOP, you may want to 45° bevel edges JUST IN CASE surfaces are not flat, it will look like you intended them to be beveled.

   **Note:** Discuss the option of utilizing 3/8” X 3/8” X 2” glue blocks for case interior.

25. Rough cut all parts for drawer:
   a. Face-frame door opening measures 4” W X 9 ½” L.
   b. This is a lip type drawer. The drawer front as per project plans should measure 7/8” X 4 ½” X 10”.
   c. Make a materials cutting list as you have been taught.
   d. Double check all dimensions to you assembled project.
   e. Cut all pieces to net sizes.
   f. Assemble your lip type drawer as per instructor demonstration.

**PHASE ONE: Lip Drawers**

- Make drawer front/s ½” larger than the drawer opening.

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<thead>
<tr>
<th>S</th>
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<tr>
<td>I</td>
<td>G</td>
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<tr>
<td>E</td>
<td>Opening</td>
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</tbody>
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- Machine drawer front to NET DIMENSIONS 7/8” X 4 ½” X 10”
- Utilize table router to machine a 3/8” X 3/8” rabbet on drawer front.
• RGH cut sides and back to following dimensions:
  1 pc ½" X 4" X 24"  [one side]
  1 pc ½" X 4" X 34"  [one side and back]

• Machine two (2) sides and one (1) back to NET dimensions:
  2 ea ½" X 3¾" X 21"  Sides  (Measure from back of case to front edge of drawer frame)
  1 ea ½" X 3¾" X 9 ¼"  Back

• Machine the following project drawer pieces:
  1 ea ¾" X 1" X 22"  Drawer Guide  (Length is RGH – will cut to NET after drawer is glued)
  1 ea ½" X 2¼" X 22"  Drawer Runner  (Length is RGH – cut to NET after drawer is glued)

• Layout and label drawer parts to be dovetailed:

```
  X
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Note: Only sand the inside faces of drawer parts @ this juncture

• Cutting ¼" drawer bottom to NET dimensions:
  o Width of bottom – length of back MINUS 9/16".
  o Length of bottom – length of side (minus dovetails) PLUS 7/16".

26. Face-frame opening for door measures 9 ½" W X 12 ½" L. The finished door will
    measure 7/8" T X 10" W X 13" L.

Frame Door:  
  Top/Bottom Rails  2 each  7/8" X 2 ¼" X 6 ¼" NET
  Left/Right Stiles  2 each  7/8" X 2 ¼" X 13" NET
  Raised Panel  3½" X 6 1/8" X 9 3/8" NET

ROUGH CUTTING LIST – DOOR PIECES:
  1 pc  7/8" X 5 ½" X 22"  Door Rails/Stiles
  1 pc  ¾" X 6 ½" X 13"  Door Panel

Note: After raised panel door is glued, it will be ripped and crosscut to NET .. to ½”
    larger than face-frame opening [7/8" X 10" X 13” as per project plan].
DOUBLE CHECK ALL MEASUREMENTS !!

**Note:** If your face-frame door opening measures differently than 9 ½” W X 12 ½” L, you will need to make the necessary dimensional adjustments.

27. Assemble a materials and cutting list to construct the door for your Magazine End Table from those choices presented by your instructor via the text readings, lecture and demonstration.

**PROCESS FOR SQUAREING LUMBER:**

1. Joint the concave face to 70% clean.
2. Surface to rough thickness – 70% clean.
3. Joint the best edge to 100% clean.
4. Rip to width to get rid of any defects.
5. Joint the ripped edge one time.
6. Prep panels for gluing.
   **NOTE:** Check each machining for square / 90°.
7. Square one end.
8. Cut to net length.
FULL SCALE

MEMORIZE!
MAGAZINE END TABLE