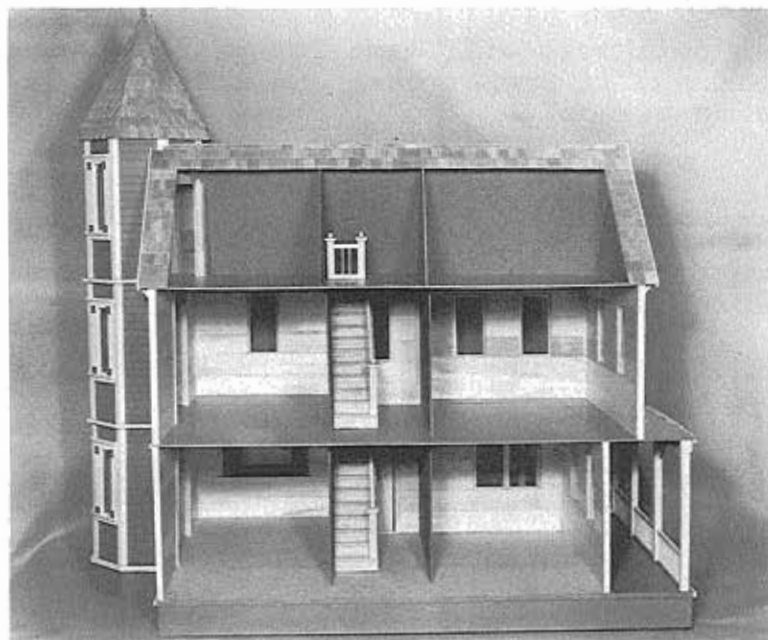
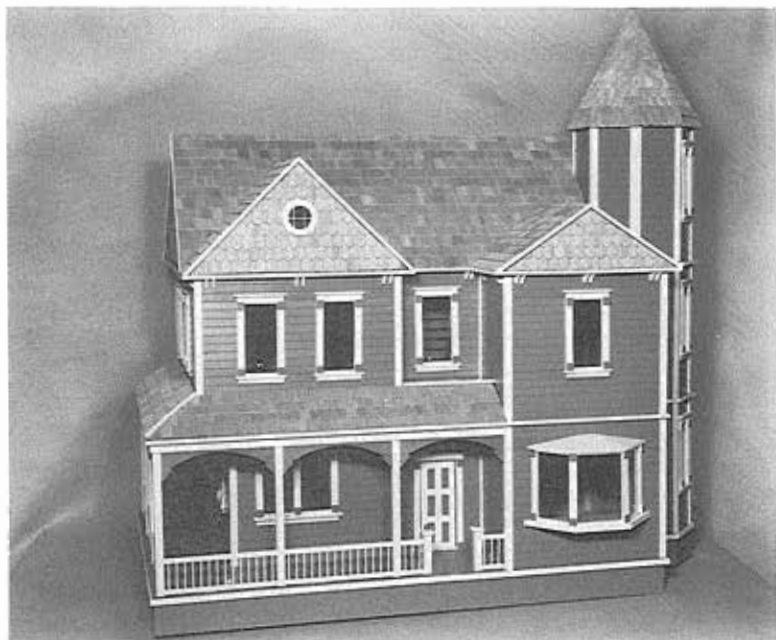


HARVARD WOOD WORKS

Victorian Dollhouse

Model No. DH-103K

40"L x 22"D x 41"H - 10 Rooms



Refer frequently to the photograph
of the completed dollhouse on this
page to aid you in assembly.

608-103K

1

A: I was around back in those days and have made that house and others that use the same 'stacked-molding and connectors' technique, and I offer these suggestions.

Paint everything (that will be painted*) one-coat, and sand down to the wood before beginning construction. The quality of the final paint job is 100% dependent on the quality of the sanding after the first coat, and it is impossible to do a good sanding job after assembly. *do not paint the outside of the roofs, the foundation parts until they are pre-assembled, the insides of the connector's grooves or the lips and grooves of the clapboard pieces (if paint gets on them here and there, it's no big deal, but as a global intention, that's not where you want the wood sealed). Do not paint inside the window parts' grooves. Painting the second coat is a back-and-forth process of painting and assembly. In most cases it is best to assemble and then paint the assembly from a strength point of view. Glue won't stick to a second-coated part very well, so things that require strength should either be painted after assembly, or should be marked and scraped for gluing to get the second-coat of paint out of the way for some glue contact inside the joint (where the scraping will be invisible). I often mark a joint, paint to just cover the mark, and then glue so the paint is perfect (with the transition hidden in the joint – a level of perfection impossible to achieve with masking for paint color separation) and the glue is wood-to-wood. So, test ahead and make decisions along the way when to do the painting.

The wall sections WILL expand and shrink seasonally with changes in humidity. You can either accommodate that or resolve to be at peace when the walls split or separate as they shrink. The two techniques I have used to accommodate that movement are:

1) Glue the walls together thoroughly, but glue them into the connectors only at the bottom 2". Glue the windows into the cutouts only at the bottom 1". When the walls are glued to the floors, only glue the walls at the bottoms, not at the tops. This allows the walls to shrink away from the top which is partly hidden by the nosing. On the inside, gluing a strip of ¼ x ½ to the ceiling on the inside of each wall (but not to the wall), and to the connectors at each end to reinforce the joint at the top without interfering with the wall's ability to shrink away. The downside of this technique is that the next higher floor is only connected at the tops of the connectors and by the Dividers. If the house is to be moved around much it makes it vulnerable to breakage.

Or (preferred):

2) When you paint the clapboard sections, paint the tongue of each piece thoroughly as you paint the rest of each piece. Paint the clapboard pieces with two coats sanded between coats or more if needed (don't paint the ends). Glue the wall sections together with small amounts of non-structural glue like Quick-Grip or Magna-Tac, and glue them into the Connectors with a fully structural glue (like Aleene's Original Tacky Glue (in the bronze bottle)). Glue the tops and the bottoms to the floors (scraping for a good joint or mark&paint as explained above). The downside of this technique is that as the walls shrink each section will separate at the tongue-and-groove, and this separation will be visible, suggesting to the owner that they ought to fill the "cracks" on the inside to make them smooth. ***That fill will literally tear the house apart and it will collapse.*** To prevent that, interior finishing (painting, wallpapering) should be done on card stock and loosely glued to the insides of the walls, so down the road no-one will try to 'fix' the walls. The other

liability is that assembly really needs to be reserved for the humid times of the year. This is not a winter-time technique in the North country (when central heat makes the inside humidity really, really dry, and wood is shrunk to its lowest size of the year). The separations between the clapboard pieces will be visible but is necessary for the wood to be able to move freely. If the individual pieces are fully painted, what shows is an extra wide shadow every 2½", and using this techniques means being at peace with that amount of visibility during the dry part of the year.

I hope this boat-load of reflections doesn't put you off, though. This is a wonderful project and, with some thought to the natural behavior of wood, it will be an heirloom build.

Best wishes

INTRODUCTION

Congratulations on your purchase of a Harvard Wood Works Dollhouse.

Your dollhouse has been precision crafted in Massachusetts with meticulous care using only the finest quality materials available.

Take your time during assembly and be sure to read the instructions completely before you proceed.

This dollhouse will last for years, even generations, if proper care and attention is given during assembly.

HELPFUL HINTS

Always read through all assembly instructions before assembling the house.

Do not skip steps. Follow the instructions in the defined sequence.

- a. Arrange pieces in groups ready for assembling. Following the assembly instructions, assemble enough in a dry run to be sure you know ahead of time when and how each part should fit. Always be sure of the parts' orientation before gluing.
- b. Sand any rough edges or splinters before gluing.
- c. Use generous amounts of glue. Always wipe off excess glue immediately.
- d. Make all joints flush. Keep surfaces and edges square.

- e. Occasional changes in humidity can cause all woods to expand or contract slightly. Always "dry-fit" parts before gluing. Limited sanding and clamping may be required for proper fit.
- f. All Harvard Wood Works dollhouse kits are inspected before shipment. However, humidity changes and handling during shipment can cause defects. If this occurs and there is time for us to replace the part, please contact our Service Department for replacement. Use the attached form on the last page.

When requesting replacement parts, be sure to include explicit identification and measurements for the part needed. Most repairs can easily be made by the kit builder using either white glue or plastic wood filler and sandpaper. Warped parts are usually self-straightening during assembly.

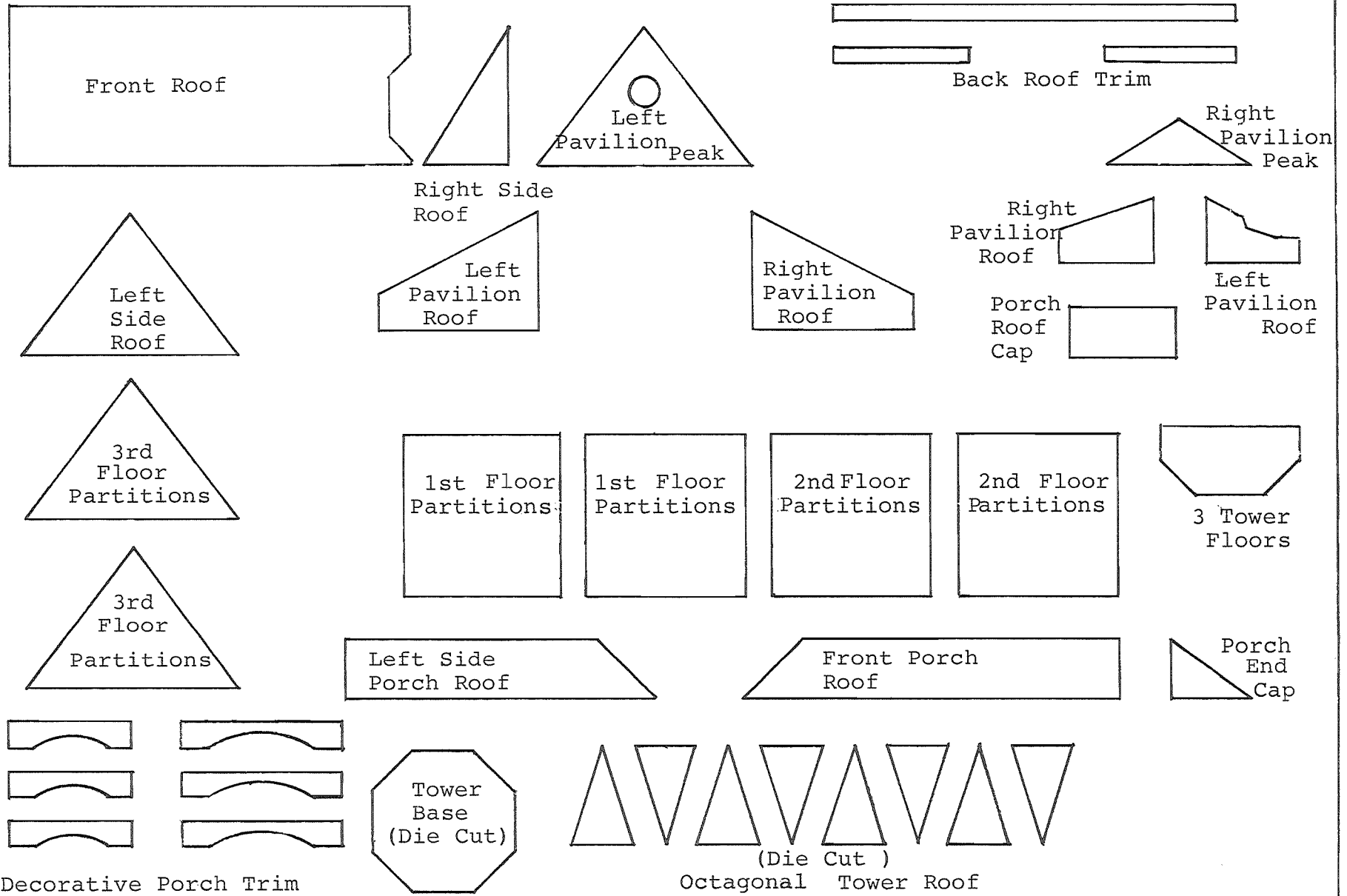
- g. Extra parts are often supplied to insure that you receive the correct number and highest quality material to assemble your dollhouse.
- h. Any white or other household glue is suitable for assembly. However, the roof and porch assembly can be facilitated by using a hot-melt glue gun and glue sticks.

1. The first step is the identify and familiarize yourself with all the items in the kit. Figure 1 identifies the major parts in the kit. Not shown are foundation parts, staircase kits, or floors. For floors, see Figure 5.
2. In addition to the parts shown in Figures 1 and 5, your kit also includes the following parts separately bagged or banded for your convenience.
 - a) Clapboard siding bundles (Refer to Figure 2.)
 - b) 8 large window kits - W-50K (Assembly instructions given on Pages 24, 25 & 26.)
 - c) 9 narrow window kits - W-51K (Use same instructions as above.)
 - d) 1 double window kit - W-52K (Assembly instructions given on Page 28.)
 - e) 1 bay window kit - W-53K (Assembly instructions given on Page 27.)
 - f) 1 round window kit
 - g) 1 door kit
 - h) 1 porch railing kit
 - i) 1/8" x 1/4" stripwood pieces
 - j) 1/8" x 1/2" stripwood pieces
 - k) 1/8" x 3/8" stripwood pieces
 - l) 1/8" x 3/4" facia boards
 - m) Interior staircase railings (8 pieces)
 - n) Six 2-5/8" posts
 - o) Six 9-3/4" posts
 - p) 80 - 2" dowels
 - q) Eighteen 2-7/16" dowels
 - r) 36 eaves brackets
 - s) Decorative trim kit (includes 3/8" balls and post caps)
 - t) Two die-cut interior staircase kits
 - u) One die-cut exterior staircase kit
 - v) 3/4" x 1-1/4" square shingles
 - w) 3/4" x 1-1/4" fishscale shingles
 - x) Plexiglass sheet for window panes

CAUTION: Extreme atmospheric changes such as high humidity or very dry conditions can cause severe warping or splitting. You can repair minor splits or cracks with plastic wood or filling in with glue prior to painting.

In order to prevent assembly problems, assemble and store your dollhouse where temperature and humidity remain fairly constant. Prior to beginning assembly, store your kit in a warm, dry room for at least 36 hours.

MAJOR STRUCTURAL PARTS



All references to the left and right sides of your dollhouse are made facing the front of the dollhouse

FIGURE 1

3. You are now ready to begin to build up the walls for the 3 levels of your dollhouse. First identify all the clapboard siding sections according to the following summary.

| <u>PART</u> | <u>QUANTITY</u> | <u>LENGTH</u> |
|-------------|-----------------|---------------|
| A | 3 | 17-5/8" |
| B | 1 | 17-3/16" |
| C | 3 | 15-7/16" |
| D | 5 | 12-3/8" |
| D-1 | 2 | 12-5/8" |
| E | 7 | 10-9/16" |
| F | 12 | 6-25/32" |
| G | 5 | 6" |
| I | 24 | 5-1/4" |
| J | 9 | 4-5/32" |
| K | 6 | 4" |
| L | 9 | 3-7/16" |
| M | 3 | 1-5/8" |
| N | 77 | 3-1/8" |
| O | 9 | 2-14/32" |
| P | 6 | 1-7/8" |
| Q | 6 | 1-23/32" |
| R | 10 | 1-1/2" |
| S | 54 | 25/32" |

CLAPBOARD SIDING LAYOUT DIAGRAM

4. After making sure you have all the clapboard siding pieces as listed in the summary on Page 5, arrange the pieces on a flat surface as shown here in Figure 2.

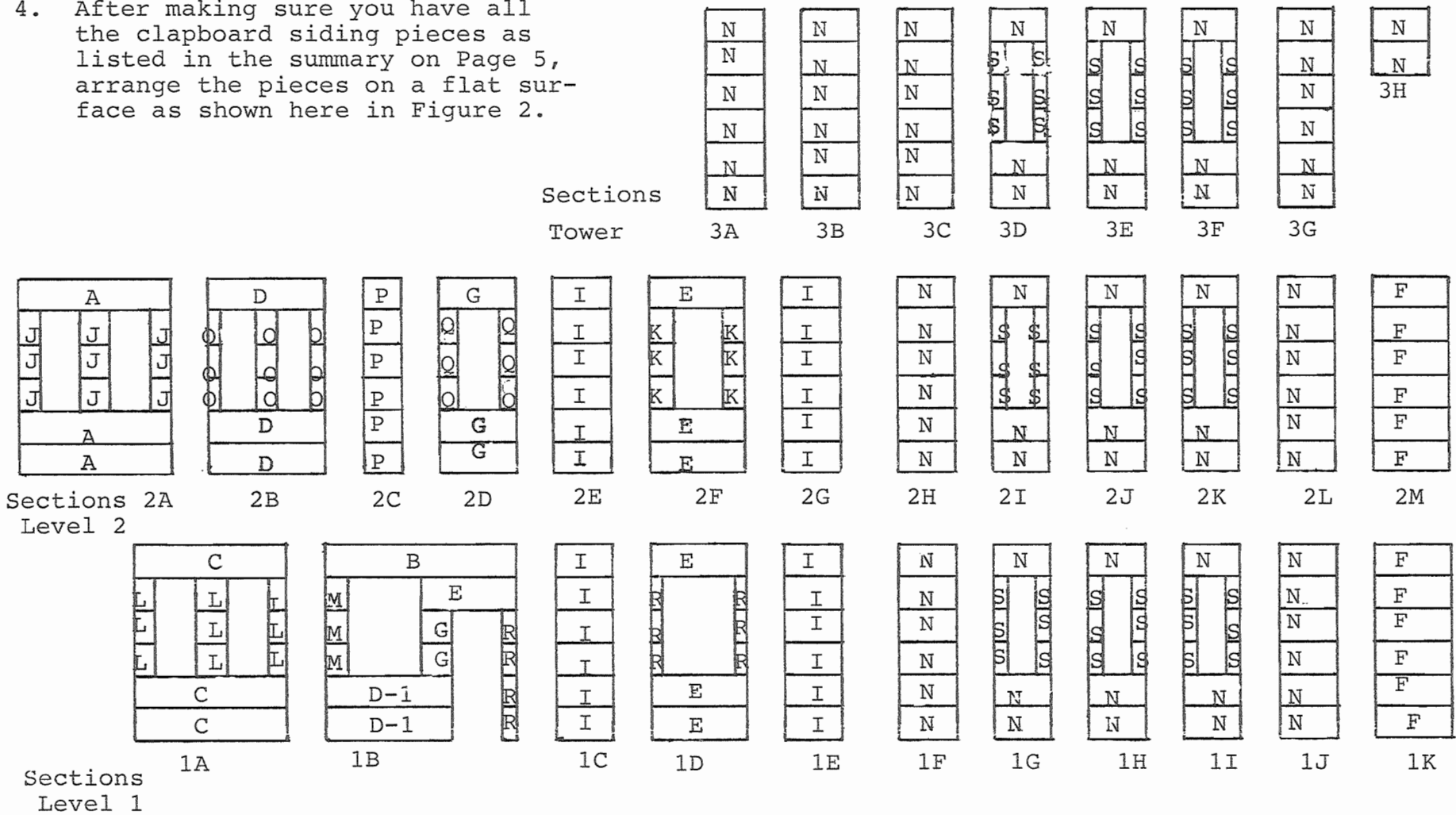


FIGURE 2

5. Before using any glue, dry-fit the clapboard siding pieces to make sure they interlock without interference. Figure 2A shows how the pieces interlock. Sand or cut any protrusions to make sure the pieces fit together properly.
6. After you are satisfied that the siding will interlock properly, you are ready to glue up the wall sections. Be sure to glue the pieces together according to the diagram in Figure 2.

Run a bead of white glue into the groove end of the pieces and press the tongue end of the adjacent pieces into the groove.

Push the siding pieces together on a flat surface making sure the ends of the sections are square and flush to maintain proper window and door openings. Apply weight and pressure as required to make a tight joint.

Keep all completed sections on a flat surface with weight applied until you are ready to join them using the corner connectors. This will minimize the risk of severe warping while the glue is drying.

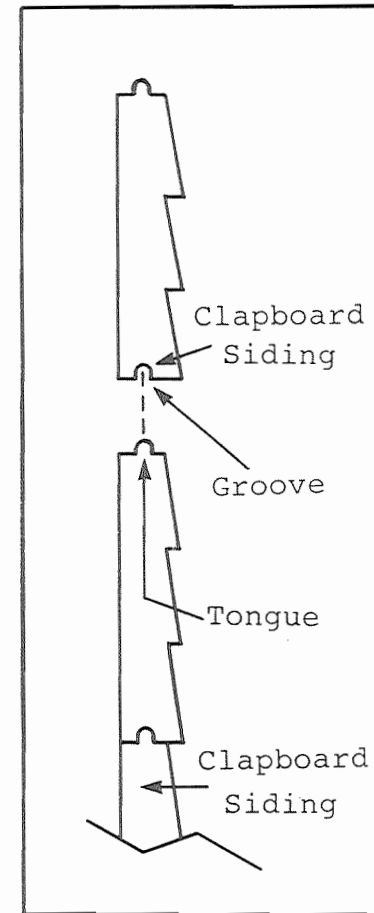


FIGURE 2A

7. Complete all of the wall sections as shown in Figure 2 following the assembly procedures as described above. Allow at least one hour for the glue to dry before handling completed wall sections.

8. While the wall sections are drying, you should assemble the bottom floor and foundation. Figure 3 on the next page illustrates how the pieces fit together.

The bottom floor is the floor without a stairwell opening.

Be sure to position the bottom floor upside down for assembling the foundation. See Figure 3. Dry-fit the foundation pieces around the perimeter as shown in Figure 3.

After everything is positioned properly go ahead and glue the pieces together.

NOTE: Due to relative humidity changes, all wood expands and contracts slightly. Therefore, it may be necessary to trim the top edges of the clapboard sections so that they are flush to the tops of the connectors. Wait until clapboard sections are completely dry before trimming.

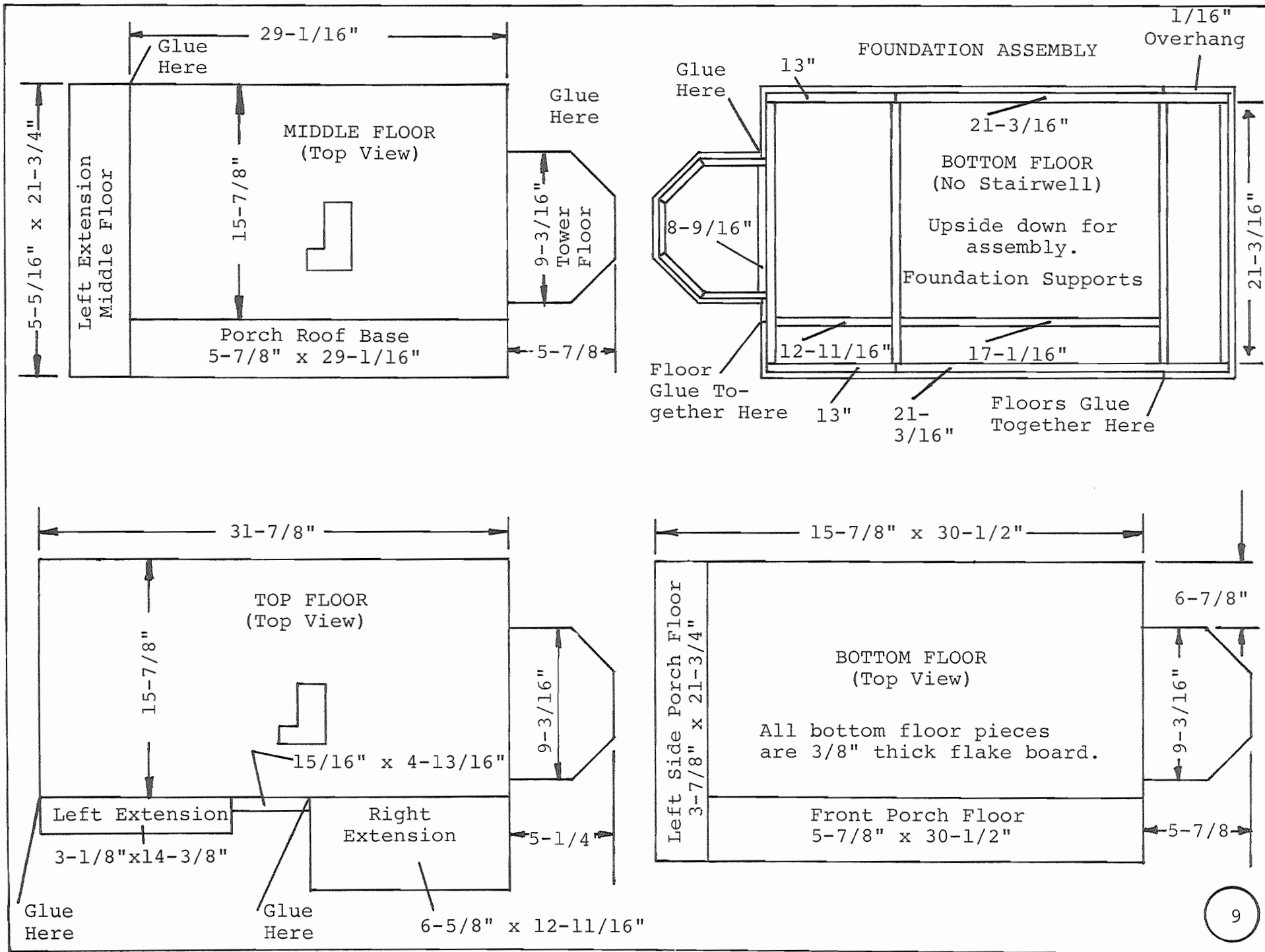


FIGURE 3

9. When the wall sections are completely dry, it is necessary to attach the corner connectors to the wall sections. Figure 2B illustrates how the connectors fit onto the wall sections.

Figure 4 on the next page illustrates where you are to use one-way, 90° or 135° connectors for levels one and two.

Working on one level at a time and without glue, work from left to right and dry-fit one corner connector to each wall section. Go ahead and dry-fit both of the corner connectors that fit onto the last wall section on the right side.

Once you are satisfied that the corner connectors fit properly, go back and glue them in place. You want the connectors to be flush to the bottom of each wall section and the wall sections should be pushed completely into the groove of the connector.

After the glue has dried completely, use a utility knife to trim off the tongue at the top of each wall section.

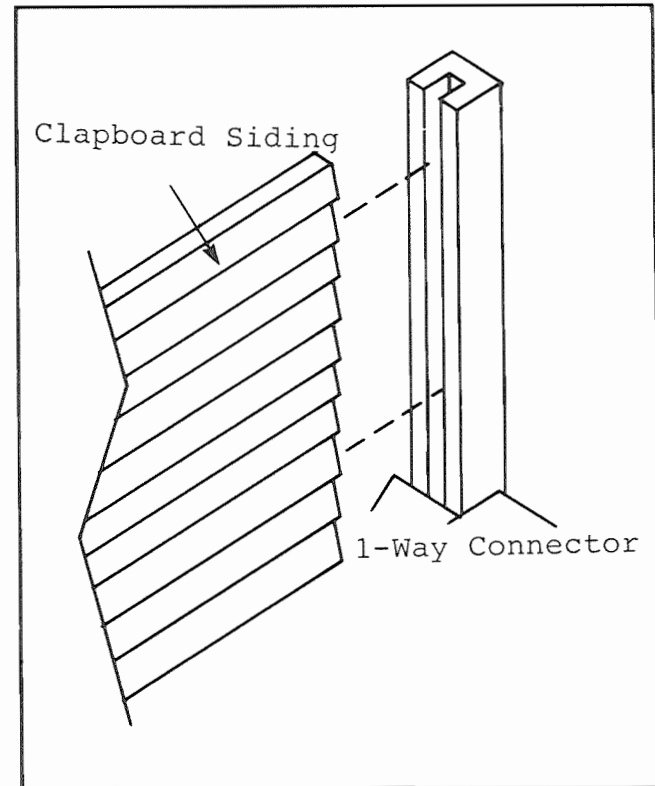


FIGURE 2B

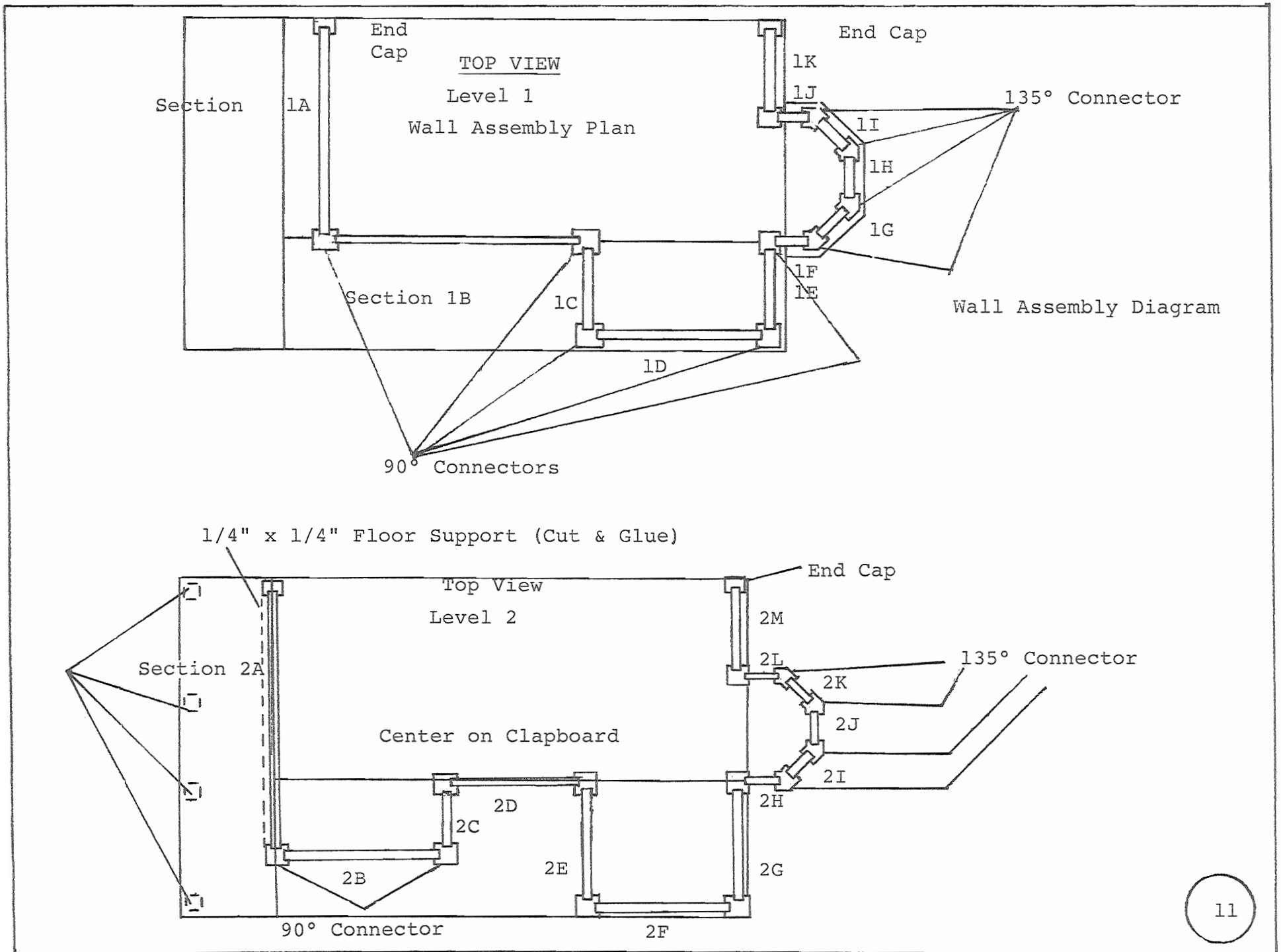


FIGURE 4

10. The final steps in building your dollhouse shell are to interlock the wall sections and to attach Levels 1 and 2 to their respective floors.

Begin with Level 1. Interlock and position the wall sections on the base. Use the diagram for Level 1 in Figure 4 and Figure 5 for proper positioning. DO NOT GLUE. Keep walls parallel and square. Equalize overhangs where applicable. Use masking tape to hold the walls together.

After you are satisfied that the wall sections are interlocked and positioned properly, trace the outline of the walls on the base with a pencil.

Then remove the structure and re-assemble the wall sections one by one within the pencil line, applying glue to the bottom edge of each clapboard section and each adjacent connector. Take care that the walls are plumb (at right angles to the floor). Use masking tape to help hold the clapboard sections in place until the glue has dried.

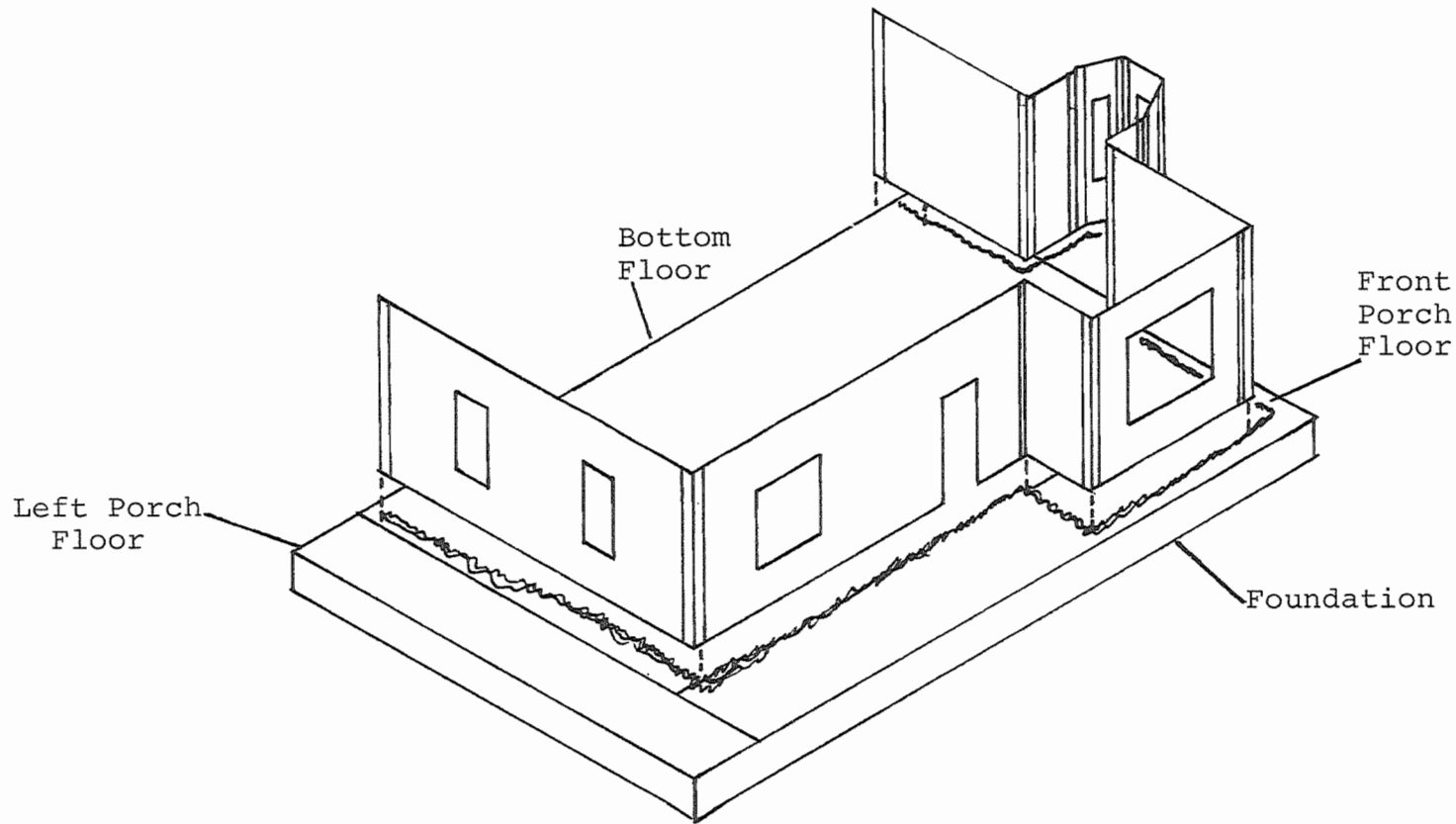
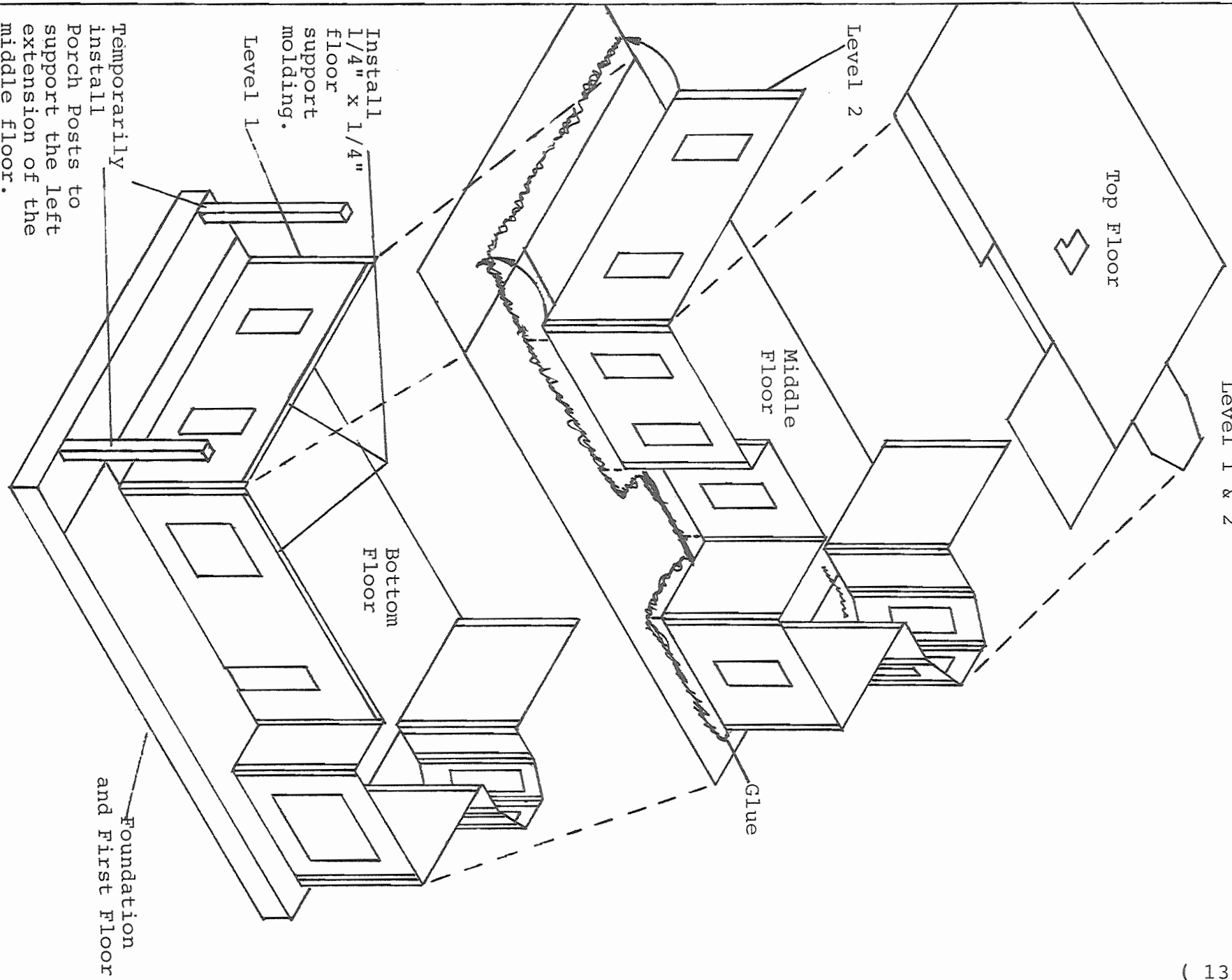


FIGURE 5

WALL ASSEMBLY DIAGRAM
Level 1 & 2



Temporarily
install
Porch Posts to
support the left
extension of the
middle floor.

Install
1/4" x 1/4"
Floor
support
molding.
Level 1

Bottom
Floor

Glue

Foundation
and First Floor

FIGURE 6

11. After the first level has dried, the second level can be installed. Apply a bead of glue all along the top of the clapboard wall sections of Level 1. Place the middle floor over the first level.

The middle floor left extension must be supported temporarily by the porch posts prior to the installation of the second level.

Cut and install a 1/4" x 1/4" molding flush to the top right side wall for added support. See Figures 6 and 7.

12. The second clapboard level can now be installed by repeating steps 10 and 11 above. Refer again to Figures 4 and 6.

After the second level of clapboard is attached to the middle floor, install the third floor.

13. Interlock and attach the clapboard sections of the tower on Level 3 according to the procedures outlined for Levels 1 and 2.

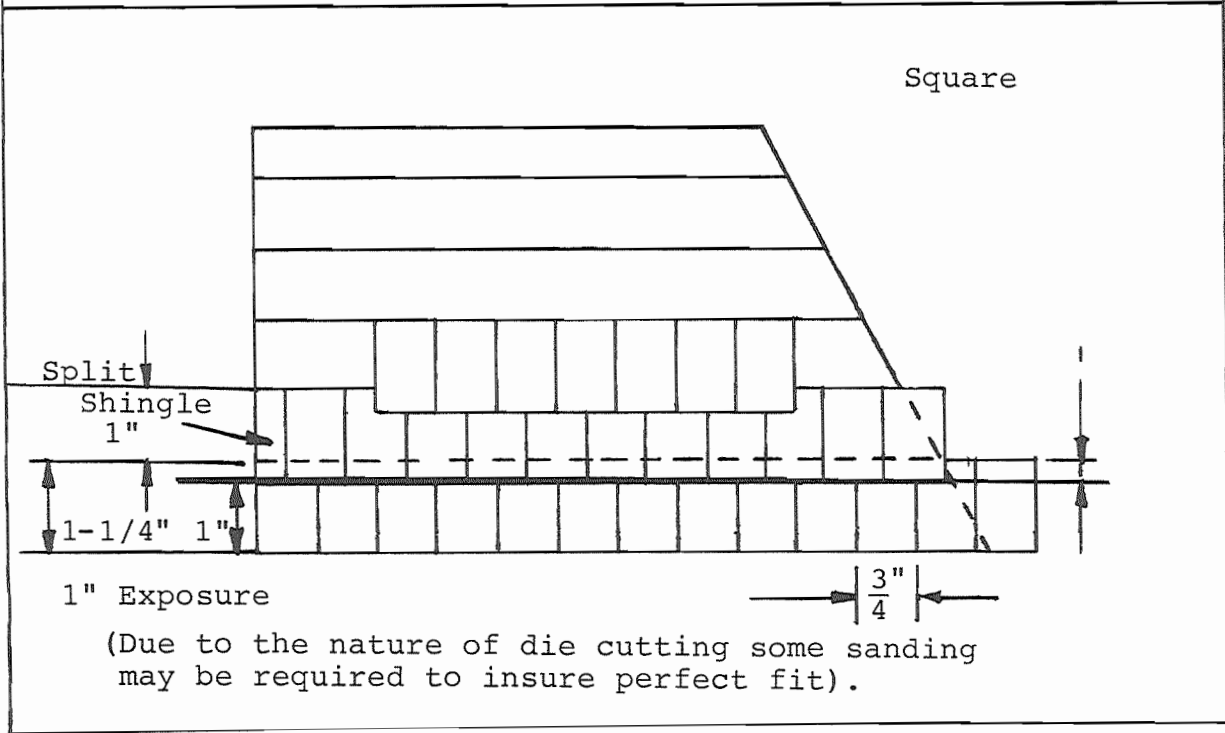
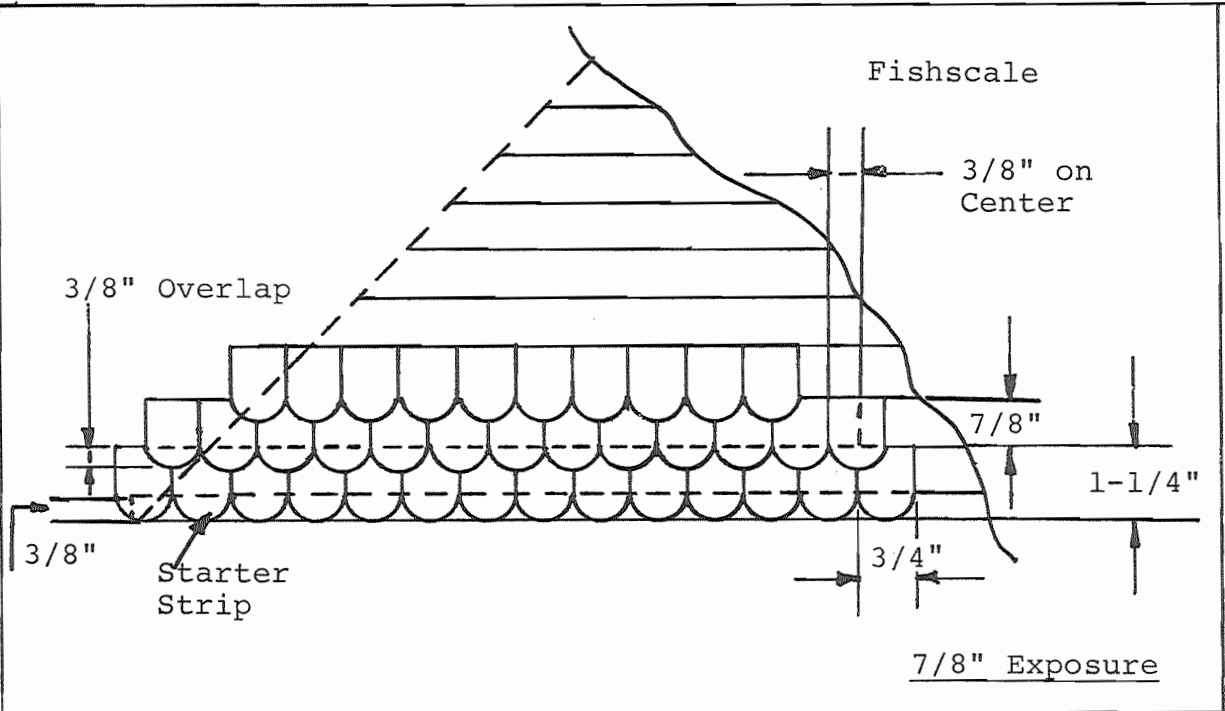
The tower wall connectors should be aligned with the connectors on Levels 1 and 2 for proper positioning. See Figures 7 and 8.

14. Your basic dollhouse shell is now complete. Before you can begin assembling the roof sections onto the shell, you should shingle the roof sections.

Refer to Figure 8 which illustrates where to use fishscale or square shingles.

Shingling instructions are given on the next page.

NOTE: If you have a hot melt glue gun and glue sticks, you can save considerable time on the shingling process.



Shingle Assembly Instructions

Fish-Scale

1. Use hot melt or white glue
2. Start at the bottom with starter strip 3/8" x 1-1/4" (Split square shingles in half)
3. Draw first guide line 1-1/4" up from the bottom and every other line should be 7/8" apart. (this will allow for 3/8" overlap)
4. Offset every other row so seams are staggered 3/8"

Square

1. Start at the bottom
2. Draw the first guide line 1-1/4" up from the bottom and every other line should be 1" apart. This will allow for 1/4" overlap.
3. End shingles for every other row should be split in half

Use Hot Melt or White Glue

NOTE: Allow 3/16" overhang on Pavilion Side Roofs only.

15. Once you have finished shingling the roof pieces you are ready to start the roof assembly. Take a moment and study Figures 7, 8 and 9 so that you have an understanding how the roof parts should fit together.

Locate the back roof strips, back roof trim, left and right side roofs, and the large front roof. Glue all of these pieces together simultaneously using masking tape to hold them together.

Assemble the back roof strip and the left and right trim first so that when the front roof is assembled it overlaps the back roof strip. See Figures 7 and 9.

NOTE: Again, a hot-melt glue gun can facilitate assembly.

You should use a utility knife to notch roof pieces around the tower connectors.

16. Next, install the left and right pavilions as shown in Figures 8 and 9.
17. Using the procedures previously applied, glue the porch roofs as shown in Figures 8 and 9.
18. Now assemble the tower roof and base pieces as shown in the adjacent diagram. Punch out all die-cut pieces carefully front to back. The front side has clearly visible cut marks. Due to the nature of die-cutting, occasional sanding, filing or cutting

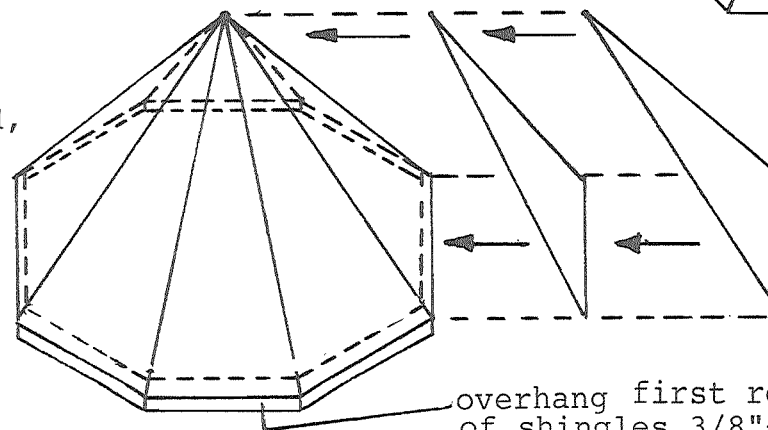
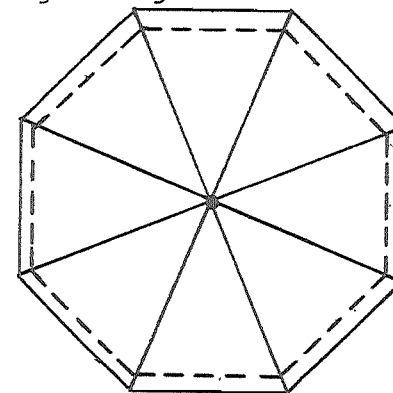
may be necessary to insure a perfect fit. Extra parts are often provided.

Assemble the die-cut sides on top of the octagonal tower base. Allow the sides to overhang the base $1/32$ "

NOTE: Shingles should have been applied prior to assembling the tower roof. The joint seams can be covered with $1/8$ " x $1/4$ " stripwood.

Shingles can be applied after assembling the tower roof, however considerable skill and time are required to angle and join the shingle edges together.

TOP VIEW
OCTAGONAL TOWER
BASE



Allow $1/32$ "
overhang
over Tower
Floor.

overhang first row
of shingles $3/8$ "- $1/2$ "
to cover edge of the
Tower base

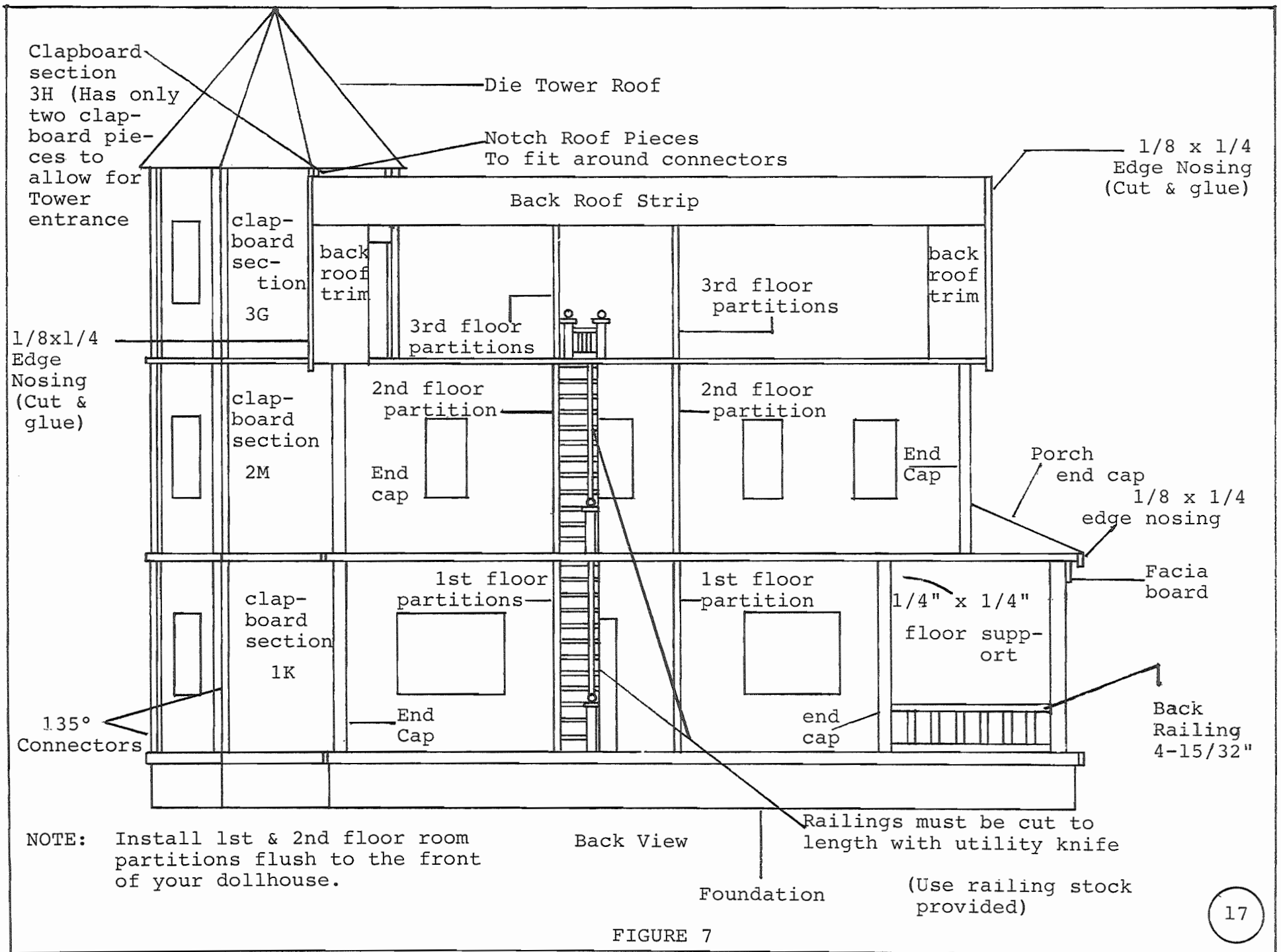


FIGURE 7

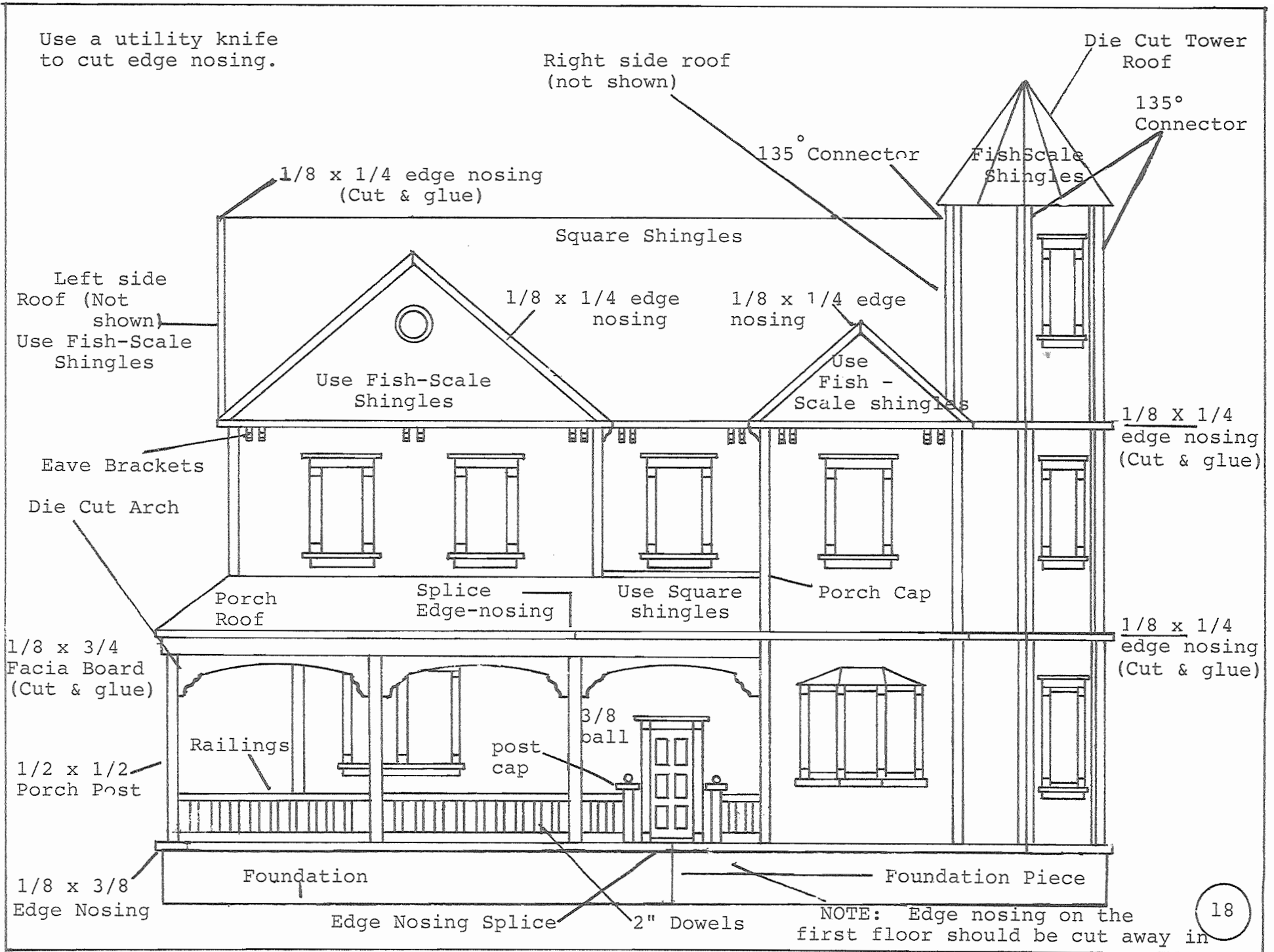
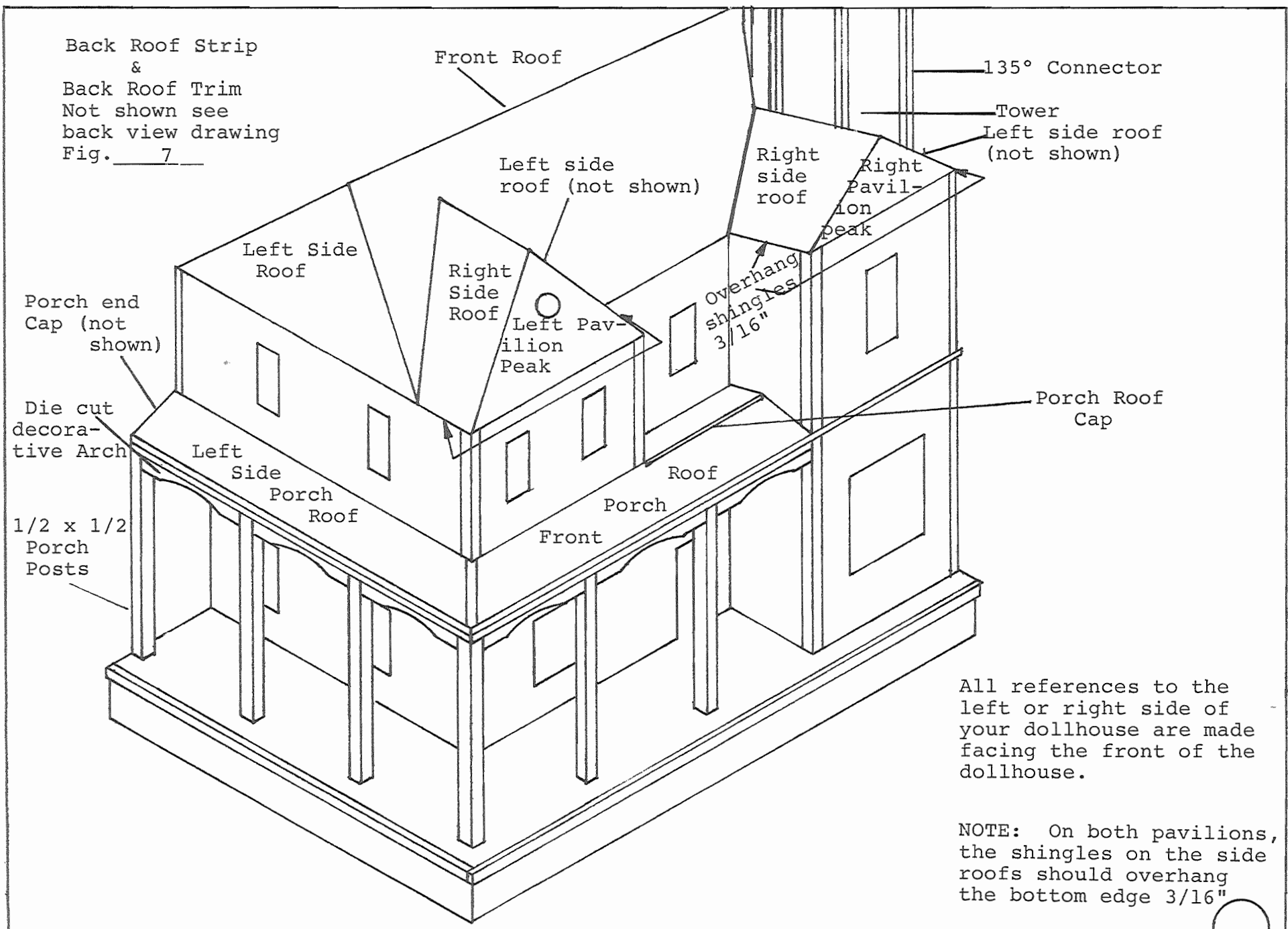


FIGURE 8



Back Roof Strip
&
Back Roof Trim
Not shown see
back view drawing
Fig. 7

135° Connector

Tower

Left side roof
(not shown)

Front Roof

Left side
roof (not shown)

Right
side
roof

Right
Pavil-
ion
Peak

Left Side
Roof

Right
Side
Roof

Left Pav-
ilion
Peak

Overhang
shingles
3/16"

Porch end
Cap (not
shown)

Die cut
decora-
tive Arch

Left
Side
Porch
Roof

Roof

Porch

Front

Porch Roof
Cap

1/2 x 1/2
Porch
Posts

All references to the
left or right side of
your dollhouse are made
facing the front of the
dollhouse.

NOTE: On both pavilions,
the shingles on the side
roofs should overhang
the bottom edge 3/16"

FIGURE 9

19. The basic structure is now complete and all that remains is to add the decorative trim, windows, door, stairs and room dividers.

You may want to paint your trim parts before actually gluing them to the house. This will save you painting time and will probably give you the better finish.

IF YOU ELECT TO PAINT SOME OF THE TRIM PARTS BEFORE GLUING THEM TO THE HOUSE, MAKE EVERY EFFORT TO KEEP PAINT OFF OF THE SURFACES WHERE GLUE WILL BE APPLIED. THE GLUE WILL NOT BOND PROPERLY TO PAINT AND TRIM PARTS WILL TEND TO "POP" OFF OF THE HOUSE WHEN BUMPED OR MOVED.

20. Start by assembling your porch railings. Figure 10 illustrates how the railing channels and spindles fit together to form the railings. Use Figures 11 and 12 to identify the length of railings to use and the number of 1/8" spindles or posts to install.

Apply a dab of glue to the bottom of each spindle and install as shown in Figure 10. Use approximately 1/2" spacing between spindles and keep the spacing uniform. Be sure all spindles are perfectly upright and perpendicular. Do not install the top railing channel until the spindles have dried.

After all the railing sets have been completed, install them simultaneously with the porch posts, die-cut archways and fascia boards. See Figures 8, 11 and 12 for proper positioning.

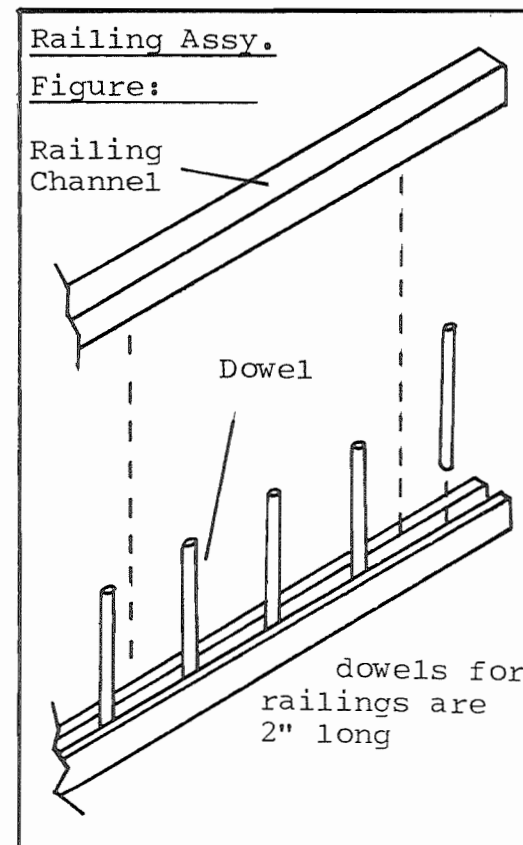
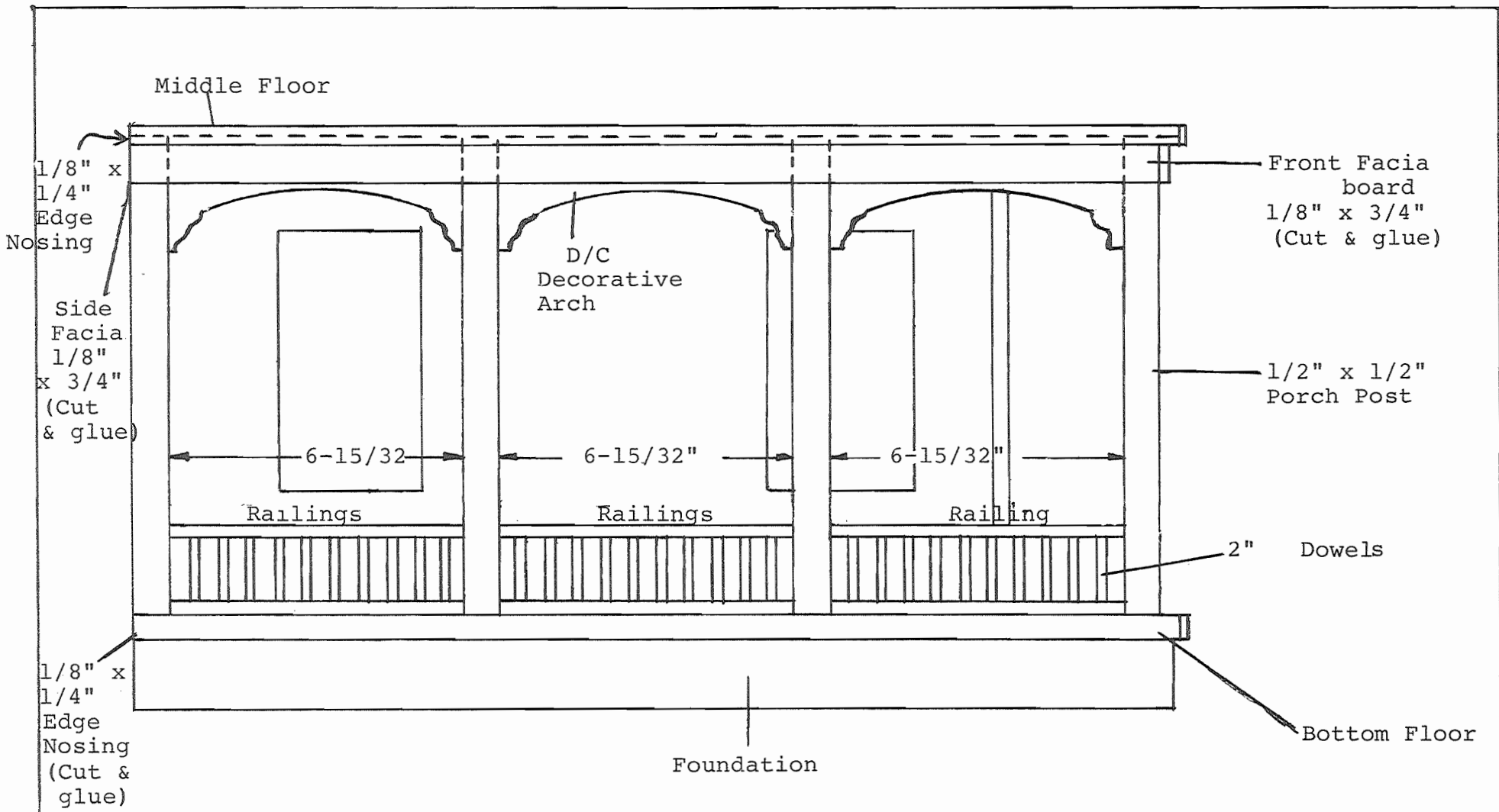
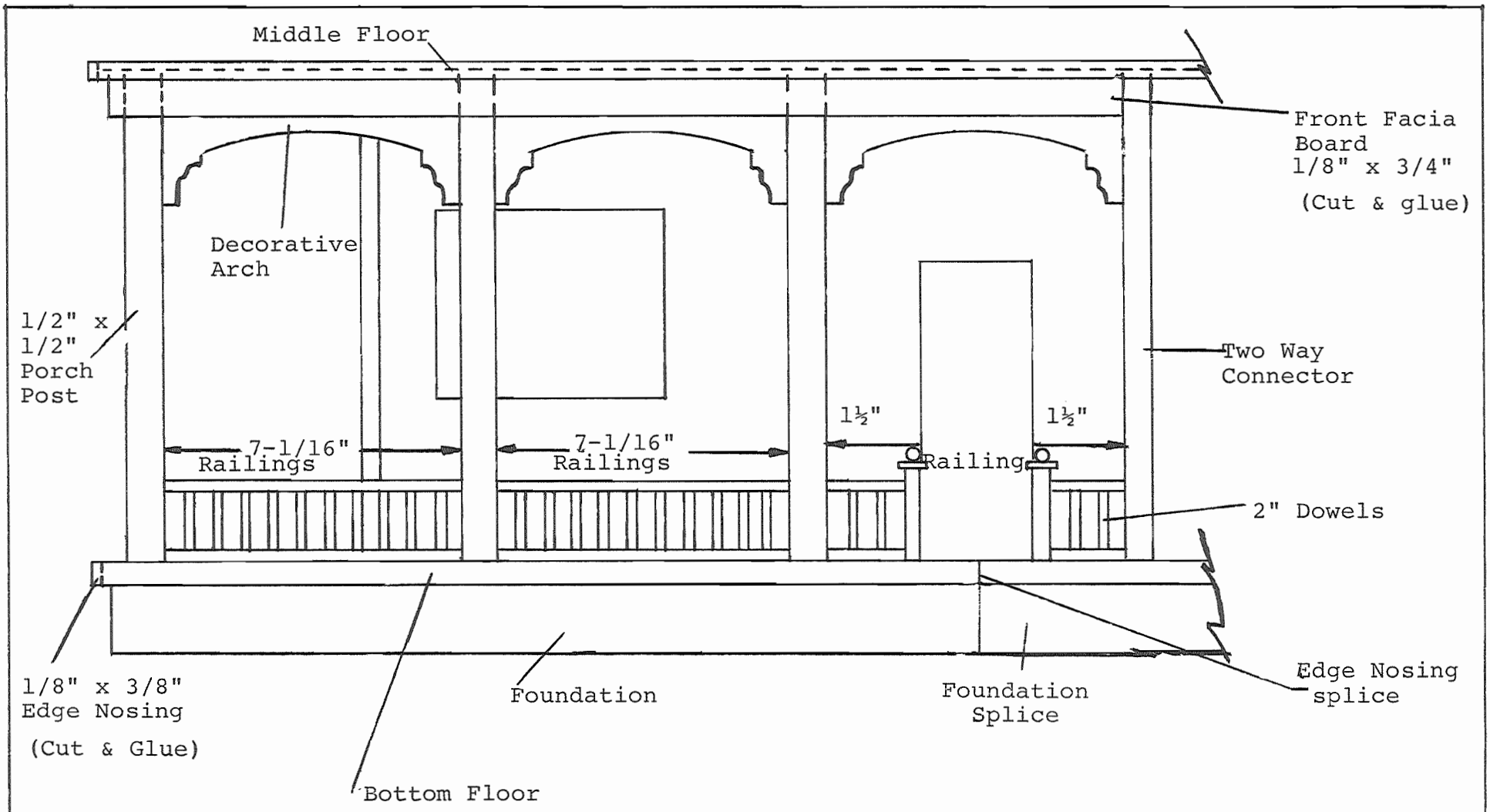


FIGURE 10



LEFT SIDE PORCH ASSEMBLY

FIGURE 11



FRONT PORCH ASSEMBLY

FIGURE 12

21. Install the eaves brackets as shown in Figure 8. Also refer to the photograph on the cover to aid you in locating the proper positioning for all trim pieces.

22. The edge nosing (1/8" x 1/4" stripwood) is designed to cover the edges of your dollhouse floors, as well as the edges of some of the roof pieces.

The edge nosing strips overhang down below the floors to cover any space between the floor and the clapboard siding.

Use a utility knife to cut your edge nosing to size. Angle cuts must be made for the edge nosing located around the octagonal tower. See Figures 7 and 8.

Always start gluing at the back edge of the dollhouse and work your way across the front to the other end of the house. Use 1/8" x 3/8" stripwood on the bottom floor.

23. Assemble the circular window by simply gluing the plexiglass into place. Then attach the window to the pavilion.

24. Assemble the 8 large windows and the 9 narrow windows using the assembly instructions and illustrations on Pages 24, 25 and 26. It may be necessary to cut or file the tongues at the bottom of the window openings in order for the windows to fit properly.

25. Assemble the bay window and double window units using the instructions and illustrations on Pages 24, 27 and 28.

26. Assemble and install the interior and exterior staircases using the instructions and illustrations on Pages 29 and 30.

27. The photograph on Page 1 shows a suggested interior room layout. However, the wall partitions may be positioned according to your preference.

28. Assemble the door according to the instructions and illustrations on Pages 31 and 32.

CONGRATULATIONS, YOUR DOLLHOUSE
ASSEMBLY IS NOW COMPLETE!

STANDARD WINDOW ASSEMBLY

The standard Harvard window kits are assembled according to the following procedure:

- a) Identify and arrange the parts in the kit using the assembly diagram as an aid. Be sure of parts orientation before gluing.
- b) Put a dab of glue on both sides of the header and sill.
- c) The plastic window is inserted into the grooves on the vertical stiles, header, and sill and pushed into position as shown in the Assembly Diagram.
- d) Slide the window over the edge of the table and wrap one end with an elastic band. As shown in the Assembly Diagram.

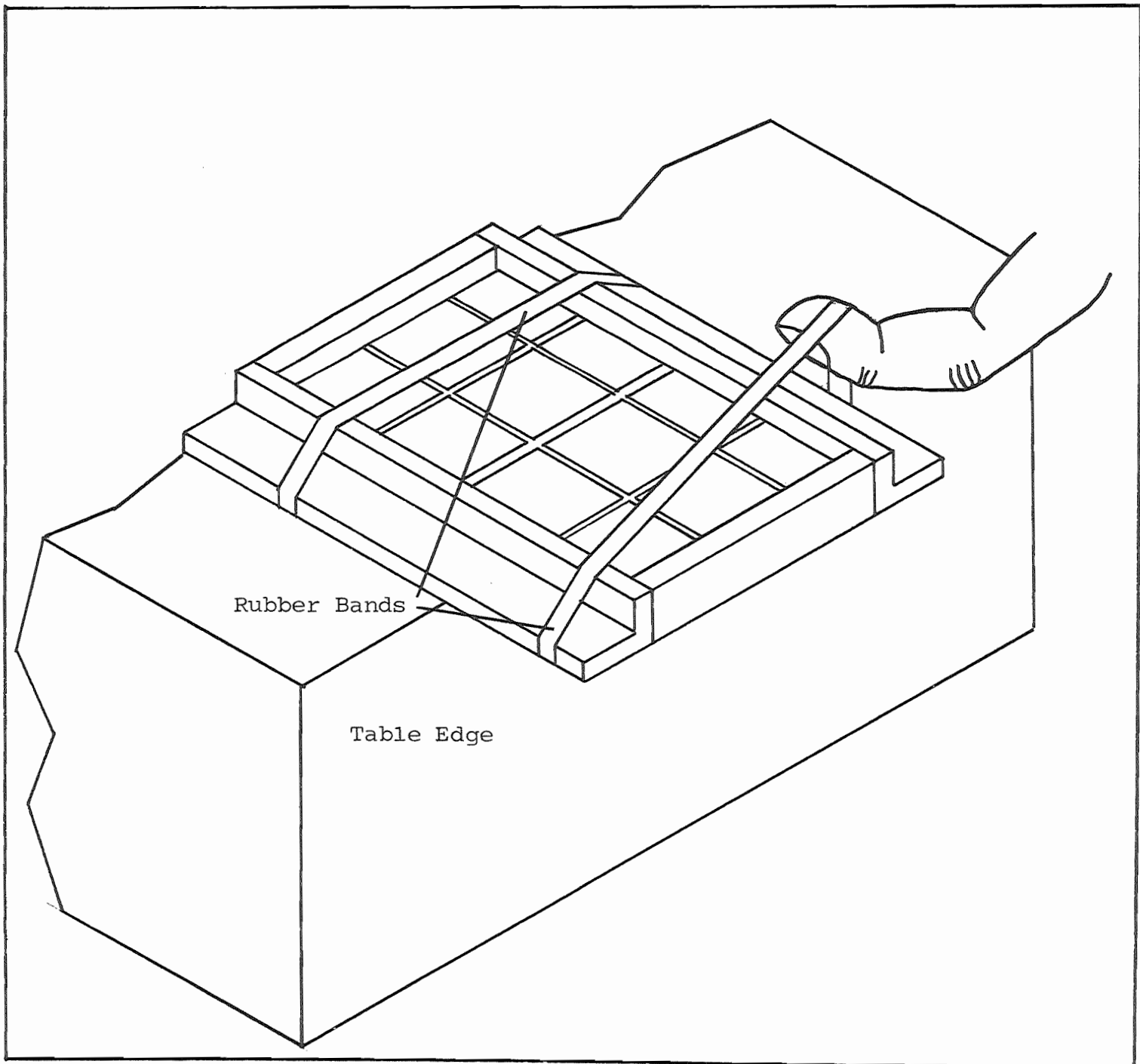
Carefully turn the window around and wrap an elastic band around the other end.

Check to see that the window is square at the corners, and the header and sill flush at the top and bottom.

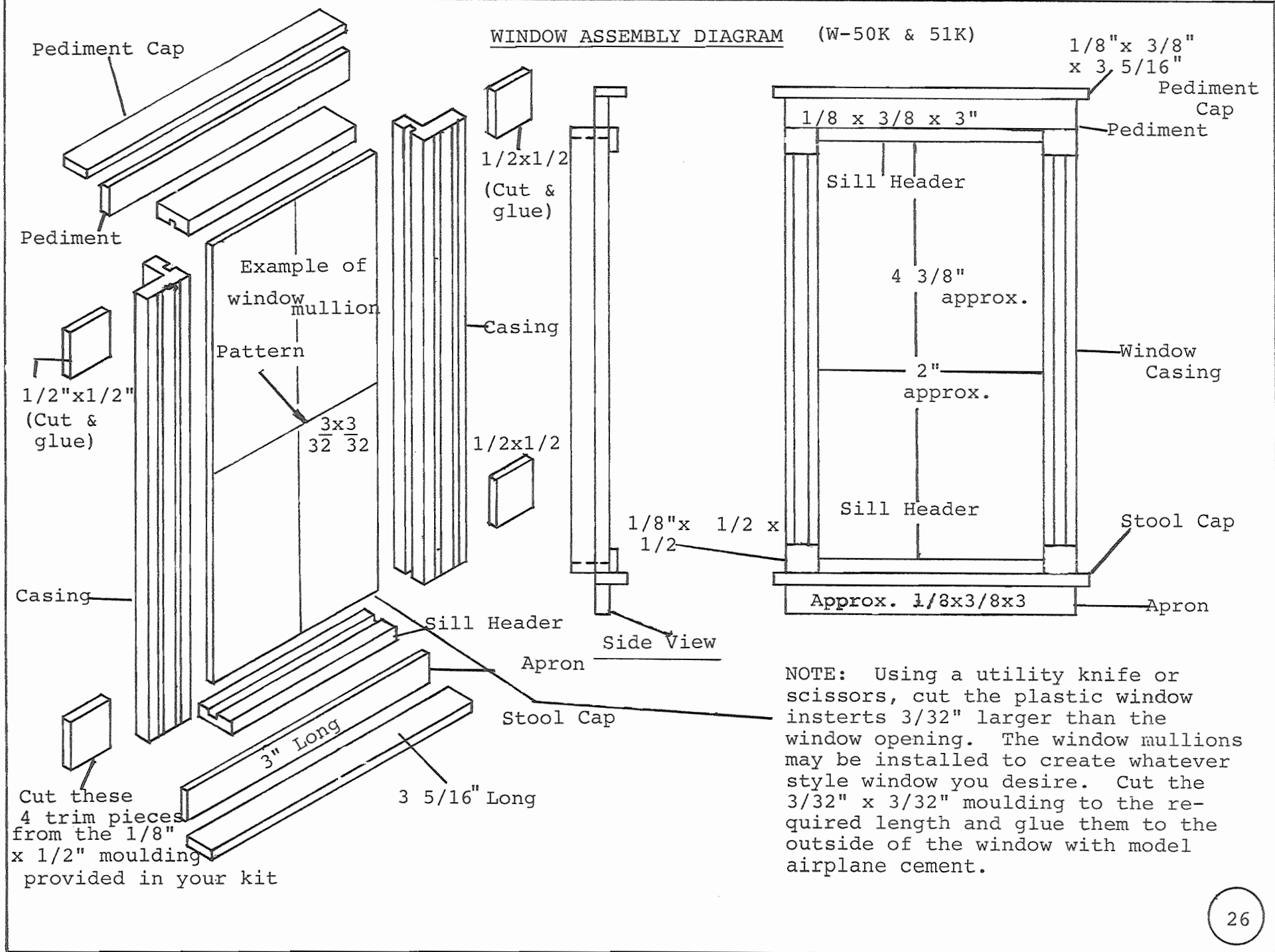
- e) Let the glue dry and then assemble the decorative pediment and stool cap, if required, as shown in the Assembly Diagram.

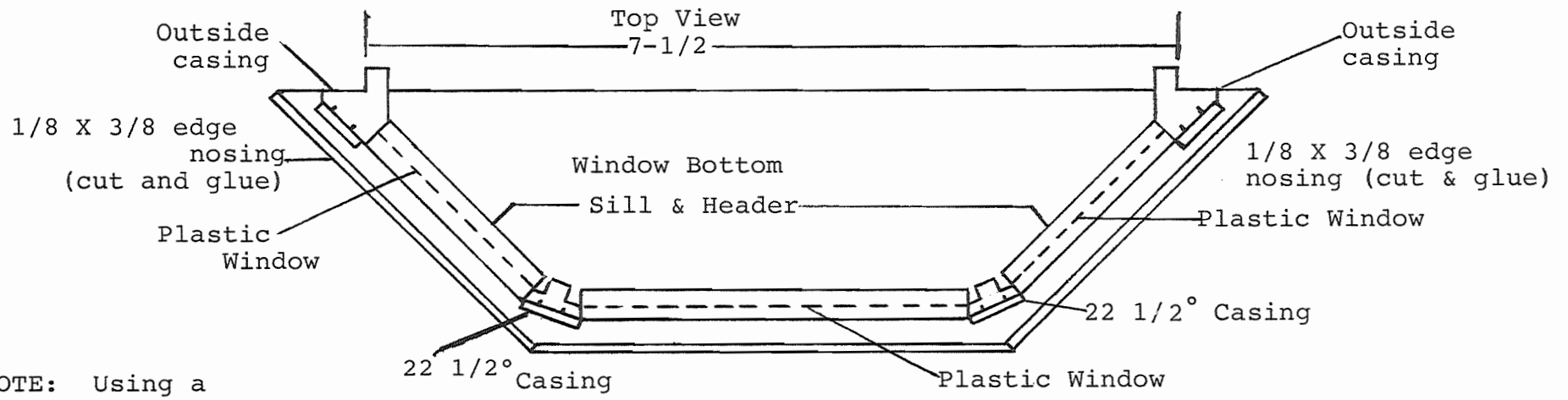
NOTE: These parts are not glued flush to the rear of the window frame and should be installed as shown in the Assembly Diagram.

- f) Tape the pediment and stool cap, if required, into position with an equal overhang at each side of the window frame.
- g) Allow the window unit to dry thoroughly before using.
- h) If too tight during assembly sand or file the corners to fit.



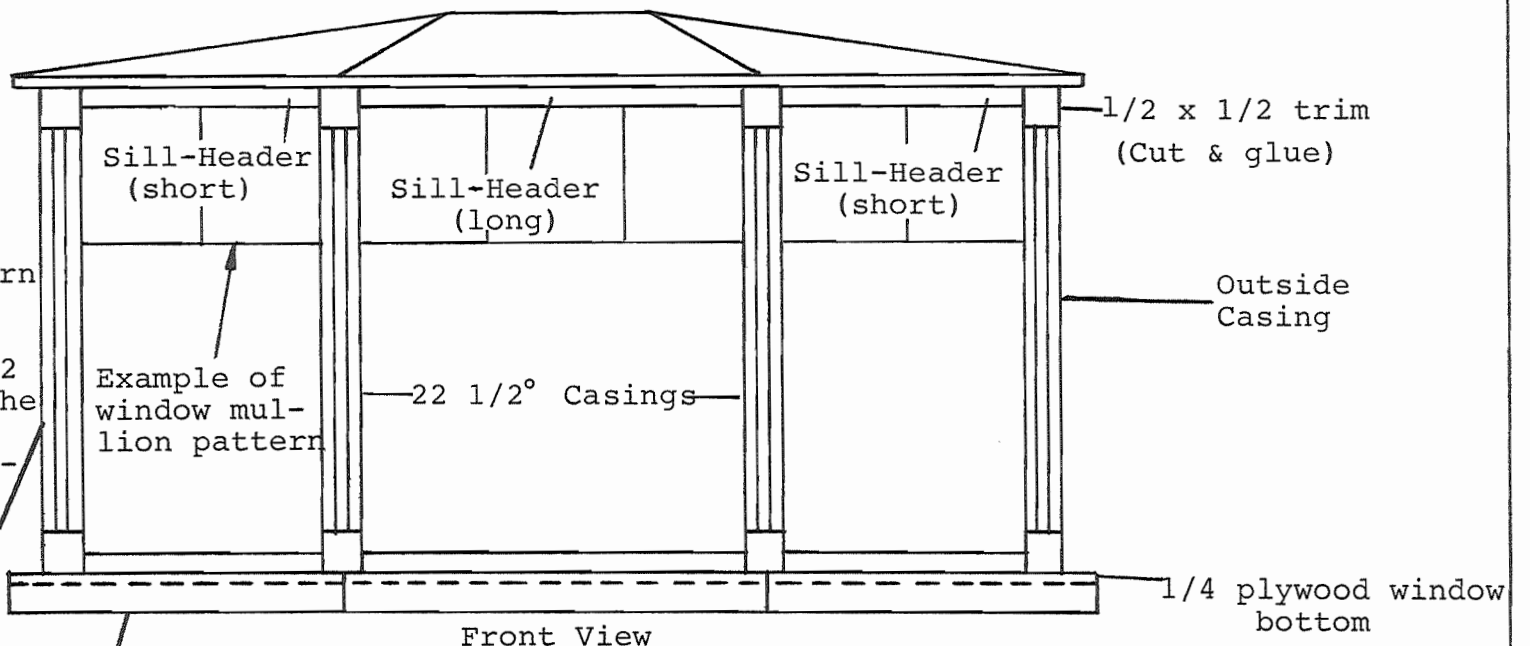
WINDOW ASSEMBLY DIAGRAM (W-50K & 51K)





NOTE: Using a utility knife or scissors, cut the plastic window inserts $3/32$ " larger than the window opening.

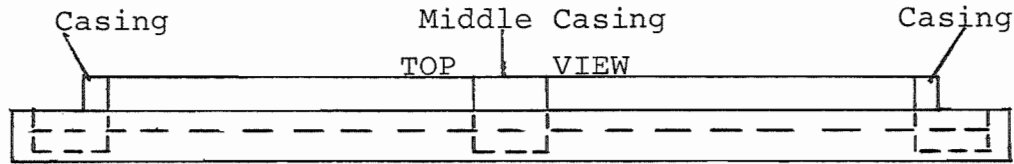
The window mullion material may be installed in any pattern to create whatever style window you desire. Cut the $3/32$ x $3/32$ moulding to the required length and glue them to the outside of the window with model airplane cement.



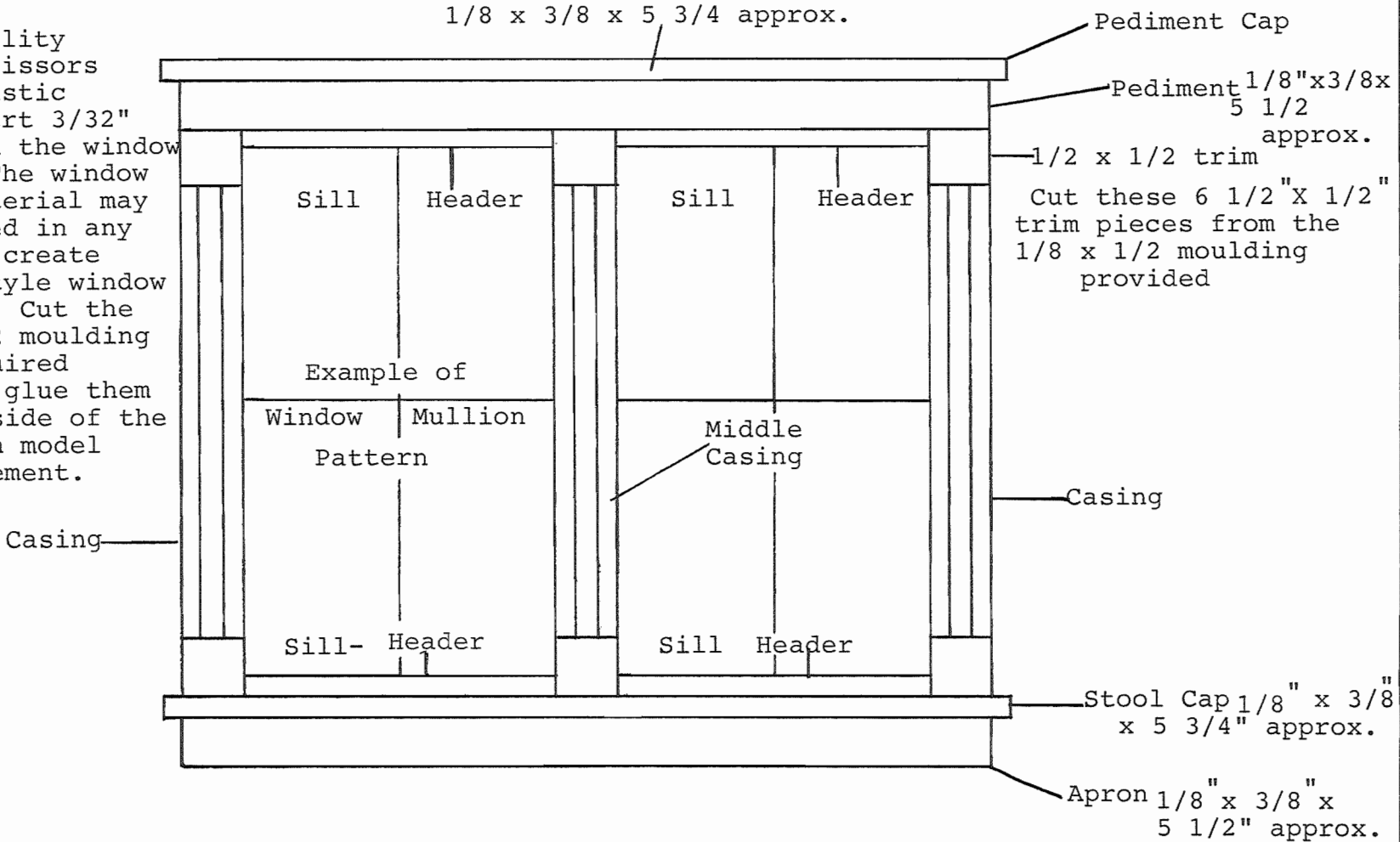
1/8 X 3/8 edge nosing (cut & glue)

(W-53K) Bay Window Assembly

DOUBLE WINDOW ASSEMBLY (W-52K)



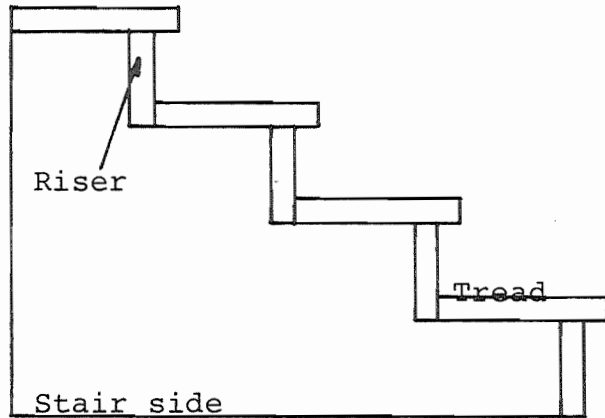
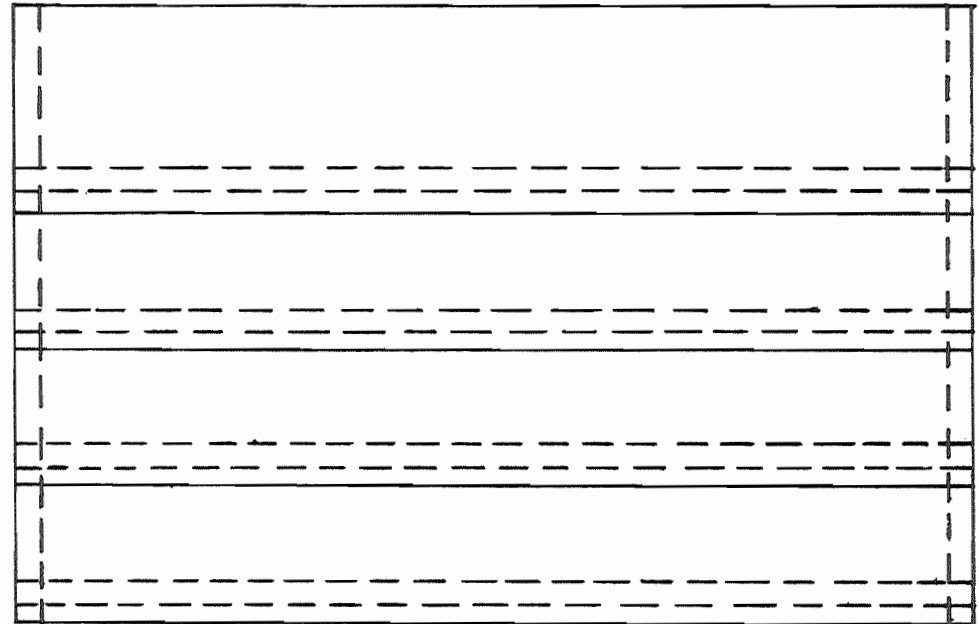
Note:
 Using a utility knife or scissors cut the plastic window insert $3/32$ " larger than the window opening. The window mullion material may be installed in any pattern to create whatever style window you desire. Cut the $3/32 \times 3/32$ moulding to the required length and glue them to the outside of the window with model airplane cement.



Front View

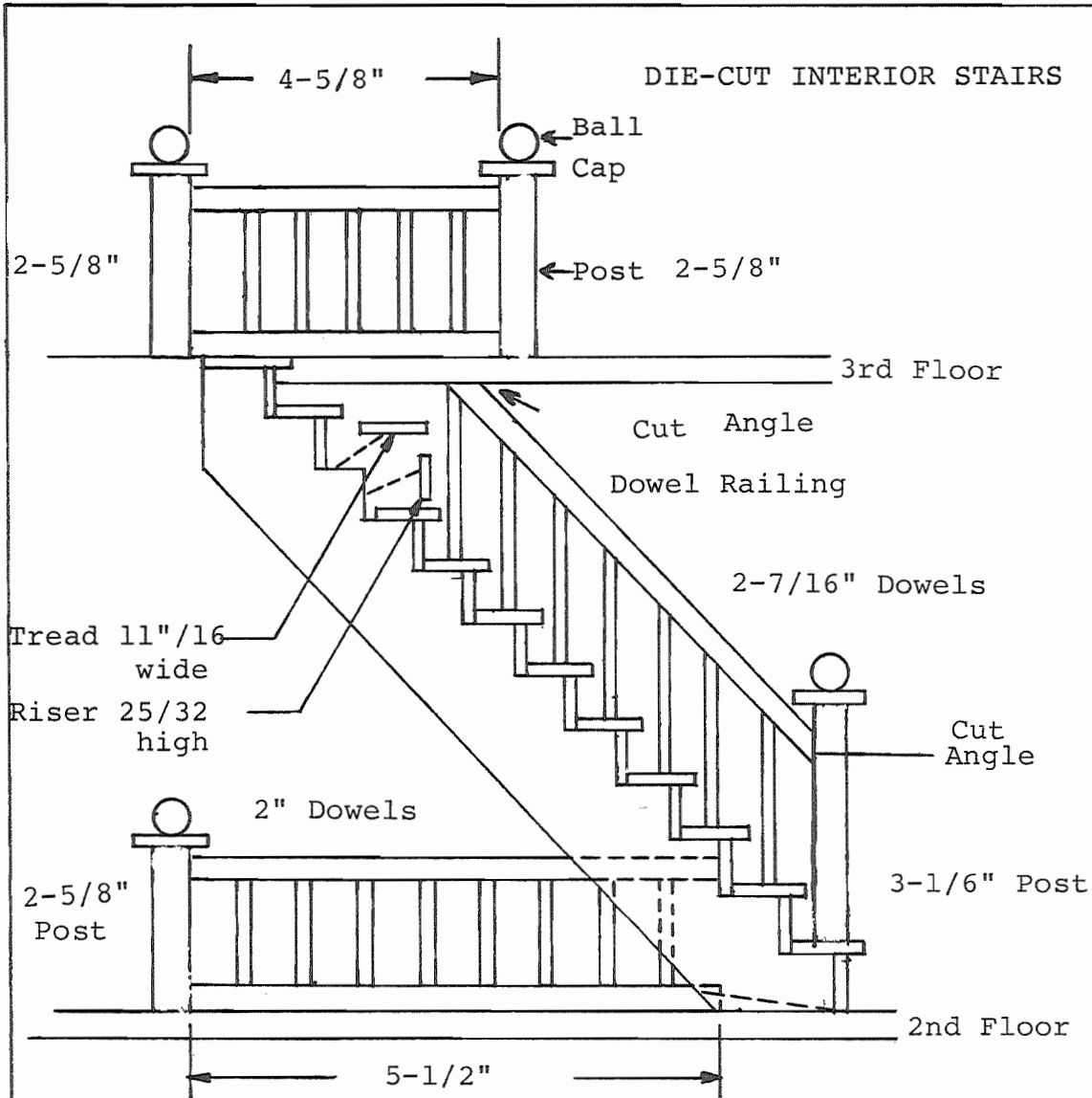
DIE-CUT EXTERIOR STAIRS

TOP VIEW

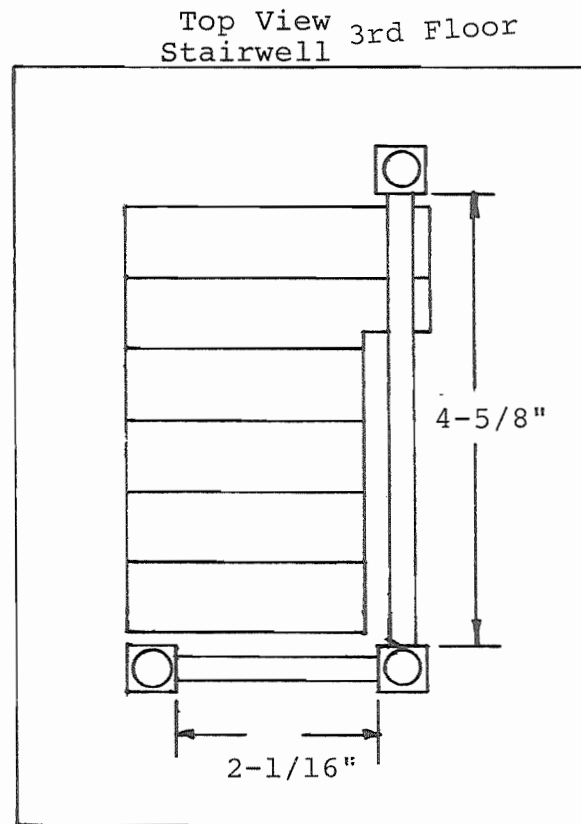


SIDE VIEW

Punch out all pieces carefully from front to back. (Where the cut marks are clearly visible) Due to the nature of die cutting occasional sanding, filing, or cutting may be necessary to insure perfect fit. (Extra parts are provided)



Use 2-7/16" dowels for stair railing spindles, and use 2" dowels for stairwell railings.



Our interior staircase can accommodate ceiling heights varying from 9-1/2" to 10-3/8". To adjust the staircase to fit your 9-1/2" ceiling height, simply cut or sand the bottom side stringer 1/8" on an angle as indicated above.

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FRONT DOOR ASSEMBLY INSTRUCTIONS

Refer to the assembly diagram on the next page to identify and arrange the door parts. Make sure you understand how the parts fit together before gluing.

Apply glue to each end of both the header and threshold. The pre-drilled holes should be on the RIGHT side of the door frame.

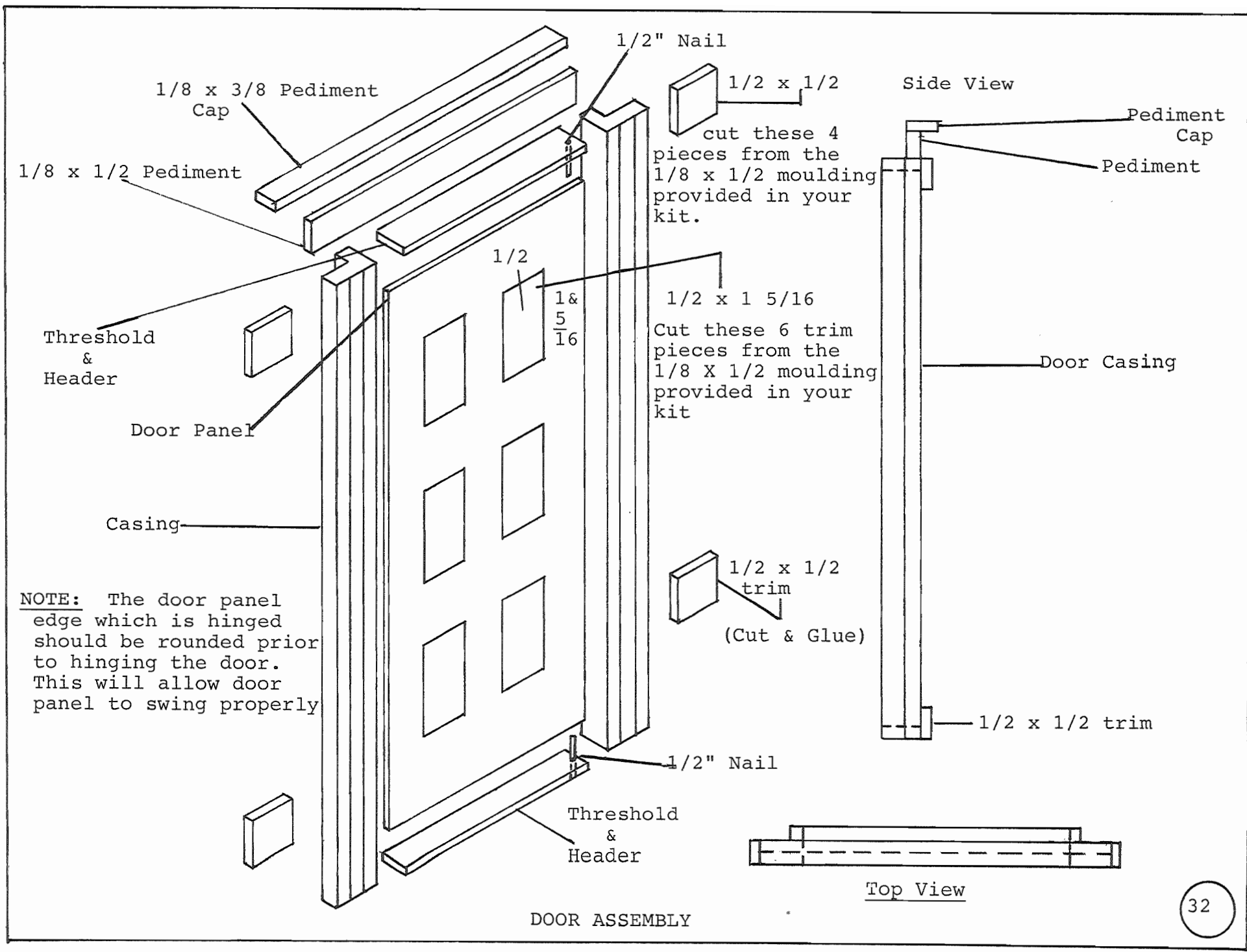
Assemble the side casings, threshold and header together as shown in the diagram. Wrap each end of the frame securely with an elastic band. Make sure the corners are square.

While the glue is drying, use a utility knife or file and sandpaper to bevel the edge of the door panel that is to be hinged. This will allow the door to swing properly.

Once the frame is dry and the door has been beveled, install the door panel. Using the nails provided, push the nail through the hole in the threshold and into the door panel. The other nail goes through the header and into the panel. Be sure to center the nails in the door to avoid splitting.

Finally, glue the decorative door pediment in place as shown. Cut the decorative door panels and casing trim from the 1/8" x 1/2" stripwood in your kit and glue in place.

Now, glue the door into place on your dollhouse. Minor sanding or filing may be required if the opening is too small.



1/8 x 3/8 Pediment Cap
 1/8 x 1/2 Pediment

1/2" Nail
 1/2 x 1/2

Side View
 Pediment Cap
 Pediment

cut these 4 pieces from the 1/8 x 1/2 moulding provided in your kit.

Threshold & Header

1/2
 1 & 5/16

1/2 x 1 5/16
 Cut these 6 trim pieces from the 1/8 X 1/2 moulding provided in your kit

Door Casing

Door Panel

Casing

1/2 x 1/2 trim
 (Cut & Glue)

NOTE: The door panel edge which is hinged should be rounded prior to hinging the door. This will allow door panel to swing properly

1/2 x 1/2 trim

1/2" Nail

Threshold & Header

Top View

DOOR ASSEMBLY