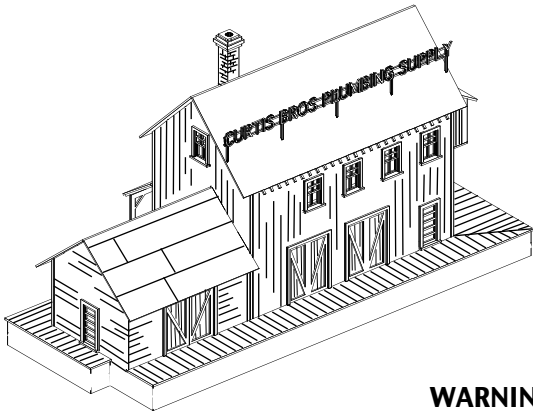




Curtis Bros Plumbing Supply Co. 1

Thank you for purchasing my N-scale Curtis Brothers Plumbing Supply kit. I have been a model builder for over 35 years. Over that time, I've built everything from snap together plastic kits on up to craftsman style kits that are little more than a box of sticks. My design goal is to provide exceptional quality and detail combined with a kit that is easy to put together accurately.

In the following directions, you will find my advice on building the kit complete with painting, weathering, and construction techniques. **Please take a moment to read over the directions before you start construction.** If you run into any problems, do not hesitate to email me at mthduggan@pawofabear.com. I have also posted my build of this kit complete with step-by-step photographs on my website at <http://www.pawofabear.com/NCurtisBrosBuild.html>. Enjoy!



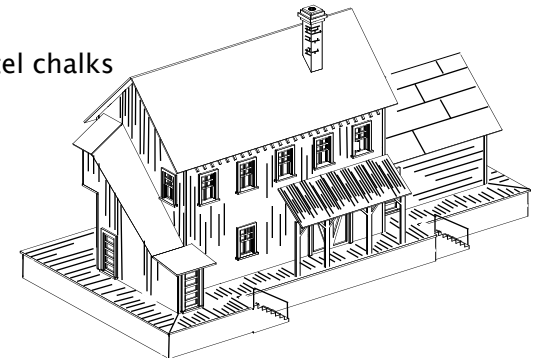
WARNING! This kit is not meant for children. Contains small parts. Potential choking hazard.

Recommended tools:

- Hobby knife with plenty of sharp #11 blades
- Fine point tweezers
- Sanding sticks (emery boards work well and are cheap)
- Pin vise & .015", $\frac{1}{16}$ ", and $\frac{3}{32}$ " bits
- Toothpicks
- Needle nose pliers
- Paint brushes #4 flat, a 0 and a 000 brush. Do not use cheap brushes. A good brush can make or break a model
- Wire cutters
- Sprue cutters

Recommended Adhesives & Other Materials

- CA glue
- Yellow Waterproof Carpenter's Glue
- White Elmer's Glue
- Paint of your choice - I used acrylic paint Polyscale "Aged White" for the walls, Polyscale "British Dark Green" for the trim, Polyscale "Southern Sylvan Green" for the roofing and Polyscale "MEC Harvest Gold" for the lettering. Ceramacoat Black, White, & Silver acrylic paint.
- Alcohol & India Ink wash (about a teaspoon of Black India Ink in about a pint 70% or 91% Isopropyl Alcohol) **Caution!** This solution is poison. Label it as such and keep it out of the reach of children.
- grey & earth tone pastel chalks





Overview of Building Technique

When you apply paint to wood, it will warp. Don't panic. There are several ways to minimize the warping. You can apply paint/stain to both sides of the wood; or brace the wood before painting; and/or clamp the parts while they dry. With these kits, I recommend painting and weathering the walls and trim while the parts are still in the carrier sheet. Then apply all the windows, doors and trim before removing the walls from the carrier sheet. Once the parts are in place and completely dry, brace the walls with $\frac{1}{8}$ " square basswood.

Paint Walls and Trim

Use any paint of your choice. Stain, enamels, and acrylic paints all work with wood. I prefer acrylic paints applied with a brush. I painted the walls (**parts W1–W14**) with Polyscale "Aged White." Whether you use a brush or airbrush, acrylic or solvent based paint, several light coats of paint are better than one heavy coat.

I painted the plywood window (**parts S1–S3 & F1**) and the door trim (**parts D2–D4, F2, & F3**) using Polyscale "British Dark Green." I painted the doors (**parts D1, D2, and D3**) with "Aged White" in order to create contrasting door panels. Again, several light coats of paint are better than one heavy coat. Allow the parts to dry.

Paint the $\frac{1}{16}$ " square basswood and allow to dry. I wanted my model to have contrasting trim so I used Polyscale "British Dark Green."

Paint N Scale 4"x 6" stripwood rafter tails and posts with Polyscale "British Dark Green."

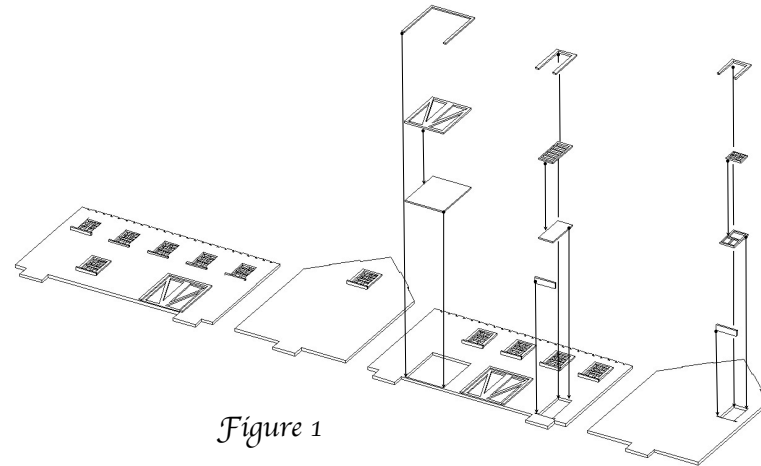


Figure 1

Paint Loading Dock Decking

Remove the decking (**parts LD1, LD2, LD3, LD4, & LD5**) from the carrier sheet. To create a weathered look, gently run a fine toothed razor saw across the parts (hold the teeth perpendicular to the score lines). Next, following the grain, rub the parts with a small wire brush. With a small pair of scissors, carefully cut at the board ends to create broken boards.

Once the boards are distressed to your taste, apply a wash of India ink and alcohol. Try to vary the tinting from board to board. Set the parts aside and allow them to dry thoroughly. Once the parts are dry, dry-brush white or light grey across the grain until the results please you. Set aside to dry. Don't worry if the parts warp a little. Glue and clamps will correct this problem.



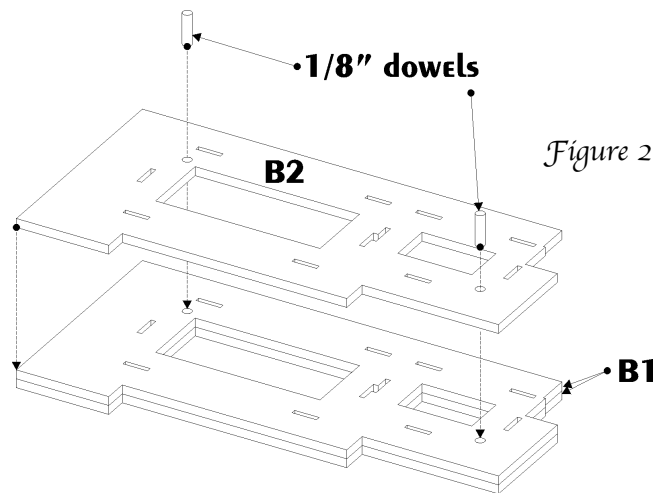
Paint Roofing

Leaving the parts in the carrier sheet, paint approximately $\frac{1}{8}$ " – $\frac{1}{4}$ " around the underside edge of the roofing (**parts R1–R7**). Assembly

Choices – I designed Curtis Bros. Plumbing Supply to be built on a base, but I have provided options. Here are a few options that I thought of as I designed the building.

- The addition can have a door or a window on the end. Select your preference and **leave off the other**.
- Use the base as a jig, but do **not** glue the model to the base. Remove the tabs when you are ready to set your building in place.
- Cut apart the base and build two separate buildings, or use the base as a jig to build two separate buildings adding your own foundation.

Assemble (& Paint) Base and Stairs



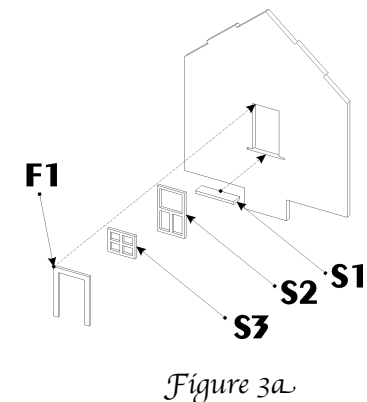
Cut two quarter inch ($\frac{3}{8}$ ") long sections of eighth inch ($\frac{1}{8}$ ") dowel. Spread an even coat of yellow glue on the top of one unscribed Masonite base (**part B1**). Press the other unscribed Masonite base (**part B1**) in place. Add a dab of yellow glue to the dowels and insert them into the alignment holes. The holes are tight, so you may have to twist the dowels into place. Check the alignment. Be sure that the dowels are flush with the bottom of the base. Any excess on the top side will be hidden by the walls. Now spread an even coat of glue onto the bottom of the scribed Masonite base (**part B2**). Press Masonite base (**part B2**) in place. Make sure to leave the score lines showing. Wipe excess glue off with a damp paper towel. Clamp and set aside to dry.

Use multiples of **part ST1** to make the stairs. You can make the stairs three parts wide or two parts wide. Glue them together with yellow glue. Clamp, check alignment, wipe off excess glue, and allow to dry.

Once the stairs have dried, paint the edges with several coats of Polyscale "Aged Concrete." For added weathering, rub grey pastel chalk over the dried surface and apply a wash of alcohol & India ink. Set aside to dry.

Windows

I designed the windows so that you can build them open or closed. The windows consist of five parts: sill, frame, lower sash, upper sash, and glazing (see figure 3a).





Note: The model is not designed to have open doors, though with care, you should be able to sufficiently brace the walls and also have open doors.

Follow the same steps with the wide loading door (parts **D2 & D1**) and the five panel doors (parts **D9 & D8**). Before fitting the five panel door, insert the sills (part **D7**) in the same way you fitted the window sills.

Leave the door frames (parts **D3, D6, & D10**) in the carrier sheet. **Apply the frames after you glue the decking in place**

Bracing

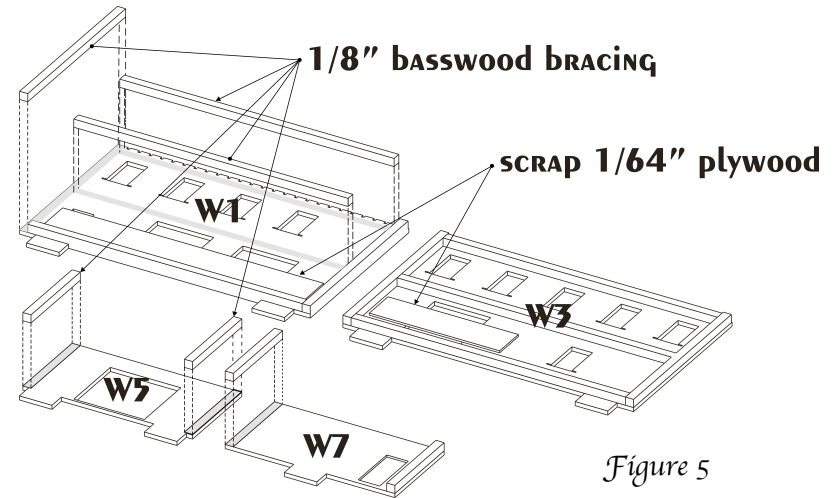
Now that the walls are painted and you have installed all the windows and doors, it is time to add bracing to the walls.

Side Walls

Cut parts **W1, W3, W5, and W7** from the carrier sheet using a sharp knife and a chopping motion. The walls are still quite delicate so use care.

Cut two (2) pieces of $\frac{1}{8}$ " square basswood into $1 \frac{3}{4}$ " lengths. Using yellow glue, attach these to the side wall (**W1**). Be certain that these pieces are flush with the edges and the bottom of the wall. Once dry, measure $2 \frac{1}{8}$ " square horizontal braces to fit between the two vertical braces. Glue the bracing near the top and middle of the wall. Do not block the windows or the rafter-tail cutouts. Repeat the process with the other side wall (**W3**). See figure 5.

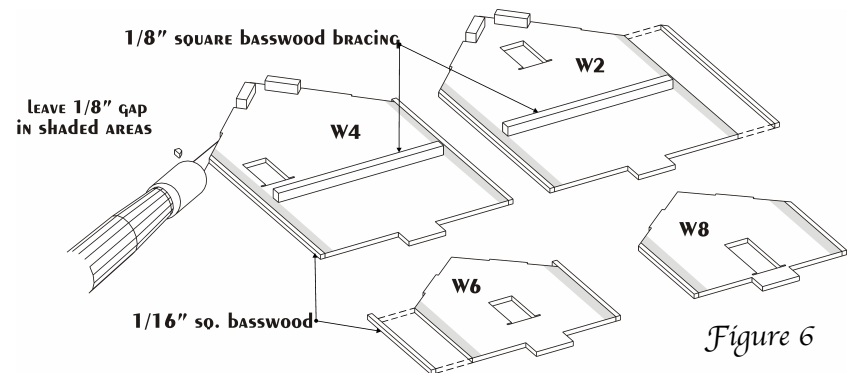
If you have not done so, add a strip of $\frac{1}{4}$ "- $\frac{1}{2}$ " wide plywood from the excess carrier sheet to strengthen the middle and bottom of the wall (see figure 5). Be sure to leave room for your glazing.



On parts **W5** and **W7**, the $\frac{1}{8}$ " square bracing should be cut $\frac{3}{4}$ " long. You only need to apply the vertical bracing.

End Walls

Cut parts **W2, W4, W6, and W8** from the carrier sheet using a sharp knife and a chopping motion. The walls are still delicate, so use care. On the inside of the walls, mark lines parallel to





the edges at a distance of $\frac{1}{8}$ ". Use a piece of the $\frac{1}{8}$ " square strip-wood as a guide. Using the guide, cut out a piece of bracing for each wall. Do not glue it in place yet.

Now cut two 2" lengths of the pre-painted $\frac{1}{16}$ " square trim. Glue them to the sides of part **W2** being sure to get the bottom edge flush. Set aside to dry. Once dry, cut the $\frac{1}{16}$ " square corner post to match the angle of the roofline.

Turn the end wall over and glue the bracing in place, cut two sections of $\frac{1}{8}$ " square strip-wood approximately $\frac{3}{4}$ " long, and glue them to brace the roof(see figure 6).

Repeat the process with parts **W4**. For parts **W6** & **W8** the $\frac{1}{8}$ " bracing is not necessary. Weathering

Although I add more weathering after I have totally assembled the model, I do recommend applying a wash of India ink and alcohol and dry brushing with a lighter shade of your chosen base color before you glaze the windows.

Glazing

Now that the walls are braced, it is time to add the glazing. I have provided two ways to glaze the windows. For either way, first, remove the protective tissue. If all your windows are closed, apply parts **G1** & **G2**. Set the glazing in place. Then using a toothpick or straight pin apply a drop of CA at each corner and along the edges. You will need very little glue to hold the glazing in place.

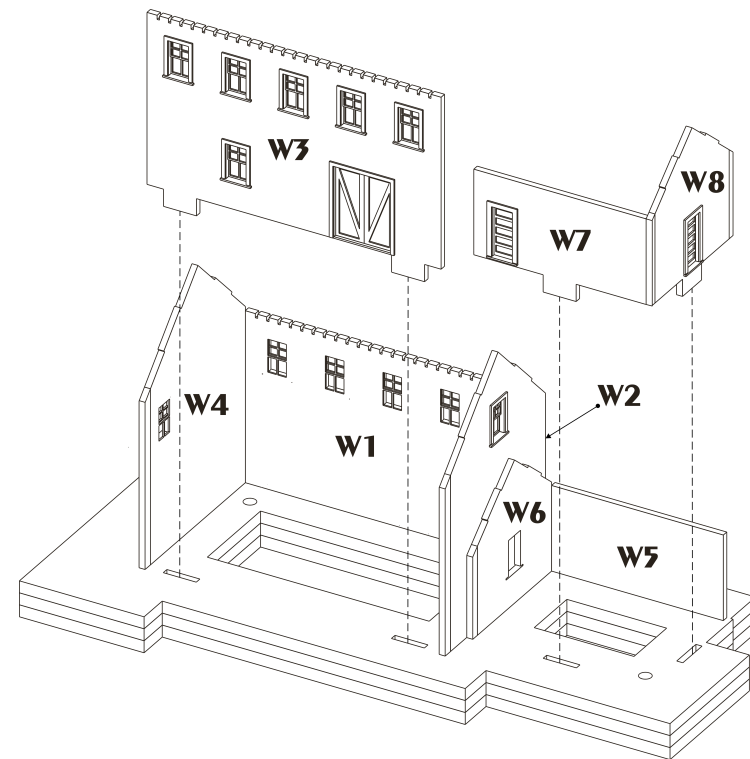
If you have "opened" some windows, you may prefer to use the individually cut glazing (**parts G3**). Cut the parts from the carrier sheet. Put a drop of CA onto a disposable, non-porous surface. Hold the glazing with tweezers and lightly dip one of the short ends into the superglue. Then set the glazing into

Curtis Bros Plumbing Supply Co. 6

place with the glue end aligned with the bottom of the sash. Next apply CA to the corners using a toothpick or straight pin.

Raising the Walls

Test fit the parts by slipping the walls into the slots on the base. The walls should fit easily into the base, and the bottom of each wall should be flush at the base. The side walls should butt up against the $\frac{1}{16}$ " square corner posts on the end walls. When all the parts fit neatly, put white glue on part **W6** or **W8** (this will depend on whether you opted for a window or a door on the addition). Slide the part across the bottom of part **W2**.



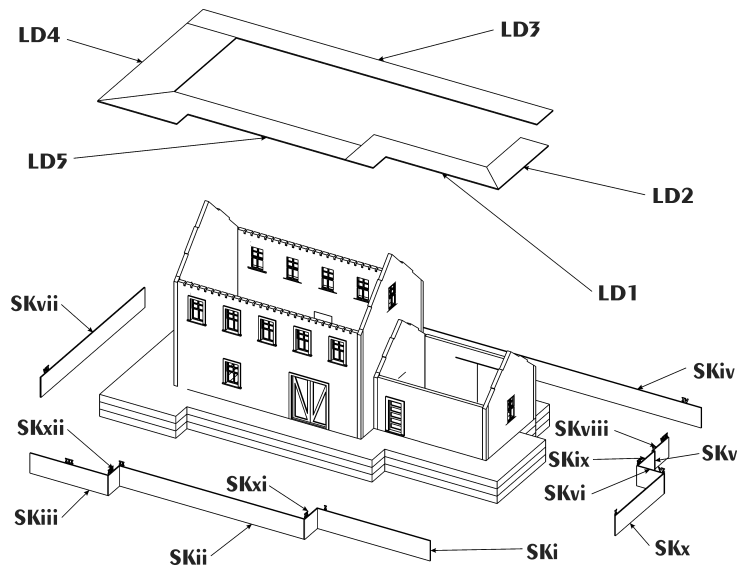


While the glue is still wet, slip the tabs into the slots and use the base to properly align the walls. Once aligned, lightly apply white glue to the bottom of the walls and to the tabs. Glue in place. Clean up excess glue with a toothpick.

Next, apply glue to the inside of the corner-posts on part **W2** and to the tabs and bottom of part **W1**. Slip part **W1** into the slots making sure that the wall sits flush with the base. Then push the corner-post on **W2** against the **W1** so that the two walls form a 90° angle.

Now do the same with part **W3**. Finally, apply glue to the bottom and inside of the corner-posts for part **W4** and glue it in place. Make sure that all four corners are square and plumb.

Then glue parts **W5** and **W7** in place making sure to align the walls with the corner-posts on **W6** or **W8**. Finally, glue part **W6** or **W8** in place. Check to see that all four walls are plumb and all four corners square.



Loading Dock Decking

Have a damp paper towel and a sheet of wax paper handy for this step. Apply a bead of glue to part **LD1**, then set the part, glue side down on the wax paper and move it in a circular motion. This should spread the glue evenly over the whole part, at the same time removing excess glue. Wipe off any glue that got on to the visible surface of the part. Then set the part in place. It is very important to get this part tight against the walls. Make sure that it slips under the door sills. When in place, clamp. Wipe off any visible glue with a toothpick or damp paper towel.

Follow the same procedure with part **LD2**.

Once the decking has dried, it is time to add the door frames (**parts D3, D6, & D10**). Glue them in place with a touch of white glue.

Glue the skirting, **parts SKi-SKxii** in place starting with **SKi**. Then follow the diagram clockwise around the model. Working this way will ensure that the parts overlap correctly. You may or may not need part **SKv**. Some parts may need a little trimming.

Roof & Rafters

Next dry fit the roof panels (**parts R1 & R2**). The slots and tabs allow for some play. Adjust the roofing panels so that they meet or even slightly overlap at the peak. Glue in place with yellow glue. Remove any excess glue with a toothpick.

The roof parts for the addition (**parts R3 & R4**) have a score line. If you are building the addition as a separate structure, use the whole roof panels. If you are building the addition next to the main building, cut along the score line and remove the



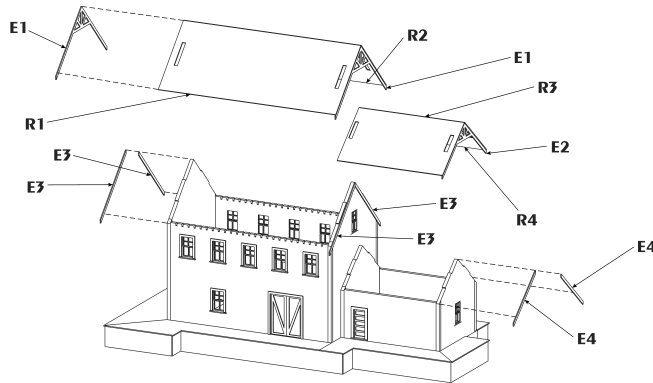
excess.

Apply the panels as above.

Once the roof panels have dried, add the rafter tails using the N Scale 4"x

6" stripwood. Dip an end in some white glue and slip it into the slot. Use a sprue cutter or sharp pair of scissors to nip off the ends even with the roof.

Finally, add the fancy trim work on the edges of the eaves. Parts **E3** & **E4** butt up against the walls tucked neatly under the roof. Glue parts **E1** & **E2** under the roof panels at the outside edge of the roof.



Covered Staircase

Glue together the three Masonite base pieces (**CS1**) using yellow glue. Allow to dry.

Next glue the front (**W9**) and rear (**W10**) walls to the base. Make to align the bottom and sides with the bottom and sides of the base. Allow to dry.

Set the staircase back side down. Following figure 10, glue parts **W11**, **W13**, and **W14** in place. The parts must be flush with the back side and bottom of the staircase assembly. Because Masonite varies in thickness, you may have to trim a little off pieces **W11**, **W13**, and **W14**. If you need to trim, use a

sharp hobby knife and slice away from yourself using the front wall as a guideline. Then touch up the paint.

Once the walls are in place and dry, add the roofing. Start with part **R7**. It should overlap on both sides of the staircase.

Next, glue part **R5** in place. This is tricky as you will be gluing to the $\frac{1}{64}$ " edges of parts **W9** & **W10** and because the part torques. Start by gluing the lower half of the roof in place using CA. Allow this to dry. Then apply CA to the top half and use a toothpick to apply pressure and hold it in place until dry. A drop of CA catalyst can be a big help here.

Glue part **R6** in place.

Now glue the covered staircase in place using yellow glue.

If you like, use a piece of $\frac{1}{32}$ " square wood to add a supporting post with braces. Use N Scale 4"x6" boards to make a fenced alcove.

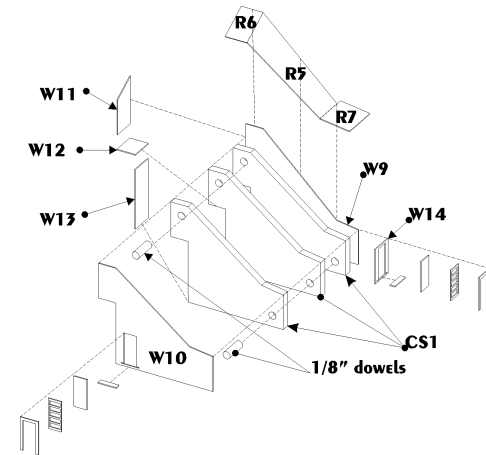


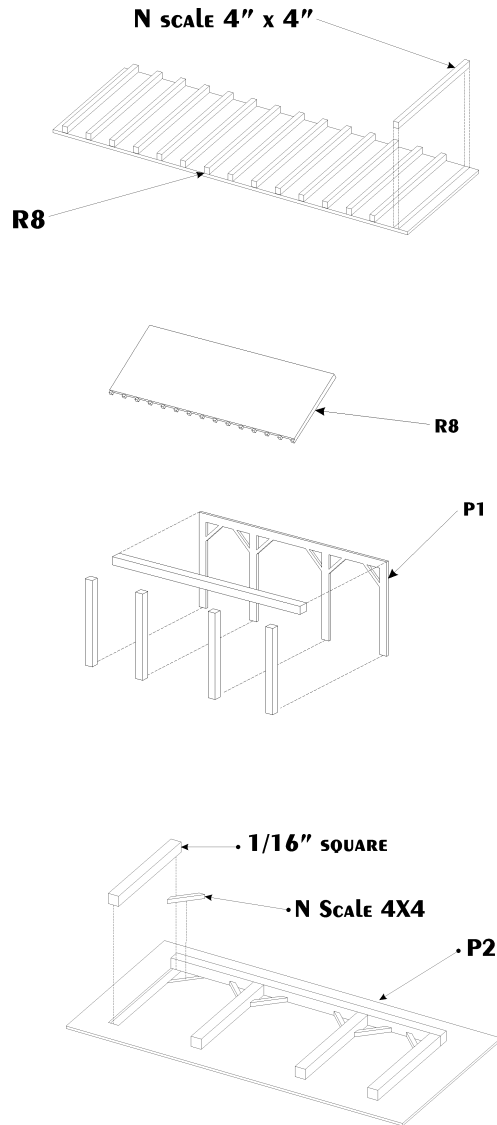
Figure 10

Dock Roof

I have designed the dock roof so that it can be built a couple of different ways. You can use part **P1B** as a base to which you glue your posts and beams, or you can use part **P2** as a template and jig for cutting out and building the posts and beams.



Figure 11



For both methods you will need to apply rafters to roof part R8. Glue N Scale 4"x4" stripwood along the scribed lines. Allow the rafters to dry. Then trim to length.

If using part P1, remove the posts (part P1) from the carrier sheet. Cut a piece of 1/16" square basswood 1 3/4" long. Glue it to the top beam to add depth. Cut three pieces 3/4" long and glue them to the posts. Allow to dry. When dry, trim to length.

If using part P2, use the template to measure the length of 1/16" square wood for the beam and posts. Also cut out the braces using N Scale 4"x4" stock. Once you have cut all

the parts, apply glue and use the jig to hold the parts in place while they dry.

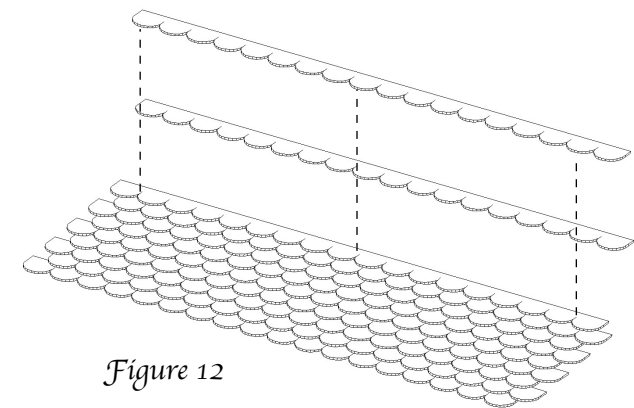
Test fit the roof R8 to determine where the posts should go. I have not made slots for the posts or roof; you can put the assembly anywhere you like. Glue the posts in place. Then glue the roof in place.

Apply Roofing

I have provided paper fish-scale shingles to cover the main roof, corrugated tin for the dock roof, and tarpaper/asphalt for the staircase and addition roofs.

The fish-scale shingles may be colored before or after they are in place. I have had good success using Prismacolor markers for pre-coloring these shingles; however, you must work carefully as the shingles are delicate. Once the shingles are in place, I recommend painting the shingles with a base color, then highlighting with watercolor pencils or pastel chalks.

Cut a straight strip from the edge of the shingle carrier sheet and apply it along the bottom edge of the roof as a starter. Cut the shingle strips loose from the carrier sheet being sure to



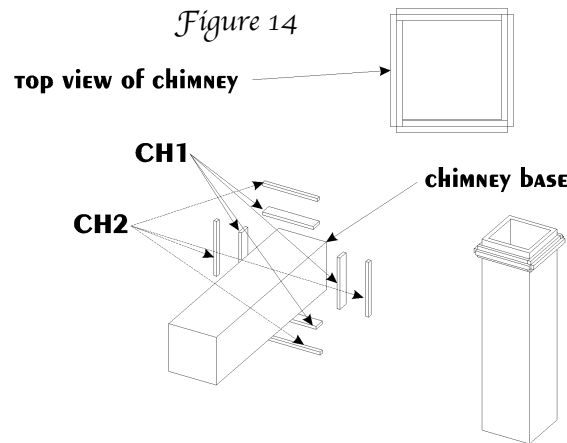


remove any unwanted bits. **Note** — **one row on each sheet is doubled. Save this for the ridge cap.** Put some white glue on a notecard. Lightly run a strip of shingle over the glue. You don't need much glue! Holding both ends of the strip, apply the first row of shingles so that the tips of the scales slightly overlap the edge of the roof. Apply the next row so that the tips overlap the joint between the lower row. (see figure 12). Allow the shingles to hang over the edges of the roof. Repeat the process until the top edge of a row of shingles just touches the ridge-line. Allow the shingles to dry, then cut off excess with a pair of small scissors.

Repeat this process on the other roof panel. Then add the roof cap and trim it to fit.

Tin Roofing On the loading dock, glue the "tin" roofing in place using CA. For a nice extra touch, fold up an edge to represent flashing before gluing the roofing in place.

Tarpaper/Asphalt Roofing – Color the strips with dark grey paint or a dark grey marker. Rub the roofing with assorted grey and earth tone pastel chalks. Wash with India ink and alcohol. Allow to dry. Then starting at the bottom edge of the roof, glue a strip in place with white glue. Apply another strip, slightly overlapping the previous strip. Fold a strip in half lengthwise to cover the ridge. On the covered staircase, start at



Curtis Bros Plumbing Supply Co. 10

the bottom of the roof and apply overlapping strips to the top of the roof. For a nice effect mix white glue and black acrylic paint together to form "tar." Apply the "tar" at the joints with a toothpick.

Chimney

Use a $\frac{5}{32}$ " — $\frac{3}{16}$ " drill bit to drill a hole in the end of the chimney material. Paint the end black. (You can get an acceptable effect with black paint alone). Paint the chimney mortar color (buff or grey work well), part **CH1**, and part **CH2**. Allow to dry. Then dry-brush the chimney parts with brick reds and browns.

For a fancier chimney, use parts **CH1** and **CH2** to build up some fancy brickwork (see figure 14).

Decide where you would like to put the chimney/or chimneys (make sure to leave space for the rooftop sign). Mark off the location and use a sharp hobby knife to cut out a slightly too small hole. Glue the chimney in place using "tar" made from white glue and black acrylic paint.

Roof-top Sign

To make the roof-top sign, first paint parts **CB1** & **CB2**. I used black acrylic paint on **CB1** to represent an iron frame. I painted the back side of **CB2** black too. The front, I painted with Polyscale Seaboard Air Line Yellow. Any bright color that will make the sign "pop" should be fine.

When the parts are dry, remove them from the carrier sheet using a sharp knife. Do not cut out the individual letters. Align the letters over the frame. Use CA or white glue to fix them in place. Take care to get glue only on the letters. You do not want to attach the carrier sheet that holds them to the frame.



Once the letters have had a chance to cure, cut away the carrier sheet.

Use the frame's legs as a guide to mark the location of placement holes in the roof.

With the tip of a hobby knife, make an incision for each leg of the frame. Glue the sign in place.

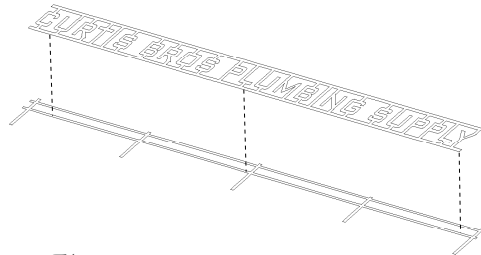


Figure 15

Details

On the whole, I think that it is easier to scratch-build details than to clean up castings. In this section, I will show you some simple techniques that yield great results.

Door knobs — I have included some micro beads to represent door handles. They scale a little large, but I like the impression that they give. If you want to install them, apply a spot of white glue with the end of a toothpick. Use tweezers to drop the micro bead in place. Licking the point of a toothpick and touching it to a micro bead is another effective way to move the bead where you want it.

Roof plumbing vents — Paint a short length of .015" music wire dark grey (black with just a touch of white added). Drill .015" holes in the roof where you want the vents. Glue in place using some "tar."

Railings — Use a pair of needle-nosed pliers to bend some of the .015" bronze wire to make railings for the stairs. Make the

Curtis Bros Plumbing Supply Co. 11

posts longer than you want them to be. Drill holes in the masonite stairs to support the railings. Hold the railing up to the stairs and cut the posts to length. Make sure to allow a little length to fit into the holes.

Tables — To make the tables, glue parts T2 to part T1. Build the tables upside down. Set part T1 with the scribed side facing down. Then glue both parts T2 to the table. Set some stripwood to brace them perpendicular to T1.

Paint Cans — On the display model, I added a stack of paint cans made from styrene rod. You can make these by painting the rod a base color. Once that coat dries, add a "label" with a slash of white paint applied with a toothpick or small brush at even intervals.

Once this is dry, using the edge of a hobby knife, gently roll the rod until the cans pop loose. Paint a silver top; allow to dry; and glue in place.

Pallets — Using the score lines as a guide, cut the N-scale 4" x4" stripwood to length. Glue the stringers to the pallets following the scored lines. Once they dry, use a chisel blade in your hobby knife to pop the pallets loose.

Oil Drums — To make the oil drums, you will use the heavy foil, an 1/8" dowel, a straight edge, and your hobby knife. Flatten the foil by burnishing it on a smooth surface. You can also smooth it in the same way you smooth a dollar for a vending machine. Set the foil shiny side down on a surface with some give, for example a note pad. Using the straight edge and the back of your hobby knife, gently emboss two lines separated by .069". Now measure .069" on either side of the lines. Cut the foil down to size.

To make a closed drum, use CA or epoxy to glue the foil to the dowel. Allow this to dry. Then carefully wrap the foil around



Curtis Bros Plumbing Supply Co. 12

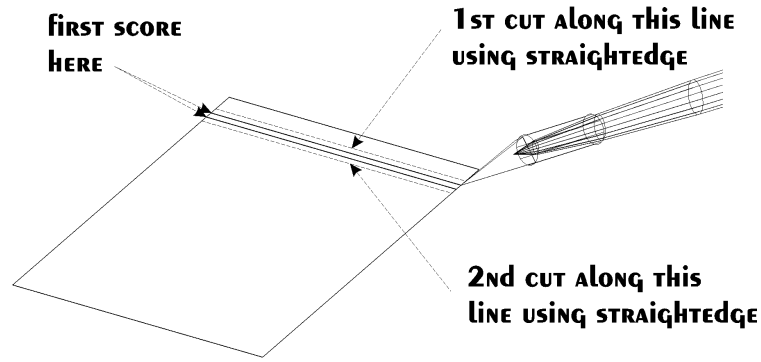


Figure 16

the dowel. Be sure to keep the edges and lines parallel. Apply a little glue at the point where the foil will overlap. Press the foil in place. Allow to dry. Then cut off the excess material. Now, set your hobby knife perpendicular to the dowel and even with the top of the barrel. Roll the dowel back and forth until you cut through it. Paint the barrel to suit yourself.

If you want to make an open drum, wrap the foil around the dowel. Glue at the overlap and allow to dry. Cut away excess foil. Now slip the drum up the dowel until only a little of the dowel is inside the drum. Add a drop of CA inside the drum. Once this dries, remove the drum as above.

Stove Pipe — Insert a #11 hobby blade in the end of the styrene tubing. Twist the blade to gently shave away the inside thickness. Paint dark grey bordering on black. Drill a hole that is slightly smaller than the tubing. Use “tar” to glue in place.

Pipe Bundle — Cut several phosphor bronze wires to length (8', 10' or 12'). Next cut a thin strip from the wine bottle foil. Touch some CA to the foil and pile on the “pipes”. Once dry

(catalyst helps here), wrap the strip around the bundle and glue. Keep a tail to hold onto so that you don't glue your fingers to the pipes. Cut off the tail. Repeat at the other end of the bundle.

Electrical Meter — Paint the end of a the styrene strip grey or industrial green. . Allow to dry. Cut a sliver off of the styrene rod. Apply a dot of glue to the end of the strip and press the sliver in place. Slice off about $\frac{1}{64}$ " from the end of the strip. Voila! Electrical meter.

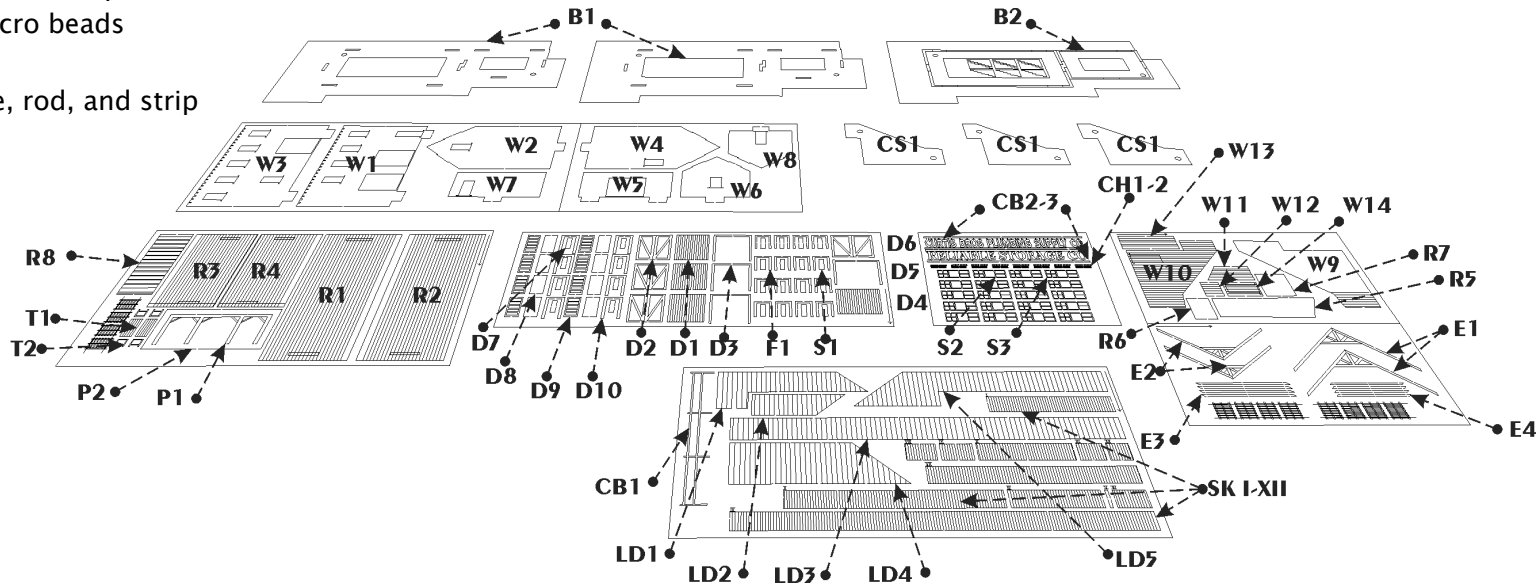
Glue the meter so that the top is about 5 scale feet from the ground. Next, paint some of the wire the same color as your meter. Cut it to length. About an inch or so long. Glue it to the wall making sure that it is perpendicular to the meter. Next cut a short block of N scale 4"x6" lumber. Apply three dots with a black pen and glue at the top of the wire.

Signs — Add signs to your building. Carefully sand the backs of the signs until almost see through. Apply white glue to the back of the sign. Be sure to get the glue all the way to the edges of the sign. Glue in place. Allow to dry **thoroughly**. Once dry, use a hobby knife with a fresh #11 blade to cut through the sign along the scribed lines on the wall behind it.



Parts List:

- 6 $\frac{1}{8}$ " masonite pieces
- 2 $\frac{1}{16}$ " basswood sheet of walls
- 4 $\frac{1}{4}$ " plywood sheets doors frames decking etc,
- $\frac{1}{64}$ " laser board sheet sign windows etc
- 6 6" lengths $\frac{1}{8}$ " square basswood strips
- 4 6" lengths $\frac{1}{16}$ " square basswood strips
- 6 6" N-scale 4" x 6" (.024" x .036") basswood strips
- 5 6" N-scale 4" x 4" (.024" x .024") basswood strips
- 3 sheets fishscale shingles
- sheet of "tarpaper" roofing
- .003 polyester glazing
- sheet of assorted paper signs
- 2" of $\frac{1}{8}$ " square scribed chimney
- 1" of $\frac{1}{8}$ " dowel
- 2 6" lengths .010" phosphor bronze wire
- strip of corrugated metal roofing
- 6 $\frac{1}{8}$ " masonite stair parts
- baggy of micro beads
- metal foil
- styrene tube, rod, and strip



Optional Final Weathering

Once the model has been assembled, I like to "rust" my tin roofing. First I powder some rust colored pastel chalks by rubbing it on a piece of chipboard. Then I paint the tin roofing light grey with a mix of black and white acrylic paint. I do not worry about having a perfectly consistent color. While the paint is still wet, I apply a wash of India ink and alcohol. This curdles the paint. I then apply pastel chalk dust by dipping my brush in my India ink and alcohol, then in the powdered chalk, then on the roofing until it looks right.

I also add some dirt stains around the base of the walls using the same method with brown pastel chalk powder.

Finally, I dry brush a very light grey or even white to catch the edges of the model.

For a dirtier building, I wash on more India Ink and alcohol.