

Build a 1:22.5-scale combine

Plan set #4 reprise

by Ted Stinson | Wiscasset, Maine

This is a reprint of plan set #4, originally published in the November-December 1992 issue of *Garden Railways*.

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This is a freelance 1:22.5-scale combination (passenger/baggage) car. The ubiquitous combine was the most common, if not the only, piece of passenger equipment on many short lines. The distinctive “duck billed” roof is typical of early passenger equipment and it is fairly simple to replicate.

The model is 15" long x 4" wide x 6" high. It scales out to a car that is approximately 28' long x 11' tall x 8' wide.

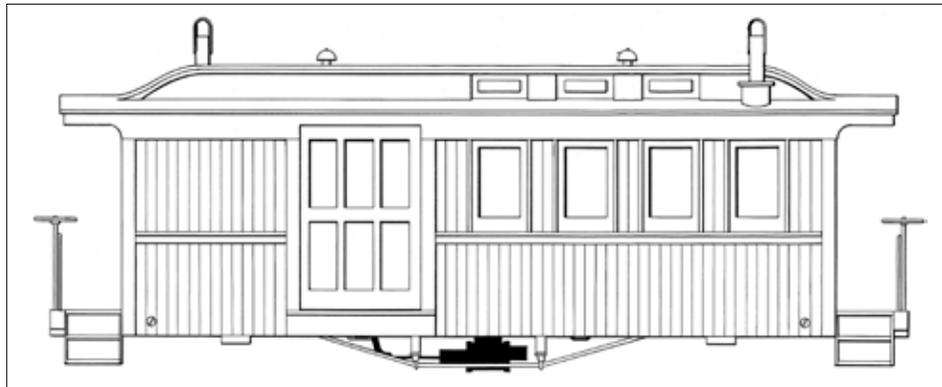
Construction

The model can be built from materials available in many hobby shops. As an alternative, the stripwood can be cut on a table saw.

Begin construction with the underbody. From $\frac{1}{4}$ " plywood, cut a $3\frac{1}{2}$ " x $14\frac{1}{2}$ " piece. Notch the ends according to the plan. Plank the ends on one end with $\frac{1}{16}$ " x $\frac{1}{4}$ " stripwood. On the other side, add the stripwood framing as per the drawing. Make up two end beams from $\frac{1}{4}$ " x $\frac{7}{16}$ " stripwood. Finally, add the brake cylinder and related rigging.

Now make up the body substructure. From $\frac{1}{2}$ " thick wood (balsa or plywood), cut two pieces $\frac{1}{8}$ " x $2\frac{5}{8}$ " x $3\frac{1}{16}$ "; two pieces $\frac{1}{8}$ " x $2\frac{5}{8}$ " x $6\frac{3}{4}$ "; and two pieces $\frac{1}{8}$ " x $3\frac{1}{2}$ " x $4\frac{1}{8}$ ". Make up two subsides and two subends from those pieces. Cut a roof beam from $\frac{1}{8}$ " x $\frac{1}{2}$ " stripwood and assemble the substructure according to the detail. This should just fit over the previously assembled floor. *Do not glue to the floor.* Add the $\frac{1}{16}$ " x $\frac{7}{16}$ " fascia and the $\frac{1}{16}$ " x $\frac{1}{8}$ " belt rail above the lower scribed-siding panels.

Refer to the drawings. From the appro-



propriate stripwood, make up the window frames, and fit and glue them in place. Now make the doors per the drawing.

Fit and glue the $\frac{1}{16}$ " sheet-wood roof in place. Add the rafters, which are cut from $\frac{1}{16}$ " x $\frac{1}{2}$ " stripwood.

Refer to the drawing. Make up the clerestory from the materials called out. When you have glued the $\frac{1}{16}$ " sheet-wood roof in place, carve and sand the balsa end blocks to shape. Fit and glue the clerestory in place on the main roof. Fillet the ends with spackle and sand to shape. At this point, I recommend that you give the car two coats of clear lacquer, sanding lightly between coats. Paint the clerestory walls, the doors, the windows, and all exposed trim a color of your choice. Paint the roof and the underbody black. Surface the ends and sides with scribed wood. With care and a small brush, seal the scribed wood with glaze, sanding lightly between coats.

All details added from this point should be pre-painted before gluing in place. Cardstock parts should first be sealed with cyanoacrylate (CA) before being painted. The last detail to be added to the car should be the steps. These should be firmly attached to the end beams and underbody while only resting

against the car end. This will allow the car body to be removed from the floor. Final assembly of the combine can be made by screwing the car body to the floor with four #2 x $\frac{3}{8}$ " screws. Finish your car with lettering of your choice, trucks, and couplers.

This reprint is an online supplement to the April 2010 issue of *Garden Railways* magazine. To purchase previously published paper plans, see the list of those available at www.sidestreet.info

A kit for the combine is available from Northeast Narrow Gauge for \$70, plus \$50 for a pair of 4a trucks + \$9 s&h (via priority mail to the US). Kadee #820 couplers are \$7 extra. Order from Northeast Narrow Gauge, PO Box 191, Wiscasset ME 04578. Web site: www.nemodel.com

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Are you working in a different scale?

If you are working in 1:24 scale, reduce these drawings to 94%.

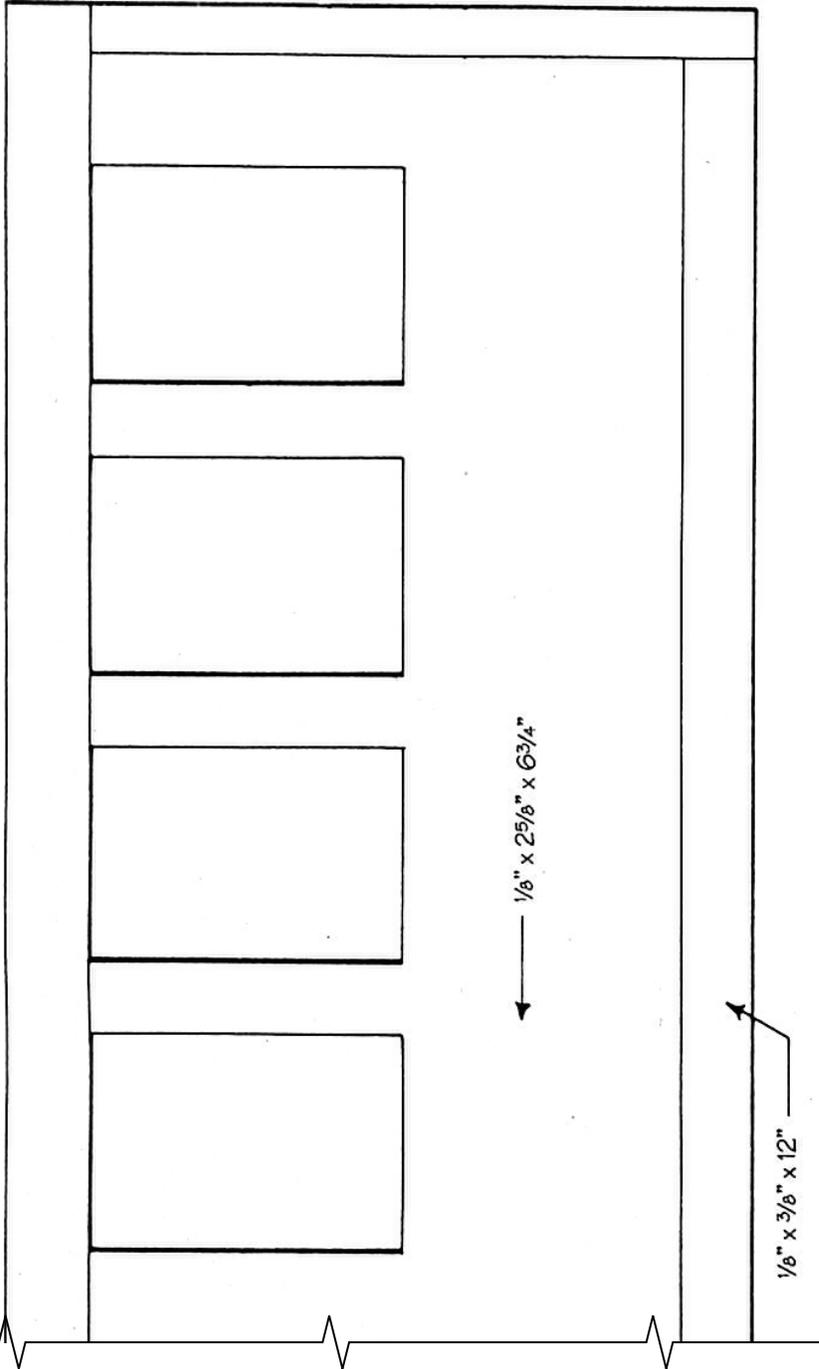
If you are working in 1:20.3 scale, enlarge these drawings to 111%.

If you are working in 16mm scale (1:19), enlarge these drawings to 118%.

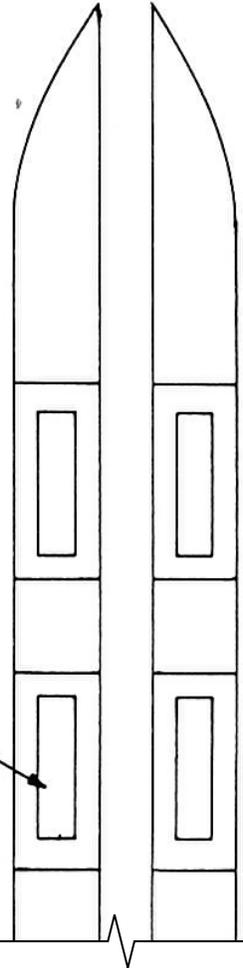
If you are working in $\frac{7}{8}$ " scale (1:13.7) enlarge these drawings to 164%.

SIDE A

Make Side B as a mirror image



Cardstock rectangle

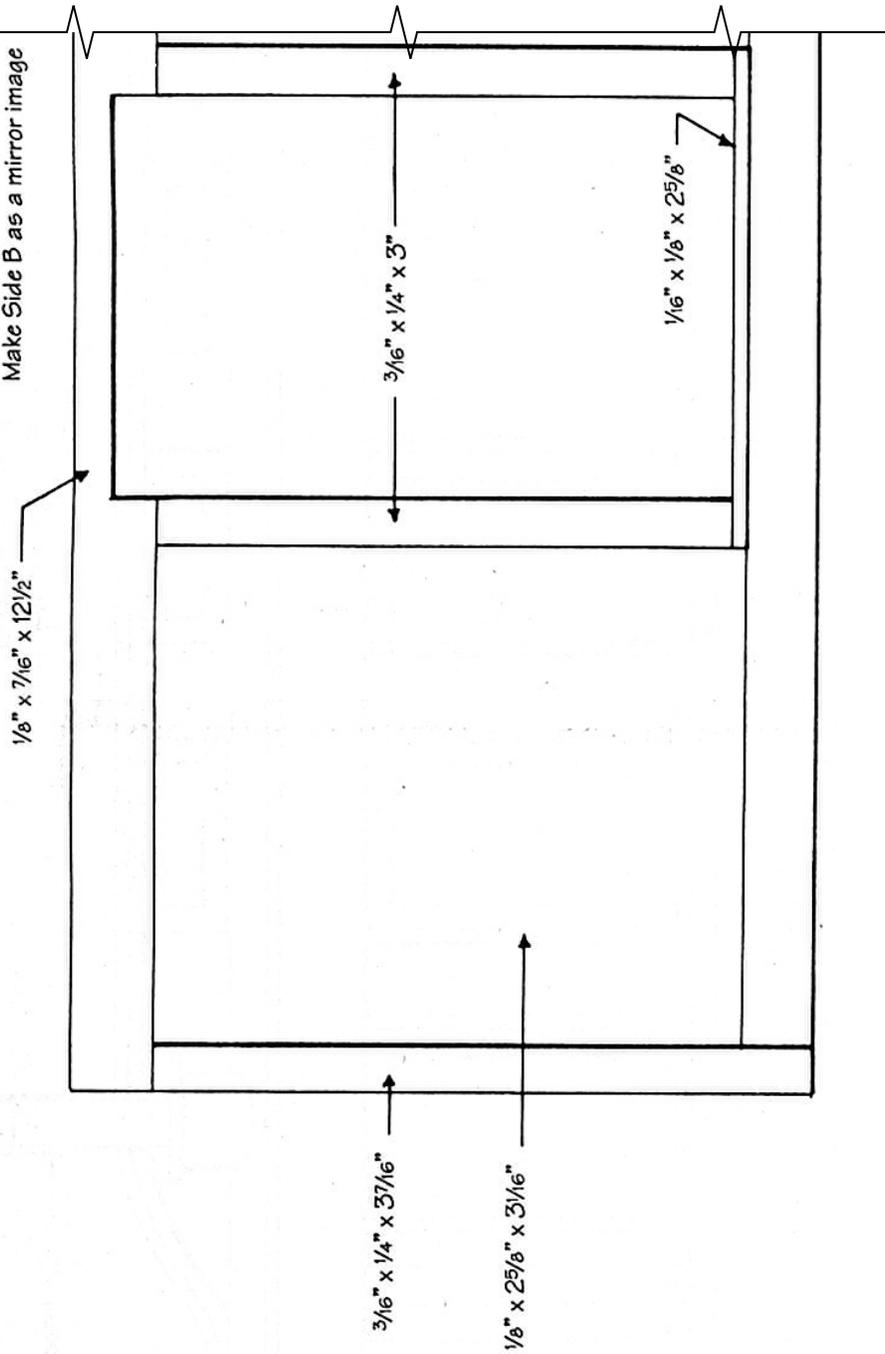


CLERESTORY SIDE

Make from 1/16" x 7/16" strip

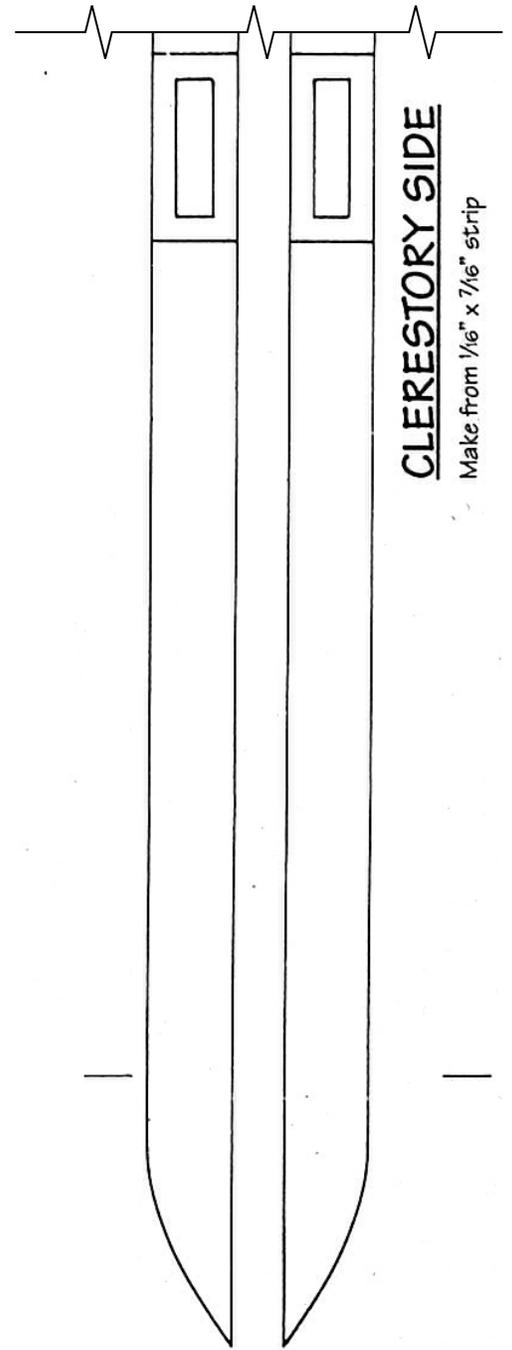
SIDE A

Make Side B as a mirror image



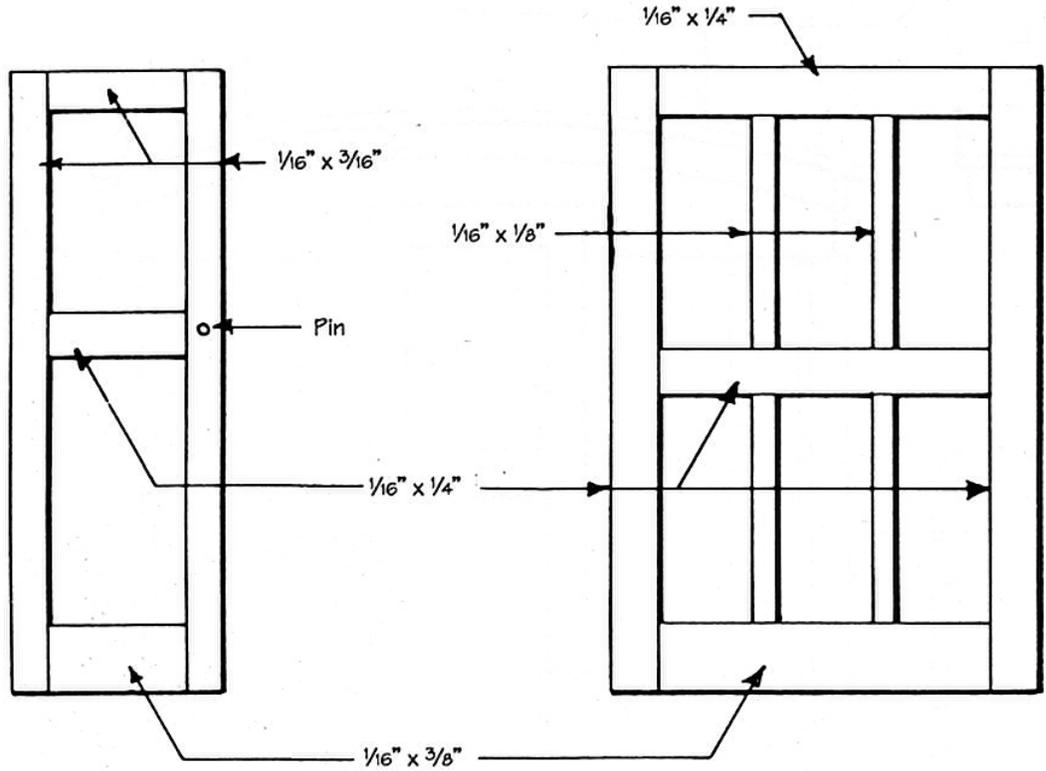
CLERESTORY SIDE

Make from $1/16'' \times 7/16''$ strip

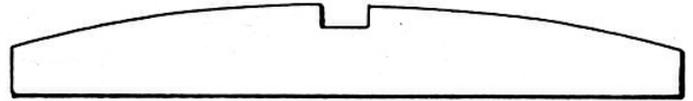
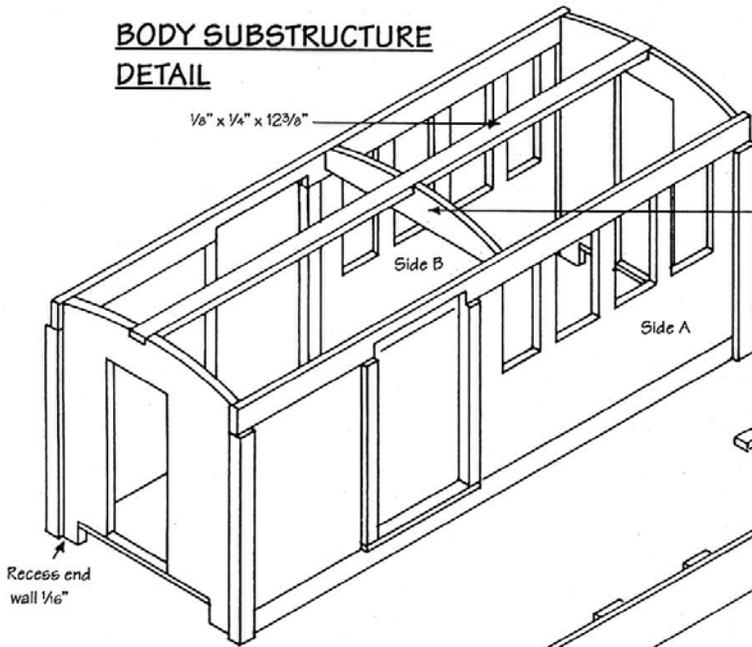


DOORS

Make 2 each by gluing stripwood to a cardstock blank. Cut openings for the windows when finished.

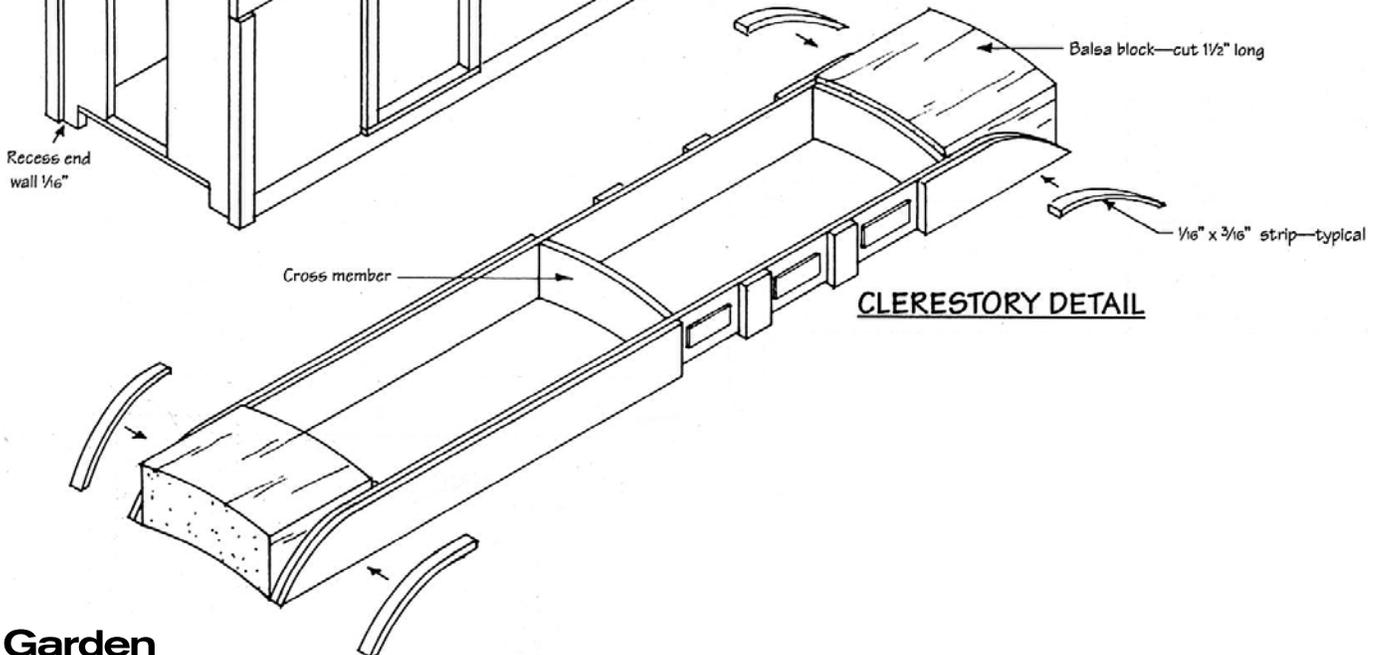


BODY SUBSTRUCTURE DETAIL

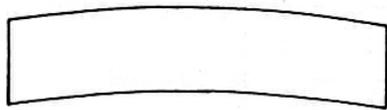


ROOF BEAM

Cut from 1/8" x 1/2"



CLERESTORY DETAIL



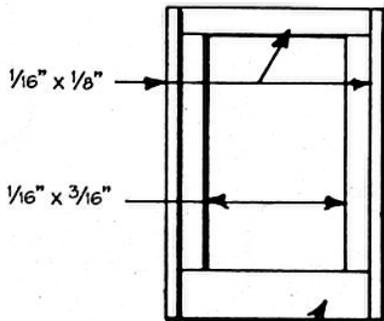
CROSS MEMBER
Cut from $\frac{1}{16}$ " x $\frac{1}{2}$ "
Make 3



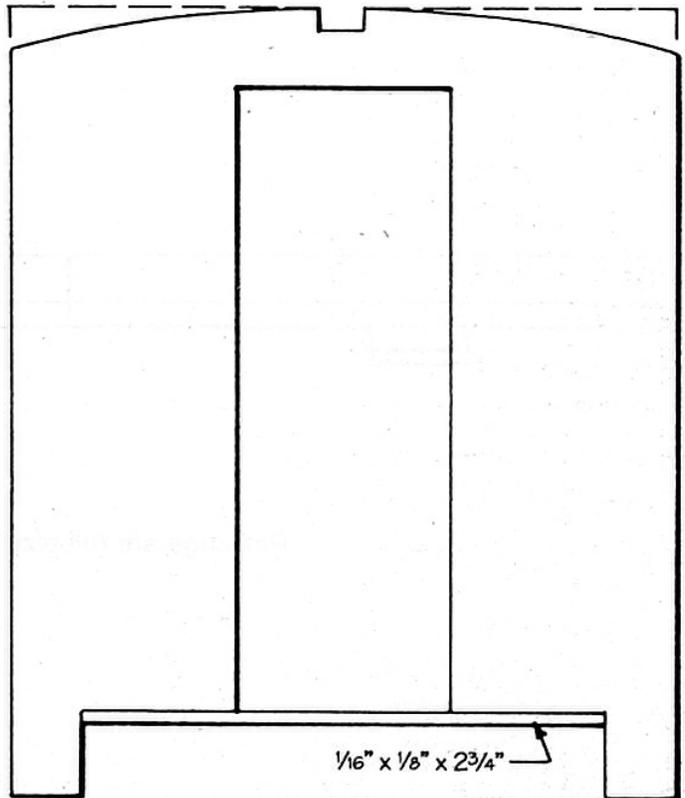
BALSA BLOCK
End pattern

WINDOWS

Make 8 from stripwood



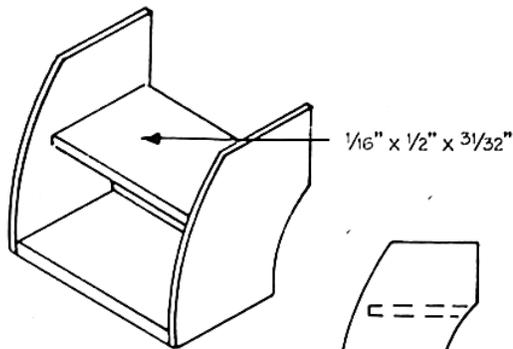
$\frac{1}{16}$ " x $\frac{1}{4}$ "



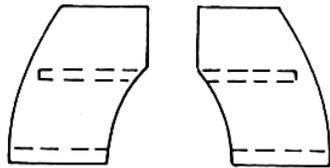
$\frac{1}{16}$ " x $\frac{1}{8}$ " x $2\frac{3}{4}$ "

SUBEND

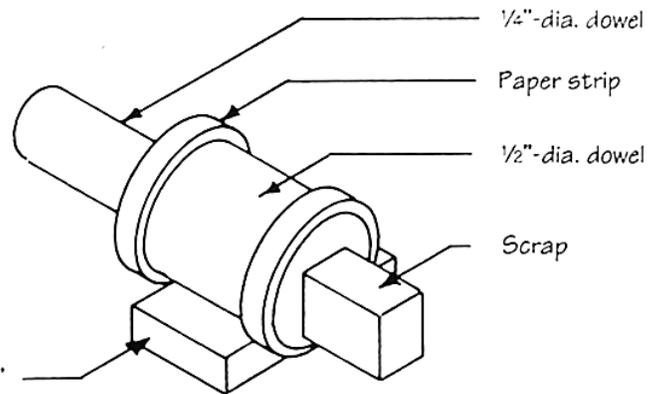
Cut 2 from $\frac{1}{8}$ " x $\frac{3}{16}$ " x $\frac{4}{16}$ " stock



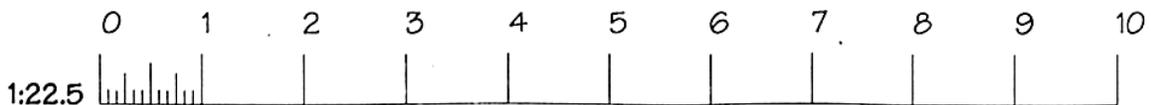
STEP DETAIL



Cardstock side



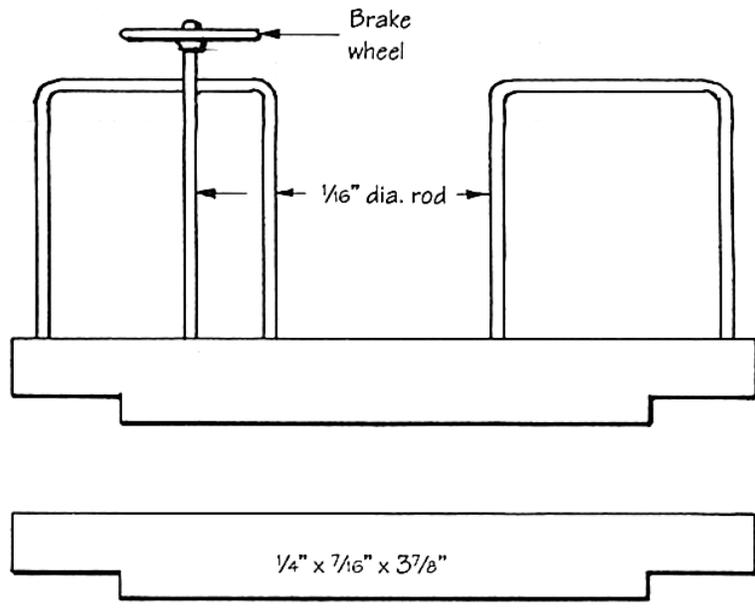
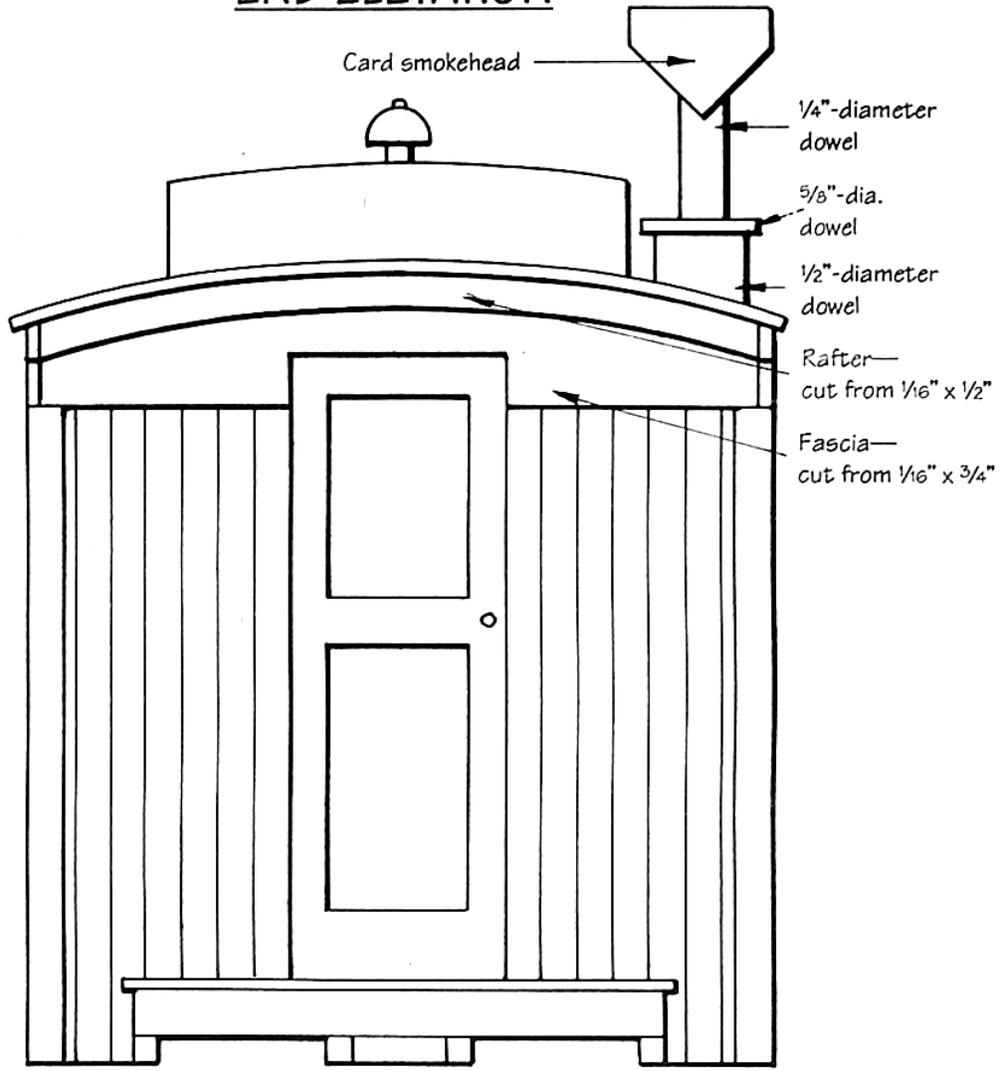
BRAKE CYLINDER DETAIL



1:22.5

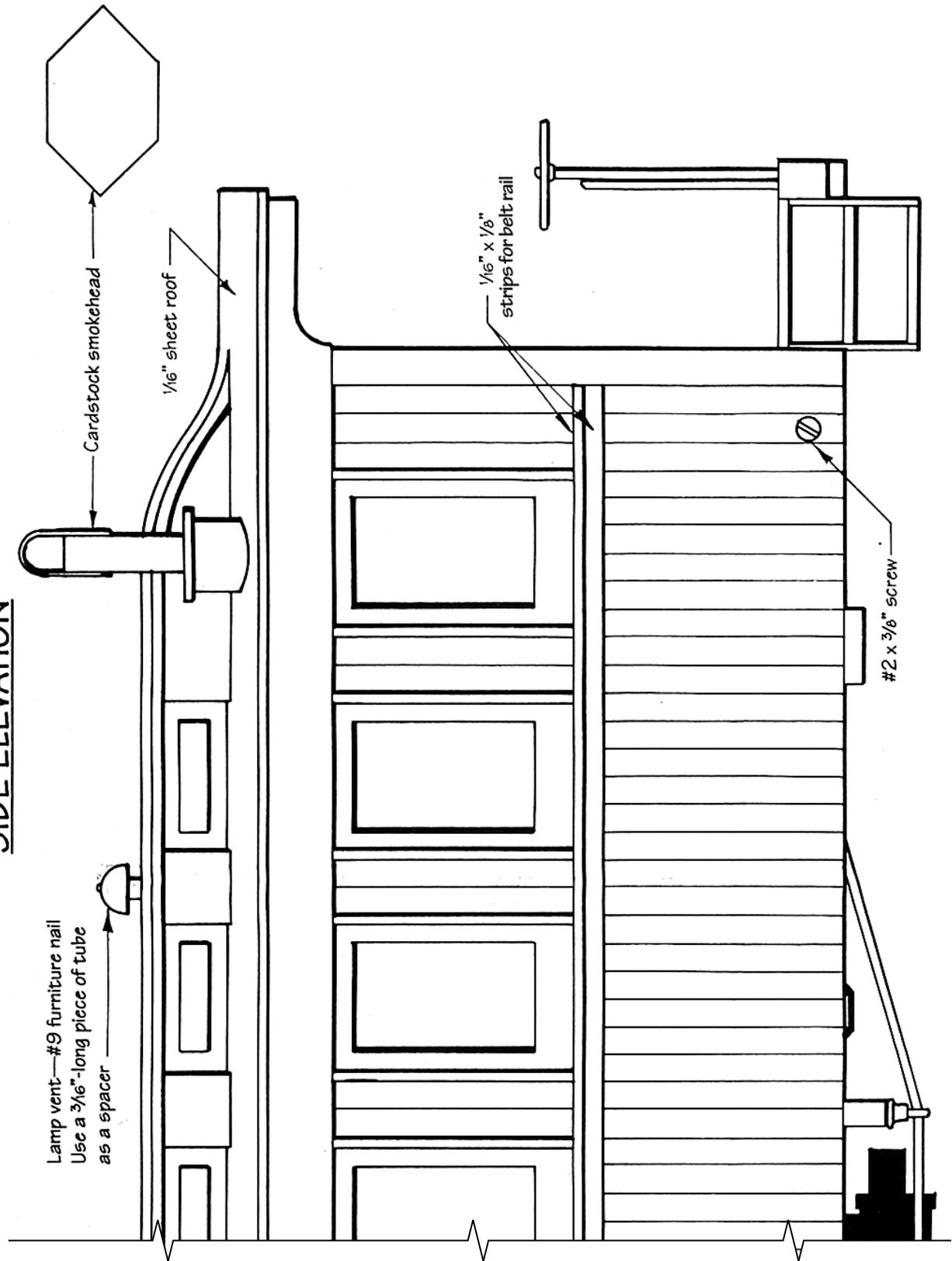
Scale: $.533$ " = 1" 0"

END ELEVATION

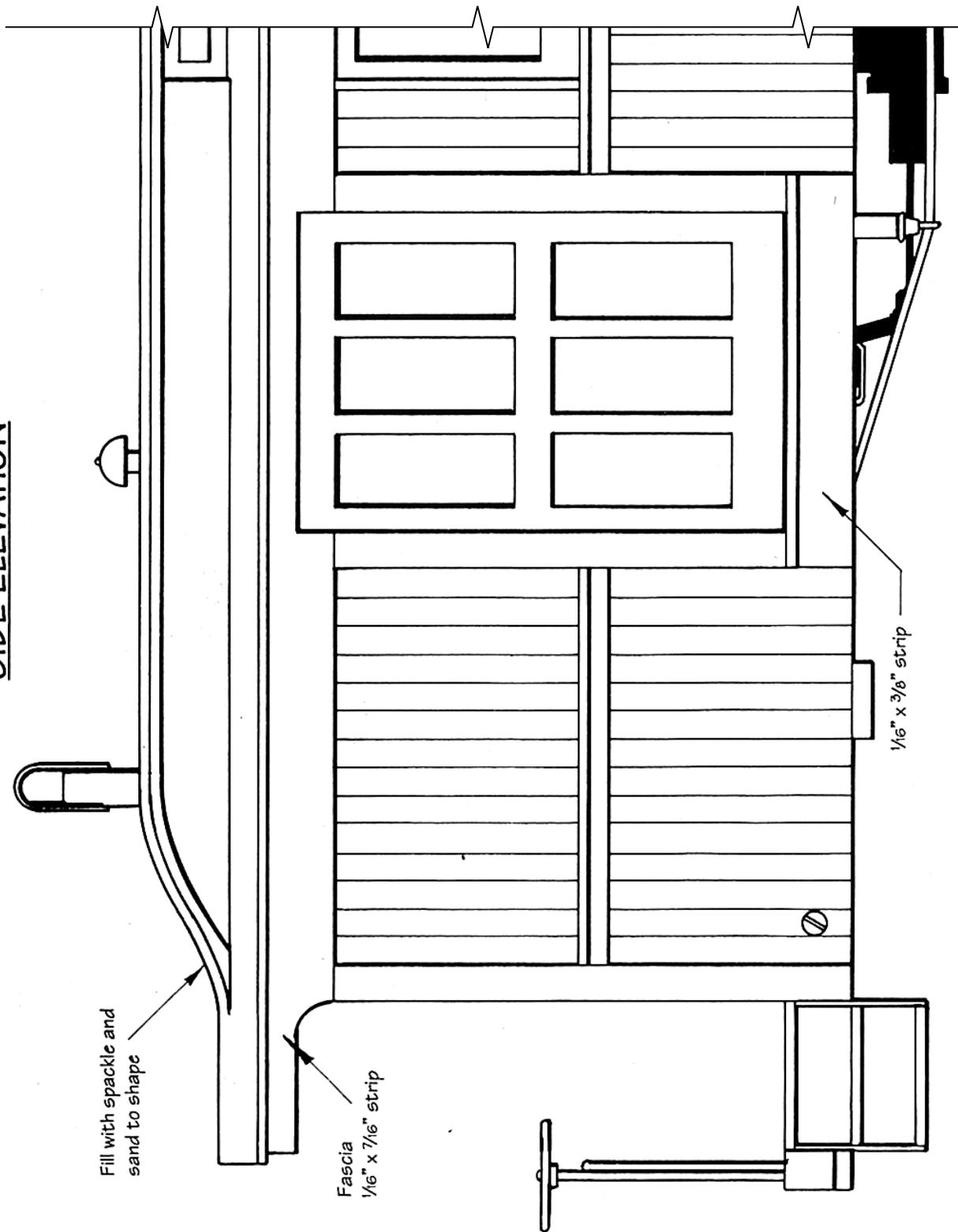


END BEAM

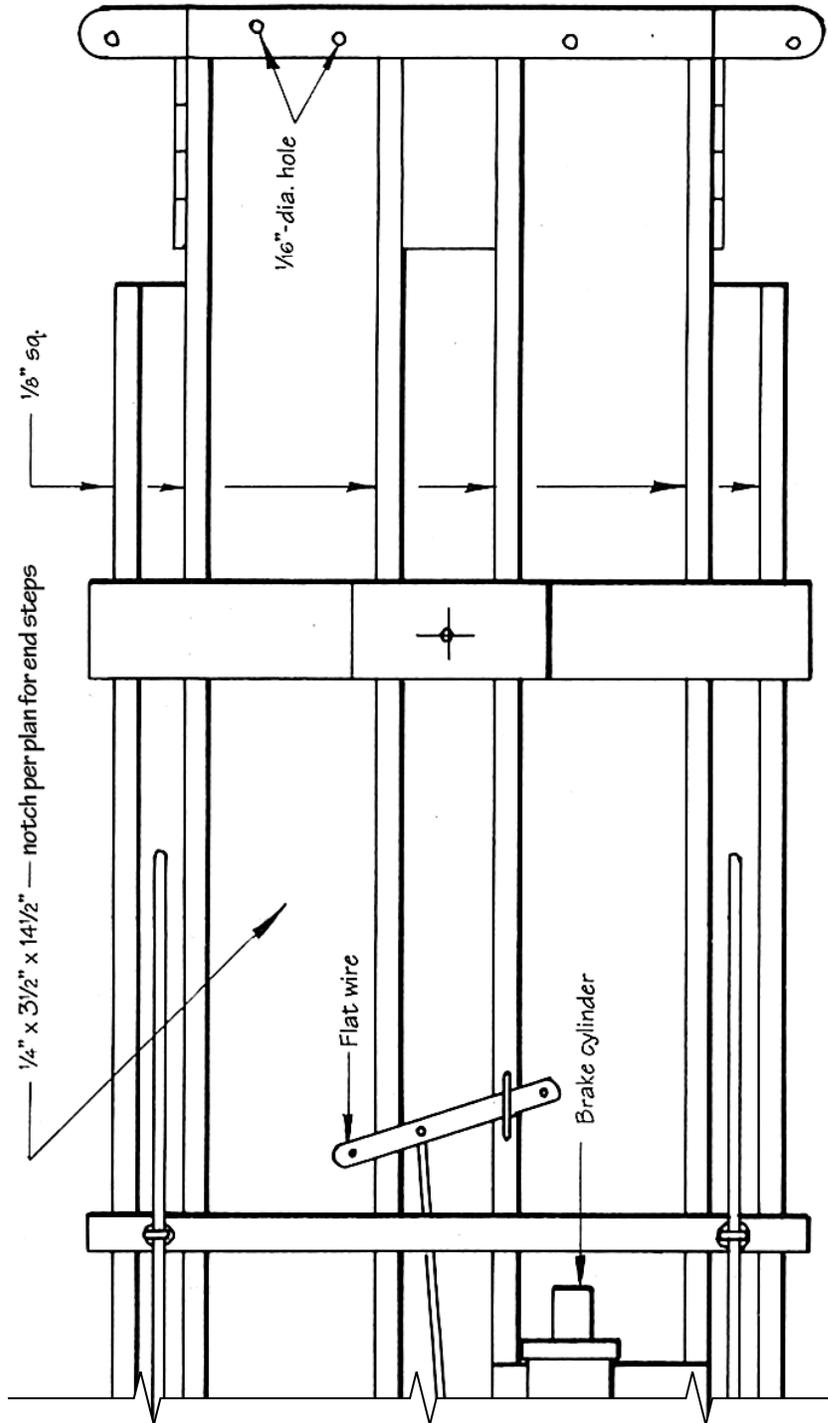
SIDE ELEVATION



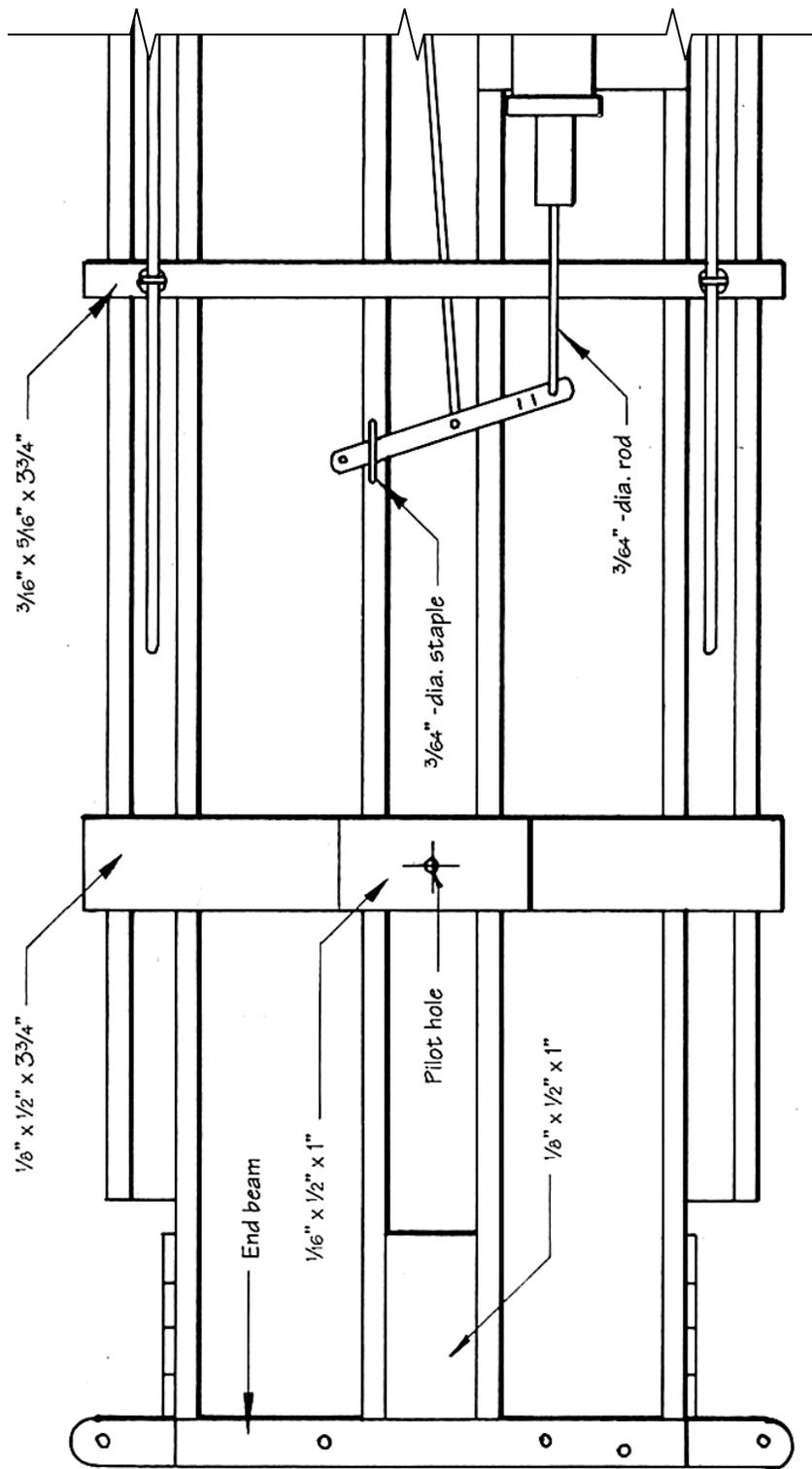
SIDE ELEVATION



BOTTOM VIEW



BOTTOM VIEW



SIDE ELEVATION OF FLOOR

