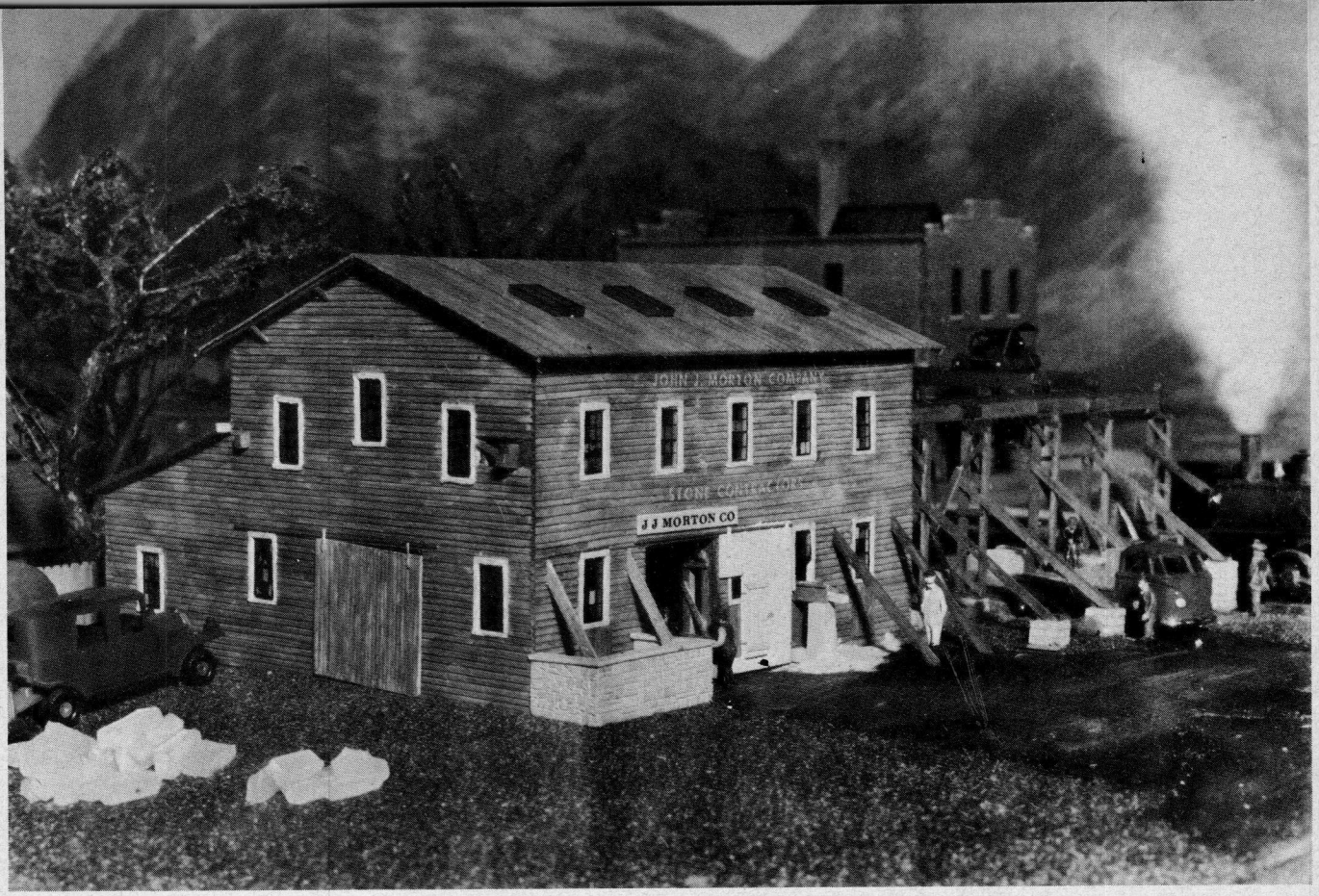


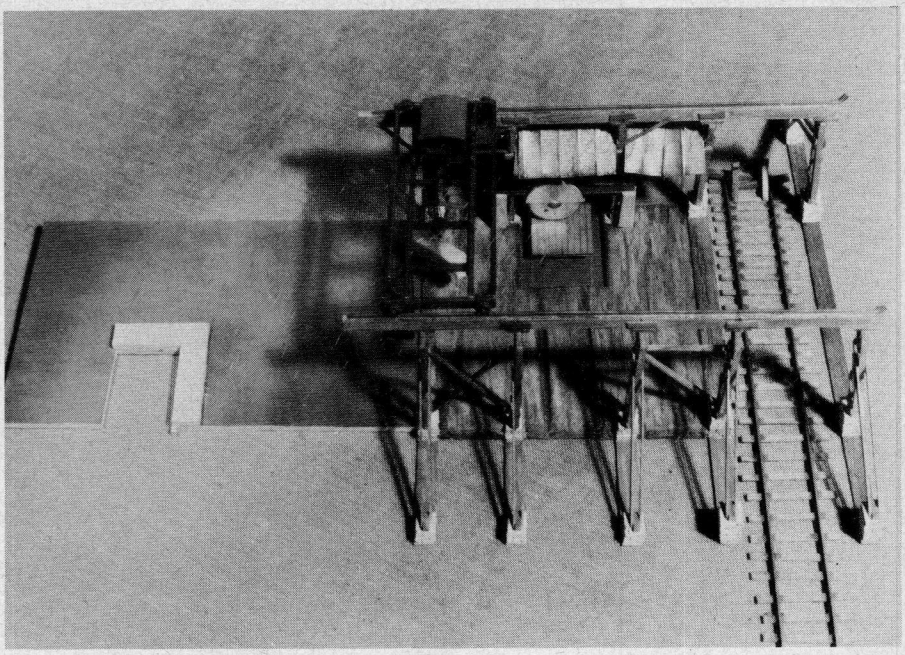
Morton's Stone Cutting Plant

By E. L. Moore

Morton's stone cutting plant is an action packed structure with its open saw and outdoor siding and crane. Build it from wood sheet and strip.

ABOVE: Heavy bracing to support the overhead traveling crane make this stone cutting facility a delight for any pike. It's all wood construction.

BELOW: Trackside view of the Morton stone shows the heavy bracing of the crabe, a car being loaded, and the large circular saw.



"THE old plant is showing its age," remarked the manager as he took me through it. For me, that was all to the good. I like old buildings. And the plant did, in fact, look every bit of its forty years, yet good for at least forty more.

Working stone, I am told, hasn't changed greatly with the passing years. Circular saws slice through great slabs of sandstone and, except for the continuous spray of water fed into the cuts, they might be cutting through wood. And compressed air tools now play a large part in facing building stone. Still and all, the processes are dependent on human skill and this requires workmen with long years of experience, who have a "feeling" for stone; as well as the artistic ability to work the intricate patterns sometimes required.

Huge slabs of sandstone come from quarries by flatcar and are unloaded at the plant by means of an overhead traveling crane. One crane works the yard and another, on the continuation of the track, does the inside work. The stone in its finished state is then hauled to building sites on flat bed trucks. My plant occupies a space 8"x12", which includes the railroad siding at the yard end.

Although this looks like an impressive list, aside from the first few items it is all small stuff.

The project is going to require, first of all, a base; so check with Figure 1 and the aerial photograph of the plant in its early stages. The plant was

built on sloping terrain and to get around this I've built up the yard area using two thicknesses of the base here. So the first requirement is to cut 77½' from a sheet of ⅛"x4" balsa. 45½" of this should be 29' wide, and the remaining 32' will need a 1'x32' strip to be cemented to one side, and another piece 15'x32' to the other. Now an additional 31'x32' piece with a cutout at (B) is cemented on top, with the grain at right angles to the other. Since this raised portion constitutes the earth covered yard I roughed it up somewhat with a brass brush and painted it an earthy color, the rest of the base is a neutral brown. A cutout is made at (A) which will coincide with a door opening and allows trucks to back in for loading. In the prototype this is a shallow pit in the earth floor with a concrete ledge serving as a loading platform.

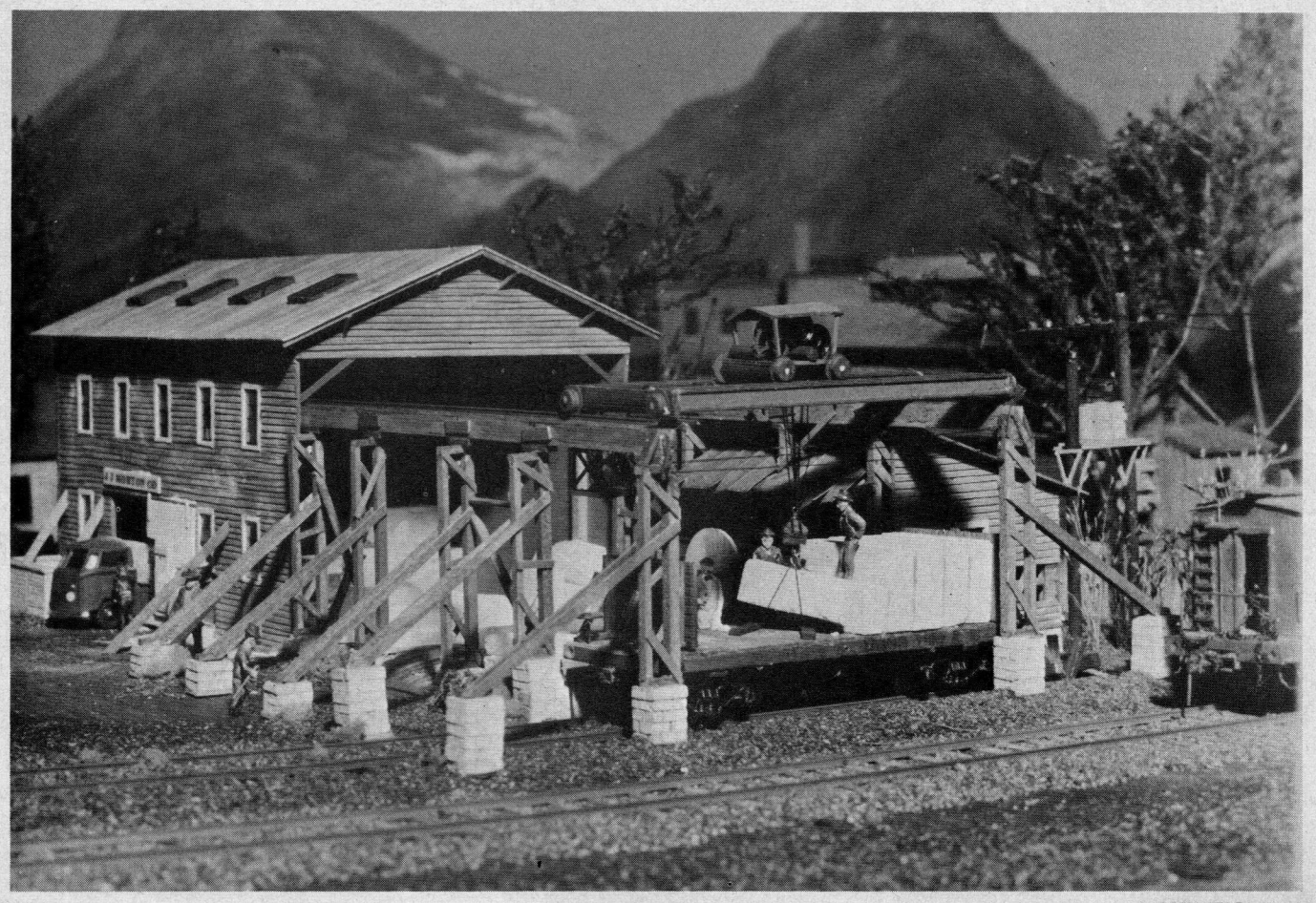
Turn the base upside down and cut shallow indentations, 1/32" deep, by a scale 2'x2½' to coincide with the spaces (D) along one side, and into which the ends of outriggers (C) are cemented. These are 1/32"x¼" stripwood cut into 2'x15' pieces. On the outer ends of these will be cemented piers of simulated solid concrete or concrete blocks. In use, these outriggers will be covered with grass or earth or rendered inconspicuous. A similar strip, 56' long, is laid beyond the railroad siding, but this will not be joined until the final moment because of possible damage in handling.

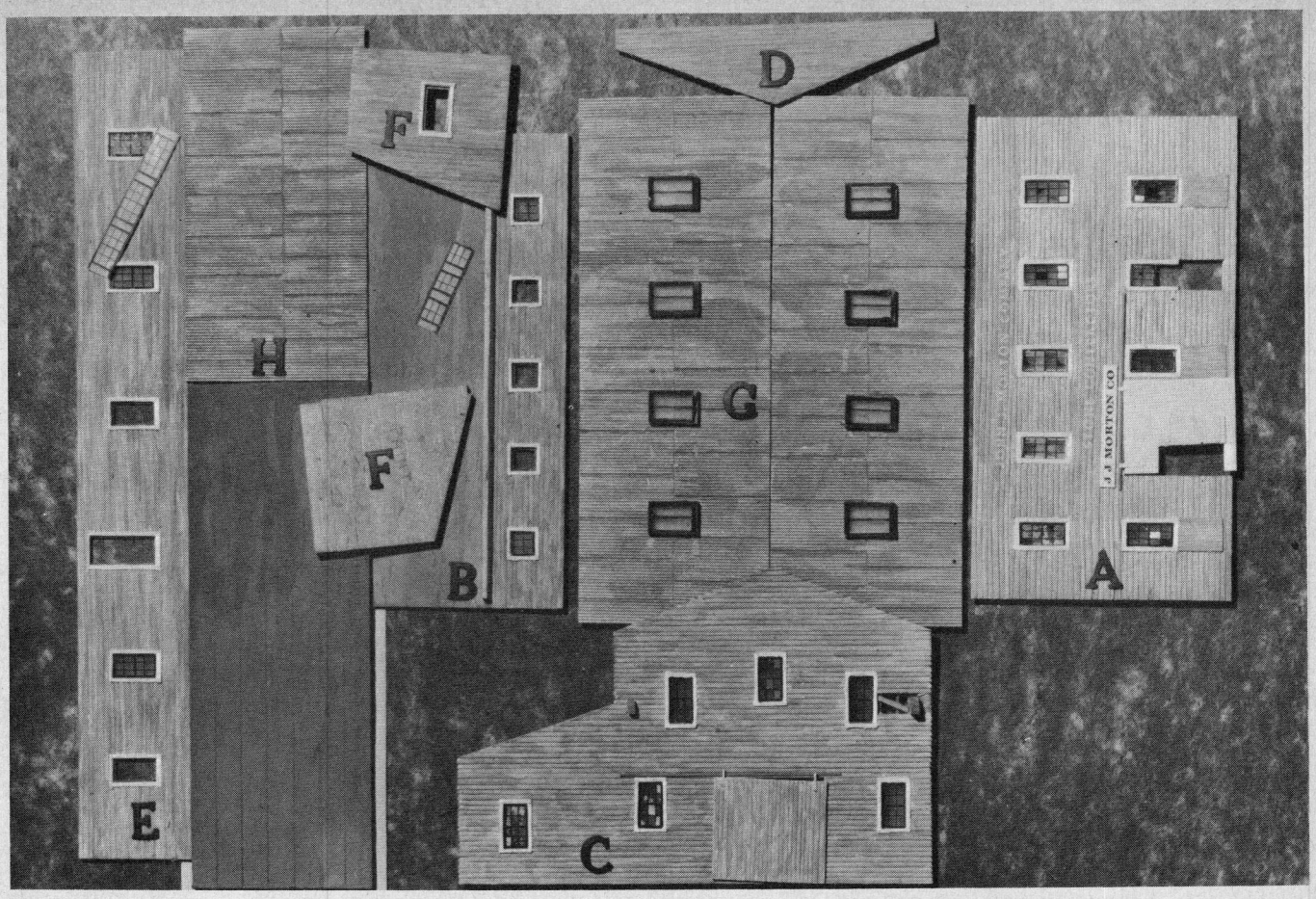
As may be seen in Figure 2 the masonry piers which border the railroad siding are 4' high, while all the others are only 2' high. In theory the yard (2 thicknesses of 1/8" balsa) should be 2' high, but is actually only 1¾', so 6 piers of those marked (D) need only 1/32" pieces of stripwood, 2'x2½' as bases for the trestle supports. I made my masonry piers of 3/32" balsa, cut 2'x2½' and cemented one atop the other and scribed. The piers at (E) match those at (D) in size and height. On the top of the (E) piers cement small blocks 6"x9"x2' on their 9" sides—to these the outer ends of braces from the trestle supports will be cemented.

Now to build the supports, which in a manner are similar to trestle bents except that each row of supports carry but a single rail. I built a template on cardboard, using 1/16" balsa, leaving a rectangular opening 2½'x14½' in which six supports were built. I then shortened it to 12½' and built the remaining four. The procedure is to lay a 6"x9"x2½' block at the bottom on its 9" face, and then added the two uprights, one 6"x9"x13½', the other 9"x9"x13½', and top it off with another 6"x9"x2½' block. There's no set pattern in adding the short braces. When completed, the supports are lined up on the (D) bases or piers, making certain they stand straight, add the 3"x9" long braces which extend to the (E) piers. Cross braces may be added between the supports as in Figure 2. When all are lined up, bring on your top beam which is 12"x18"x55' long, and to which code 70 (or smaller) rail is cemented to one 12" surface with Pliobond. Blocks, 6"x12"x2½' are cemented to the underside of the beam at intervals to coincide with the supports as seen in Figure 2. Care must be taken to keep the rails equidistant at both ends, otherwise your traveling crane may have some difficulty navigating.

The framework of the traveling crane may now be made, the general plan of which may be seen (F) inside Figure 1. While it calls for 4 I-beams, in the absence of these I used 3"x12's" with 3"x6's" cemented to tops and bottoms. These, 26' long, are joined at the ends to pieces 3"x18"x11' long. Brace the corners well. Now for the wheels. At least they resemble flanged wheels. I used two paper punches, one making a hole about 15 scale inches in diameter, and the other about 21". I punched out 8 cardboard circles from 1/32" material, then cemented them together in pairs, giving me 4 1/16" wheels 15" in diameter. The other punch furnished the flanges from postcard stock, which were cemented to the wheels, then to the carriage ends. Otherwise you'll have to cut the flanges with scissors and the wheels from dowel stock. I painted the carriage frame a dark green, the wheels black and touched the wheel centers with a dot of lighter

BELOW: Aerial view of yard in first stages of construction, with completed yard area. Method of construction applies to all popular scales.





All parts except base are shown laid out in photo above, ready for assembly, lettered for ready identification. Building is not too large for average layout; won't overpower scenery.

color. Better check your track width to see if the carriage frame as I have it will fit—you may have to make a slight alteration in width. Attached to the underside of the carriage frame is a suspended cage-like affair shown in Figure 3 and which contains the motored power for the crane. It is 3'x5'x5', has a 3'x5' stripwood floor and is otherwise built of 1/32" square stripwood.

My hoist, which travels from one side of the yard to the other across the top of the crane carriage, is more or less a caricature of the prototype, consisting as it does of a small watch gear, couple of dress snaps, a simulated motor mounted on a 5'x5' base of 1/32" stripwood, which in turn sits atop ⅛" dowel axles with flanged wheels cemented to the ends, and with a curved canopy above to shed the elements.

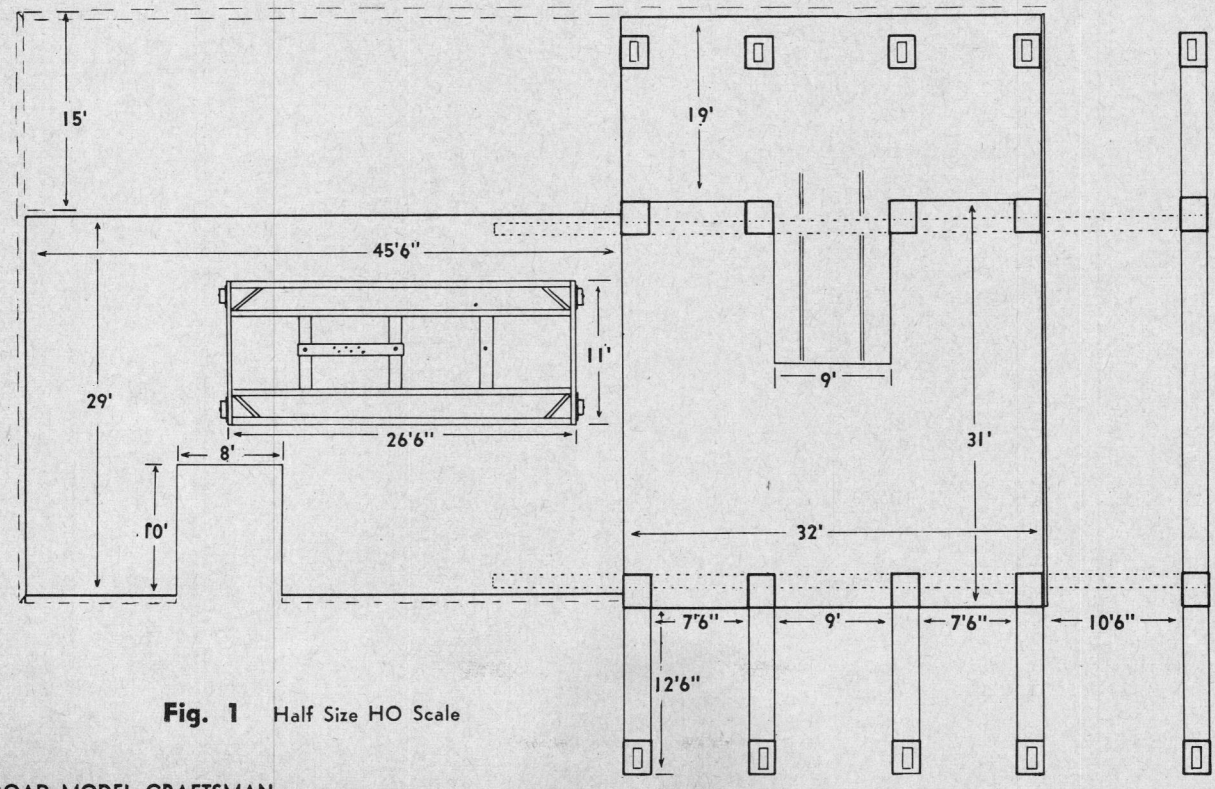
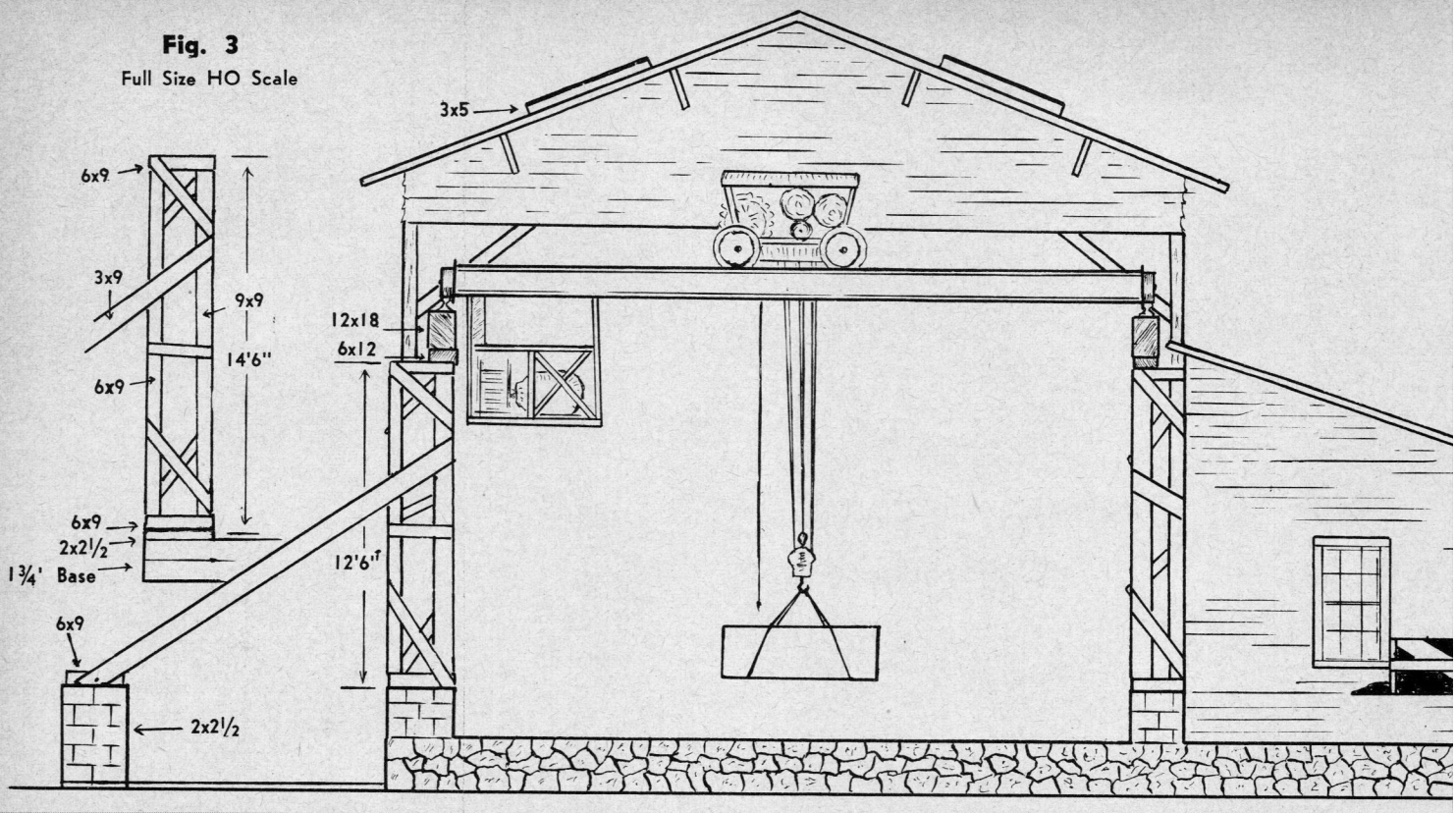


Fig. 1 Half Size HO Scale

Fig. 3
Full Size HO Scale



Required Materials; HO

24" 1/16"x3½" Northeastern clapboard siding (1/16" spacing)
15" .040x3½" Northeastern corrugated roofing (.040 spacing)
24" 1/8"x4" Sheet balsa for base etc.
7" 1/16"x4" Sheet balsa or sheetwood shed roof
16" 1/32"x1/4" stripwood for outriggers
15" 1/8"x3/16" balsa or stripwood for track beams (12x18)
24" 1/32"x1/8" stripwood (3"x12" HO)
48" 1/32"x3/32" stripwood (3"x9" HO)
24" 1/32"x1/16" stripwood (3"x6" HO)
24" 1/16"x3/32" stripwood (6"x9" HO)
24" 3/32"x3/32" stripwood (9"x9" HO)
15" Code 70 (or smaller) rail 10 sq. inches acetate

The block, underneath, with its 6 supporting cables, may be seen in Figures 2 and 3. It is a bit of stripwood filed to shape, with an eyebolt at the top and a hook at the bottom. One thread is run through the eyebolt and two through holes in the block. The six thread ends are then passed through drilled holes in a piece of stripwood which is anchored in the crane carriage as may be seen in Figure 1. This was more accessible, although of course in the prototype the block was suspended from the hoist, itself.

(B) in Figure 1 is a cutout simulating a shallow pit with rails. The rails are merely brown paper strips. The carriage in the pit is 7'x8' and stands 18" high on its wheels. Its purpose is to move the large slags of sandstone into position so that the moving circular saw can make its cuts. The saw is a gear from an alarm clock (could be made from card stock, notched and painted) with the upper portion covered with a guard and a motor mounted above. It travels along an I-beam whose ends rest on 5½' tall stone piers. I was fortunate in making my first photograph of the saw while it was partially sheltered from the elements by old sheets of corrugated roofing. On a later visit I noticed this had been replaced by a less picturesque but well constructed shelter. My tin coverings were salvaged from an old toothpaste tube. All exposed wood in the yard such as beam, supports and braces was weathered a silvery gray.

This finishes the yard, so now to the other end. Cut from clapboard siding, one piece 24'x46', this being the side shown in Figure 2. What I

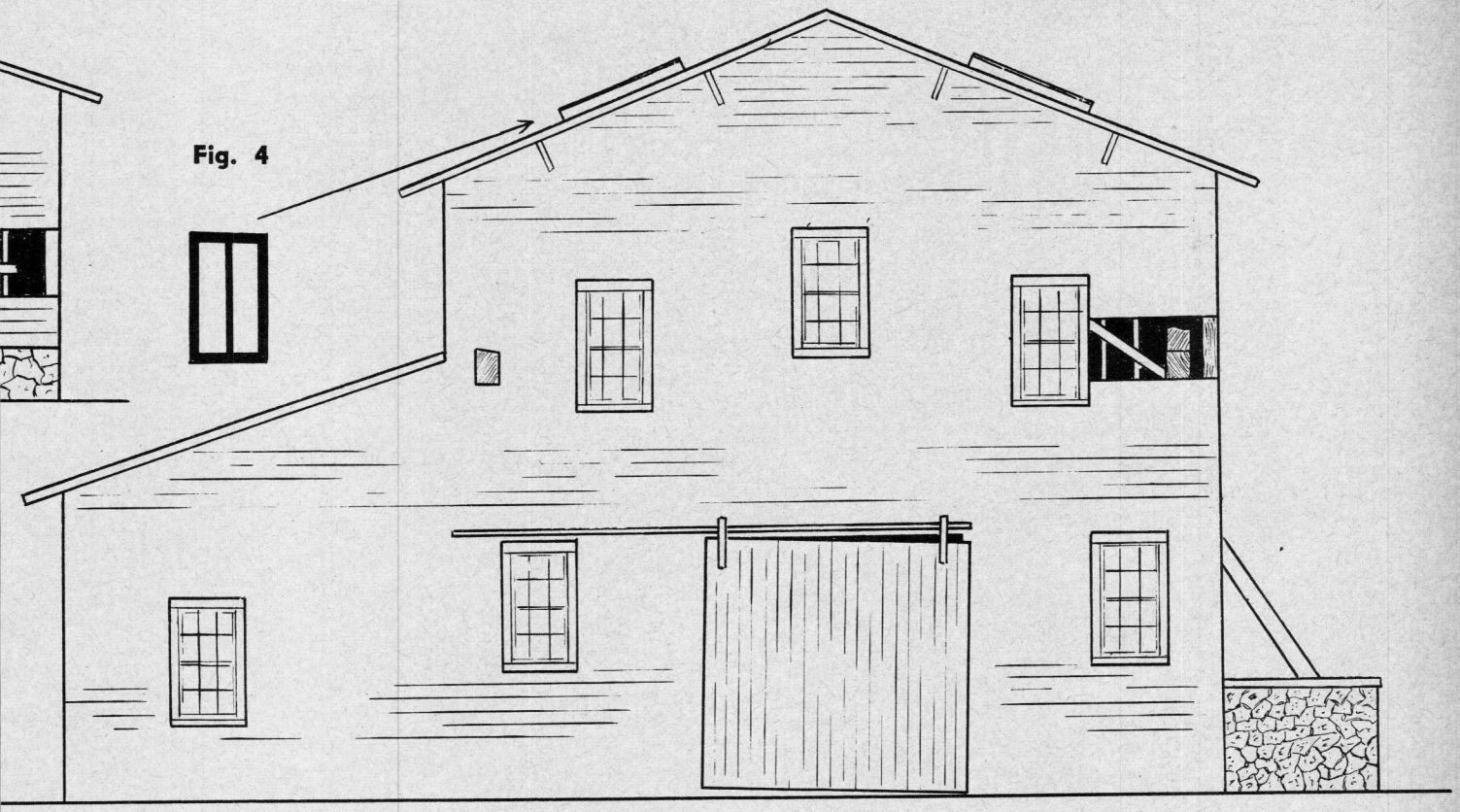


Fig. 4

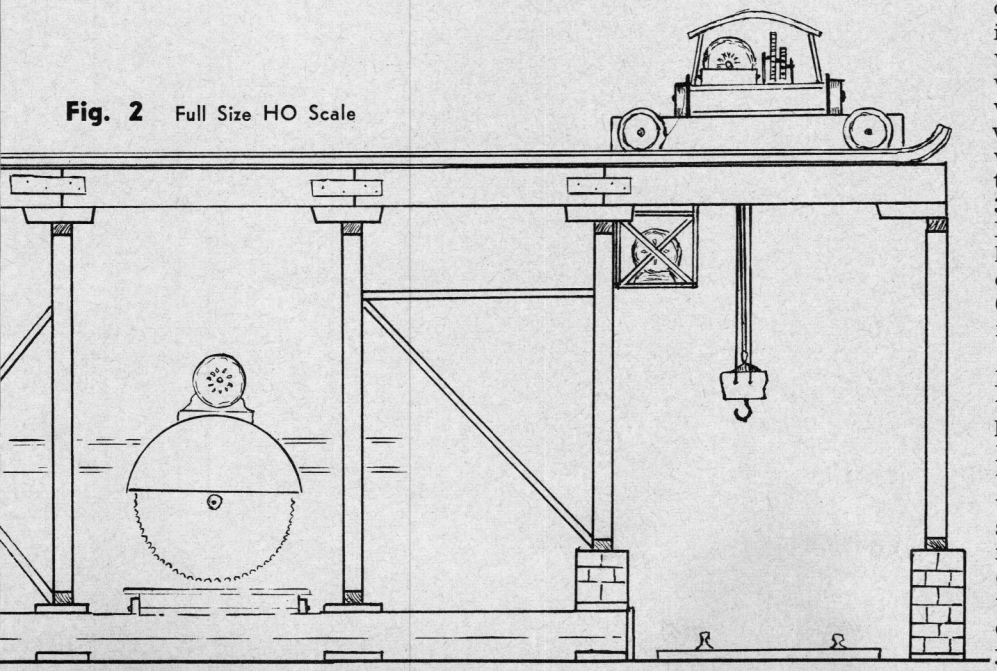
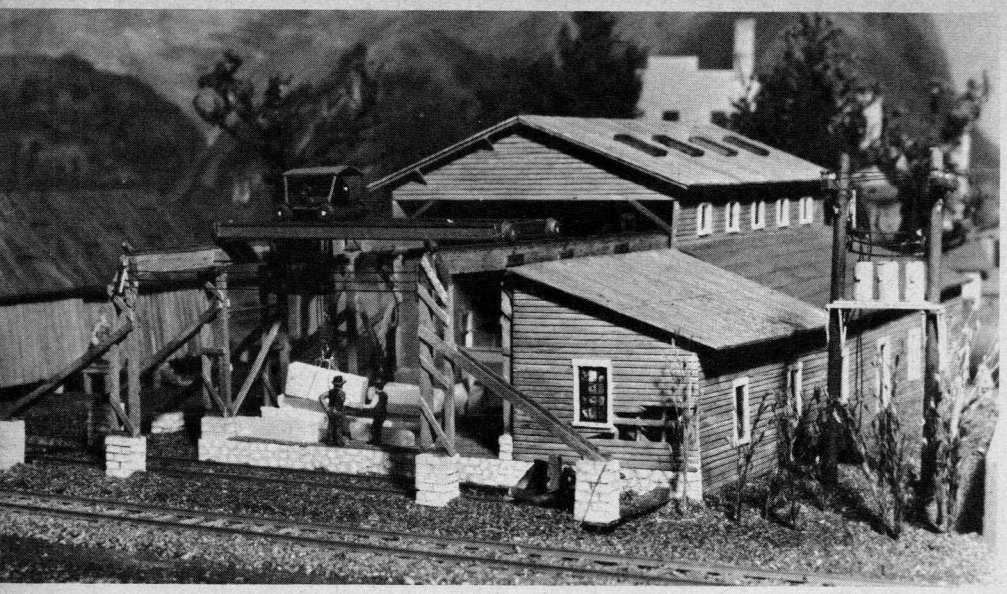


Fig. 2 Full Size HO Scale

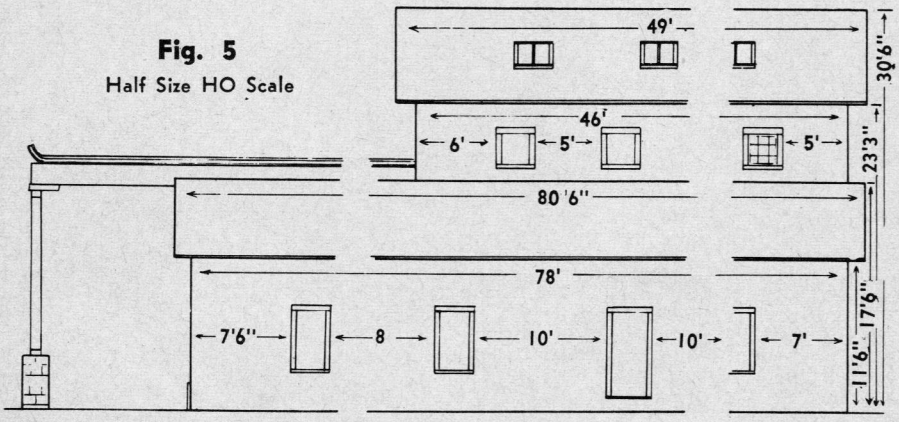
did to Mr. Northeastern's pretty siding would probably cause him to weep. On the back of it I laid out the window and door openings, cut the window openings 3'x5', casing them with white prepainted 6" square stripwood, except for the bottom sill which took 3"x6" stripwood. Inside this went 3" square stripwood window stops. Bevel the wall end as the building has no corner posts. If you'll observe closely you'll see that I cut my wall 6" too short and therefore had to butt it up against the end wall.

Now to the paint job. While it isn't likely you'll want to follow me through with all the decal work, still here is how I proceeded. The building has a bleached out red paint job, and the dust from stone being worked with compressed air tools is much the same as you'd find around a flour mill. So I first gave the wall a coat of railroad white diluted with 10 parts thinner. When this dried I mixed boxcar red 5 parts, caboose red 5 parts, yellow 1 part, and thinner 20 parts,



Rear view of plant from the yard end with all shrubs, grass, and other scenic details in place. Notice small sub-station at right.

Fig. 5
Half Size HO Scale



and applied this to all but the window frames. Then, using Gothic ⅛" decals I applied the original company sign. Over this went more of the diluted red, streaking it on until I obtained the desired effect. I added a little extra yellow and streaked this on at random. Later, too, I dusted the wall with pumice stone powder. Over the doorway I put up a fresh sign and made a door of 1/32" scribed sheathing, cutting a smaller walk-in door at one side. The little matter of the saw track which juts out below a window to the right of the door, and the display wall at the corner, may well be left until the building is assembled and on location.

Now to the opposite wall (B) in the Kit Photo, and an abbreviated showing of it in Figure 5. Make this 24'x 45½' as it will butt up against the end. Make it either from one piece of siding, or, as I did, cement a 7'x 45½' strip to a piece of plain 1/16" balsa or sheetwood, 17'x45½'. The 3'x3' window openings are spaced just as are the windows in the opposite wall. Attach a ⅛" square strip of balsa the length of the wall with the top at 17' to serve as a support for the upper edge of the shed roof.

The end wall, Figure 4, is 45' wide, 12' high at shed eaves, 24' high at barn eaves, and 30' high at peak. Bevel both sides to fit at corners. Window openings are 3'x5', and a door, 10'x 10½' hangs in a closed position so there is no point in cutting an opening other than possibly a little slit at the top. Ends of track beams jut through.

Once the windows are installed the three sides may be assembled. I used frosted acetate, obtainable at office supply stores, for windows and skylights; its matte surface simplifies the inking-in of pane divisions. Windows come in two sizes, 22 of the full size and 5 of the small ones, plus 8 skylights 3'x5'. I sketched the windows in detail with pencil on white card stock, fastened acetate over this and inked them in. They were installed glossy side out.

Before assembling it will help to cement ⅛" square balsa strips vertically at the corners. Then assemble, and cut out the other end shown in Figure 3, (D) in Kit Photo. It will help here to cement a piece of ⅛" balsa, the same size but only 29' wide to the back of the siding before cementing in place. Gives greater cementing and holding surface.

We already have one end of the shed, so cut the other as in Figure 3, 15' at the peak and 10' at the eaves. Being a long shed it will also need a center brace the shape of an end. Make this of ⅛" balsa, 14½' wide, 17' at peak and 12' at the eaves. The shed wall (E) in Kit Photo, is one piece of siding 12'x78', both ends beveled. Placement of door and windows is not important here. The shed roof is in two parts, one end 17'x47' is 1/16" balsa or sheetwood and is painted a gray and lined to simulate roofing paper. The other end, 17'x33½' is Northeastern corrugated roofing, painted aluminum, then stained a rust color.

The main roof, each side of which is 18'x49' is also corrugated material and painted like the shed roof. This has to be pieced so I cemented each side to a piece of ⅛" balsa 15'x44'. then beveled the top edges to a fit and cemented them in place. The acetate skylights were set on rectangular frames made of 1/16' 'square stripwood, painted black. At the ends of the roof, under the eaves, are short braces of 1/32" square stripwood.

A display wall of simulated stone goes at one corner, as seen in Figures 3 and 4. I made this of ⅛" balsa, the wall 4' high, the ends 6' wide and the side 12' long, mitering the corners. I gave this several thick coats of cream paint, then made a light pencil sketch of the stone formations on the surface. I followed up with a sharp awl penetrating only into the paint, topping it all with a few pastel touches of water color. A 3" coping of simulated stone tops the wall. A 3'x4' space was ripped out below one window and a concrete pier was set up outside attached to the wall at the base, and on this rests the outer ends of two short I-beams. A trough appears between these and drains off the milky liquid resulting from a circular saw cutting through stone slabs. The braces appearing alongside the building are best left until it is on permanent location. I assure you they are not there to hold up the building, but to brace the track supports.

We are now ready to attach the outermost row of supports and braces to the end of the overhead beam. Add any braces which will assure rigidity. It is also possible to run a brace across at the bottom just beyond the end of the siding and perhaps a slender one fitting between the ties of the siding.

And finally, you'll be needing stone. Of the various items tried: soap, chalk, household wax and art gum, the latter was the most realistic when given an off white coating of railroad color, and it cuts easily with a jewelers saw. Household wax comes next, but is harder to cut, and unless painted has the look of ice. Both show in one photograph, art gum on the flatcar and the household wax in the background.

If you're thinking of selecting a tombstone, you're in the wrong stone plant. That's a stone of a different color, and another story.