Model Railroader SPECIAL ISSUE

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Ideas that work in all scales!

MODEL RAILROAD SCENERY

STEP BY STEP

WINTER 2019

20 projects that add realistic detail!

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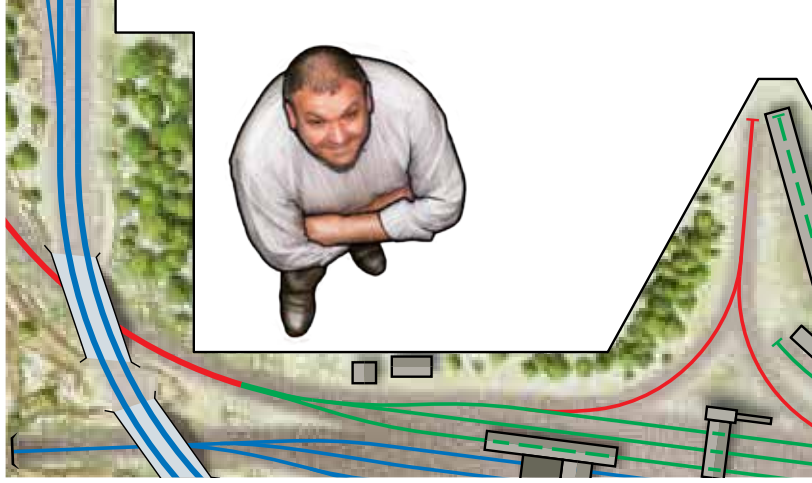
MODEL RAILROAD SCENERY STEP BY STEP

ON THE COVER: There are lots of ways to add realistic detail to layouts of any size. Pelle Søeborg scratchbuilt this tunnel portal on his compact HO Union Pacific layout. See page 54. Photo by Pelle Søeborg



HEY, HOW DID YOU DO THAT?

IT'S A COMMON QUESTION we all ask at some point when we see something that catches our eye on someone else's model railroad layout: "Hey, that's neat! How did you do that?"

The great thing about model railroading is the social aspect, and passing along what we've learned to others that are interested in the hobby. But there are other places we glean ideas too, like the pages of *Model Railroader*.

One of the areas of model railroading people are most interested in is scenery. The first thing we usually want to do is to get track down and trains running. After that, we want to develop a sense of time, place, and emotion, and to "set the scene" our locomotives and cars will pass through.

Scenery helps us do that. Terrain, foliage, structures, roads, and figures are just some of the tools you can use to create your railroad's own miniature place in the world. The techniques to create scenic features are wide and varied, but ultimately will help you achieve the look you're working toward.

Within the overall theme of your layout are usually smaller scenes. In addition to projects you can use anywhere on your layout, we've included stories on creating these vignettes that will make visitors want to stop and look at the detail for a while.

The railroad itself ties these scenes together. And even there, scenery plays an important role, as track is ballasted and weathered to look like the prototype.

In *Model Railroad Scenery Step by Step*, we've collected a lot of ideas on the topic that we hope will both pique your interest, as well as give you the answers to the questions you might have. If you want to know how they did that, then please read on. You'll find out.

FOR MORE INFORMATION

LOOKING FOR MORE TIPS & TRICKS?

Visit the Kalmbach Hobby Store, www.kalmbachhobbystore.com.

PDF packages are available for download covering construction of various scenic features for model railroads.

Also available is Lou Sassi's book, *Basic Scenery for Model Railroaders*.

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Kalmbach Media

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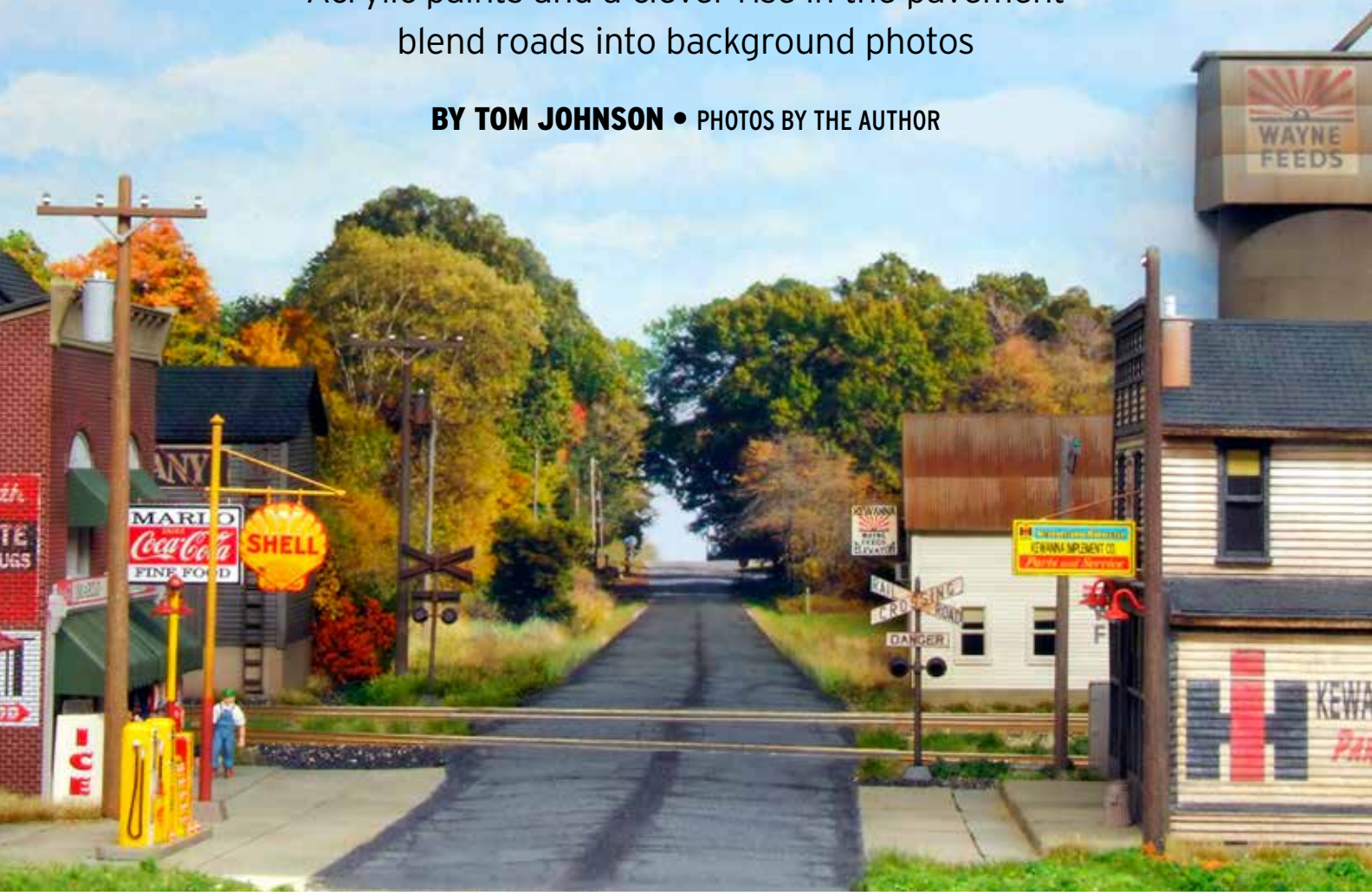
CONTINUE YOUR ROADS INTO THE BACKDROP

Acrylic paints and a clever rise in the pavement blend roads into background photos

BY TOM JOHNSON • PHOTOS BY THE AUTHOR



This picture of Tom Johnson's HO scale layout shows how he blended the foreground road into the photo backdrop. Below is the original scene.

BUILDING SHELF LAYOUTS has many advantages, including easy access, less scenic work, and less expense. However, it has its drawbacks as well. Depicting roads that end at the backdrop with realistic depth is one of the biggest challenges of scenicking a shelf layout.

Though my HO scale Pennsylvania RR South Bend Branch layout was more or less finished, I was unhappy with several spots where roads ran into the backdrop. I solved this problem with the help of my good friend Jim Six. Jim uses photo backdrops on his New York Central Michigan Branch model railroad, and after seeing the great results he got with this technique, I decided to do the same on my layout.

Picture a road

I took several digital photos of roads in autumn, which is the season I model. I loaded the pictures into my favorite photo-editing program and chose the one that best fit my first location. I resized the photo to fit my backdrop scenery and the finished road in front of it, then printed it out.

Next I cut the sky off the photo along the top edge of the distant tree line, using a sharp pair of scissors. I also cut off the bottom edge of the photo until

FIG. 1 TESTING THE PHOTO. **After removing the surrounding foliage and nearby structures, Tom test-fit a printout of his digital photo against the backdrop. He trimmed the bottom of the photo until the width of the road at that point matched the width of the street modeled on the layout.**

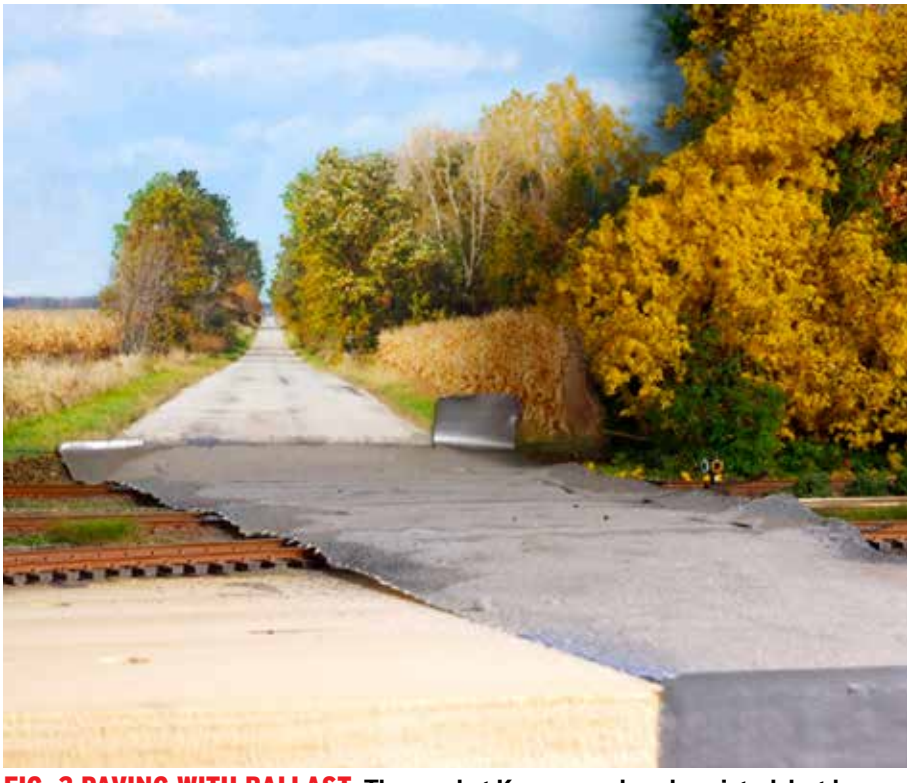


FIG. 2 PAVING WITH BALLAST. **The road at Kewanna already existed, but here in Delong, Tom built a road from scratch. He masked the flangeways and the boundaries of the road with duct tape, then glued on N scale ballast.**

the bottom of the road in the picture matched the width of my modeled road. After tearing out some of the old scenery from the area, I placed my cutout photo against the backdrop to see how its size and looks fit the modeled road and surrounding scenery. See **FIG. 1**.

Once I was satisfied with the size, I glued the photo to my backdrop using white glue. After this dried, I dabbed some acrylic craft paint in autumn leaf colors along the top of the distant tree line to hide the cut edge. With a small paintbrush, I painted tiny dot patterns to simulate foliage. You can achieve the same effect by stippling sky colors on top of the distant tree edge; both methods work well.

From foreground to background

The next step is building the fillet that helps blend the modeled road into the road in the photo. Rather than having the road butt square against the backdrop, this curve makes a smooth transition from horizontal to vertical and makes the modeled road look like it rises into the photo.

I built my road using Highball N scale ballast. I applied narrow strips of duct tape to the base terrain to mask the edges of the road and the flangeways, as shown in **FIG. 2**, then sprinkled the ballast

between the strips from a height of about 10 inches. I did this because I wanted the ballast to fall randomly like snow so it would form a smooth and even layer. When I was happy with the looks of the road, I secured the ballast by wetting the modeled road with wet water (distilled water with a few drops of dish soap to break the surface tension), then thinned white glue.

After about a half-hour of drying, I removed the tape that masked the edges of the road and the flangeways (**FIG. 3**), then tamped down the rough edges with my finger. I then smoothed the road's surface by tamping it with a small square of basswood, as shown in **FIG. 4**. If the ballast sticks to the wood while you're doing this, the road needs to dry longer.

I made the fillet where the road meets the backdrop in the same way, building it up in layers. I piled my N scale ballast about half the needed height, sprayed it with water and dish soap, and applied white glue and water. After about a half-hour of drying, I shaped it, added more ballast, then applied wet water and thinned white glue again. Take a look at **FIG. 5** to see how it blends the layout into the backdrop.

When the road and fillet had thoroughly dried, I painted them using various shades of gray, white, and black acrylic paint. I then drybrushed the road, using other colors such as blue, violet, tan, and red, to match the shades in the photo. This isn't that hard to do. I often brush the paint from the road up onto the photo backdrop, which also helps blend it into the modeled road.

I finished my road by adding surface details that match the road in the photo backdrop. For example, I might make cracks in the road using an ultra-fine Sharpie black marker. See **FIG. 6** on the next page. Dark streaks can be brushed on to mark where cars have traveled.

FIG. 3 LIFTING THE MASKS. **After letting the diluted white glue securing the new road dry for about half an hour, Tom removes the tape on the edges of the road and the strips protecting the track's flangeways.**

FIG. 4 TAMPING IT DOWN. **Peeling up the tape leaves the edges of the road rough. Tom presses the edges into shape by hand, then uses a piece of basswood to tamp down the surface.**

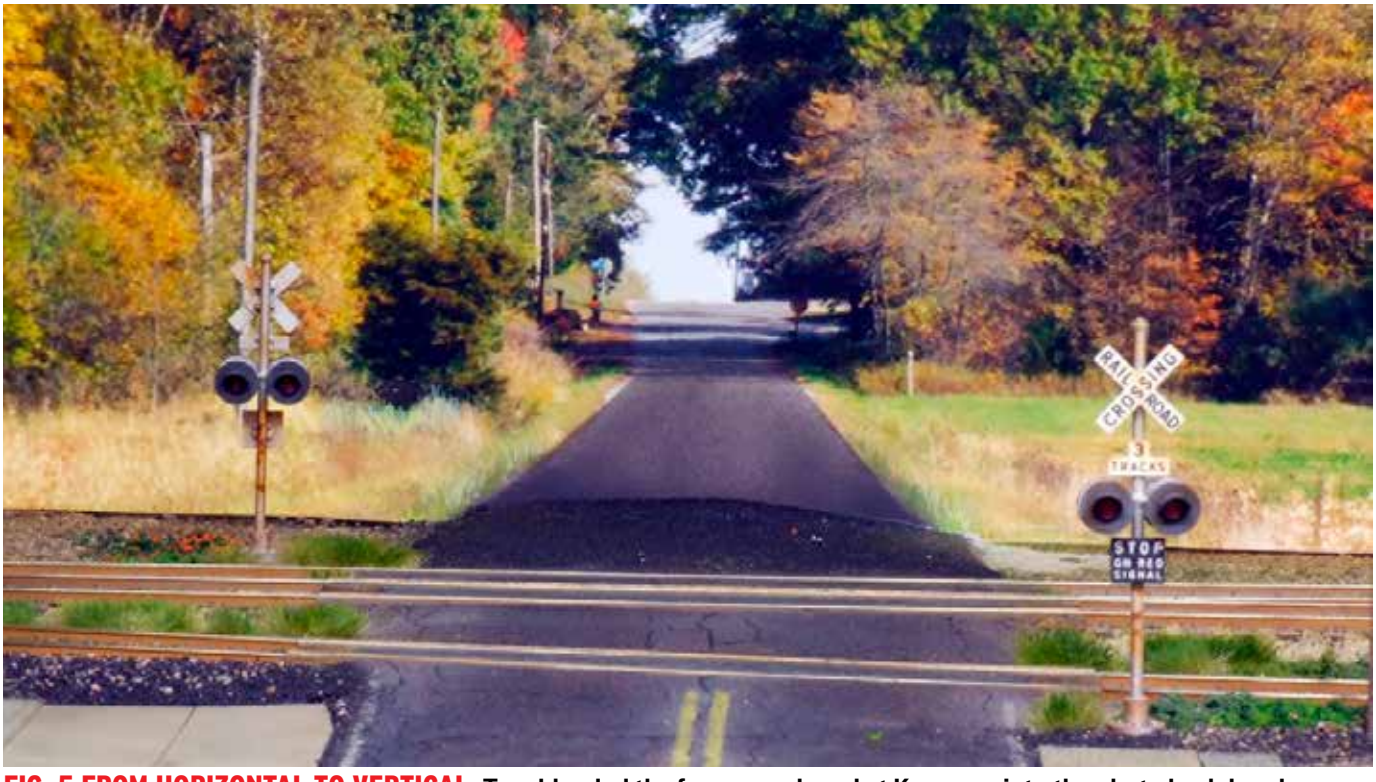


FIG. 5 FROM HORIZONTAL TO VERTICAL. **Tom blended the foreground road at Kewanna into the photo backdrop by building up a fillet of ballast that rises from the road's surface up into the vertical backdrop.**

FIG. 6 MAKING IT MATCH. After the road and fillet were dry, Tom painted the road to match the road in the photo backdrop. He also painted the bottom of the photo to further disguise the junction between foreground and background.

FIG. 7 A REALISTIC LOOK. Even when viewed at an angle, the road at Kewanna still seems to continue into the backdrop. Later, Tom will use scenery and structures to control sight lines and prevent viewing from unrealistic angles.

I also use acrylic paints and permanent markers to depict patches, lane markings, and expansion joints.

Blending in the edges

I finished my scene by adding Scenic Express SuperTrees to both sides of the road along with fine turf, prairie tufts, and clumps of weeds. I covered my trees with various shades of fine autumn-colored turf to help blend them into the photo backdrop. I also like highlighting the weeds and ground turf with acrylic paints so they'll better blend with the colors in the photo backdrop.

Once painted and detailed, the road in the backdrop in **FIG. 7** looks like a continuation of the foreground road. When viewed at a slight angle, the road merely looks like it goes around a bend. Nearby trees and structures help control sight lines to preserve this illusion.

Though I added my photo roads after I built my layout, it would be much easier to add them as you build your layout. But as you can see here, it's not hard to improve an already completed layout with strategically placed photos. MR

DETAIL AND WEATHER AN ASSEMBLED STRUCTURE

A simple factory-assembled model can be the centerpiece of an interesting scene

BY PELLE SØEBORG

Pelle Søeborg added a view block and exterior details to this HO scale BLMA Models (now Atlas) yard office. He toned down the shine of the plastic by applying thinned paint with an airbrush. Photos by the author

I BEGAN GATHERING STRUCTURES for my HO scale Union Pacific Daneville Subdivision model railroad as soon as I'd started the benchwork. Yes, I reused some of the buildings from my previous layout. However, I'd also add a few new structures, including this BLMA yard office. [BLMA details and structures are now available from Atlas Model Railroad Co. – *Ed.*] Though the structure comes factory assembled, there are some easy ways to dress up this model.

The first thing I do with any factory-assembled model is weather it. Even if a building is molded to look like brick, metal, or wood, it still has that plastic shine. Simple weathering with pastels and an airbrush will give any structure a more realistic finish.

If your structure is in the foreground and lacks an interior, add a view block. It can be as simple as a piece of construction paper or made from styrene to look like separate rooms. No matter what method you use, the goal is to keep visitors from seeing straight through the building.

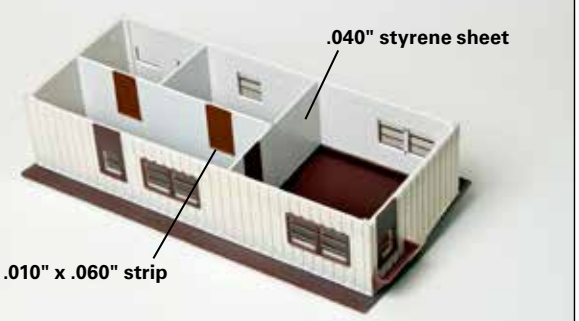
Finally, enhance your building with details. Electrical boxes, air conditioners, and rooftop vents are a few possibilities. Look at real buildings for ideas.

Enhancing a factory-assembled structure is fun and easy to do with common modeling supplies and scrap box items. This works in any scale, so give it a try.

STEP 1 EASY VIEW BLOCK

SINCE THE YARD OFFICE is in the foreground of my layout, its lack of interior detail is obvious. To prevent viewers from looking right through the building, I added interior walls from .040" styrene sheet. I used .010" x .060" strip for the door frames.

I painted the frames and doors a warm brown color that complemented the exterior color. I didn't paint the interior walls.



STEP 2 AIRBRUSHING

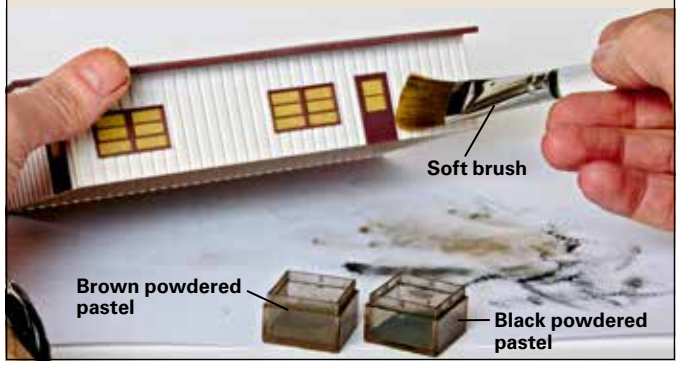
I WANTED TO KEEP the window glazing clean during the weathering process. I thought the easiest way to ensure this would be to remove the glazing. Wrong! The glue used to secure the clear plastic was quite strong. I had to resort to plan B, measuring the window panes and cutting individual pieces of masking tape.

With all the windows masked, I sprayed the building with thinned Model Master Sand (1 part paint to 2-3 parts thinner). Once the paint dried, I sprayed the building with Vallejo Model Air Matte Finish.

STEP 3 POWDERED PASTELS

NEXT, I USED A SOFT PAINTBRUSH to apply brown and black powdered pastels. I applied the pastels sparingly on the white surfaces, where they'd be more visible than on the dark brown surfaces of the roof, doors, awning, and window frames.

When applying powdered pastels, build up the color in light layers. It's easier to apply several light coats than to remove a heavy coat. Move the brush parallel to the siding corrugations so you don't get wavy lines of pastel.

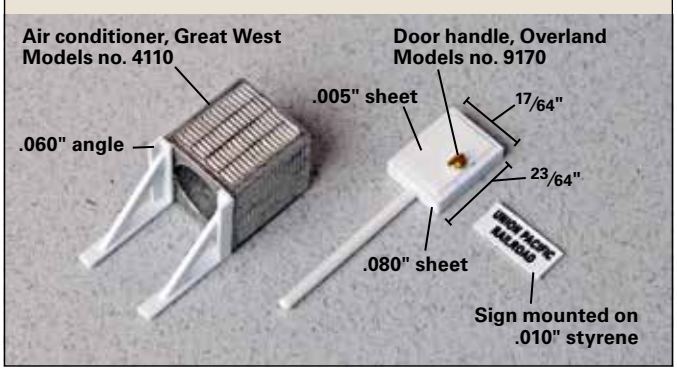


STEP 4 EXTERIOR DETAILS

MY LAST STEP WAS TO ADD exterior details. Since it can be hot in Daneville, I installed an air conditioner to keep the HO railroaders comfortable. I found a Great West Models white metal air conditioner in my scrap box that fit the bill perfectly. [Walthers includes a similar HO scale swamp cooler in its Roof Details kit, part no. 933-3733. – *Ed.*] I made a bracket from .060" styrene angle and .010" x .060" strip and attached the casting to it with cyanoacrylate adhesive (CA).

Next, I made a 17/16" x 23/64" electrical cabinet from .005" and .080" styrene. The brass door handle is an Overland Models detail part, now out of production. Precision Scale Models part no. 3997 can be used instead. I used a 4-scale-foot length of .030" rod for the conduit.

I then made the UNION PACIFIC RAILROAD sign on my computer and printed it using a laser printer. I attached the paper sign to a piece of .010" styrene with spray adhesive. Then I cemented it to the wall with CA.



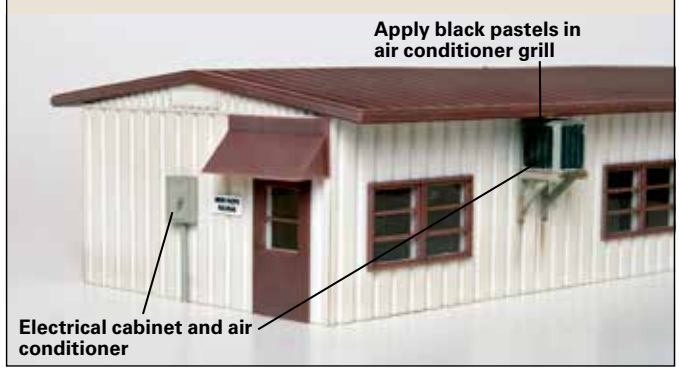
STEP 5 FINAL TOUCHES

I AIRBRUSHED THE AIR CONDITIONER and electrical cabinet with Model Master Gull Gray. After the paint dried, I applied some powdered pastels to the air conditioner's grills so they'd stand out. I also used pastels to add rust streaks below the wall-mount bracket for the air conditioner. I sealed the pastels with the same Matte Finish I used in Step 2.

I scraped the paint off of the gluing faces of the air conditioner and the electrical cabinet before attaching them to the walls with CA. This ensures a strong glue bond.

Once the CA cured, I set the yard office on my layout. To complete the scene, I added concrete barriers and railroad crew vehicles in the parking lot, a radio antenna tower, and a no-trespassing sign next to the grade crossing.

Factory-assembled structures save time for other modeling projects. And with a bit of weathering and detailing, you can turn a ready-to-use structure into a building with character.



A front-end loader pulls a covered hopper toward the unloading pit at Kalmbach Feeds on *Model Railroader*'s HO scale Wisconsin & Southern layout. The concrete lot allows vehicles and trains to operate in the same space.

MODEL A CONCRETE LOT WITH EMBEDDED RAILS

Styrene sheet makes this project quick and easy

BY CODY GRIVNO
PHOTOS BY JIM FORBES AND BILL ZUBACK

AFTER READING the headline you're probably asking, "Okay, how much plaster am I going to need?" Well, none. You can model a concrete lot with embedded rails quickly and easily with styrene sheet and strip and some basic tools.

Styrene was the ideal medium for the lot at Kalmbach Feeds. Not only are the rails in the concrete, but there is a curved siding and a turnout to contend with. Fortunately, styrene is easy to cut and shape, so overcoming these obstacles wasn't difficult.

Of course, you can make styrene look even more like concrete with a little extra effort. Scribing expansion joints, painting the styrene a concrete color, and applying a weathering wash can turn plain pieces of plastic into what looks like a well-worn concrete lot.

You can adapt the techniques shown here for modeling a street running scene, too. The cutting, scribing, painting, and weathering techniques used on the concrete lot could easily be adapted for modeling a line that operates through a business district.

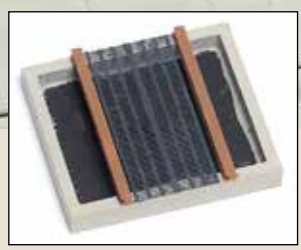
STEP 1 CUTTING AND BRACING

THE FIRST STEP in modeling the concrete lot was cutting the .060" styrene sheet. Fortunately, Andy Sperandeo, who built the feed plant, had already made cutting templates from parchment paper. After placing the paper over the tracks, he rubbed a pencil on the railheads. Using the pencil marks as guides, I cut the styrene with a pair of scissors. After I'd cut each piece of styrene, I used a mill file to smooth the edges.

To make the lot level, I attached .100" x .250" styrene strips to the outside edges of the styrene sheet with Plastruct Bondene. I didn't add the strips under the styrene between the sidings, as the crossties kept it level and at the correct height.

Then I used pieces of .040" styrene sheet to reinforce the joints where I'd glued sections of .060" sheet together. The .040" sheet is thinner than the strips, so there won't be any bumps in the lot.

STEP 2 UNLOADING PIT



BEFORE I COULD attach the styrene to the cork roadbed, I had to install an unloading pit. Andy built the pit, which measures 1¼" x 1⁷⁄₁₆", using styrene sheet and strip. The bottom of the pit is .030" plain sheet, while the walls are .080" x .156" strip. He added .080" I beams where the rails cross the pit.

Andy painted the pit with now-discontinued Polly Scale paints. He used Aged Concrete for the walls, Steam Power Black for the bottom, and Rust for the I beams. Similar colors are in the Testor's Model Master acrylic line.

I finished the pit by attaching Detail Associates Farr air intake grills to simulate metal grating. I brush-painted the shiny metal parts with Polly Scale Grimy Black.

Once the paint had dried, I glued the pit in place with a small amount of DAP Dynaflex 230 latex caulk.

STEP 3 SCRIBING AND SCULPTAMOLD

WITH THE UNLOADING PIT IN PLACE, I used the caulk to attach the styrene to the cork. I let the caulk dry overnight before I scribed the expansion joints. It's critical that the styrene not shift when scribing.

I used a carpenter's square and hobby knife to scribe the joints. I placed the square against the wall and scribed the joints (1¼" apart) lengthwise and crosswise with the back edge of the knife.

Next, I used Sculptamold to blend the styrene into the surrounding scenery. Sculptamold is a papier mache-like product that works well for scenery. It has a working time of about 30 minutes, so I mixed it in small batches.

I made a gradual slope between the lot and the adjacent scenery, as shown in the bottom photo, since the front-end loader used to move cars needs to be driven on and off the lot.

I let the Sculptamold dry thoroughly (no cool, damp spots) before proceeding.

STEP 4 PAINTING

ONCE THE Sculptamold was dry, I began prepping the styrene for painting. First, I used a putty knife to clean off any dried bits of Sculptamold that were on the styrene. Next, I gently wiped the styrene with a Scotch-Brite scouring pad (the green ones designed for use with plastic). Then I wiped the plastic with a tack cloth. After covering the track with Scotch-Blue Painter's Tape, I airbrushed the styrene Polly Scale Aged Concrete.

I then switched gears and brush-painted the Sculptamold with flat tan latex paint. Instead of applying the paint full strength, I dipped the paintbrush in water and then swirled it into the paint on the underside of the lid. Once the paint was the consistency of skim milk, I used a ½"-wide paintbrush to apply the color over the Sculptamold.

Be sure the paint covers well. Any unpainted areas will show up as white specks under the scenery.

STEP 5 WEATHERING WASH

AS SHOWN IN THE TOP PHOTO, I adhered the 4-scale-foot wide styrene strips between the rails with DAP Dynaflex 230 latex caulk.

It's important not to apply too much caulk, as excess may ooze out and fill the flangeways. This can prevent cars from rolling freely and potentially cause a derailment.

The Aged Concrete looked too clean for a feed mill, so I applied an India Ink wash with a foam brush, as shown in the bottom photo. For my wash, I mixed two teaspoons of India Ink to one pint of 70 percent isopropyl alcohol. The wash can be lightened or darkened by adjusting the number of teaspoons of ink.

In the bottom photo you'll also notice there are brush strokes. Don't worry. As it dries, the wash will level out and the brush strokes will disappear.

STEP 6 SCENERY

NEXT I ADDED SCENERY along the perimeter of the lot. First, I applied diluted white glue (mixed 9 parts glue to 1 part water) to the Sculptamold along the edges of the concrete pad. With the glue still wet, I sprinkled a ¼" band of Highball Products HO scale limestone ballast along the edge of the styrene.

Then I filled in the remaining unscenicked areas with various shades of Woodland Scenics ground foam, including Burnt Grass, Earth Blend, Green Blend, and Soil. I also used the firm's Light and Dark Green coarse turf to give the scenery additional texture.

STEP 7 FINAL DETAILS

TO COMPLETE the concrete lot, I added bumpers at the end of both tracks. I used a plastic Walthers Hayes-style bumper on the tank car track (left) and Custom Finishing metal Buda wheel stops on the other track, both painted Safety Orange.

To install the wheel stops, I cut notches in the styrene with a hobby knife. I attached the bumper and wheel stops with cyanoacrylate adhesive.

Finally, I sprayed thinned Polly Scale Steam Power Black between the rails to suggest grease and oil drippings from the front-end loader. MR

BUILD A HIGHWAY OVERPASS

A simple solution for crossing a busy railroad

BY BRUCE PETTY • PHOTOS BY THE AUTHOR

STARTING IN THE 1950S, the railroad overpass replaced many busy at-grade crossings. In the Los Angeles area, as in other large cities, there are many street and freeway overpasses. On my HO scale Los Angeles & San Fernando Valley RR layout, I wanted to install a modern looking overpass for the 1950s.

Because of space, my overpass had to be a low-relief structure where the tracks will disappear under the bridge and into the backdrop. I modeled a generic, deck beam bridge from the late 1950s, using welded plate girder beams and concrete bents and abutments.

Since the bridge starts at ground level and goes up and over the tracks, I needed to replace the old grade crossing. To make the project a bit more challenging, the overpass needed to gradually arch over the tracks.

Building the overpass

I made some scale drawings to determine track clearances and the length of the I beams. The drawings also helped me determine the curve of the beams. For my model, I needed four 6 x 65-foot webs for the four I beams, two for each span.

I scratchbuilt the beams from Plastruct .030" plain styrene sheet. As you can see in **FIG. 1** on the opposite page, I clamped a steel rule to two square blocks that I secured to the table with C-clamps. I then set the arch by adjusting the C-clamps.

The ends of the I beams had to be vertical in relation to ground level so they'd rest flush on the concrete bent. This is where the drawing comes in handy. I cut ¼"-wide strips of .030" styrene for the I beam flanges, smoothed the edges with emery paper, and then glued them together.

As shown in **FIG. 2**, I built the bridge abutments from .030" styrene sheet. I used braces to keep the sides and ends at right angles and stiffeners to give the styrene extra strength.

Then I added decorative trim to the abutments by laminating .030" styrene to the face of the abutments. I smoothed

Much like on the real railroads of the 1950s, Bruce Petty replaced a grade crossing on his HO scale layout with this highway overpass.

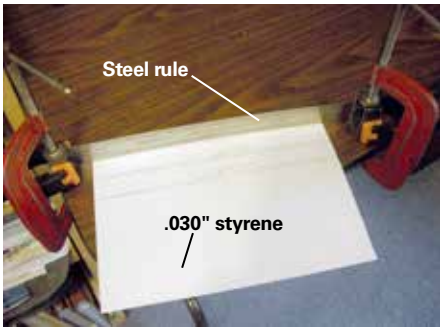


FIG. 1 MAKING AN ARCH. **Though many prototype bridges have vertically curved I beams, few models do. Bruce used clamps and a steel rule to mark the shape of each web before cuttng it from a sheet of .030" plain styrene.**

the edges of the styrene with emery paper before attaching the trim with plastic cement. You can see this in **FIG. 3.**

I used two Rix bridge kits for the roadway deck and the concrete railings. In retrospect, the concrete could be a little thicker under the railings, but building the overpass to prototype dimensions would overwhelm the scene.

I cut several Rix roadway sections lengthwise for my low-relief bridge, as you can see in **FIG. 4**. If you're building a full-width bridge of this type, it should be a four-lane road.

Painting and weathering

I airbrushed the I beams with a mix of Floquil MKT Green and Reefer White that matched the prototype's color.

After the paint had adequate time to dry, I masked the beams and airbrushed the bents, abutments, and railings with Floquil Concrete.

I weathered the bridge with washes of Polly Scale Earth and Concrete. [Since Polly Scale is no longer available, the equivalent Model Master paint is listed in the materials list. – *Ed.*] After examining the prototype, I noticed that dirt tended to accumulate beneath the beams, so I applied additional washes of Earth there. I also added soot stains to the bridge directly above the tracks.

Hiding the overpass ends

Other than scenery, there's nothing permanently affixed to my layout, and this overpass is no different. The bent is even a separate piece.

I placed a tall tree in the corner to mask the edge of the overpass. To mask the end of track under bridge, I added a cantilever signal in front of the center bridge support along with a signal relay structure and speed sign. MR

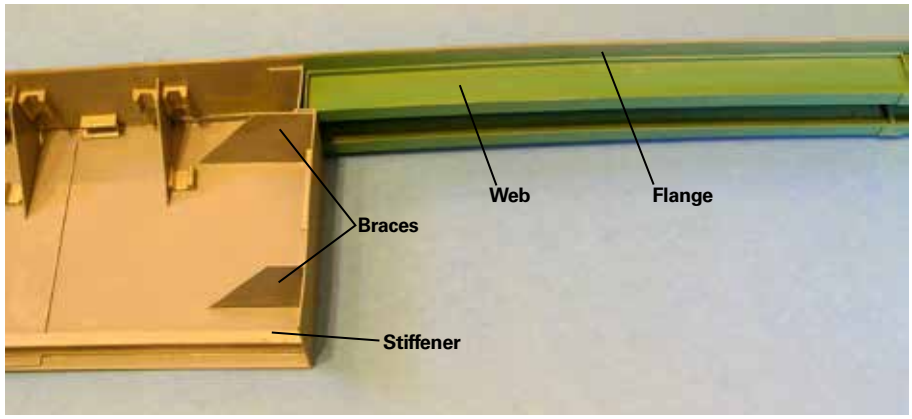


FIG. 2 USING STYRENE. **Bruce used Plastruct .030" styrene to model the bridge abutments. He installed braces so the sides and ends of the abutments would be at right angles, and he added stiffeners so the thin styrene wouldn't bow.**

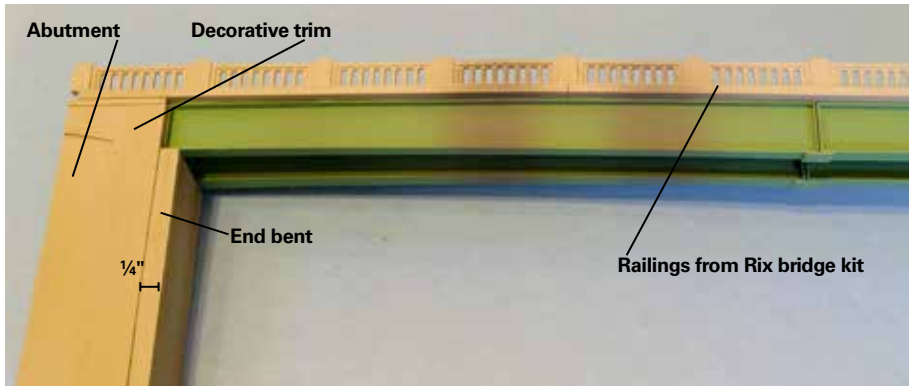


FIG. 3 RAILINGS AND TRIM. **To give the plain abutments some visual interest, Bruce laminated them with more .030" styrene. He then added the railings, which are from the Rix Products vintage highway overpass kit.**

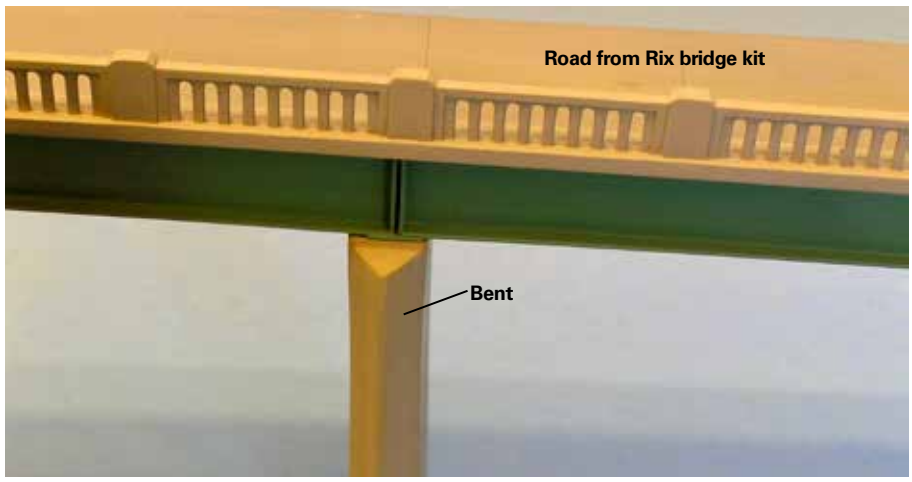


FIG. 4 ONE-LANE ROAD. **Bruce cut the road sections from the Rix bridge kit lengthwise. For this low-relief bridge, a single lane provides enough room for vehicles. If the bridge were modeled full width, it should have four lanes.**

MATERIALS LIST

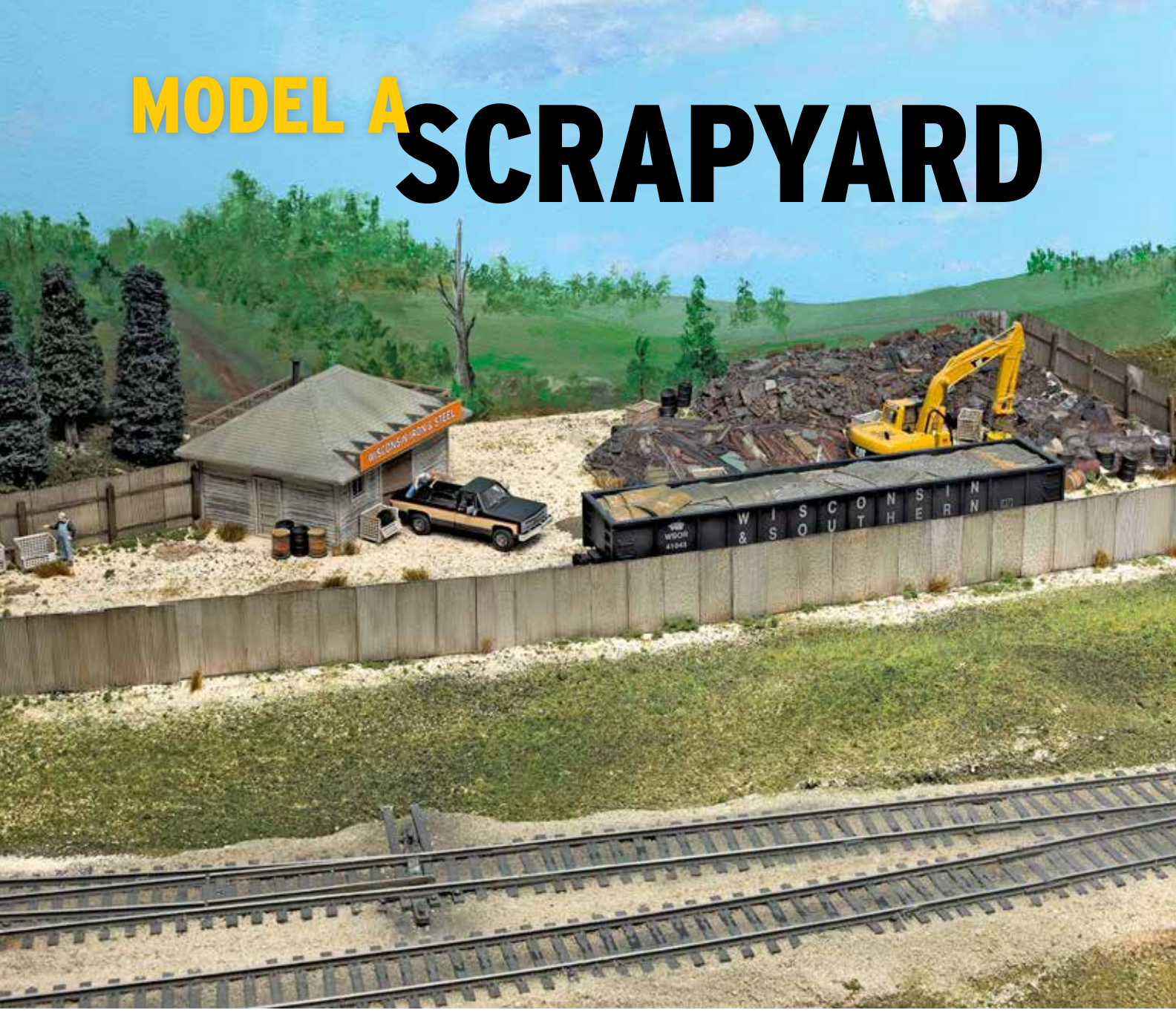
Floquil enamel paint
110011 Reefer White
110082 Concrete
110320 MKT Green

Plastruct (styrene)
91103 .030" sheet, 2

Rix Products
101 bridge kit, 2

Testor's Model Master
4873 Reefer White
4876 Concrete
4877 Earth

MODEL A SCRAPYARD



A scrapyard can add visual interest to a model railroad. Cody Grivno describes how he modeled this scene on the HO scale Milwaukee, Racine & Troy.

This rail-served industry can fit in almost any small space on your layout

BY CODY GRIVNO
PHOTOS BY THE AUTHOR AND THE KALMBACH MEDIA PHOTO STUDIO

AN OFFICE, some scrap piles, assorted detail parts, and a device to load and unload the metal was all it took to model the scrapyard shown above. This industry not only fits in a compact 1 x 2-foot space, it has visual interest that draws visitors into the scene.

Scrapyards (or "junkyards") and metal recycling have been around for decades, but the scope of metal recycling has grown. Yards used to deal primarily in industrial scrap and old cars. They've since expanded to collecting and recycling soda cans, appliances, and metal lawn furniture, among other items.

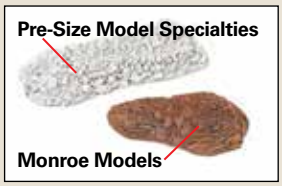
For this article, I modeled a compact scrapyard. However, yards can vary in size from small ones like the one modeled here to large operations that sprawl over several acres.

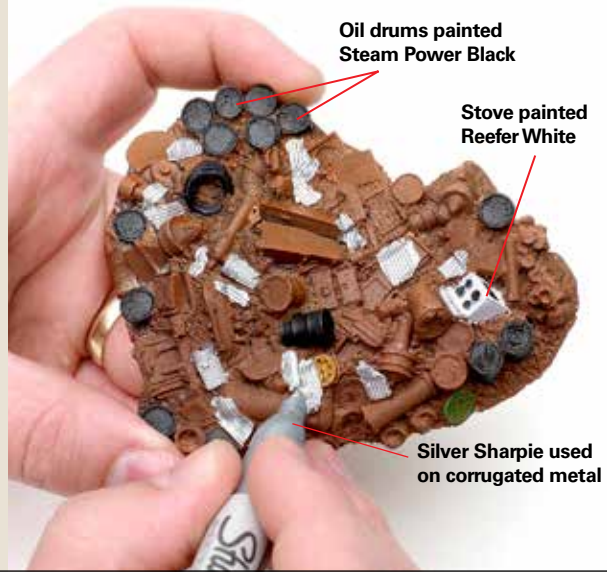
Although I used commercial scrap piles and gondola loads for this project, as shown in steps 1 and 3, you can model an operating yard with miniature scrap metal using Bruce Petty's techniques in the October 2006 issue of *Model Railroader*. No matter which approach you take, a scrapyard will be a visually and operationally exciting addition to your model railroad.

STEP 1 SCRAP PILES

I USED MOLDED scrap piles and items from our detail parts bin to fill the scrapyard. The shredded scrap metal and city junk piles are from Monroe Models, and the larger pile is from Pre-Size Model Specialties. I sprayed the unpainted resin castings with Polly Scale Railroad Tie Brown and Rust. [Note: Polly Scale has been discontinued. Testor's Model Master is a good substitute. – *Ed.*]

To make the details in the scrap piles stand out, I painted them with acrylic colors and paint markers. Here I'm using a silver Sharpie paint marker to color some of the corrugated metal on the Monroe Models city junk pile. I then applied an India ink wash (2 teaspoons ink to 1 pint 70-percent isopropyl alcohol).



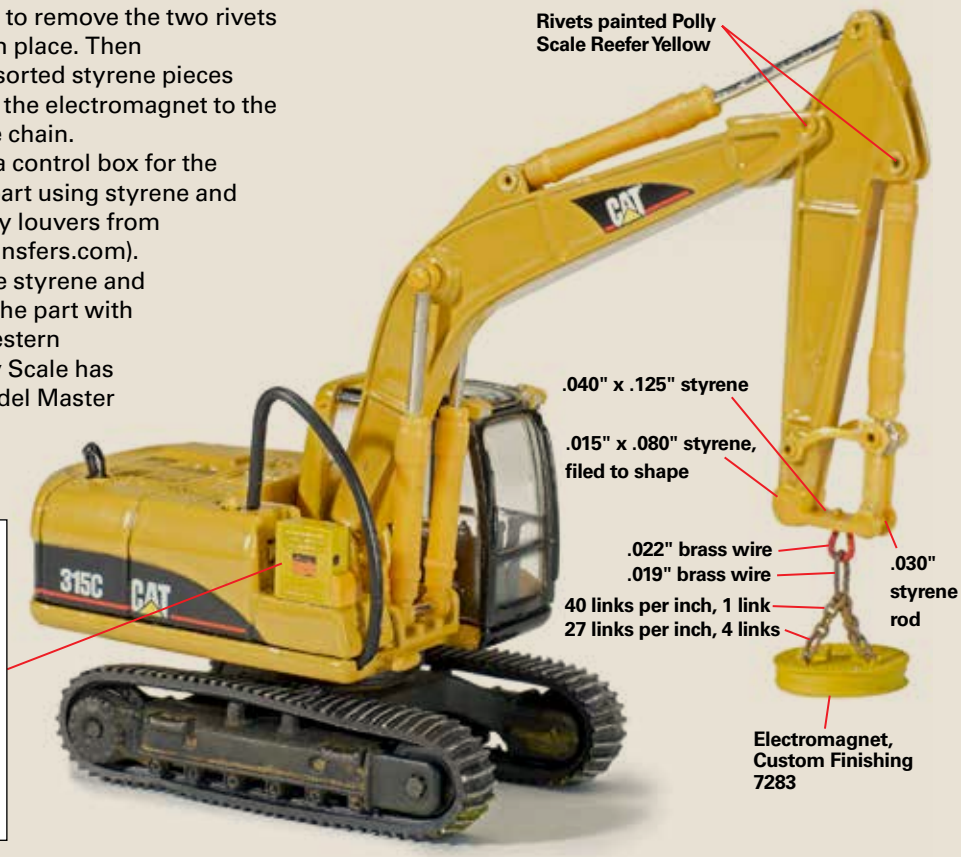


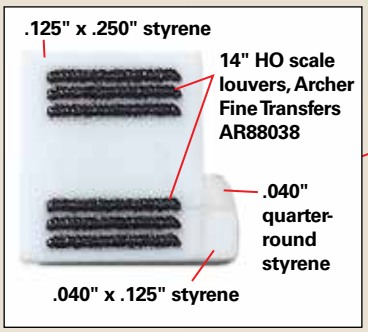
STEP 2 ELECTROMAGNET

WHEN SEARCHING for scrapyard photos on the Internet, I came across images of a Caterpillar 320C excavator that had been fitted with an electromagnet by Star Tractor Ltd. in Fort Worth, Texas. I knew Norscot produces an HO scale Cat excavator, so I looked it up in the Walthers catalog. Though the Norscot excavator is a Cat 315C, it was close enough to stand in.

I started by using a no. 60 bit to remove the two rivets that held the excavator bucket in place. Then I made a new yoke using the assorted styrene pieces listed with the photo. I attached the electromagnet to the yoke with brass wire and A-Line chain.

The prototype also features a control box for the electromagnet. I modeled this part using styrene and HO scale diesel locomotive body louvers from Archer Fine Transfers (archertransfers.com). I applied the louver decals to the styrene and then used an airbrush to spray the part with Polly Scale Chicago & North Western Yellow and Reefer Yellow. [Polly Scale has been discontinued. Testor's Model Master is a good substitute. – *Ed.*]





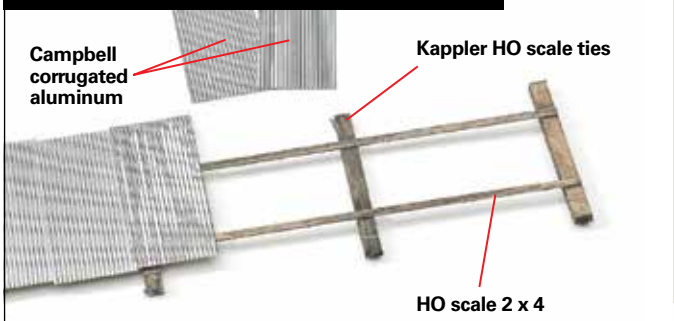
STEP 3 GONDOLA LOADS

SINCE THE SCRAPYARD is rail-served, I needed scrap metal loads for the gondolas. Chooch Enterprises, JWD Premium Products, Model Railstuff, and Pre-Size Model Specialties are among several firms that make scrap loads for gondolas. You can see examples of the loads these firms offer at right.

Most loads are cast in molded resin, but those from Model Railstuff are cast gypsum. Both the resin and gypsum loads can be cut with a razor saw and shaped with files or sanding sticks. Cut and sand either material in a well-ventilated area.

Athearn now offers the 50- and 52-foot gondolas in its Ready-to-Roll HO scale line with factory-painted and weathered loads. The car shown is an Athearn (ex-Roundhouse) 52-foot mill gondola.

STEP 4 BUILDING THE FENCE



HAVING BEEN to several scrapyards, I can tell you their fences vary greatly. Chain link and galvanized sheet steel are the two most common types. I've even visited yards in smaller towns that have no fence around the perimeter. The inspiration for this easy-to-build fence came from my dad and grandfather's automobile salvage yard.

The support posts are Kappler HO scale ties, and the cross braces are HO 2 x 4 strips. I stained all of the wood with the same India ink wash that I used earlier. Apply the stain before assembling the fence, because the stain won't penetrate the glue.

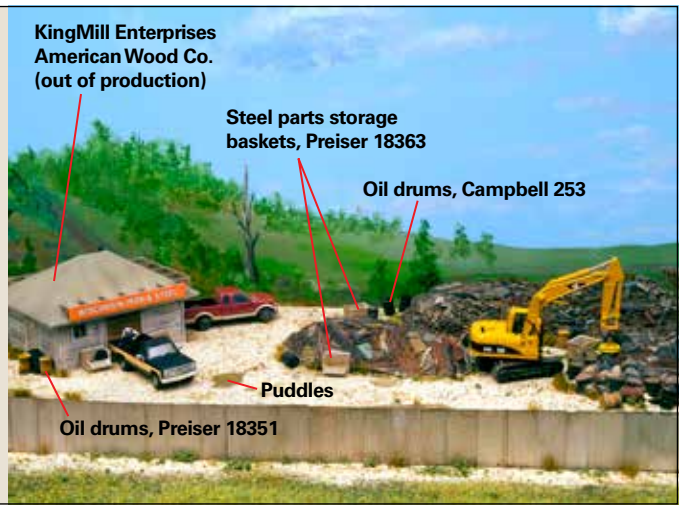
I then cut Campbell corrugated aluminum into scale 4 x 8-foot panels on a piece of plate glass with a fresh single-edge razor blade. Once the stain had dried, I attached the aluminum to the wood with medium-viscosity cyanoacrylate adhesive (CA).

After I'd attached the aluminum to the 2 x 4 stripwood, I sprayed the entire fence assembly with Model Master lusterless flat. Then I weathered the aluminum using A.I.M. Products (now Monroe Models) alcohol-based washes. I started by applying Quick Age with a ½"-wide brush, keeping the strokes parallel to the corrugations. I followed that with New Fresh Rust and Dark Rust. Let each wash dry thoroughly before applying the next color.

STEP 5 FINISHING THE SCENE

WITH ALL the components completed, I was ready to scenic the scrapyard. I started by attaching the resin scrap piles with DAP Dynaflex 230 latex adhesive. Once the adhesive had dried (24 hours), I set the fence and office in place. Then I sprinkled Highball Products N scale limestone ballast throughout the yard.

I used a pipette to saturate the ballast with 70 percent isopropyl alcohol, which makes it easier for the Woodland Scenics Scenic Cement to wick through the granules. After the alcohol soaked in for two minutes, I applied the Scenic Cement. Next I added patches of ground foam. When the scenery glue was dry, I added puddles using Vallejo Still Water (www.acrylicosvallejo.com/gb). MR



UPDATE A COMMON WATER TOWER KIT

Scratchbuilt details customize this Atlas model

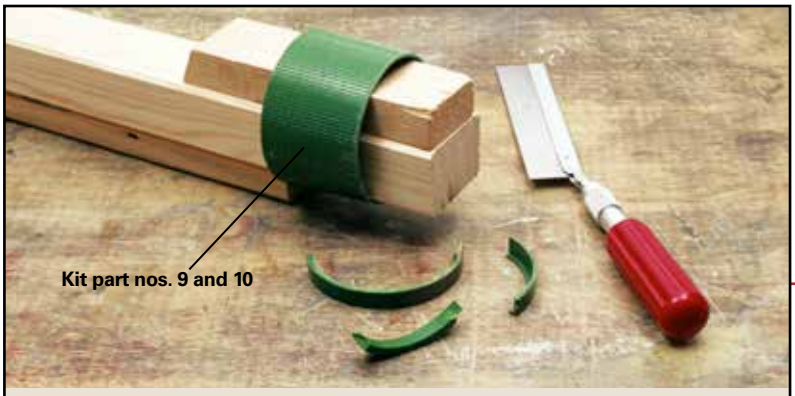
BY RON FOREMAN
PHOTOS BY THE AUTHOR

A CALENDAR PHOTOGRAPH of a rusty red water tower on the Nevada Northern Ry. captured my attention and inspired me to reproduce the scene on an HO scale diorama.

Transforming an Atlas no. 703 plastic kit into a realistically detailed model wasn't especially difficult. Using a process I like to call "kit-scratching," I first separated the construction of the water tower into subassemblies.

After combining the tank and tank support, the two primary subassemblies, I applied the roof, spout, rigging, and other details that reproduce the characteristics of the prototype and help distinguish the structure from the original kit.

WATER TOWER ASSEMBLY

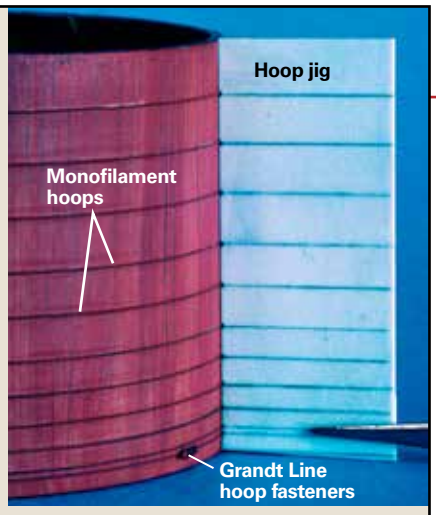


FOLLOW THE ATLAS KIT INSTRUCTIONS for assembling the two tank halves. After securing the assembly to lumber scraps, use a razor saw to shorten the height of the tank. The top hoop serves as a handy guide for cutting around the cylinder.

Next, use the curved plastic scraps to plug two slots originally designed to fasten the spout. If necessary, cover the plugs with filler putty and file it smooth.

The tank sub-assembly is complete at this point, but I changed some of the detail cast into the plastic. I used a single-edge razor blade to carve away the hoops and fasteners.

Applying a thin coat of paint to the tank will help you gauge how closely to scrape the tank surface. After shaving the surface, I used a suede brush to clear away debris and give the plastic tank wood grain texture.

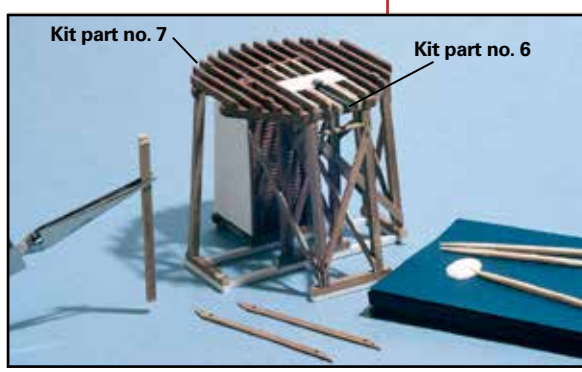


TO MAKE NEW HOOPS for the tank, I used painted 4-pound test (.006" diameter) monofilament fishing line and Grandt Line hoop fasteners. [Grandt Line products are now carried by The San Juan Model Co. – *Ed.*] Of the 11 hoops on the prototype, those at the bottom are set closer together. This is typical tank construction, as water pressure increases with depth.

I made a jig from a scrap of styrene to help keep the monofilament aligned around the tank. I drilled no. 80 holes along a vertical line to match the notches on the hoop spacing jig.

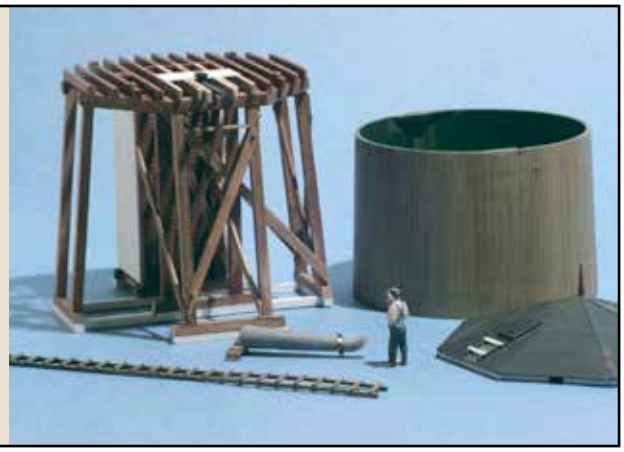
Start a hoop in its hole and use cyanoacrylate adhesive (CA) to cement the end inside the tank. After wrapping the hoop tightly around the tank, add another drop of CA where it overlaps. Allow the joint to set before trimming off the excess, then paint a bead of thinned white glue under the hoops to hold them in place. Be sure to use the jig to keep the hoops parallel.

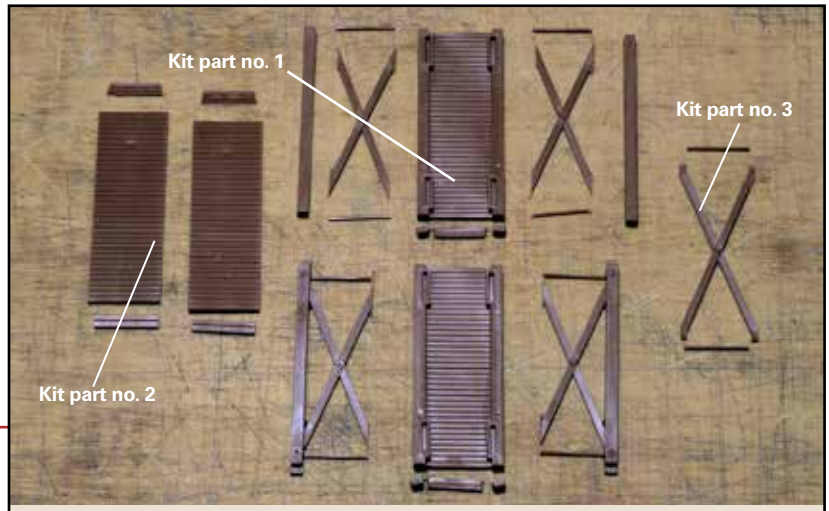
For the final tank details, I painted 33 hoop fasteners and cemented them to the plastic tank. Using scale 2 x 4 spacers, I mounted a water-level gauge to hide the hoop holes.



TO FIT THE ROOF to the modified tank, I used a hobby knife with a chisel blade to remove the tab on the underside of the roof. Scrap styrene plugged the holes on the top of the roof intended to hold the pull chain lever. I replaced the cast ladder rungs with scale 1 x 3 styrene.

Using a small file, I carved a scale 12" wide gap on the underside of the roof lip to accommodate a new chain. I cemented a 1 x 6 styrene fascia to this lip all around the roof, leaving a 12" gap for the chain. I removed the original plastic finial and replaced it with a painted toothpick protruding a scale 2'-6".





TO REVAMP THE TANK SUPPORTS, I combined Atlas plastic kit parts with stained stripwood. Use portions of part nos. 1 (two required), 2 (two required), and 3 to help form the frost box, bents, and braces.

First, I removed the tie rods from part no. 3. Next, I assembled the center bent using cross brace no. 3 and two posts from part no. 1. After testing and trimming the fit of wall parts nos. 1 and 2, I used CA to assemble them into the frost box.

I built new walls for the frost box using V-groove styrene siding. One wall has a 2'-9" x 6'-9" opening to suit a Grandt Line door and an awning made from styrene. Based on the prototype, I added vertical scale 1 x 8 and 1 x 12 styrene strips over the siding for this wall. All the other walls have horizontal 1 x 6 styrene trim. I used CA to install these walls over the frost box and to join the .125" square styrene braces at the corners of this sub-assembly.

THE JOISTS supporting the tank come from kit part no. 7. On this tower, these will run front-to-rear, not side-to-side. I used a hobby knife to remove the center joist at the front of the tower to make room for two pieces of scale 4 x 10 stripwood, plus an outlet pipe and a spout.

I laid the no. 7 assembly upside-down to attach the frost box and center bent. I used the defined notches on the underside of the plastic joist casting to position these parts and secured them with CA. I added .125" square styrene painted to represent concrete footings.

Next, I used CA to attach 10 x 10 stripwood base timbers to the styrene. I allowed this assembly to set before installing six vertical support posts. I trimmed the post tops to fit the notches on part no. 7. I also made notches in the base timbers to help secure the bottom of each post using wood glue.

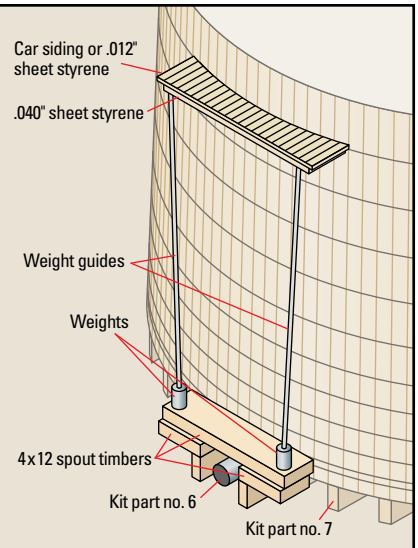
To finish the support, I added 3 x 12 timbers to cover the plastic joists at the corners. I cemented the outlet pipe, kit part no. 6, into place, using a piece of styrene siding to secure the rear of the pipe. After painting the completed assembly, I cemented the tank to the support tower.

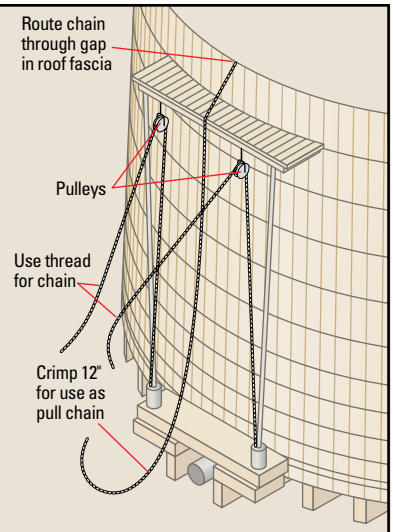
WATER TOWER FINISHING DETAILS

WEIGHT GUIDES AND WEIGHTS. I cut two guides using .012" wire stained with Blacken-It. [Jax Brown-Black is a suitable replacement. – *Ed.*] I cemented these to the 4 x 12 spout timbers. The weights are 1/16" brass tube, also stained with Blacken-It, slipped these onto the guides.

AWNING. The awning is .040" sheet styrene. I drilled no. 80 holes for the weight guides and two pulleys and suspended the pulleys from the awning using 32-gauge wire.

I slid the awning onto the weight guides and cemented it to the top hoop of the tank. Then I filed out a notch, centered over the awning at the top edge of the tank, for the pull chain.



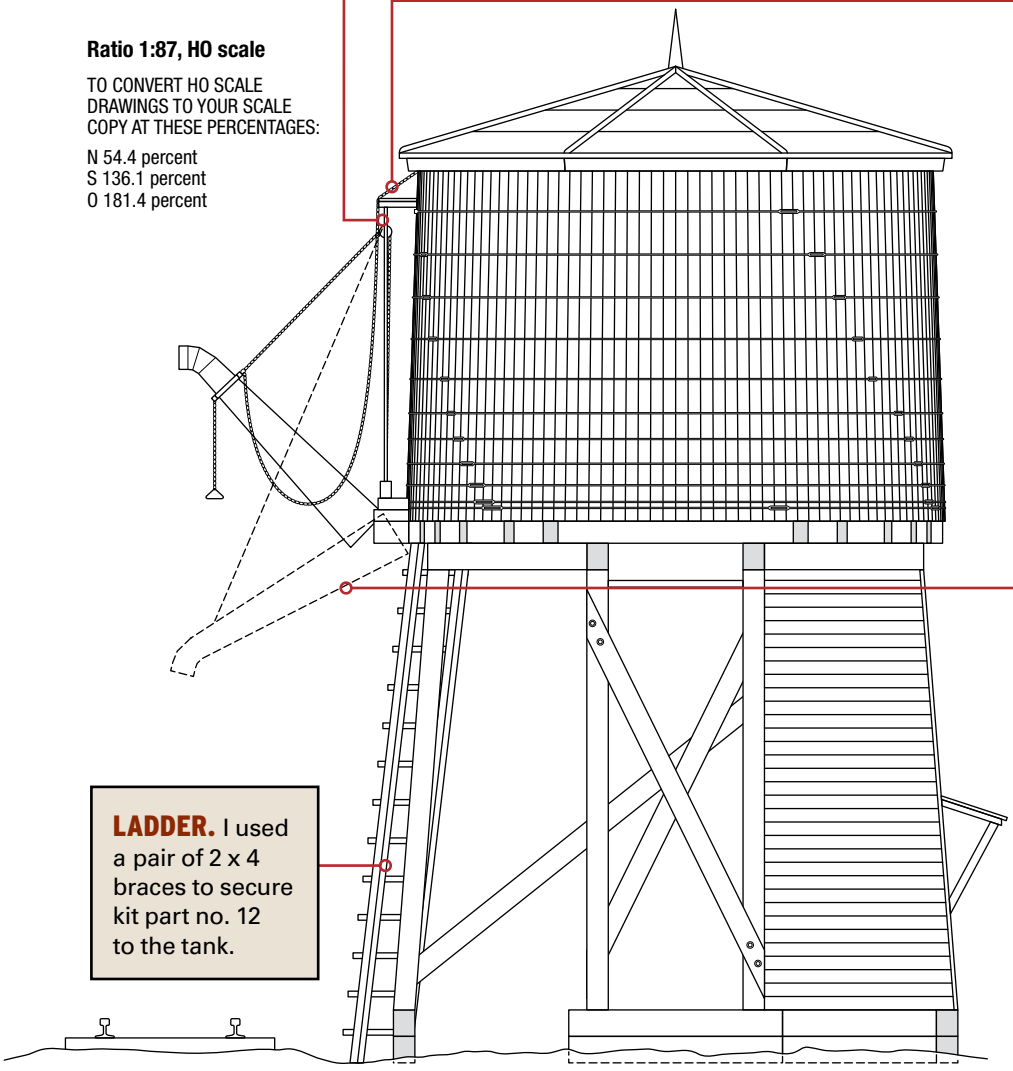


CHAINS. I used black carpet thread to represent HO scale chains. Chain installation is best attempted using pointed tweezers. I used a small drop of white glue to secure the chain around pulleys and weights.

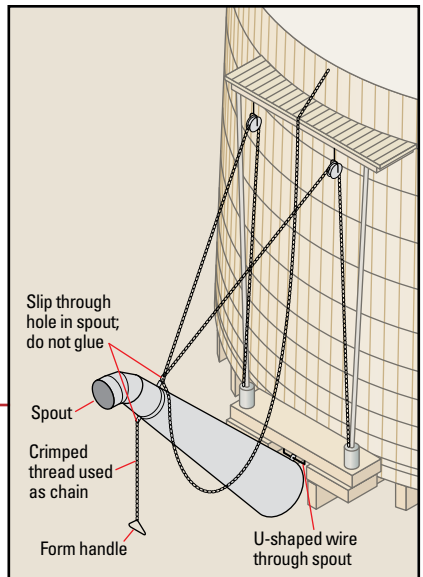
Ratio 1:87, HO scale

TO CONVERT HO SCALE DRAWINGS TO YOUR SCALE COPY AT THESE PERCENTAGES:

N 54.4 percent
S 136.1 percent
O 181.4 percent

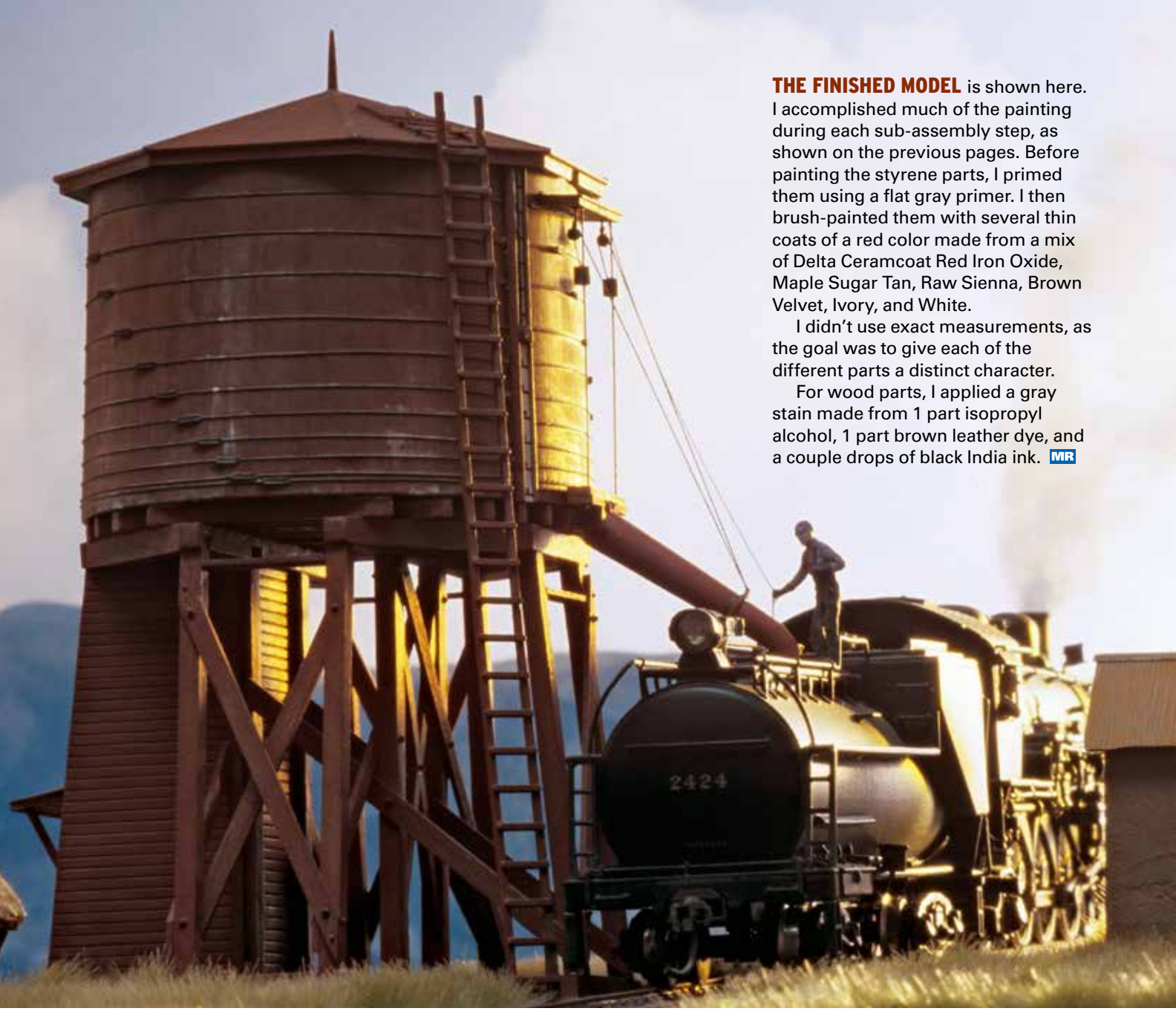


LADDER. I used a pair of 2 x 4 braces to secure kit part no. 12 to the tank.



SPOUT. I fit the Grandt Line spout with a scale 3" wide brass band and used a no. 80 bit to drill holes for the chains. Also, I drilled holes into the 4 x 12 timbers for the weight guides and the U-shaped .012" wire used to attach the spout. I attached the spout to the timbers, then glued the assembly to the 4 x 10 joists extending from the support structure.

Illustrations by Rick Johnson



THE FINISHED MODEL is shown here. I accomplished much of the painting during each sub-assembly step, as shown on the previous pages. Before painting the styrene parts, I primed them using a flat gray primer. I then brush-painted them with several thin coats of a red color made from a mix of Delta Ceramcoat Red Iron Oxide, Maple Sugar Tan, Raw Sienna, Brown Velvet, Ivory, and White.

I didn't use exact measurements, as the goal was to give each of the different parts a distinct character.

For wood parts, I applied a gray stain made from 1 part isopropyl alcohol, 1 part brown leather dye, and a couple drops of black India ink. MR

MATERIALS LIST

Atlas Model Railroad Co.
703 HO scale water tower kit

Delta Ceramcoat acrylic paints
2020 Red Iron Oxide
2036 Ivory
2062 Maple Sugar Tan
2109 Brown Velvet
2411 Raw Sienna
2505 White

Detail Associates
2504 brass wire, .012" dia. x 12"

Evergreen styrene
8102 HO 1 x 2 strip
8103 HO 1 x 3 strip
8106 HO 1 x 6 strip
8108 HO 1 x 8 strip
8112 HO 1 x 12 strip
9010 .010" sheet
9040 .040" sheet
12125 .020" V-groove siding, .125"

Grandt Line (available from The San Juan Model Co.)
5038 hoop fasteners
5054 spout set
5099 3" nuts, 4.5" washers
5100 1¾" nuts, 2½" washers
8006 doors

Northeast Scale Lumber stripwood
HO 2 x 4
HO 3 x 10
HO 3 x 12
HO 4 x 10
HO 4 x 12
HO 10 x 10

Plastruct styrene
90780 .125" square rod

Miscellaneous
A-West Blacken-It
Brass tube, 1/16"
Carpenter's wood glue
Coats & Clark Dual Duty button thread, black
Cyanoacrylate adhesive
Flat gray primer
India ink, black
Isopropyl alcohol, 70 percent
Leather dye, brown
Monofilament fishing line, 4-pound test
White glue
Wood toothpick, round

HOW TO WEATHER AND

Adding this realistic trackside detail to your layout is easier than you think

BY CODY GRIVNO
PHOTOS BY THE AUTHOR AND JIM FORBES

FOR DECADES, line poles were a common sight along the railroad right-of-way. These poles carried telephone and telegraph wires as well as power lines for railroad equipment. Though most are no longer in service, line poles can still be found trackside today. No matter what era you model, line poles can enhance the realism of your model railroad.

Modeling line poles is easy. Commercial poles are available in HO, N, and O scales, though you could make your own from dowels and stripwood. Painting and weathering the poles can be done with a few basic colors, and clear-tint paints from Tamiya make insulators a snap. Installing overhead wires can turn a simple pole line into an attention getter on your layout.

Line poles enhance the realism of the right-of-way on the HO scale Milwaukee, Racine & Troy. Cody Grivno explains how to weather and detail the poles and string elastic polymer thread to simulate communication lines.

STRING LINE POLES

STEP 1 SOURCES OF LINE POLES

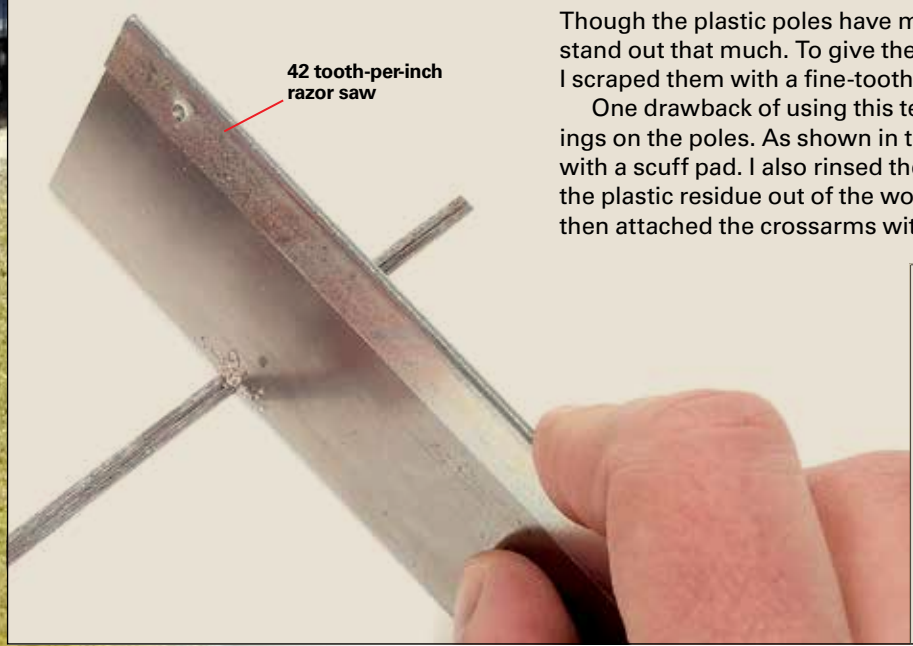
THERE ARE a variety of sources for HO scale line poles, including Bachmann, Rix Products, and Atlas Model Railroad Co. Examples of products from these three firms are shown at right. In addition, Wm. K. Walthers Inc. sells electric utility pole kits, and Scale Structures Limited offers crossarms, insulators, and brackets.

The pool of products in N and O scales is smaller. Line poles are offered in N scale by Atlas and Bachmann, and crossarms are produced by Depots by John. In O scale, poles are manufactured by Plastruct.

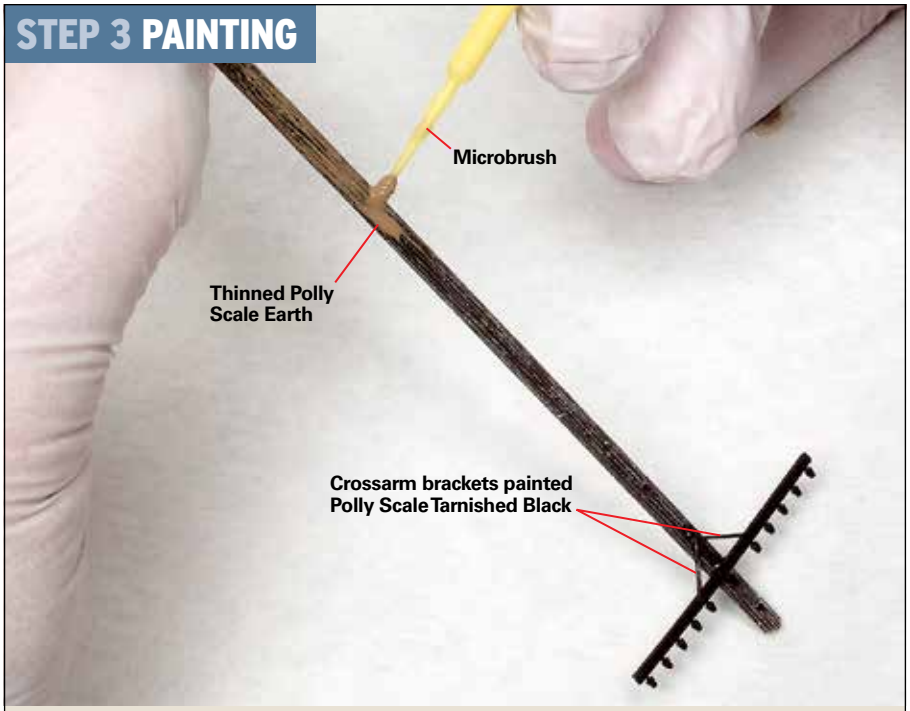
STEP 2 POLE PREPARATION

I SELECTED the Rix Products railroad telephone poles for this project. Though the plastic poles have molded wood grain detail, it doesn't stand out that much. To give the poles a realistically rough texture, I scraped them with a fine-tooth razor saw.

One drawback of using this technique is the leftover plastic shavings on the poles. As shown in the inset photo, I removed the shavings with a scuff pad. I also rinsed the poles in warm, soapy water to clean the plastic residue out of the wood grain. I let the poles air dry and then attached the crossarms with liquid plastic cement.



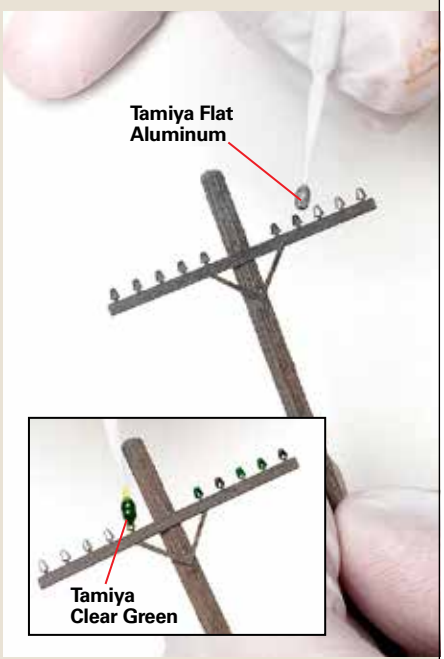
STEP 3 PAINTING



I WANTED the poles along the MR&T right-of-way to look like they'd been in place for a while, so I painted them grayish-brown. To achieve this look, I first applied a ring of full-strength Polly Scale Earth at the base of the pole. [Note: Polly Scale paint is discontinued. Testor Model Master is a good substitute. – *Ed.*] With the paint still wet, I used a Microbrush soaked in water to pull the paint toward the top of the pole, in effect creating a wash.

AFTER THE EARTH paint had dried, I used the same techniques as above, but with L&N Gray, to give the poles a faded, sun-bleached look. I applied only one coat of gray, but more could be added if you want the poles to look even older.

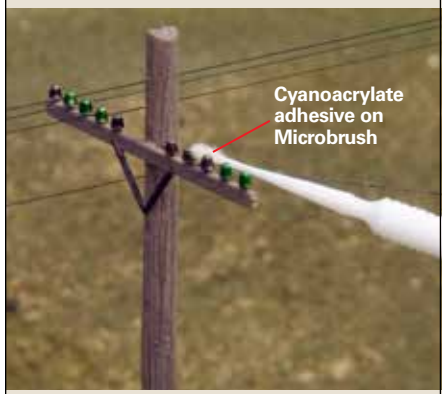
Once the gray dried, I painted the crossarm brackets with Polly Scale Tarnished Black.



TO COMPLETE the poles, I painted the insulators using a two-step process. First, I used a fine Microbrush to paint each insulator with Tamiya XF-16 Flat Aluminum. Then, as you can see in the inset image, I used a second Microbrush to apply the same firm's X-25 Clear Green. Most telephone and telegraph insulators were clear or green glass.

STEP 4 INSTALLATION

PROTOTYPE LINE poles are spaced anywhere from 100 to 150 feet apart, so you may want to apply selective compression. A rule of thumb many modelers follow is to space the poles on 12" centers in HO scale and 6" in N. I set the poles on the MR&T 25 scale feet from the track center line. Depending on the width of the right of way, the poles should be at least 13 feet from the nearest rail.



STRINGING WIRES is an optional step, but it definitely enhances the realism of the poles. I used Pro Line Pole Line from Pro Tech (protechmodelparts.com). This elastic polymer thread holds its shape even if it's bumped.

I started by applying quick-setting cyanoacrylate adhesive (CA) to the side of an insulator. Then I set the line in the adhesive and held it for 10 seconds, enough time for the glue to set. I repeated this process on insulators in the same position on subsequent poles until the line was strung.

Line poles enhance the realism of the right-of-way. The techniques shown here are easy to use, and the end results look great. MR

An Alco RS-2 leads a train out of the woods on the N scale Spartanburg Subdivision layout. Associate editor Steven Otte shows how he hid the tunnel entrance with trees and foliage.

DISGUISE A TUNNEL ENTRANCE WITH TREES

How to make a foliage canopy that conceals a turnback loop

BY STEVEN OTTE
PHOTOS BY THE AUTHOR

TUNNELS CAN BE USEFUL on model railroads to hide staging tracks, conceal turnback loops, and make a finite layout look like it goes somewhere. But not all prototype roads had tunnels.

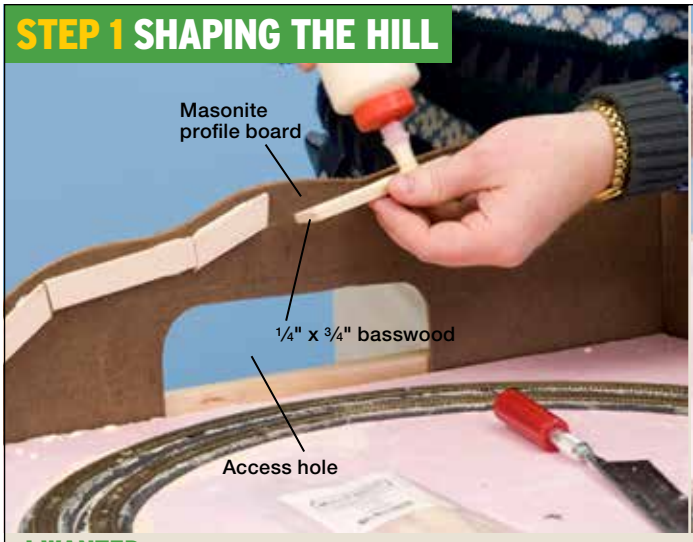
Tunnels are expensive to build and maintain, so prototype railroads avoided them if they could. What can you do if your model railroad needs a tunnel and the locale or prototype you're modeling doesn't have any?

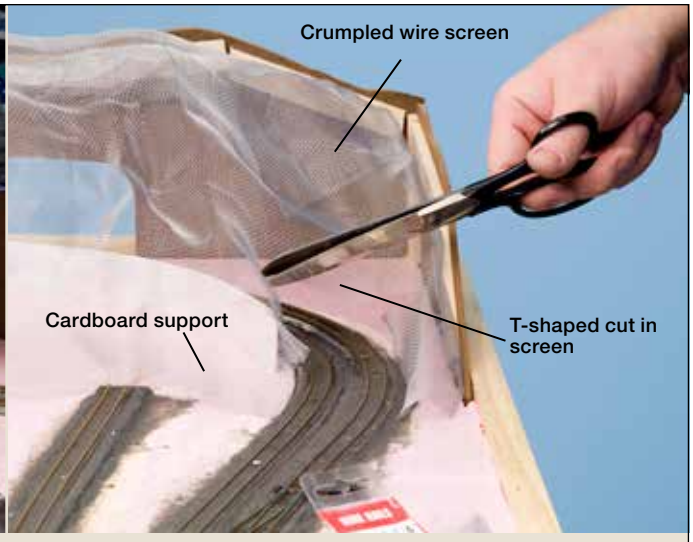
One common trick to disguise a tunnel entrance is to run the track between two buildings or under an overpass. But there's another variation you might find useful: Send your train into the woods.

The entrance to a tunnel through a wooded hill can be concealed by trees and foliage. The train makes its way beneath tall trees' overarching branches, until it seems to disappear into the increasingly dense forest.

Follow along as I show you how I added a hill to my N scale Southern Ry. Spartanburg Subdivision layout and made a tunnel entrance that vanishes into the trees.

STEP 1 SHAPING THE HILL





I WANTED to conceal a stretch of double track on one end of the Spartanburg Subdivision layout so one track could be used as hidden staging or as a passing track. The first step was to rough in the shape of the hill over the track.

I cut profile boards from 3/16" Masonite and glued them in between the layout's framing boards and its extruded foam surface. Since the tunnel would be long and have small portals, I cut an access hole in the longer of the two boards, in case I ever have to retrieve a derailment.

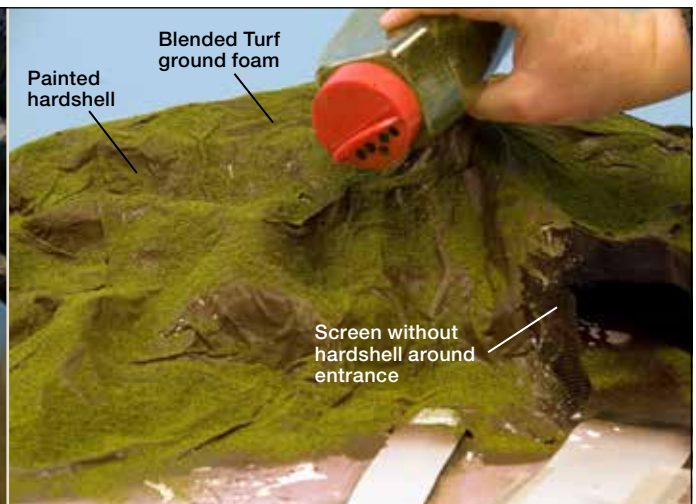
To provide an anchor for the top of the hill, I glued strips of ¼" x ¾" basswood along the tops of the profile boards. Once they were secure, they would provide a place to attach the hill's surface material.

I used aluminum screening to form the hill itself. I could have used cardboard strips or stacked foam board, but I like the random, organic shape I got by crumpling, then unfolding, the metal screen. I also wanted a material that would let me plant trees wherever I wanted. The holes in the screen would be just the right size for the pegs at the base of the Woodland Scenics trees I planned to use to landscape the hill.

I knew that the screen could sag down and obstruct the tunnel, so I cut two slits in the foam base on either side of the track and inserted curved cardboard walls along the inside to keep the screen off the track.

After tacking the screen to the profile boards with a staple gun, I made a T-shaped cut above the track and folded the screen down on either side to form a tunnel entrance. (I used an old pair of scissors, since screen will quickly dull them.) I then trimmed the edges of the screen where they met the ground and secured them with wire nails I pushed into the foam surface of the layout.

STEP 2 BUILDING THE SHELL



I WANTED the train to be partly visible at the tunnel entrance. I would add foliage to make this look like a tangle of tree branches. To keep the silver screen from spoiling that illusion, I protected the track with paper and masking tape, then spray-painted the screen brown.

I left the paper protecting the track in place for the next step, in which I covered the hill with paper towels dipped in plaster. I left a few inches around the tunnel entrance uncovered, though. I wasn't concerned with wrinkles, since I would be covering it with foliage.

After the plaster dried, I brushed on brown-colored latex paint and sprinkled on Scenic Express Blended Turf ground foam. I fixed it in place with Woodland Scenics Scenic Cement.

Next, I tossed a handful of medium green lichen that I'd sprayed with aerosol adhesive in a plastic tub of light green ground foam. I glued the lichen to the screen on either side of the tunnel. I had intended to use the lichen to model the treetops on the hill, but I didn't like how it came out, so I only used it as underbrush.

STEP 3 PLANTING THE TREES

I ASSEMBLED two dozen deciduous trees from Woodland Scenics kits, ranging from ¾" to 3" tall. I drybrushed the plastic armatures with medium gray and earth-toned acrylic paints to bring out the texture, twisted them to shape, then glued on the foam foliage that came with the kit. I also applied spray adhesive to the tree crowns and sprinkled on various colors of fine ground foam.

I then planted the trees around the entrance of the tunnel. I started with the taller ones, pushing the pegs on the bases through the holes in the screen. Before securing them in place with wood glue, I adjusted the armatures so the branches would arch out above the track. I continually checked the clearance with my N scale National Model Railroad Association clearance gauge to be sure the branches didn't hang into the path of the trains. I stuck one of the trees into the screen directly above the track, as though it were just a branch of a larger tree.

STEP 4 TOPPING THE HILL

I WASN'T satisfied with the look of the lichen I'd originally planned to use to cover the remainder of the hill. So I used foam foliage, as I'd used on the trees. I should have thought of this from the start, as it better matched the trees around the tunnel entrance.

After spraying the hill with adhesive, I stuck on roughly torn patches of Woodland Scenics Clump-Foliage in medium and dark green. I then gave it the same treatment as I had the treetops, spritzing it with adhesive and sprinkling on various shades of fine ground foam. This gave the hill a realistic, springlike look.

I also planted a couple of Woodland Scenics trees on top of the hill, giving the effect of a taller tree breaking through the canopy.

STEP 5 FINISHING THE SCENE

THOUGH I LIKED the top of the hill, I wasn't happy with the tunnel entrance, which still looked too abrupt. So I built a handful of bigger trees, 4" to 5" high, and planted them on either side of the tunnel approach. I arched their branches far over the track, forming a canopy with hardly a gap between. This made the entrance into the woods look much more natural.

Next, I used Sculptamold to vary the terrain around the tunnel entrance. Once it dried, I painted the Sculptamold brown, sprinkled on some turf, and added some twigs to represent deadfall. Finally, I planted a few more trees around the edges of the scene to soften the transition from flat land to hill. MR

MEADOWS MADE EASY

New techniques for modeling realistic ground cover

BY HORST MEIER • PHOTOS BY THE AUTHOR

For his Union Pacific sectional layout, Horst Meier used a variety of materials and techniques, including ground foam and static grass, to model Wyoming's wild grassland.

FIG. 1 MIXED MATERIALS. Horst's ground cover starts with fine turf on diluted white glue. He then glues down rocks, coarse clumps of turf, and bits of wood.

MODELERS GENERALLY model grass by using ground-foam turf or ready-made mats. Both methods are simple and fast, but the results they produce are often more representational than realistic. In the past few years, affordable electrostatic applicators and static grass fibers have been developed that produce ground cover which truly stands up to close inspection.

I used a mixture of turf, clump foliage, and electrostatic fibers in a variety of colors and textures to represent the grasslands of Wyoming on my HO scale sectional layout. [Horst's Union Pacific layout was featured in the August 2007 *Model Railroader*. – *Ed.*]

Electrostatic applicators are terrific for making short stubble, but I'm modeling a wild grassland, not a golf course! I got my best results when I blended traditional and new materials. Irregularly arranged turf of different sizes and colors along with electrostatic grass better represent wild vegetation than static grass fibers alone.

I urge you to give these new products a try. Why should you settle for "good enough" when great results are within your reach?

A wild and weedy meadow

Creating my wild meadow was a multi-step process. I started by covering my landform base with diluted white household glue – I used 9 parts glue mixed with 1 part water. Then, working on one relatively small area at a time, I gave my landscape a base coat of fine, brown-tinted ground foam.

FIGURE 1 shows how I added variety to my landscape by dotting on glue with a paintbrush and adding lumps of foam in different sizes and colors, as well small rocks and bits of deadfall.

After giving the glue time to dry, I gently vacuumed the area to remove loose material. In places where this left noticeable gaps, I repeated the steps above. Finally, it was time to unpack the static applicator and make my meadow come alive.

Electrostatic applicators

Using an electrostatic device such as Noch's Gras-Master to apply individual fibers of tall grass is relatively new. Earlier electrostatic applicators were generally quite expensive.

FIGURE 2 on the next page shows how the device works. Generally, you must connect a ground wire to the scenic base using a needle or screw to establish a strong static charge between the applicator and the scenic base. It's always best to push the ground pole into a base that's covered with wet diluted household glue. The dampness helps conductivity, and the glue keeps the static fibers upright when it's dried.

As the static charge builds between the wet ground and the applicator, the grass fibers rise in a rippling fashion. I control the amount of grass by carefully shaking the applicator or tapping its side. Apply the fibers as sparingly as possible. A little goes a long way.

I've found that covering a large area with static grass is fairly simple. I just change the location of the ground pole from time to time.

Smaller areas are more difficult. If the surface is broken by rock outcroppings, you may need some practice to get the fibers to rise correctly. One trick is to slightly wet the area with water from a plant mister.

Variety and color

To model a western meadow, it's important to keep in mind that the grass cover is rather meager, which serves to

FIG. 2 STATIC GRASS. Horst uses an electrostatic applicator to apply grass fibers on diluted white glue. The ground wire of the applicator is at right.

FIG. 3 TOP COAT. While the glue on the scenery base is still wet, Horst sprinkles on small amounts of fine ground-foam turf in a variety of colors and textures.

FIG. 4 TUFTS OF GRASS. To model random clumps of grass, Horst applies dots of glue to a cookie sheet in the left photo and applies static grass. When the glue is dry, the right photo shows how the clumps are easily peeled off.

emphasize other small plants in the surroundings. Clump foliage of ground-up foam rubber works well for modeling this kind of vegetation.

After placing a sparse layer of static grass fibers, I follow by sprinkling on very fine ground foam in five or six different colors, as in **FIG. 3**. The turf I used ranged from brownish earth-like tones to various shades of green.

The turf settles between the static fibers, covering and concealing the white glue in the process. Some bits of foam will stick to grass fibers, but that only adds to the overall impression.

After letting the glue dry overnight, I again vacuum the loose materials. My vacuum has a half-power setting that comes in handy for this sort of work. If you start with a clean vacuum, you can reuse the scenic materials.

Bunches of grass

It's handy to have single clumps of grass that can easily be placed where needed. I apply dabs of white glue on a cookie sheet, which is highly conductive and consequently very effective with a static applicator. As the left photo in **FIG. 4** shows, the fibers that land outside the glue fall over, but the rest form convincing bunches of grass.

Once the glue is dry, the right photo in **FIG. 4** shows how I use a chisel-blade palette knife to peel off the grass clumps and apply where needed.

Let's sum up: While longer fibers of static grass look realistic in wild grasslands, the impression is still too uniform. Exuberantly growing weeds, the sort often found on railroad embankments, can't be imitated by static grass alone. Ground-foam turf in different colors and textures adds the all-important variety.

Small plants

I once used fine particles of dried flowers to add blossoms of color to my weeds and low vegetation, but recently I've had good success using model plants with blossoms from the German firm Silhouette. Woodland Scenics also offers ground foam foliage in a similar range of bright colors.

To model smaller bushes and shrubs, I use Silhouette's Silflor. It's easy to cut its leaflets and fibers into different sizes and shapes that can be glued down between the blades of grass. Natural plant armatures, such as dried heather or asparagus stems, also can produce realistic shrubs.

Combining a variety of products and materials brings you close to an optimal scenery solution. MR

FROM BACKDROP TO BLACKTOP

Tips and tricks for adding background buildings and small-town streets

BY GERRY LEONE • PHOTOS BY THE AUTHOR

I BEGAN PLANNING my Bona Vista RR as an HO scale layout set in the rural Upper Midwest, specifically Minnesota and Wisconsin. And because I enjoy wayfreight switching, I knew there would have to be a significant portion of my layout dedicated to online industries. At that point, setting aside space for an entire town – something more than a couple of representative buildings – seemed highly unlikely.

But the more I planned, the more I realized that a layout's corners offer significant real estate that is often wasted. Situating a town in these spaces seemed both practical and probable.

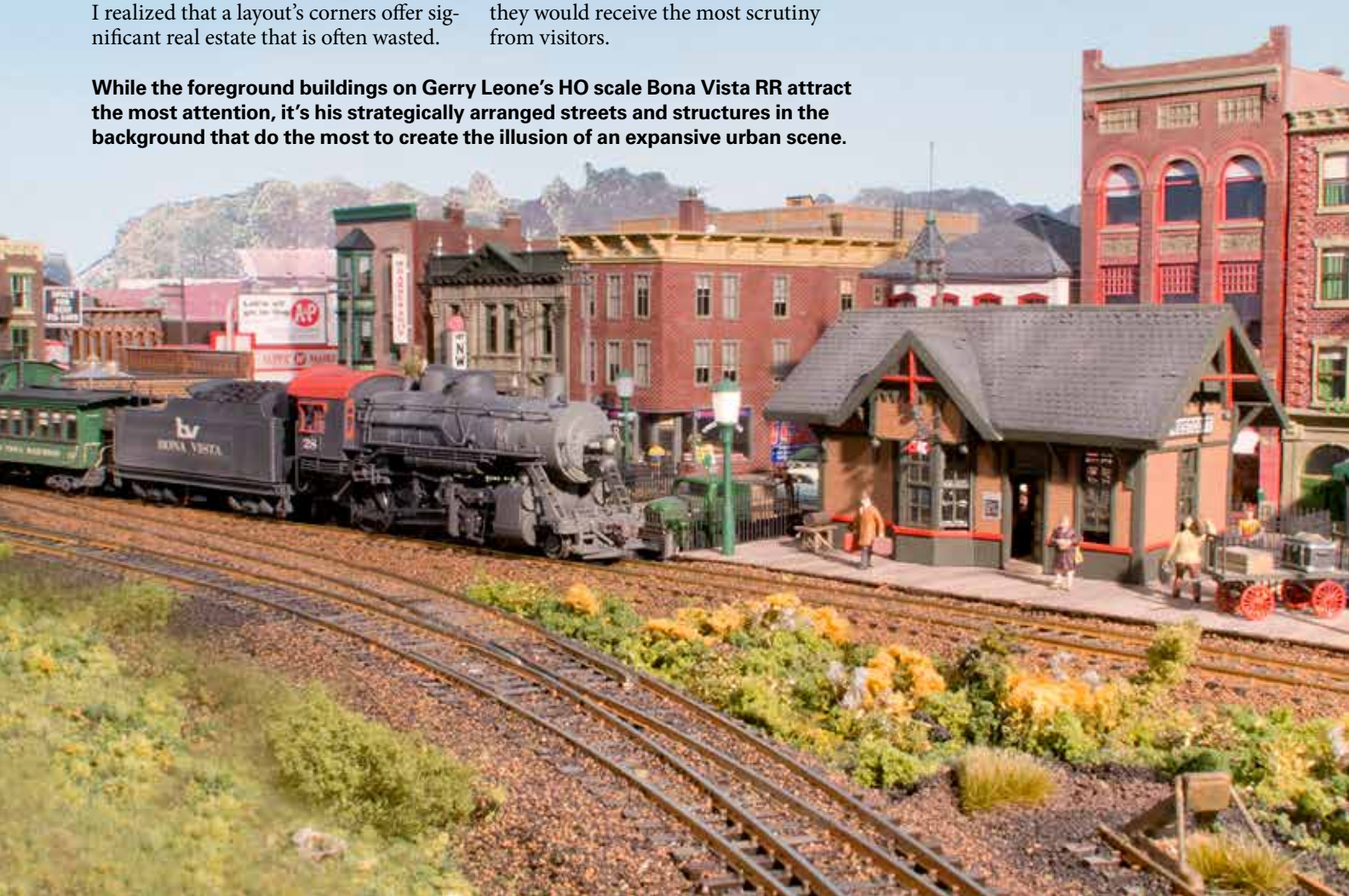
To make the town feel large enough, I envisioned several blocks of foreground buildings positioned close to the aisleway, while several less noticeable buildings and other pieces of urban-like scenery would stand in the background.

The foreground structures are about 12" from the aisle and are slightly below my shoulder height. I added a significant amount of detail to these structures, as they would receive the most scrutiny from visitors.

To add even more visual interest to the foreground and still avoid blocking the view to the main buildings, I added a small, low-height town square.

While foreground structures receive the closest scrutiny, it's often the background structures and streets that give the illusion of a larger town. I'll share how building and roadway placement help unify the town of Westcott on my HO scale model railroad.

While the foreground buildings on Gerry Leone's HO scale Bona Vista RR attract the most attention, it's his strategically arranged streets and structures in the background that do the most to create the illusion of an expansive urban scene.



BUILDING IN THE BACKGROUND

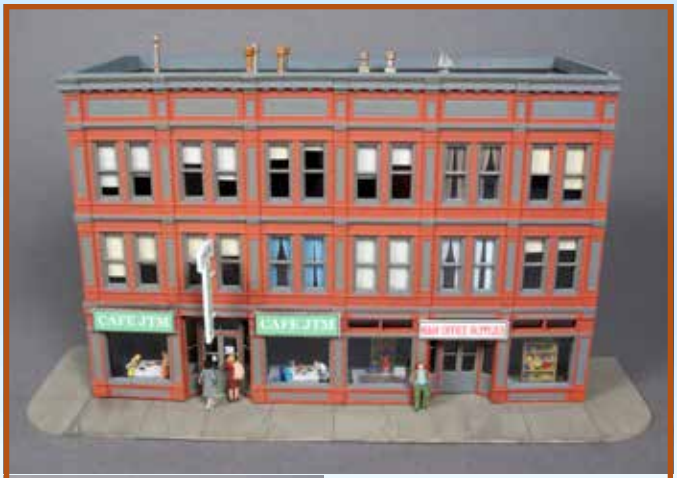
BETWEEN THE CURVED BACKDROP and the two up-front blocks of Westcott, there's a maximum of about 18" of space – just enough room to give viewers the impression there's another entire street lined with businesses. These storefronts need only be tall enough to be seen, yet, because Westcott represents a small town, couldn't be larger than three or four stories tall.

By staggering the position of these background structures, I disguised the abrupt joint between the ground and the backdrop. No street runs directly from the front edge to the backdrop.

FOR THE TRIANGULAR SPACE along the curved backdrop, I modified a Bachmann Spectrum Department Store kit by cutting an entire story out of the facade. I finished only two visible walls of this building and added a Walthers no. 933-3729 fire escape. Styrene sheet (.080") serves as the building base and sidewalks.

I MODIFIED A BACHMANN Spectrum Variety Store HO scale kit to fill the center of the secondary block and effectively hide the bottom edge of the backdrop. The original structure was too tall, so I eliminated one story and added a new roof trimmed with strips of styrene.

Next I added short-length side walls, as neither side would be visible from the aisle. To improve the structure's curb appeal, I added a variety of roof vents, modeled the Ben Franklin sign using 3-dimensional lettering from Slater's Plastikard, installed decorated acetate window glazing from City Classics, and placed figures on the sidewalk.



I FILLED THE THIRD of three secondary blocks with a Design Preservation Models' M.T. Arms Hotel facade. I modeled this structure without side walls. I added a full roof, made from .060" sheet styrene, and detailed it with a variety of vents and styrene strips. I added styrene braces to prevent the roof from sagging.

ON THIS SIDE OF TOWN, I added the massive Osgood Brewer, the Walthers Milwaukee Beer & Ale Brewery kit under different ownership. I created a set of decals to decorate the walls and added a water tank left over from a Walthers Imperial Food Products kit. I weathered the tank with real rust powder suspended in alcohol. To simulate vines growing up the brick, I applied a thin trail of white glue to the walls before added a pinch of Woodland Scenics fine ground foam. To bring the loading doors closer to the railroad siding, I used basswood strips to assemble a loading dock, complete with kegs from J.L. Innovative Design.

TAKIN' IT TO THE STREETS

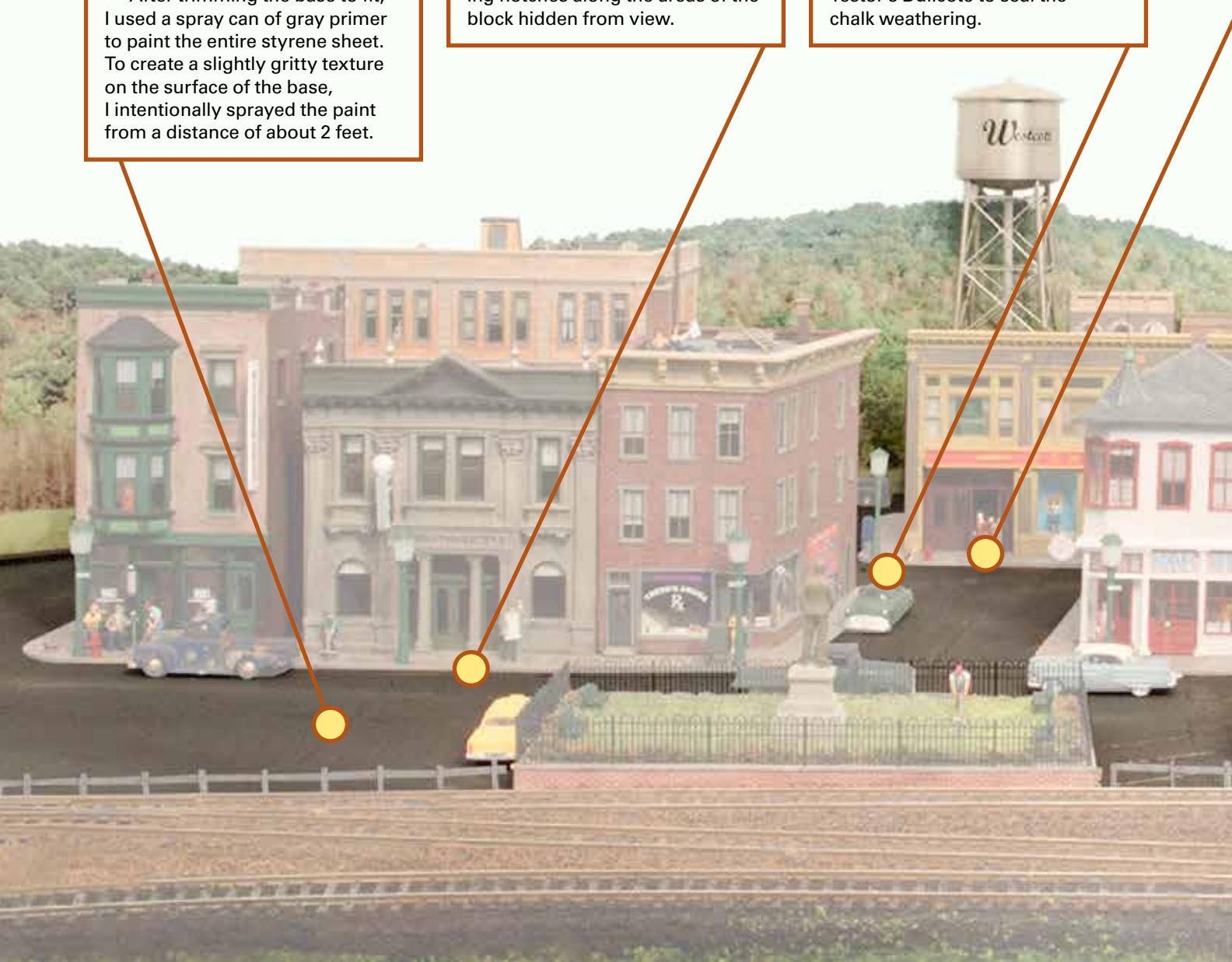
AFTER COMPLETING the background buildings, I installed the paved streets of Westcott. But rather than constructing these roads on the layout, I built a complete base for the city using a single piece of .080" thick sheet styrene. This approach allowed me to work while comfortably seated at my workbench. By searching the Internet, I found a local vendor selling 4 x 8-foot sheets of styrene.

TO BUILD THE BASE for Westcott, I first cleared the layout surface for the city. I then arranged several sheets of copier paper, taped together, to create a template for the city base. After tracing the curve of the backdrop onto the paper, I used the template to transfer and cut the base from a large piece of styrene. I found using a utility knife to make a full cut though the material worked best.

After trimming the base to fit, I used a spray can of gray primer to paint the entire styrene sheet. To create a slightly gritty texture on the surface of the base, I intentionally sprayed the paint from a distance of about 2 feet.

NEXT, I DETERMINED the position for each of the city blocks. To keep these buildings stable, yet removable, I glued ¼" square strips of styrene to the town base. I then cut corresponding notches along the areas of the block hidden from view.

TO ADD REALISTIC WEATHERING effects along the painted pavement, I used Bragdon Enterprises' black weathering chalk. First, I used a soft brush to smear the chalk onto the surface. I then used my finger to work the chalk into the painted surface. In areas where the chalk was too heavy, I used a can of compressed air to blow away the excess. Finally, I applied several light coats of Testor's Dullcote to seal the chalk weathering.



I MADE MANHOLE COVERS for the streets of Westcott by using a ¼" leather punch to pop holes into the .080" styrene streets, taking care to save the inserts. I used the jaws of my bench vise to press a cross-hatched pattern into these inserts. After painting the holes with a black marker, I used a small brush to lightly dust the covers a dark gray color.

FOR AN ADDITIONAL LAYER of roadway weathering, I loaded my airbrush with undiluted isopropyl alcohol (70 percent) and directed the spray along the center of the streets. As the alcohol dried, it reacted with the previously applied Dullcote finish to realistically simulate areas of the road that are typically devoid of oil spills and tire rubber.

TO DETAIL THE STREETS, I used a fine-tipped marker to add cracks and patches. I also used a pipette to apply a few drips of highly diluted Oily Black or Rust to simulate various spills. Finally, I added crosswalk markings and parking space lines by applying ⅛" wide strips of white decal paper and weathering them with black chalk.

AFTER COMPLETING THE STREETS and positioning the structures, I returned the entire town base to the layout. But even before I had the town settled into place, it appeared that the scene was already lacking something. To solve the issue, I added a photographic printout of real trees to the curved, hardboard backdrop. For additional interest, I placed a Korber water tower behind the secondary block. I then installed Design Preservation Models building fronts directly against the backdrop to give the impression of another block of buildings. MR

Evergreen trees contrast the fall foliage and add to the realistic scenery on David Popp's N scale Naugatuck Valley RR.

CONIFERS FOR ALL OCCASIONS

Options for modeling pine trees on a layout

BY DAVID POPP • PHOTOS BY BILL ZUBACK

YOU CAN NEVER HAVE TOO MANY trees on a model railroad. Even a small layout can use hundreds. Though I'm modeling Connecticut in the fall, up to this point I've used only deciduous trees in autumn colors on my layout. However, to be true to the region, I also needed some conifers – more universally referred to as pine trees or evergreens, since they stay green all year. (Conifers have needles instead of leaves.)

I'd held off adding conifers to my N scale Naugatuck Valley RR for some time because I couldn't get past the thought of the "bottle brush" trees, common on the layouts of my childhood. These were made from a twisted wire trunk that had colored strands of coarse jute or plastic protruding from them. The model tree was then trimmed into a roughly conical evergreen tree shape. If viewed from some distance, they looked fair at best, but any closer and the illusion was destroyed.

However, one glance at the Walthers catalog or website at www.walthers.com shows there's a lot more variety in model pine trees these days, and they're available as both ready-made trees and in kits. We'll take a look at several brands of ready-made conifers, as well as an easy-to-build tree kit. These trees would be a good fit for most layouts.

READY-MADE PINES

READY-MADE PINE TREES have come a long way since the spindly bottle-brush trees of my youth. The photo shows some examples offered by Scenic Express, Timberline Scenery, and Woodland Scenics, but many other scenery manufactures, such as Noch, Faller, and JTT Trees, also sell conifers.

The blue spruce trees from Scenic Express are made from tiers of flexible-plastic branches attached to a plastic trunk. The branches are covered with a special type of pointed ground foam, giving the trees a more natural appearance. The Timberline pine trees are essentially improved bottle-brush trees. These have wood trunks, and the branch strands are more naturally cut and are covered with ground foam, giving them a better appearance. The Woodland Scenics trees have plastic trunks with clusters of ground foam cemented to them. The foam has some variation in color, giving the effect of sun highlights.

Though the ready-made trees look fairly good straight out of the package, you can improve them by painting the shiny exposed parts of the plastic armatures. (I did this for my Woodland Scenics and Scenic Express trees.) As shown on the lower right tree, I painted the trunk and lower branches with a base coat of Polly Scale Union Pacific Dark Gray. [Since Polly Scale paint is discontinued, a similar shade of Testor's Model Master paint would also work. – *Ed.*] I then highlighted the bark detail by lightly brushing CSX Tan over the gray once it dried.

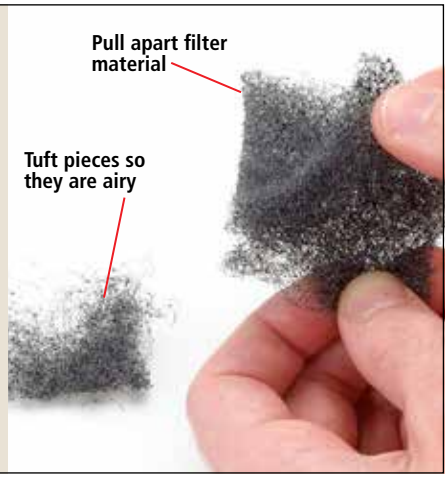
Most of these ready-made model trees have a mounting pin of some sort on the trunk that makes them easy to "plant" on a layout. Simply drill a hole in the scenery's surface, put a drop of white glue on the tree's mounting pin, and insert the pin into the hole.

STEP 1 ADDING BRANCHES

WHILE READY-MADE TREES can cover a lot of ground in a hurry, they're also often the most expensive option. Building trees from kits can save money. (Some companies, such as Woodland Scenics, offer both kits and ready-made trees.)

Conifer kits usually include stained wood trunks, poly fiber material for the branches, and ground-foam foliage to represent the needles. The kits come in an assortment of sizes, are easy to build, and no two trees end up exactly the same. [David used Sweetwater Scenery conifer kits for his layout, but the firm has gone out of business since this article was first written. – *Ed.*]

Using a pair of scissors, start by cutting the poly fiber pad into small squares. This material is made up of interwoven layers (about four) and



STEP 1 ADDING BRANCHES (CONT'D)

needs to be pulled apart, as shown in the previous photo. Once the pad is separated, pull smaller tufts from the layers and fluff them out a bit. These will form the tree branches.

The poly fiber branches slip onto the carved wood trunk. I placed a drop of white glue at the base to hold the first layer of branches in place; the others can simply slide down on top of them. Slip the tufts onto the trunk slightly off-center and stagger them to give some variation to the branches of the tree. When you get to the top of the tree, place another drop of white glue on the point of the trunk to hold the uppermost tuft.

On my first batch of kit-built trees (shown in these photos), I used too many poly fiber branches, making my trees look too dense. On later trees I used fewer branches, giving the finished trees a more realistic open structure and airy appearance.

STEP 2 TRIMMING THE FOLIAGE

AFTER YOU'VE ATTACHED the branches to several trees, you need to shape and trim them. To shape the branches, simply slide them around on the trunk, positioning them so they look natural. You can also pull the poly fiber apart as needed to fill in bare areas.

Once you're satisfied with the branch location, it's time to trim the tree. Using a pair of scissors, start by clipping away any long stray fiber strands to make the tree look more pine-like. Next, to add definition to the layers of branches, clip away some of the tufted strands between the branches. This step will not only open up the tree, it will also help accentuate the distinct branch structure characteristic of pine trees.

STEP 3 APPLYING NEEDLES

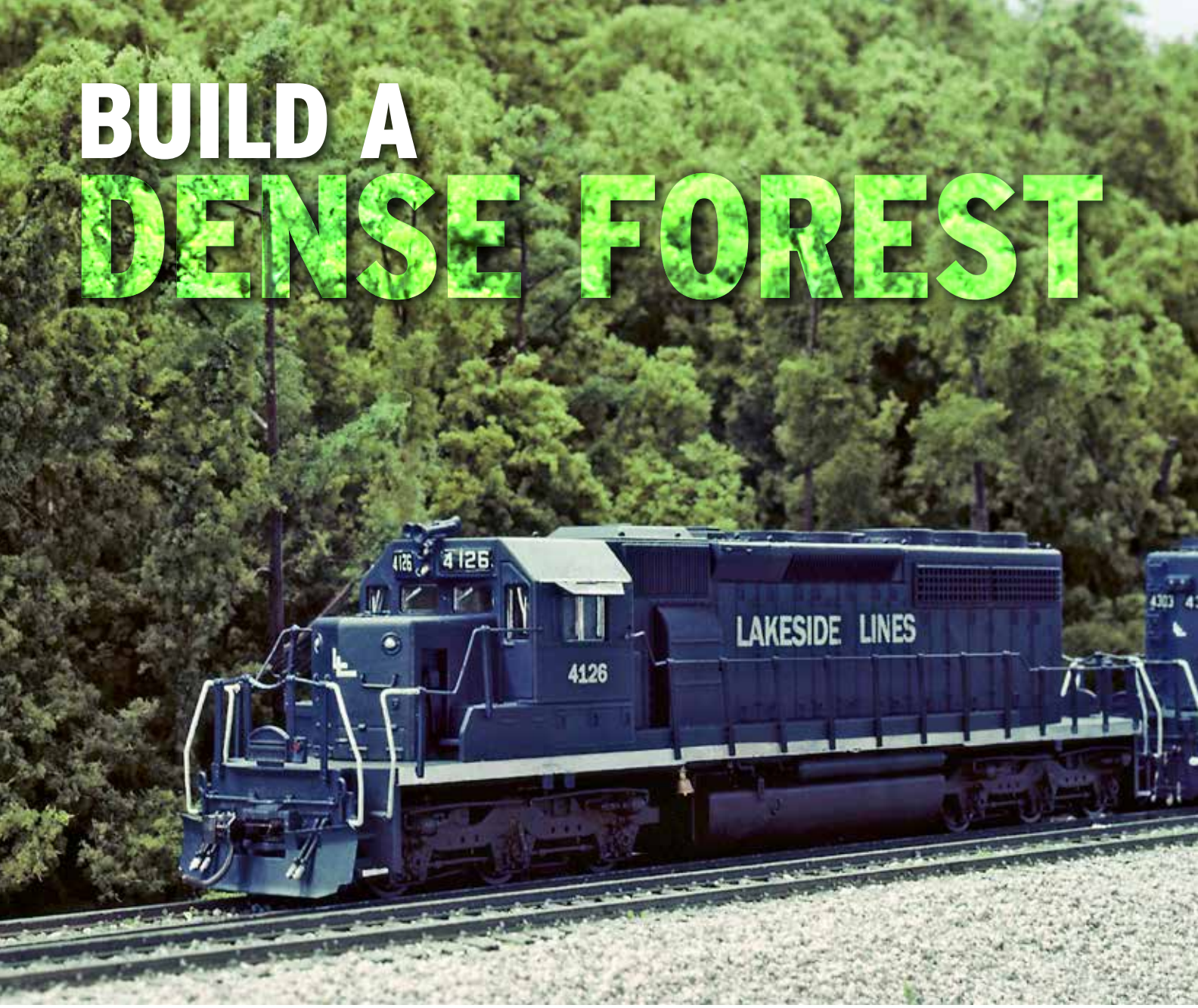
THE FINAL STEP IN THE PROJECT is to add the ground foam "needles" to the trees. The instructions in the kit suggest using hair spray for an adhesive, which will work just fine, but I used diluted matte medium (mixed 1 part matte medium to 5 parts water), since that's what I use for my other tree projects. The mounting pin in the bottom of the trunk make the trees easy to hold during this step.

If you dunk the trees directly into the diluted matte medium, the poly fiber branches soak up too much liquid, causing them to sag and making something of a mess. (Yes, I found this out the hard way.) Instead, I poured the diluted matte medium into a misting bottle and sprayed the tree branches over a plastic-lined garbage can – a much neater solution. You want the poly fiber to be wet, but not soaked, with matte medium.

Next, sprinkle the ground foam onto the tree, making sure to work it into the spaces between the branches. As shown in the photo on the left, I applied the ground foam to the tree over an old kit box. This way the excess foam is easy to collect and reuse for the next batch of trees.

After applying the foam, I stuck the trees into a block of extruded-foam insulation board (shown in the photo above) to let them dry overnight. The next day I planted the trees on the layout. At last, conifers had come to Connecticut. MR

BUILD A DENSE FOREST



Tom Harris uses a variety of materials and techniques to make a convincing dense forest for his HO scale layout.

Combine two simple techniques for a great-looking eastern forest

BY TOM HARRIS • PHOTOS BY THE AUTHOR

THOSE OF US WHO MODEL eastern railroads almost invariably face the problem of how to create a credible deciduous forest. On my HO scale Lakeside Lines, I used SuperTrees armatures from Scenic Express. The best feature of these armatures is their excellent canopies. I also scratchbuilt a smaller number of foreground trees from twigs for terrific trunk detail. Combined, the two form a great-looking woodland.

There's more than one approach to modeling an eastern woodland. There are commercial tree models, but the best ones are too expensive for me to buy in large quantities. I want a dense forest where the trees are packed so tightly their branches intertwine.

Many builders cover their hillsides with representations of a distant tree canopy, often employing lichen, polyfiber puffballs covered with ground foam, or clump foliage. This can be quite effective, but what about trees close by? A viewer can clearly see the deception when a supposedly distant ridge of trees is represented by puffballs mere inches away.

An effective compromise is to place full-sized and well-detailed trees closest to the viewer, with canopy-only materials beyond. Being a bit stubborn, however, I made full-sized tree models that stretch all the way from the foreground to the backdrop.

Canopy trees

The vast majority of the trees I used in my forest are "canopy trees," with

FIG. 1 ONE BRANCH, MANY TREES. A single branch of SuperTrees from Scenic Express provides several useful tree trunks and shrubs.

FIG. 2 DIP-AND-DRY FOLIAGE. After soaking the trunks in dilute matte medium, Tom sprinkles on ground foam foliage. Then he hangs the trees upside down to dry. Alligator clips on the crowns straighten the trees as they dry.

SuperTrees armatures as my basic working material. The tree armatures are a plant that Scenic Express kindly dries, sorts, and packages in good-size bags. I buy it by the case.

As shown in **FIG. 1**, this plant has an extremely fine branch structure, which makes it uniquely useful for modelers. On the downside, the stems are light tan and too small for full-grown HO scale trees. The material also tends to come bent into awkward shapes.

I begin by separating the branches from the stem. Each branch becomes a separate tree. Often, this branch is too pointy, so I pinch off some at the top, creating another small tree in the process. It's often necessary to open up the structure a bit by pruning away some of the branches. I save these pieces to create smaller brush.

The instructions that accompany the SuperTrees suggest painting the stems a more natural color to represent tree trunks. This is a good idea if the tree is to be a foreground specimen. However, I've found that lost in the dim mass of my forest, the unpainted trunks will do as they are.

Preparation and foliage

To straighten and preserve the trees and brush, I soak them overnight in a diluted solution of matte medium. I pour a 16-ounce jar of Mod Podge (I get mine at the crafts department at Walmart) into a gallon jug, add warm water until the jug is full, and then shake it well. I fill a super-sized soda cup with this solution and then stuff in my selected tree trunks. Finally, I replace the cup's lid to keep the trunks immersed and to minimize evaporation.

When I remove the trunks the following day, the stems are pliable and the crowns are wet with matte medium. I sprinkle the crowns with flocking to represent leaves. I model midsummer, so I use Woodland Scenics medium green coarse turf. I occasionally vary my tree cover with other shades of green.

I then hang the trees upside down, as shown in **FIG. 2**, using alligator clips. Alligator clips attached to the crowns straighten the trees as they dry, which usually takes 24 hours.

I devote a half-hour or so every evening to constructing and planting a few trees. Although the work seems to creep along, the key is to make progress, little by little. I keep at it, and before long the entire forest is done.

The SuperTrees material isn't perfectly uniform, and this variation does show

through in the finished trees, giving them subtle variety.

Scale-trunk trees from twigs

I like the large trees at the boundaries of my forest to have HO scale trunks. I make many foreground trees from weed stems, small twigs, and root pieces. One of my favorite materials is the small twigs found in the interior of cedar trees.

FIGURE 3 shows how a pair of twigs can be combined, painted, and covered with foliage to make a realistic HO tree. I make multiple-trunk trees by arranging the twigs together and then pushing them into an extruded-foam-insulation-board base that I've covered with waxed paper to keep solvents from attacking the foam base. I then apply Squadron's Green Putty to the trunk and shape it with a toothpick. By dragging the Green Putty down the trunk, I can add a realistic texture and give it a nice, wide base.

After the tree trunks have dried, I paint the putty to match the natural color of the twigs. I begin with a coat of the now-discontinued Floquil Concrete paint [Model Master no. 4876 Concrete would work. – *Ed.*], and then I drybrush the trunk with burnt umber acrylic artist's paint.

For greenery on my twig trees I like Woodland Scenics foliage material, which is a fiber mat impregnated with small bits of ground foam. I cut the mat into ¾" pieces. Then I stretch the fiber to impart a see-through quality to the tree's foliage.

I attach the foliage mat to the tree limbs using white glue and placing more of it on the upper sides and ends of branches than to other locations.

My forest is built on a hillside covered with dirt and various shades of ground foam, all bonded with matte medium. The dense canopy of trees will keep a forest's floor relatively clean, but a lot of brush will grow at the edge of the woods. To establish the forest's boundary, I tear a mixture of various shades of Woodland Scenics clump foliage into smaller working pieces and glue down a 1½"-wide border.

I continue planting brush along the boundary using foliage-covered bits and pieces of left over SuperTree material. I add an occasional twig-and-putty tree, along with smaller SuperTrees, just behind this brushy border.

The tallest SuperTrees are placed adjacent to the backdrop. I then fill in the hillside between with average trees, packing in as many trees as possible. I want to make a forest, not a park.

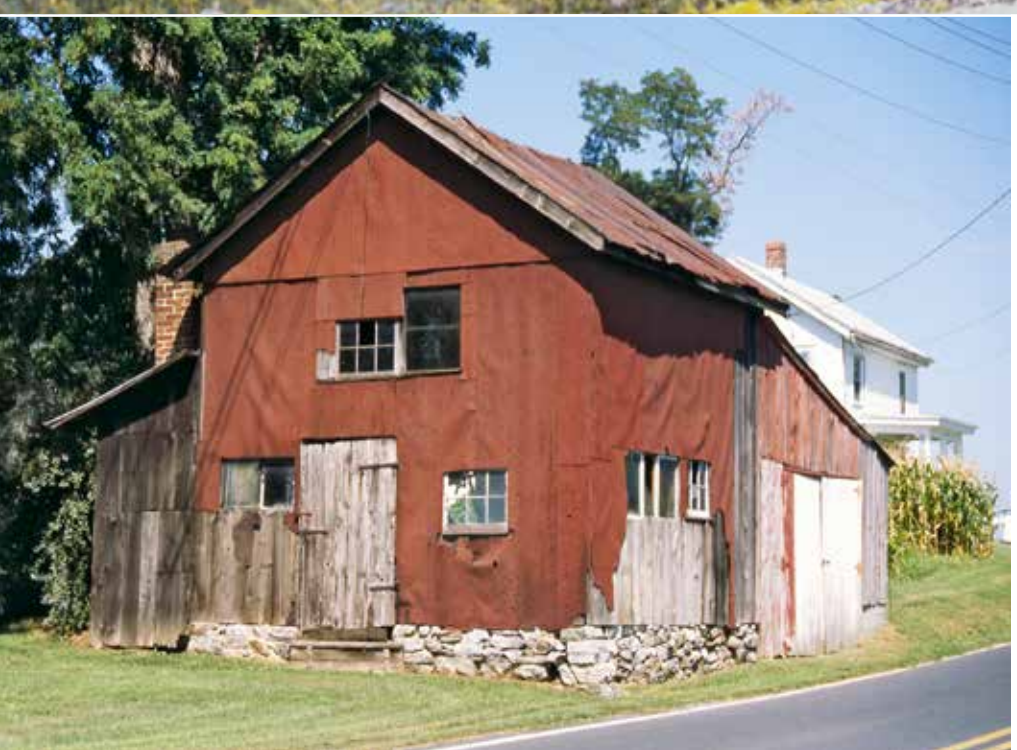
I work only a small area at a time. It's more important to me to do the scenery well, not fast. See **FIG. 4**.

Of course, my forest looks best once I add a train to the scene! MR

FIG. 3 FROM TWIGS TO TREES. Tom scratchbuilds his larger trees using twigs covered with Squadron Green Putty. Painting the trunk and adding foliage completes the model tree.

FIG. 4 FINISHED FOREST. Tom places brush and coarse ground foam at the front of his forest. Then he adds a row of mixed SuperTrees and larger scratchbuilt trees, followed by densely planted rows of SuperTrees.

CLEVER WAYS TO MODEL RUNDOWN STRUCTURES



Modeling techniques for achieving the dilapidated look

BY KATHLEEN RENNINGER
PHOTOS BY THE AUTHOR

ONE OF THE ASPECTS I like most about being a model railroader is that it's opened my eyes to the unique qualities of many of the ordinary things around me. While I might once have viewed a structure like the one in the photo at left as simply an old shed, as a model railroader I see it as a barn with character – beautiful in its own offbeat way. In fact,

If you want a structure to look neglected, Kathleen Renninger has tips that work on models in any scale, era, or size.

I liked the old shed so much that I scratchbuilt it in HO scale.

All of the techniques and almost all of the materials I used to build my dilapidated shed will work on structure projects in any scale. The beauty of it all is that you can't really make any serious mistakes that you can't undo.

FOR MORE weathering ideas and projects, download this PDF article collection from **www.kalmbachhobbystore.com**

STEP 1 WALLS

THE WALLS OF MY building are black foam core. What appear to be structural materials in relief (fieldstone and planks) are simply applied to the foam core surface. My first steps were to prepare and then print out scale drawings using Corel Draw (though any drawing program would work) on my home computer. I cut out the shapes and, using rubber cement, attached them to a piece of foam core. When the cement had dried, I used a no. 11 hobby knife to carefully cut along the lines. I then used Aleene's Tacky Glue (sold in craft stores) to assemble the pieces, bracing them with ⅛" square stock.

To make assembly of the foam core walls easier, hold the hobby knife (with a new, sharp blade) so that the cut edges are 90 degrees to the surface. Angled edges can be a problem at assembly time.

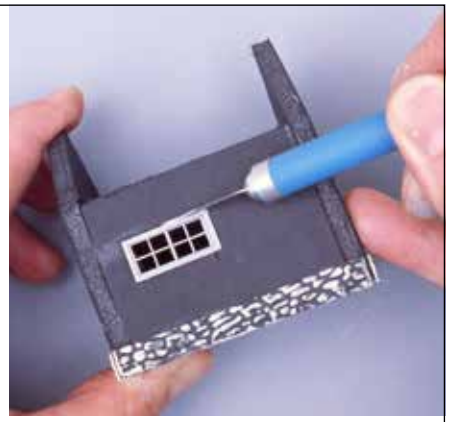
STEP 2 FOUNDATION

I BEGAN WORK on the foundation by painting a Plastruct fieldstone sheet black and letting it dry. Then I removed the paint from the high spots with a wire brush in a motor tool running at slow speed. I was careful to let most of the paint remain in the recessed spaces between stones. The black that remains defines the rocks and gives the impression of shadows. I then cut the sheet into scale 2-foot-wide strips and used Tacky Glue to cement them along the bottom of the walls. I'll come back to finish the foundation later.

Kathleen used a motor tool to remove most of the black paint from the surface of the fieldstone sheet, leaving what appear to be black shadows in the recesses between the rocks.

STEP 3 WINDOWS

WITH WINDOW CASTINGS serving as templates, I cut openings large enough for the window to fit into but small enough that the frames won't drop through the walls. The frames, which are quite thin, overlap the edges of the foam core on all four sides. However, since the siding overlaps the frames, I trimmed away the paper layer of the foam core beneath the frame. I traced around the frames with a knife to define the area and then peeled away the paper layer. I painted the windows and then, when the paint was dry, used Tacky Glue to cement them in place. The glazing came later.



Using the outside of the frame as a template, Kathleen cut through the paper surface of the foam core and removed the paper. This recesses the frame so the siding material covering it will lay flat.

STEP 4 ORIGINAL WALL

USING A SAW to cut the wall boards would have resulted in an even, well-maintained look. To achieve a ragged-edged look, I broke them with my thumbnail. I also used rail nippers to cut notches on the ends of some boards.

I used Tacky Glue to apply the walls board-by-board. When the glue had set, I sanded the boards with 60-grit sandpaper to give them some texture and then painted them. I didn't really try for even coverage.

Before weathering the siding, I masked the stone foundation with tape. Next, I blotted a mascara applicator on a paper towel, removing most of the fluid. Using the almost-dry mascara brush, I stroked it over the boards with the grain. I used a paper towel to immediately wipe off most of the mascara, toning down the color. Then I went back and darkened random areas using the same technique. Finally, I creased 60-grit paper and used the edge to sand streaks here and there, revealing the natural wood color.

For the parts of the wood that would show, I applied paint to the wood, laying on an even coat in some spots, but letting the brush run dry in others. Then I wiped over the boards with a paper towel. When the paint had dried, I sanded the boards lightly with 220-grit sandpaper to expose some natural wood color.

Kathleen uses the drybrush technique to apply mascara weathering to the siding. After wiping much of it off, she darkens random areas and lightly sands others.

STEP 5 ASPHALT SIDING

I PREPARED THE ASPHALT PAPER by cutting 220-grit sandpaper into 3" squares and soaking them overnight in water with a few drops of liquid dish soap. It's a good idea to prepare more sandpaper than you think you'll need, since you're likely to ruin some pieces in subsequent steps.

In the morning I separated the paper backing from the grit layer by inserting the tip of a no. 11 hobby knife blade into the paper and peeling it back. If you get a tear, stop and start at a different corner. Your aim is to get the paper layer completely off, though some fibers will remain.

While they were still wet, I placed the grit pieces on a glossy piece of cardboard, taping down the ends to keep them from curling. Once the pieces had dried, I painted the grit with a 50:50 mix of Accu-Flex SF Red and Maroon Tuscan Oxide Red. The mix isn't critical; experiment until you get the color you want. If you substitute paint, make sure you use a flexible acrylic finish.

When the paint had dried, I cut the pieces of grit into scale 3-foot strips and trimmed them to fit the walls. To get a ragged look, I tore some of the ends. At this point, I had to decide which way my siding would overlap. I used a black Sharpie to touch up the edge that would show, giving the strips more definition once on the shed.

I glued the pieces in place with Tacky Glue, overlapping each one by a small amount. After letting each piece set for a few moments, I pushed and pinched it just a little to get the characteristic wrinkles of asphalt siding.

To finish up the siding, I weathered the asphalt by using a ballpoint pen (black ink) to draw tiny squiggles and marks to represent cracks and holes in the siding.

To simulate asphalt siding, Kathleen starts by soaking squares of 220-grit sandpaper overnight in solution of water and dish washing liquid. Then she separates the paper layer from the grit layer using a hobby knife.

After painting the grit layer, Kathleen cuts it into strips and applies it to the painted and weathered siding material. Rather than cutting all the strips sharply, she tears some of them to give the siding a well-worn look.

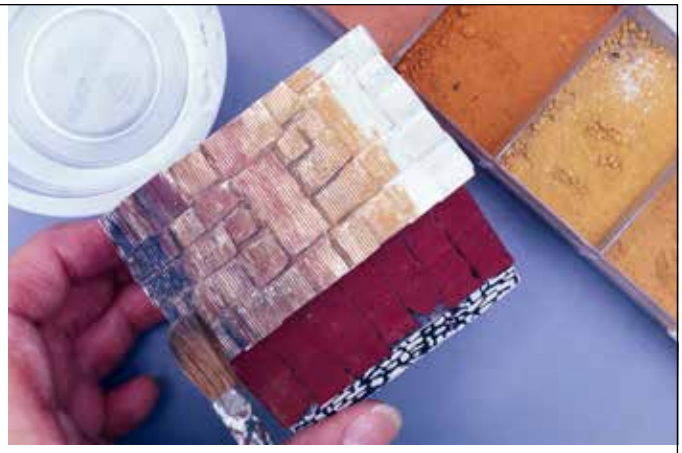
STEP 6 ROOFING

BEFORE ADDING THE ROOF, I attached the window glazing to all of the windows from the inside. I used scraps of clear styrene glued in place with Micro-Scale Crystal Clear. With that done, it was time to add the roof. The underlayment is 1/32" sheet balsa cut to size, and the roofing material that covers the underlayment is Campbell Scale Models corrugated aluminum. I cut most of the aluminum into sections about 3 scale feet square, but I cut an assortment of larger pieces as well. I sprayed Testor's Dullcote on one side of the aluminum roofing, then applied a thin coat of Walthers Goo to the other side.

I used Tacky Glue to attach the balsa roof underlayment to the walls. Then I coated the top of the balsa with Goo and allowed it to dry for a couple of minutes. When the Goo on both the aluminum and the wood was tacky, I carefully placed the aluminum pieces. I used the square ones as a basis for a pattern, but I interspersed the larger pieces for variety. I was careful to let the overlapping edge of the larger pieces remain unglued so I could tuck the smaller ones underneath the larger.

With the aluminum sheets all in place, I weathered them using Stoney Mountain Classic Castings weathering powders mixed with water to a consistency thin enough to be applied with a brush. I worked from light to dark. Intermittently, I applied a very pale gray, followed by a fairly even coat of light yellowish rust. Then I brushed a mix of medium brown with that same rust into the seams to define them. Following that, I applied medium reddish rust, again intermittently.

Finally, I mixed a bit of black with the original light yellowish rust and brushed it on in streaks and patches. I wanted to suggest heavier rust at the center and less along the edges. I then masked the window glazing and gave the roof a light spray of Dullcote, avoiding overspray on the asphalt paper as much as possible.



Kathleen weathers the corrugated aluminum sheeting (cemented onto the roof) with weathering powders mixed with water. She used a variety of thinly applied earth tones; the specific colors don't matter much.

STEP 7 FOUNDATION FINISHING

Kathleen used Microbrushes to apply three shades of weathering powders to the foundation.

I BEGAN THE FINAL CONSTRUCTION STEPS by filling the foundation's corner joints with Squadron White Putty. Once this had dried, I scored it to match the adjoining mortar lines and touched it up with paint. I also filled the joint on the concrete portion of the foundation and painted it with Polly Scale Aged Concrete. [Testor's Model Master is a good substitute. – *Ed.*]

I added subtle color to the stones with Bragdon Enterprises weathering powders. (You don't have to spray them with Dullcote if you rub them in well enough.) I used a Microbrush to apply the powder to individual stones, starting with Dust Bowl Brown on a few, Green Grunge on others, and Used Brick here and there. I left some stones uncolored. For the final touch, I highlighted the top edge of some stones with a white china marker. MR

FOAM CORE TIPS

1 Measure the thickness of your foam core with a scale rule. You'll need to take the thickness into account when determining the size of your walls and base.

2 Plan construction so that one set of walls fits inside the other. Peaked end walls should fit on the outside of the side walls so the roof fits flush against the peaked ends. Remember that the walls attach to the outside of the structure base.

3 A sharp no. 11 knife blade works well for cutting, provided you take the time to score the material. If the foam tears while you're cutting, change the blade.

4 Hold the knife vertical to avoid angled cuts that can make construction difficult. – *K.R.*

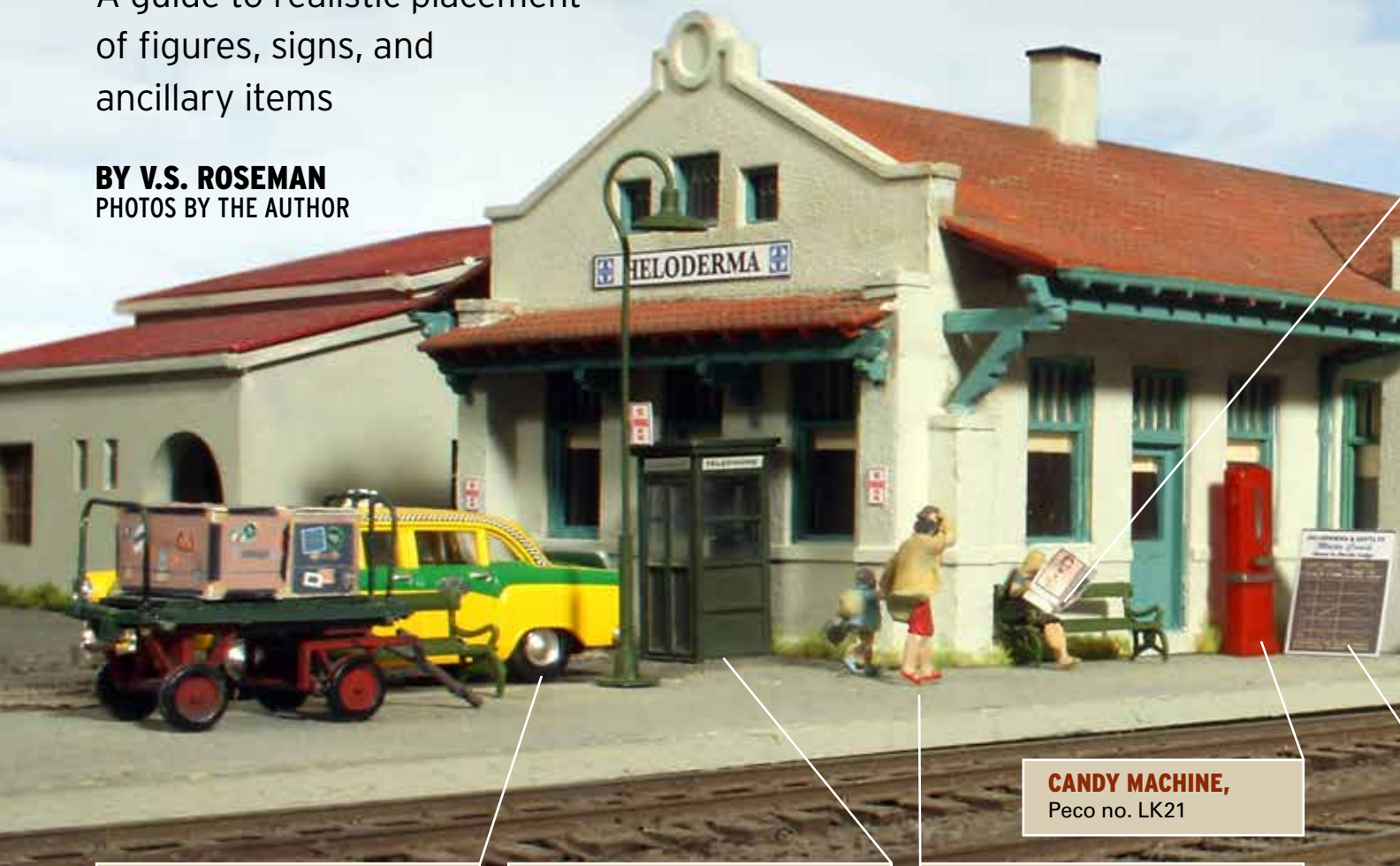
HOW TO DETAIL YOUR STATION SCENES

A guide to realistic placement of figures, signs, and ancillary items

BY V.S. ROSEMAN
PHOTOS BY THE AUTHOR

PASSENGER STATIONS add interest to a model railroad, and nearly every layout can potentially include one. There are many great commercial kits that make modeling stations easy, though to create an authentic scene the project requires more effort than simply placing a depot and platform next to the tracks. To realistically model a station as a central location of activity in a city or town on your layout, you'll want to include period-appropriate figures, signs, and posters, along with many other key details.

The following photographs and callouts demonstrate how I've added these details to compose several realistic passenger station scenes.



ATHEARN NO. ATH26371
Checker A8 taxi awaits passengers from the arriving train. Classic Metal Works and Sylvan Scale Models also offer HO scale taxis. Additional cab options, including those decorated in maroon or black fleet colors, are available in O and N scales, too.

I PAINTED A BACHMANN no. 44209 phone booth olive green. I also added computer-printed signs. Bachmann and Walthers booths are available in sets of HO scale railroad details. More contemporary phone shelters with side panels are also available in N, HO, and O scales.

FIGURES POSED IN MOTION, like this woman and child walking toward the train, are useful for representing action along the platform. However, figures in extreme action poses tend to appear artificial. Use figures in subtle poses so it isn't so obvious they aren't really moving.

CANDY MACHINE,
Peco no. LK21

PLATFORM FIGURES

THIS HO SCALE (1:87.1) WALTHERS Cornerstone Series no. 933-2920 mission-style depot, patterned after a Santa Fe prototype, serves as the gateway to the fictitious community of Heloderma, N.M. Although the arriving single-coach local train doesn't draw as much attention as the celebrated *Chief*, the selection and arrangement of figures and details on the station platform help establish a sense of anticipation.

Other ideas for placing figures include a cab driver standing next to his taxi, a station agent standing on the platform, and passengers exiting from waiting room doors.

A BAGGAGE ROOM ATTENDANT standing with a cart filled with sacks and boxes denotes the arrival of a train. Note that a load of mail or express freight often has one or more handlers nearby.

A FEW PREISER or Woodland Scenics figures seated on a bench reading newspapers or standing on the platform with luggage suggest that a train will be arriving soon.

THE TELEGRAPH sign is a scaled print of a photo.

A SANDWICH SIGN displays connecting local and long-distance bus schedules. Classic Metal Works and Athearn sell HO scale buses suitable for modeling the 1950s. Rapido sells HO 1960s to 1980s buses while Busch has more contemporary offerings. Athearn has N scale buses, too.

BAGGAGE scale, Peco no. LK22

BISHOPS CROOK LAMPS can be modeled by bending a piece of .024" brass wire (2" diameter in HO scale) into a hook 2 scale feet wide. Use a no. 73 bit to drill the center of a Tichy no. 8027 reflector and insert the wire to make a simple HO scale lamp.

TRASH CAN, Funaro & Camerlengo no. 605

STATION AND PLATFORM DETAILS

I BUILT MY O SCALE (1:48) Hunterdon Junction commuter station to resemble a depot typically found in the eastern United States. The choice of trim colors, the placement of platform canopies, the type of advertising posters, and other station details can help define a particular period or setting for your station.

TO MAKE CONTEMPORARY POSTERS, photograph real ads displayed at train or bus stations. Reduce prints of these posters to scale using a color copier or computer image-processing software. Vintage posters are available in old magazines or through online sources. Several model railroad suppliers, such as Blair Line, JL Innovative Design, and others, offer printed sheets of posters in various scales.

ADVERTISING POSTERS on platform posts, fences, and station walls promote both local and national businesses and products. Posters are hung in frames, which today can be tan, silver or black. In the past, frames were wood and often painted maroon, dark green, or a color to match the station trim. I tend to make my advertising space 3 x 6 scale feet.

MAKE AN O SCALE wooden lamppost using .125" square styrene cut to 1¾" high. Attach a wire lamp arm near the top of the post. Glue a button to the wire to represent an O scale shade.

RAILROADS GENERALLY PICKED uniform color schemes for their structures, including stations, trackside sheds, and interlocking towers. For example, the Lehigh Valley RR painted its stations gray, Reading Co. used tan and cream, and Central RR of New Jersey used medium and light green on its structures.

RAILROADS GAIN EXTRA REVENUE by selling space on platforms for advertisements like these.

TALL POSTERS, mounted vertically in aluminum, stainless steel, or black painted metal frames, are displayed on modern station platforms.

MAKE YOUR OWN STATION SIGNS with the aid of word processing or graphics software on a computer. You can also scan photos of more elaborate signs and reproduce them using a color printer. The signs I make are typically 12" tall with 6" letters. Some small station signs are posted on fences or lampposts.

A STATION CANOPY will make your station appear larger without actually using much space. These canopies don't even need to match the station, as they were often added years after the original structures.

MAIL AND FREIGHT AT THE STATION

HERE I'VE USED AN ATLAS HO SCALE STRUCTURE of Maywood Station to model my Atlantic Avenue station. This busy suburban stop features numerous passengers and parcels bound for Atlantic City. Although the business of moving people was important to many railroads, handling mail and express freight often represented a more significant source of revenue. This scene highlights many of the details associated with moving and storing freight about the station and platform.

UNTIL THE 1960S, perishable fruit was often shipped by express. Fruit boxes vary in size, but some measure 12" x 12" x 24". I cut box forms from balsa or basswood sticks and glue labels on the ends. To make the labels, I reduce photos of real fruit box labels on a color copier.

SIMULATING EXPRESS FREIGHT operations at your station can be done as easily as parking an express company truck or mail truck at your station. Classic Metal Works has produced appropriate step vans in N and HO scales. Athearn and Sylvan also make REA truck models.

RAILROADS CARRIED UNITED STATES MAIL through the 1960s. Faller, Preiser, Tamiya and other companies make plastic sacks suitable for mail service. Place these sacks or crates of mail at the station door, on the platform, or on a wagon. Add destination tags or labels by gluing a small square of colored paper to the neck of each parcel.

MOST RAILROAD STATIONS had one or more four-wheeled express wagons. A great number of these were painted in Railway Express Agency (REA) green with a red underbody and wheels. Other wagons were owned by the railroads and were painted in the passenger color scheme or in Pullman Green.

Where business warranted the use of more than two wagons, handlers used a gasoline or battery-powered tractor. Four-wheel wagons are available in plastic kit form from Grandt Line in HO and O scale. Bar Mills sells carts as HO and O scale crafts-man kits. Small, three-wheel tractors and four-wheel modern wagons are available from Kibri.

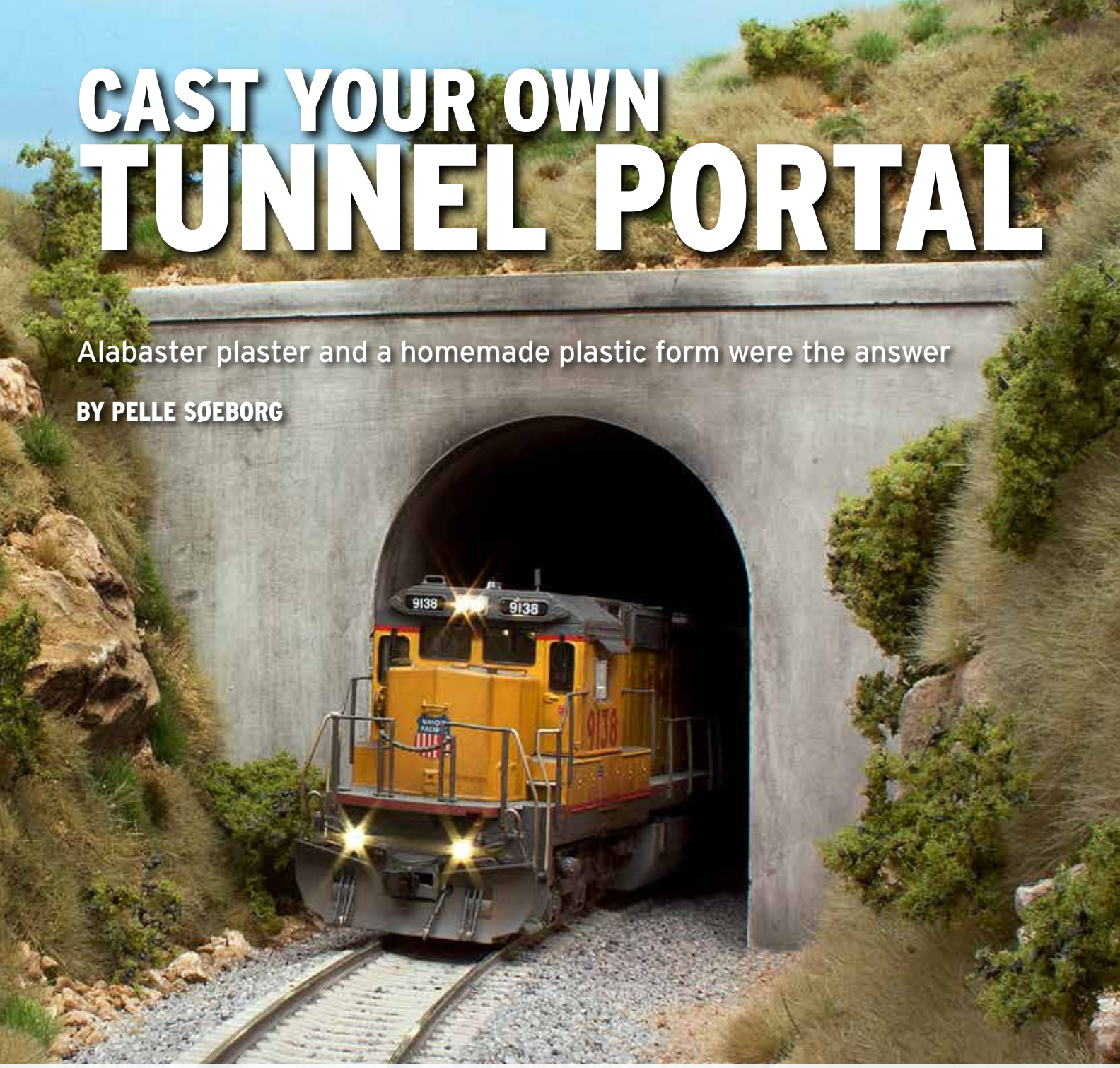
REFRIGERATORS, WASHING MACHINES, mattresses, bikes, and other items come in corrugated cardboard boxes, and these are often decorated with the company logo or large printed letters identifying the contents. Tichy, Preiser, and Merten make scale-sized crates, but shipping cartons are harder to find in any scale. Instructions for making a large carton using lightweight inkjet paper are available at www.ModelRailroader.com.

IN HO SCALE, Preiser offers a 90-piece luggage set. Many of these are large enough to be used with S scale or O scale, as they represent some very large HO scale cases. Apply brightly colored stickers to repre-sent resort labels.

CAST YOUR OWN TUNNEL PORTAL

Alabaster plaster and a homemade plastic form were the answer

BY PELLE SØEBORG



Union Pacific Dash 8-40C no. 9138 exits staging through a tunnel on Pelle Søeborg's HO scale Union Pacific layout. Pelle made his own molds for the tunnel portal and liners from styrene and cast the parts with alabaster plaster. Pelle Søeborg photos

JUST BEFORE THE TRACK ENTERS the east end of staging below Daneville on my former HO scale Union Pacific layout, the track curves into a small canyon and enters a tunnel. After unsuccessfully searching for tunnel portals that match those on the prototype's line through the Tehachapi Mountains, I made my own.

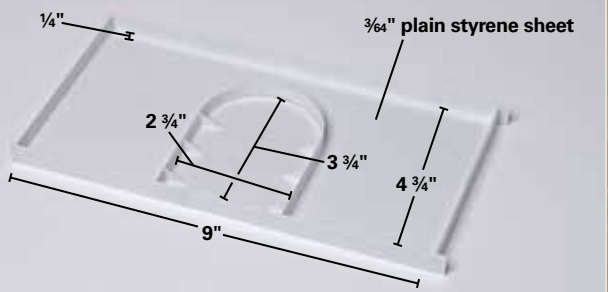
I considered scratchbuilding the portals from styrene, but I quickly changed my mind. Plaster does a better job of capturing the look and texture of concrete.

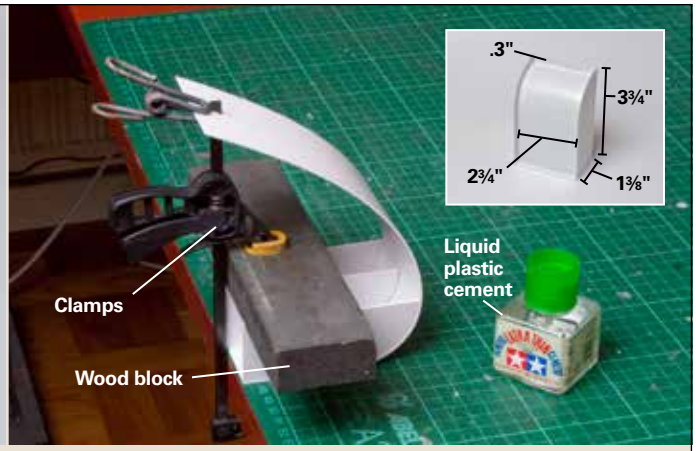
I did, however, use the styrene to make the molds for the portal and liners. Styrene is perfect for this type of work because it can be easily bent to shape, as shown in the photos of the portal and liner molds, and then cemented into place quickly.

For many years I've used Woodland Scenics lightweight Hydrocal for rock castings. The material is easy to cut and carve, but it also breaks easily. I was afraid the Hydrocal would be too soft for tunnel portals, so I looked for a harder type of plaster. I found alabaster plaster in an art supply store. This plaster, used by sculptors and in the dental industry, dries harder than Hydrocal. It also can be removed from the mold just 15 minutes after pouring, meaning you can make several castings in one evening.

If you want tunnels that are unique to your model railroad, try casting them from plaster. With some simple painting and weathering, the plaster portals will have the look of real concrete.

STEP 1 MAKING MOLDS



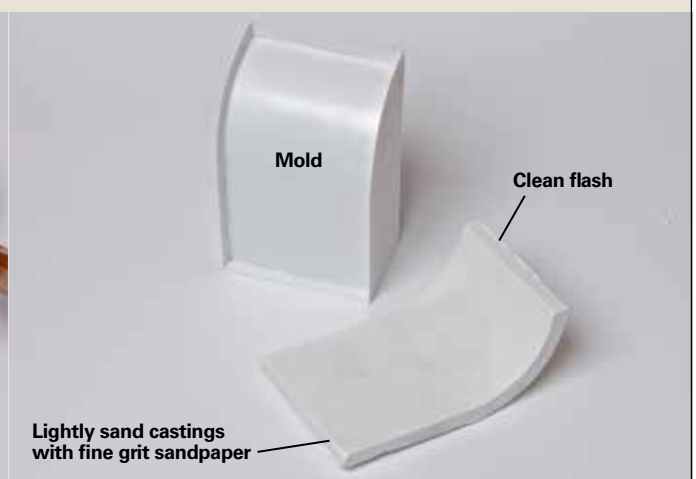


I MADE THE MOLD for the portal from 3/64" plain styrene sheet. I reinforced the entrance with triangle-shaped styrene supports. The strips of the material will bend easily, as shown in the arched opening. I cemented the styrene parts with Tamiya Extra Thin liquid plastic cement.

Next, made a mold for the tunnel liner from the same 3/64" styrene sheet. I used clamps and a block of wood so the styrene would keep its curved shape until the liquid plastic cement had hardened. A lip on the outside of the mold will hold the plaster. You can see the finished liner mold in the inset photo.

STEP 2 POURING PLASTER

IT MAY BE TEMPTING to pour plaster into the molds once they're finished. However, it's important to coat the molds with silicone to prevent the plaster from sticking to the styrene. I used a brand sold in Europe, but suppliers, such as Micro-Mark and others, sell various mold release products. [Aerosol cooking oil also works. – *Ed.*] Let the silicone dry completely before pouring the plaster. I mixed the alabaster plaster following the instructions and poured it into the mold. I ran a stick along all edges of the mold to make sure the plaster filled the edges and corners.



FOR THE TUNNEL LINER, I added less water to the plaster to make a paste, as shown above. The thicker mix makes it easy to keep the plaster in the curved mold. I applied the plaster with a spatula.

The castings hardened in 10 minutes, and can be removed after 15 minutes. I cleaned up the flash and lightly sanded the castings with fine-grit sandpaper once they were dry, giving the plaster a concrete-like texture.

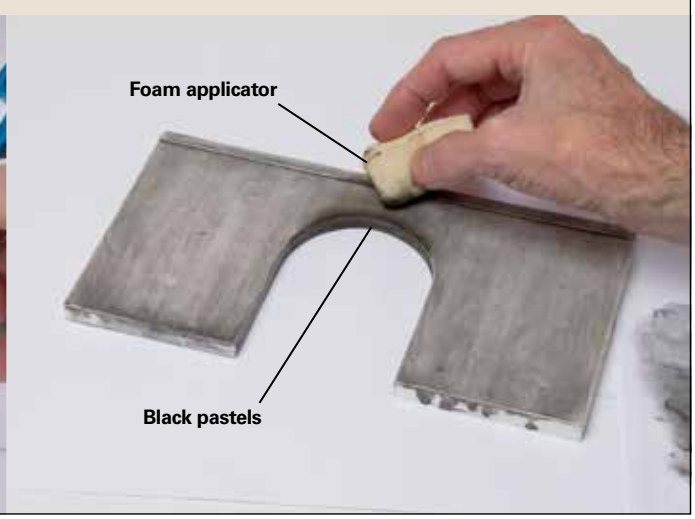
STEP 3 PAINTING AND WEATHERING

I WANTED MY TUNNEL to look like it has been around for many years. To achieve this look, I stained the white plaster with washes I made using Woodland Scenics Raw Umber and Slate Gray liquid pigments.

Before applying the washes, I dipped the castings in water. If you apply the washes to dry castings, too much pigment soaks into the plaster, making the casting look too dark. It's easier to control the color intensity if the plaster is damp. I applied the wash three times before I set the castings aside to dry. I then used a foam applicator to apply black powdered pastels above the tunnel entrance, as shown in the bottom right photo. This simulates the soot stains on the concrete from diesel exhaust.

To install the tunnel, I first positioned the portal on the layout and ran a test train of loaded double stack cars and auto racks through it. Once I was satisfied that there were no clearance problems, I secured the portal to the layout with lightweight plaster. With the portal in place, I then installed the liners using more lightweight plaster to cement everything together and let it all dry thoroughly.

With the castings in place, my trains enter and exit the layout in style through a typical Tehachapi tunnel. MR



Fences, such as the yellow picket fence behind the gas pumps in this scene on Mike Tylick's On30 Marshfield & Old Colony RR, have a lot of uses on a layout. Kits like Bars Mills' InstaFence make it easy to add these details to your model railroad.

GOOD FENCES MAKE GOOD SCENERY

Wooden kits can help divide scenes and make cramped areas seem larger

BY MIKE TYLICK
PHOTOS BY THE AUTHOR

GOOD FENCES DON'T always make for good neighbors, but they do make for good scenery design. Fences can also be put to good use compressing perspective. Additionally, they can serve as a compositional line to lead a viewer's eye where we'd like it to go.

Model fencing is inexpensive and easy to build. My On30 Marshfield & Old Colony RR is small, so space is at a premium. Fencing can do all of the above while taking up almost no scenery space.

For these examples I used the Bar Mills InstaFence. Made of wood, InstaFence provided easy-to-weather fencing that was fun to build and more versatile than I'd suspected.

Building fences

My first project was to build a fence behind the station at Marshfield Hills.

FIG. 1 SPLITTING THE SCENE. Mike needed a way to make the two dirt paths on either side of the rock wall seem more believable, so he added the fence on top of the wall.

FIG. 2 FENCE ON A HILL. Mike wanted to better define the scene at the coal trestle on his layout, so he built a fence with a gate on the hill next to the office.

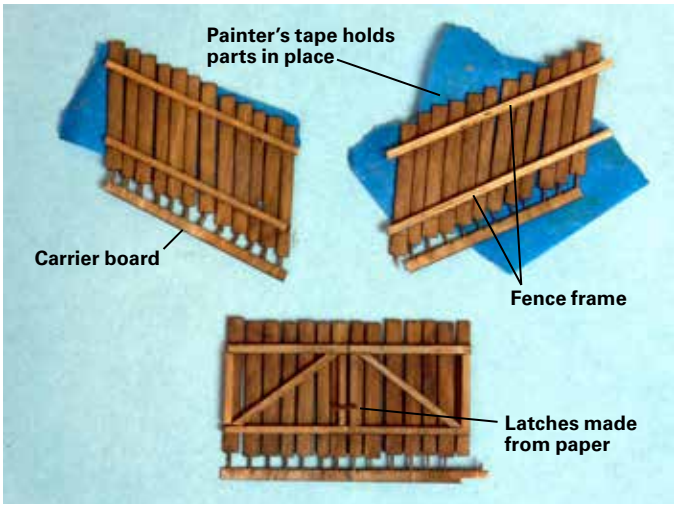


FIG. 3 TRICKS WITH STICKS. Mike made a template of the area where he wanted a fence, then skewed the parts to fit.

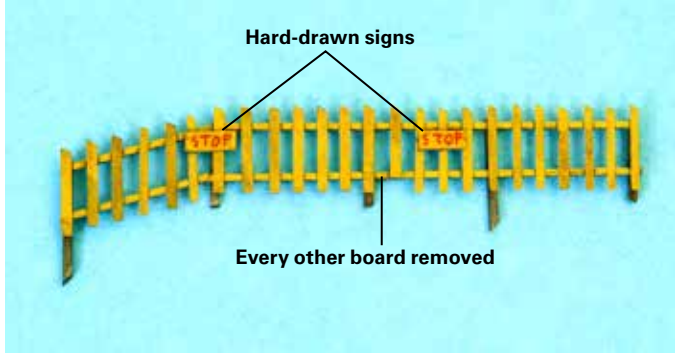


FIG. 4 MISSING BOARDS. Mike removed every other board to make a poor-man's picket fence for his garage scene.

See **FIG. 1**. Two dirt paths behind the station and a steep hill all appear on top of one another. The fence helps split the scene. Because it hides the base of the hill, the hill seems to be farther away than it really is.

The Bar Mills kit is available in four scales, N, HO, S, and O. I used the S scale fence here to force the perspective a bit on my O scale layout.

Elsewhere on the layout I have a coal trestle. An access road passes by the office and down below track level to the coal yard.

In order to break up the scene and reduce the apparent steepness of the dirt driveway, I added a fence and gate next to the office, as seen in **FIG. 2**.

InstaFence made both these projects simple. The boards are held by a carrier strip until a stripwood frame is glued to the back. The irregular placement of the boards adds character, and it's very easy at this point to further age the fence by removing, twisting, or breaking some of the boards.

I weathered the boards with a wash of India ink thinned with isopropyl alcohol. The frame and posts were then glued on the back, and I could remove the carrier strip.

I applied an acrylic craft paint "whitewash" to the front of the fence with a stiff brush using drybrush techniques. Watercolor washes at the end help to bring out the texture. Small signs can add additional detail, but be careful not to overdo this effect.

The Bar Mills InstaFence can easily be built to accommodate sloping ground. I cut a paper template to match the sloping terrain next to the coal trestle office, and carefully bent the boards on the carrier strip to match. The blue painter's tape, shown in **FIG. 3**, held everything in alignment until the glue dried. Sway bracing and a tiny paper "latch" completed the gates.

Other options

At another location there's a service station, where I built a fence to discourage motorists from plunging onto the tracks at the bottom of a small slope behind the garage.

By removing every other board from the carrier strip, I was able to replicate a type of board fence that was at one time a quite common poor-man's picket fence.

This S scale fence was painted bright yellow to draw motorists' attention (see **FIG. 4**). The signs are an added safety feature. I drew them with a red fine-point marker, as a real garage would likely have hand-painted its own.

The versatility of the Bar Mills InstaFence made it easy to adapt to several different situations on my layout, and the wood construction made it easy to build and paint.

These quick projects went a long way in improving the appearance and believability of my layout. MR

MODIFYING AND PAINTING FIGURES

These HO scale workers are fixing a steam locomotive on Sam Swanson's Greenbriar & Lost River RR layout. Sam shares his techniques for painting and modifying commercial figures.

Add realism to your layout by varying its inhabitants

BY SAM SWANSON
PHOTOS BY THE AUTHOR

FIGURES ARE OFTEN the final details that complete a layout and add life to a scene. But even with the wide variety of stock figures sold, there is often a limited range of figure poses available to fit specific scene requirements. To eliminate repetitious poses and make my layout appear more realistic, I choose to modify, paint, and detail stock figures.

I start with unpainted plastic figures in HO scale; however, painted and unpainted figures in HO and larger scales can be converted and painted or repainted to your liking. Choose stock figures you find easy to work with and that fit your budget. Unpainted figures often cost less and are a more practical buy if you're planning to repaint them anyway. Wm. K. Walthers Inc. and Scenic Express carry many different figure brands, styles, and scales.

Follow this quick and easy process for converting, painting, and detailing figures in order to polish a particular scene on your layout.

BASIC CONVERSIONS

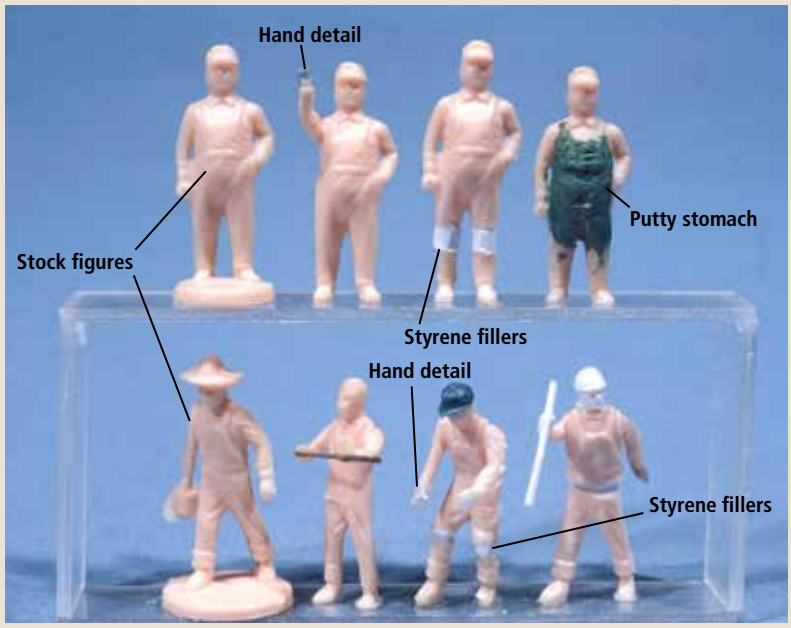
FIRST DETERMINE HOW YOU WANT a particular figure to be posed, then find a stock figure with similar attributes (including gender, dress, and stance). To alter the figure, you can cut and reposition limbs and heads or combine parts from different figures.

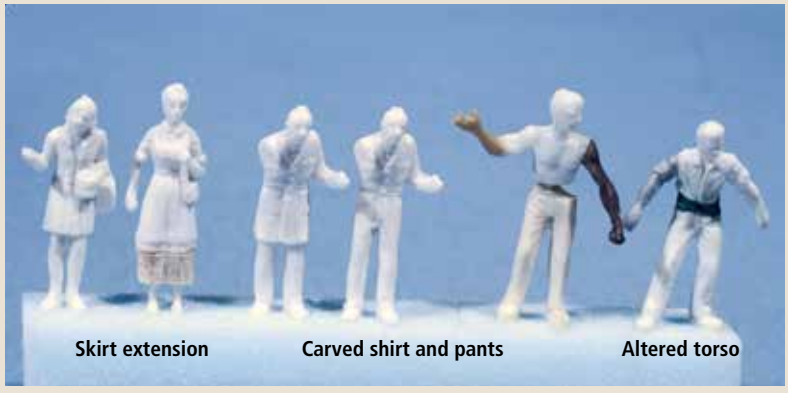
Be careful – not all swapping yields properly proportioned figures. And, as with other conversions, make sure to keep all of the materials left over from one figure because you may be able to use them for another project.

Next, decide on the desired form of your figure. You can make figures taller by using styrene fillers, or you can make them heavier by adding putty bellies. The top photo at right shows how I shaped and posed two stock figures three different ways.

You can also add more-defined features to the figure. For instance, hands are sometimes under-detailed compared to the rest of the body. To add more-detailed hands, a piece of paper can be cut to a hand shape, hardened with a drop of cyanoacrylate adhesive (CA), and then glued to the arm.

The figure's clothing can also be altered through carving and the addition of fillers, such as wood or styrene blocks. The bottom photo shows several clothing conversions, including a skirt extended using a balsa block (left), a shirt and pants carved from a tunic (center), and modified upper and lower torsos (right). Other existing clothing features, such as sleeves, collars, and hats, can be removed or reshaped using putty.





ADVANCED CONVERSIONS

AFTER THE BASIC FIGURE adjustments have been completed, it's time to make some more-detailed modifications. These can be as simple as the rag hanging from the back pocket of the figure second from the right — made from a bit of painted tissue paper soaked in diluted white glue — or as elaborate as an ice cream cone shaped from putty (center).

Pencil marks on paper cut from the margins of a real newspaper replicate newsprint (far left). Feathers cut from paper accent the cap of the seated figure second from left, while his butterfly net is made from basswood. The boxes carried by the figure second from the right are also basswood, and the flowers held by the figure on the far right are crafted from jute twine and ground foam used for scenery.

Other possible details include a cane or walking stick made from a styrene rod or a suitcase fashioned from basswood. Thin strips of paper serve well as belts, straps, suspenders, workshop aprons, and other clothing accessories.

If you're modeling a past era, look at old magazines and newspapers at your local library for more inspiration as fashion trends have changed over the years.

FIGURE PAINTING IN SIX STEPS

AFTER THE FIGURES HAVE BEEN CONVERTED, altered, and tweaked to your liking, it's time to paint them. The painting process for HO figures can be simplified into six easy steps, which can be refined for larger scales.

Start by filing and scraping away any remaining flash or mold lines, and make sure to fill in any imperfections with putty. Before painting, use white glue to secure the figures to an easy-to-grip wood block. Next, prime the figure a medium tan and wash with a dark stain. I use Floquil Earth to prime figures and Liquitex acrylic burnt umber for the stain. The tan serves as a good base for Caucasian skin tones, and the wash adds just enough shadowing to bring out facial and hand details. You can add brown to the base as needed for darker skin tones. Avoid using pink for flesh tones, though, as it tends to look unnatural. Also, avoid trying to detail facial features (even eyes) for HO and smaller-scale figures.

After the base and wash coats dry, continue by painting individual clothing items, such as pants, coats, and hats.

I use craft store acrylics sold in 16- and 20-color assortments. These provide a variety of realistic clothing colors. I transfer the acrylics from the containers onto a plastic palette using a brass wire. Use a fine-pointed no. 00 brush or smaller to paint the figures.

THINGS TO AVOID

APPLY THE BASE COLOR FIRST. It will be darkened for shadows and lightened for highlights later. The acrylics dry fast, so be ready to apply the shadow and highlight paints as soon as you're done mixing them. As shown in the photo, avoid using paints that dry with a glossy finish or that are too bright or too dark, as they cause the figures to look unrealistic.

After applying the base color to each item, add a bit of brown or dark gray to each hue to create the shadow colors. Use the shadow colors first to outline seams, and then to paint the lowest portions of creases. This color should also be applied to the shadowed undersides of clothing, such as armpits and cuff bottoms.

Next mix a bit of light gray or tan with the base colors. Lightly brush these colors onto the high points of the figure's clothing, including lapels, hat crowns, and the tops of shirt and coat cuffs. Build up the highlight color in two or more paint applications. This helps to emphasize clothing detail and makes shadows more noticeable. Don't drybrush with white to bring out detail because it can give your figures a frosty look, as seen on the far right figure.

FINAL DETAILS

AT THIS POINT you can add any detail painting, such as dots of brass color to represent watches, buttons, and belt buckles. If you'd like to add clothing wrinkles or creases, use thick acrylic paint. A couple of applications will build up the high points, giving the illusion of bunched cloth.

Finally, the figures are ready to populate your layout! Woodland Scenics Accent Glue works well to cement the figures onto the layout, while allowing for easy relocation later. The figures on my G&LR layout represent the railroad's owners posing near their latest acquisition. MR

SOME SOURCES FOR UNPAINTED FIGURES IN BULK

HO scale
5772 Model Power, Figures, pkg (72)
16325 Preiser, Railway personnel and passengers, pkg (120)
16326 Preiser, Working figures with accessories, pkg (120)
16328 Preiser, Seated people with accessories, pkg (120)
16337 Preiser, Passengers and passersby with accessories, pkg (120)
16343 Preiser, Passers-by/spectators, pkg (130)
16349 Preiser, Seated passengers, pkg (36)
16352 Preiser, At the train station, pkg (120)

N scale
93335 Plastruct, City figures, pkg (12)
79000 Preiser, Assorted figures, pkg (120)
79006 Preiser, Walking people, pkg (125)
79007 Preiser, Seated people, pkg (120)
79008 Preiser, Passengers, pkg (120)

O scale
6172 Model Power, figures, pkg (36)
65600 Preiser, 1:43 Passengers/travelers, pkg (16)
65601 Preiser, 1:43 Passersby, pkg (18)
68290 Preiser, 1:50 People, pkg (60)

S scale
72510 Preiser, 1925 civilian flight crew/passengers, pkg (36)
72512 Preiser, People standing/walking, pkg (25)
72513 Preiser, People in uniform, pkg (24)

Z scale
93337 Plastruct, City figures, pkg (12)
88500 Preiser, Railway personnel and passengers, pkg (160)

DIG THOSE DITCHES

How to model realistic-looking trackside drainage ditches

BY TONY KOESTER
PHOTOS BY THE AUTHOR

Elevating the main line above the Midwestern farm fields and prairie grasslands with drainage ditches along both sides adds visual interest to what could otherwise resemble a billiard table on Tony Koester's HO scale Nickel Plate Road.

SPECTACULAR SCENERY IS ONE of the reasons that modeling mountain railroading is so popular. Yet mentioning the flatlands of the Midwest in the same context as "mountain scenery" can elicit some very strange looks.

Of course, all of America's granger country isn't flat, as deep river valleys still require towering viaducts. But let's just acknowledge that a lot of acreage in farm country is indeed tabletop flat.

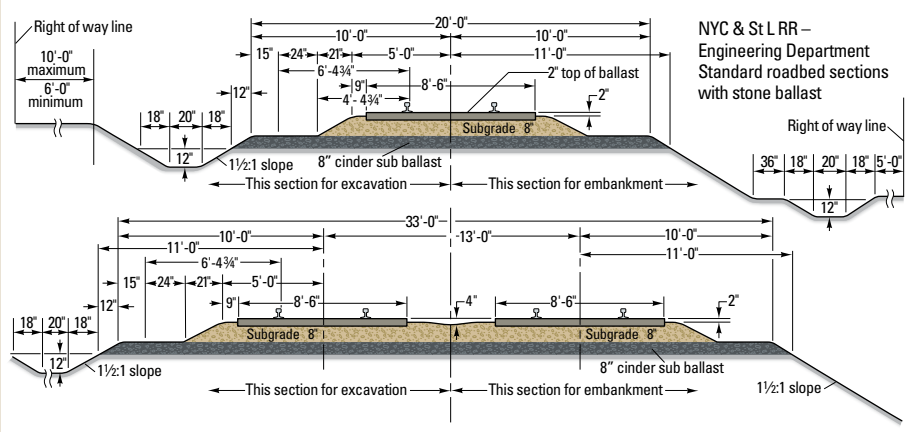
The concern then becomes modeling flat country in a manner that provides more visual texture than simply laying track across a Ping-Pong table.

Creating texture quickly is a secondary concern for me. Frank Hodina and I designed my Nickel Plate Road to maximize the mainline run that supports timetable-and-train-order operation. So I wound up with about eight scale miles – nearly 500 linear feet – of main track. Towns and four lengthy bridges help break up the monotony of a single-track main loping across the prairie, but most of the railroad is flat as a pancake.

My main challenge was to find a visually effective – and quick! – way to model typical Midwestern terrain. It's still not the Rockies or Appalachians, but my method effectively represents the terrain typical of the agricultural belt. Frankly, I'm relieved that I found a way to create the needed drainage ditches and to cover a lot of ground.

As any railroad civil engineer will tell you, the three keys to good roadbed are drainage, drainage, and drainage. More simply put: Ditches rule!

STEP 1 PROTOTYPE CROSS-SECTION



THE NICKEL PLATE ROAD'S roadbed cross-section drawing reproduced here shows how the railroad tackled the problem of keeping the roadbed relatively dry. Note the depth of the ditch is a minimum of 24" deeper than the bottom of the ties. In HO scale, that's just over ¼", so my first concern was to raise the track at least that distance above the ¾" birch plywood subroadbed. I used a ½" elevation for mainline tracks and ⅜" for unballasted sidings and spurs.

STEP 2 HANDLAID TRACK

This before view shows the need to build up the open terrain on either side of the elevated roadbed to create sufficient depth for realistic drainage ditches.

I INITIALLY PLANNED to hand-lay a lot of track, and I prefer to use Homasote, which does a great job holding onto spikes. I used ½" Homasote in the yards glued to ¾" birch plywood, but opted to use California Roadbed's Homabed elsewhere.

I first glued down a ¼"-thick layer of unbeveled Homabed, then glued another ¼" layer of 45-degree beveled Homabed on top of that, thus achieving ½" total depth – sufficient to allow for ditches on either side of the track.

The track forms one side of the ditch, but how could I raise the terrain to form the field side of the ditches and then taper that down to align with the top of the fascia, which is essentially flush with the plywood subroadbed? (Raising the top edge of the fascia wasn't practical, as it would get in the way of realistic viewing from the aisle and, more importantly, low-angle photography.)

STEP 3 A SIMPLE SOLUTION

I TRIED SEVERAL APPROACHES – using plaster gauze over screening, shaped mounds of decomposed granite, and carved ceiling tile – before stumbling onto the easiest one: ⅜" insulation board. It's sold in a 50-foot bundle of accordion-folded sheets each measuring 2 x 4 feet. At each fold, the board pinches down, forming a rounded edge that can be easily aligned along the fascia.

Fan-folded ⅜" insulation board, sold at big-box or hardware stores, offered an easy fix. Tony cut strips to fit between the track and fascia or backdrop and stapled them in place using 9/16" staples to fasten the foam along the outer edge.

STEP 4 HO DITCH TEMPLATE

Tony laminated an HO scale photocopy of the Nickel Plate Road's standard roadbed and cross-section drawing to a piece of styrene. Then he trimmed off the bottom edge to make a stiff template to guide his ditch installations.

TO ENSURE THAT I LEFT adequate margins for the ditches, I made an HO scale copy of the Nickel Plate Road's roadbed cross-section drawing from step 1, glued it to a piece of styrene, and cut out the bottom profile. Then I used this template to mark the outer edge of each ditch line along the roadbed edge. This provides an accurate line that makes it easy to trim the insulation so the ditch comes out parallel to the rails.

In the transition era, most major railroads used a grading machine called a Jordan Spreader to clean the ditches and restore the proper roadbed profile.

STEP 5 FITTING THE FOAM

Tony relied on his eye to initially judge the ditch width as he stapled the insulation board in position. However, his ditches looked too narrow so he trimmed off more of the foam board to match his roadbed profile template.

I USED A NEW BLADE IN A utility knife to cut the individual 2 x 4-foot foam sheets apart and then to cut them into strips. One strip fits between the roadbed and the fascia, while the other goes between the roadbed and the backdrop. On curves, I sketched the arc of the backdrop onto the foam, cut it out, and trimmed it for a close fit. Then I positioned the panel tight against the backdrop and over the track so I could press it down hard to make an indentation of the rails. This made it easy to cut the track edge of the foam to the proper curvature.

STEP 6 SHAPE THE SUBROADBED

Tony used fine sand to fill in the ditch before shaping it with his plastic template. Then he brushed any remaining sand off the ties and other areas that would receive the finished rock ballast scenery later on.

WITH THE BASIC LEVEL landform scenery in place on both sides of the track, I spooned some inexpensive fine sand into the ditch as a filler material. The sand blended the foam board smoothly into the edge of the subroadbed along the track.

Then I used the plastic template as a scraper to shape the loose sand into the proper ditch profile.

Finally, any areas along the ties that would receive the finished rock ballast were gently cleaned off using a dry foam paintbrush.

When this step was finished, I had smooth ditch profiles running along both sides of the track.

STEP 7 STABILIZING THE ROADBED

Tony used gentle sprays of rubbing alcohol to give the loose sand a good soaking (ensure good ventilation!) and followed that with diluted white glue.

TO KEEP THE LOOSE SAND from moving and losing its proper profile, I gently applied multiple light sprays of rubbing alcohol until the sand was thoroughly soaked. At that point, I switched to a 50-50 mixture of white glue and water that I applied by dribbling it on the saturated surface. I held the glue container as close to the sand as possible so the fine drops of glue landed without moving the wet sand out of place. The glue was absorbed almost on contact. (Note: alcohol fumes are flammable and evaporate quickly, so good ventilation is a must).

STEP 8 CINDERS AND BALLAST

As the glued filler sand ditch profile hardened, Tony applied a layer of cinders, wetted and glued it down, and then added the final layer of limestone ballast.

AS THE GLUE BEGAN TO HARDEN, I used a plastic spoon to apply a thin layer of cinders along both sides of the track. That evening, I added the limestone ballast using Arizona Rock & Mineral no. 138-2 (CSX, Southern Pacific, Wabash) to represent the NKP ballast. A dry foam paintbrush worked well to level the rock ballast, push it off the tie tops, and shape the shoulder cross-section. Then I glued the ballast layer in place.

STEP 9 GROUND COVER

Here are some samples of the Busch Wildgras-Teppich grass mats of various colors. They have a flexible backing so they can be glued down.

Tony trimmed each mat to fit and secured it with white glue or matte medium and a few staples (which were removed later).

The Heki Wildgras Waldboden sheets don't have any backing material, so they can be stretched to cover more terrain.

ON THE FIELD SIDES of the ditches, I applied various colors and types of Busch and Heki ground cover to represent pastures or low crops.

Busch also offers grass and crop mats in various sizes.

For cow pastures, I installed fence posts made from .060"-square styrene painted a weathered gray. I then punched a small hole in the foam and inserted each post with a drop of cyanoacrylate adhesive (CA).

STEP 10 FENCING AND CULVERTS

Using a ruler as an alignment and spacing guide, Tony punched small holes in the foam base an inch or so apart, slipped a fence post into each hole, and secured each of them with a drop of cyanoacrylate cement (CA).

Water flowing along the ditches has to pass under roads, and metal culverts are easy to fashion from expandable drinking straws painted aluminum.

WHILE THE FIELD GRASS mat's glue was drying, it was easy to erect a pasture fence line in the foam terrain. I made the posts from short bits of .060"-square styrene painted a weathered gray. While I was at it, I also fitted the appropriate angled corner bracing that keeps the wire fencing tight. Similar bracing is also found at gate openings.

Some railroads also fenced portions of their right-of-way using steel-wire fencing and concrete posts for maximum durability.

A variety of culverts are used to keep the water flowing through the ditches and under the roads that cross the NKP main line. Most of the small to medium-size rural culverts are made of corrugated steel pipe that I simulate with flexible plastic straws painted aluminum.

Important county and state highways may have larger concrete box culverts designed to let branches and other large debris pass through with the fast-flowing storm water during heavy weather. MR

This photo of the finished scene shows how the different colors and textures naturally blend together with this Midwestern scenery technique. Perhaps the best part is everything in the photo was started and finished in one day.

HOW TO MAKE A DISTANT TREE LINE WITH SCUFF PADS

The addition of a low-relief tree line between the last row of trees and backdrop makes this shallow setting appear deeper.

A strip of inexpensive scuff pad helps blend layout scenery into a backdrop

BY LANCE MINDHEIM
PHOTOS BY THE AUTHOR

Lance Mindheim uses 33-foot-long rolls of Mirka Mirlon no. 18-573-448 scuff pad, purchased from Beaver Industrial Tools (beavertools.com), to create distant tree lines.

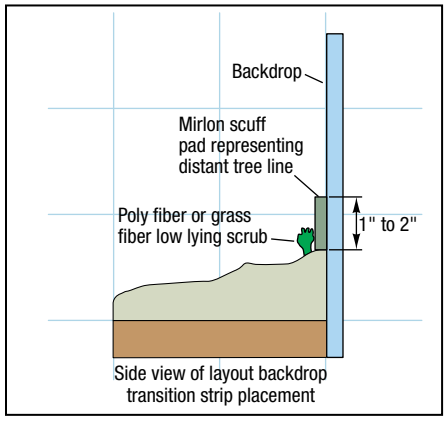


FIG. 1 Transitional scenery. This cross section of a layout depicts the ideal placement of components to make a scenic transition between the foreground and backdrop.

THERE ARE PLENTY of established techniques for adding foreground and background scenery to your model railroad. However, the installation of transitional scenery between these two areas is often overlooked. Since a layout itself is three-dimensional, and a backdrop is two-dimensional, the point where the two surfaces converge can be abrupt. By adding simple scenery to this area, as shown in **FIG. 1**, you'll soften the transition from the horizontal layout surface to the vertical backdrop and create a realistic setting with greater depth.

If you observe the landscape in most areas of the United States, you'll typically see a scenic element obstructing the horizon. One of the most common natural buffers is a tree or shrub line, so I considered how to use them to help transition the scenery where the layout meets the backdrop.

Since my layouts tend to feature flat topography, I had a number of scenes where the tree lines were quite far in the distance. What I needed was a way to simply and inexpensively model distant and less-detailed trees.

On a recent trip to the hardware store, I discovered synthetic steel wool scuff pads. This gray material is about ¼" thick, cuts easily with scissors, and has just enough texture to be a good stand-in for a distant tree line. Because hardware stores typically sell it only in short lengths, I prefer ordering 33-foot long by 4"-wide rolls. You can purchase these through online suppliers; find them by searching for "scuff pad rolls."

Another advantage to using the 4"-wide continuous roll material is that it can be cut lengthwise, which effectively doubles the amount of material you have to create nearly seamless horizontal scenery along the layout backdrop.

FIG. 2 Cut undulating shape. After cutting the continuous roll of scuff pad into 4-foot sections, use scissors to make a wavy, lengthwise cut down the middle of the strip.

FIG. 3 Rough or smooth edges. The scuff pad can be torn by hand for a more ragged appearance (top) or cut with scissors for a smooth tree line (bottom).

FIG. 4 Tree line installation. One method for installing a strip of scuff pad is to partially insert toothpicks along the backdrop and then push the strip onto the exposed ends.

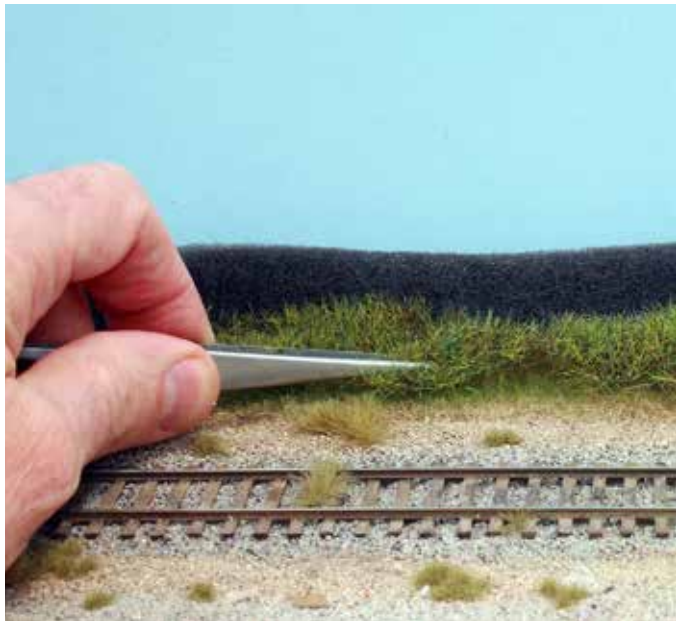


FIG. 5 Masking the transition. Hide the bottom of the tree line by adding tufts and patches of poly fiber or grass fiber mats along the base of the scuff pad.

Preparing the material

Although a continuous roll of scuff pads is convenient, I found that working with long sections to be a bit cumbersome. Using a pair of scissors, I first cut the roll into 4-foot lengths.

Next, as shown in **FIG. 2**, I made a wavy cut lengthwise down the middle of the 4-foot strip, producing two pieces with a gently undulating top. Using sharp scissors helps keep the cut edges of the scuff pads smooth and clean. However, you can also score the material with a utility knife, then tear it to produce two pieces with rough, textured edges for a ragged appearance. **FIGURE 3** shows the two types of edges.

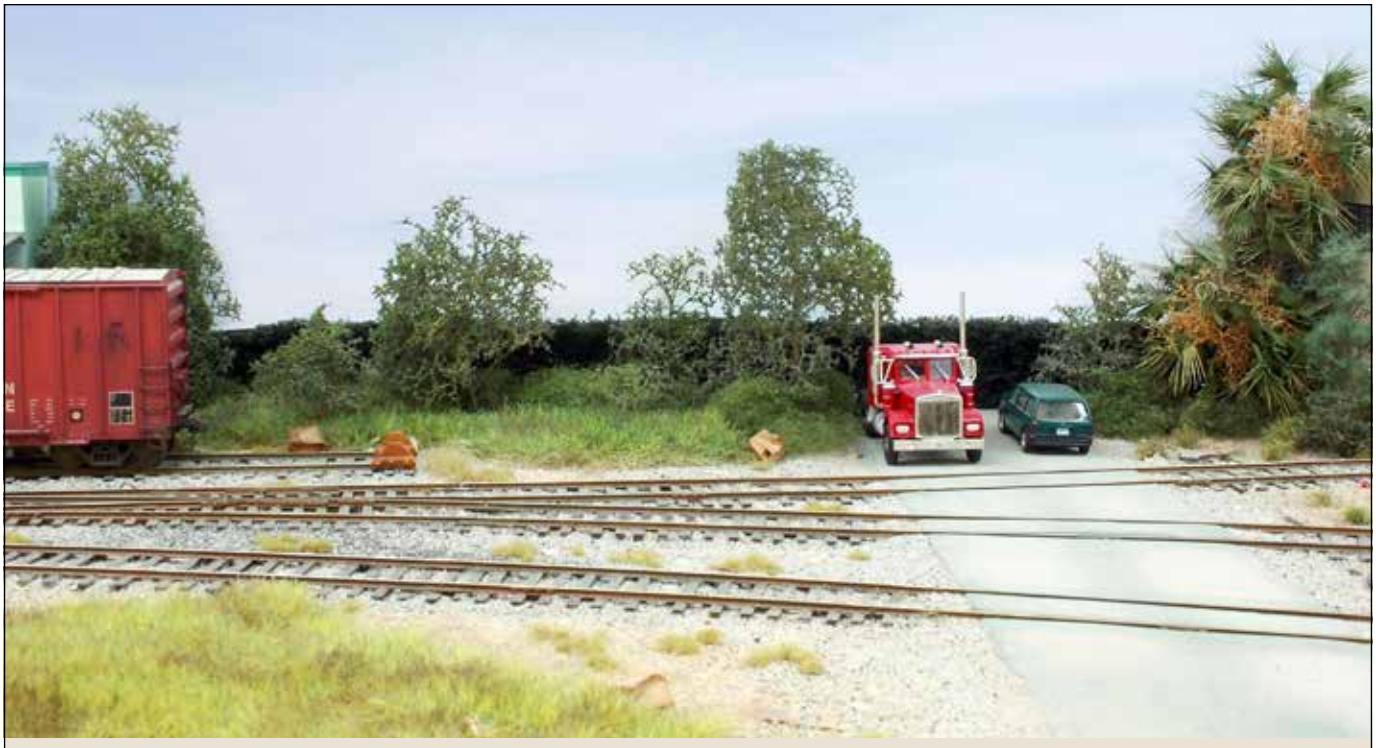
The material I purchased comes in a dull gray color that looks appropriate for a distant tree line, without painting. If you want to add a hint of color, try painting the material with a light mist of Floquil Roof Brown, applied from a spray can in a well-ventilated area. [Model Master no. 4884 Roof Brown is a good substitute. – *Ed.*] Be sure to allow the painted scuff pad material to dry before starting to install it on a layout.

MATERIALS LIST

Heki
1576 Grass fiber, forest floor
1577 Grass fiber, dark green

Mirka
18-573-448 Mirlon 4" x 33'-0" ultra fine scuff roll, gray

Woodland Scenics
S190 Scenic Glue



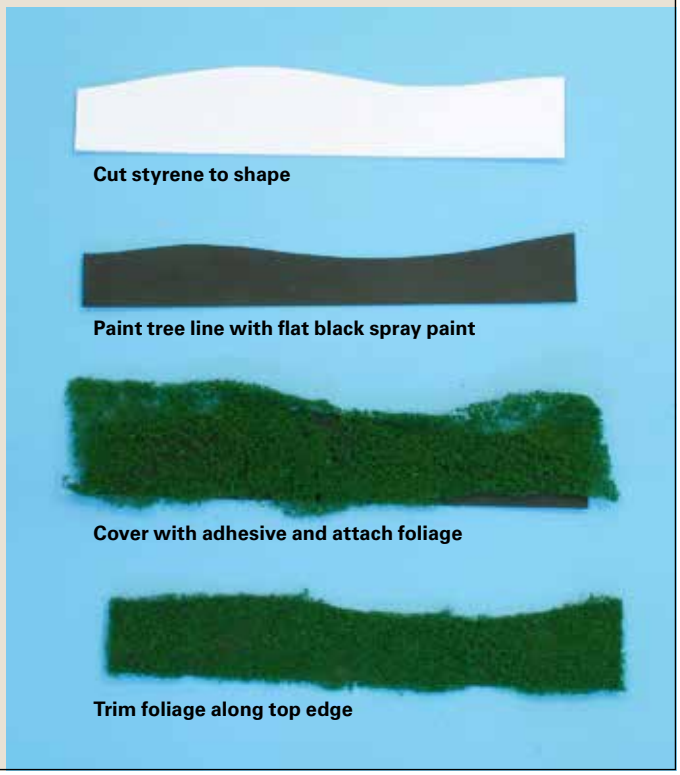
In this scene, Lance modeled a short stretch of tree line and wanted to represent foliage with more color and texture. To do this, he used spray adhesive to affix Woodland Scenics foliage material to styrene sheet.

A SCUFF PAD ALTERNATIVE

THERE ARE SOME LOCATIONS on my layout where I want to represent a short stretch of horizon that's much closer to the viewer. These locations require more color and texture, so I used transitional scenery strips formed by affixing Woodland Scenics F54 Conifer Green or F53 Dark Green foliage to styrene sheet.

First, I use a hobby knife to carve a gently undulating tree line shape into a 2" wide strip of .060" sheet styrene. Next, I paint the strip with plastic-compatible flat black spray paint. After allowing the paint to dry, I cover the painted side of the styrene with 3M Super 77 spray adhesive and wait a few seconds before adding the Woodland Scenics Foliage material. Then I use scissors to trim the shape of the foliage.

I typically wedge the styrene foliage strip behind existing trees installed along the backdrop. If this isn't possible, I'll use hot glue to attach the styrene strip the backdrop. Finally, I add transitional scenery, including brown or green poly fiber, Heki grass fiber mats, and dense patches of Scenic Express Super Trees, as previously described. – *Lance Mindheim*



Installing the tree line

There are two ways to install the pieces you've prepared. One method is to push a row of toothpicks halfway into the scenery base at 8" to 12" intervals and then push the pad onto the exposed sticks. See **FIG. 4** on the previous page. If you haven't installed a backdrop, another option is to attach the strip at the back of the layout using hot glue. In this case, you may need to insert a few toothpicks through the material and scenery base to temporarily hold the strip.

As **FIG. 5** shows, I hide the bottom of the tree line between the scuff pad and the foreground scenery by gluing tufts of light vegetation or scrub along the base of the strip. Poly fiber, Heki grass fiber, or small trees all work well in this background location.

Using this simple and inexpensive process, I can install several feet of textured, low-relief strips that realistically bridge the transition between my layout surface and backdrop – all in the course of an evening. MR

BUILD A BACKWOODS SCENE FOR YOUR LAYOUT

Turn a bland return loop into a scenic standout

BY GERRY LEONE
PHOTOS BY THE AUTHOR

IN THE JANUARY AND FEBRUARY 2009 issues of *Model Railroader* magazine, I outlined the construction of Eureka, a small town on my HO scale Bona Vista RR. This hamlet partially disguised a return loop on the layout, but there was still a 5-foot stretch of unfinished terrain between the outskirts of town and an opening in the backdrop.

A small industry or residential neighborhood seemed like logical options for the undeveloped area. But in keeping with the rural nature of the layout, which is set in the thick of Minnesota and Wisconsin woodlands, I modeled a backwoods scene.

I wanted more than just trees in this space, so I added a muddy stream with a short railroad bridge crossing it. Additionally, I was determined to somehow conceal the fact that this return loop track passes through a hole in the backdrop. Rather than installing a highway overpass or tunnel portal, I used a natural canopy of handmade trees to the mask the opening.

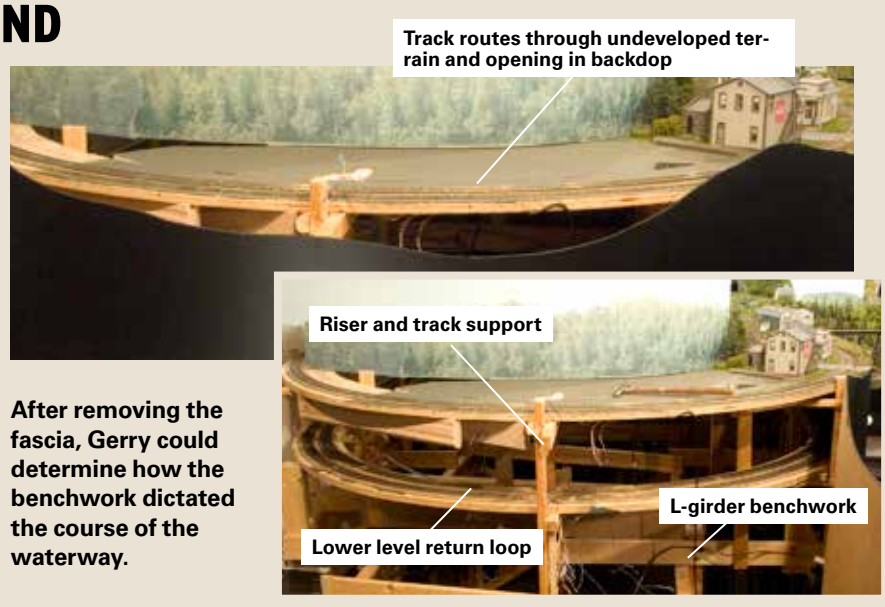
Follow along as I share the step-by-step techniques I used to construct the key components of this HO scale backwoods scene, from adding a waterway to filling a forest with trees and other scenery enhancements.

This overhead view of the completed backwoods scene reveals how much scenery Gerry effectively fit into the space – less than 18" between the track and the backdrop.

SURVEYING THE LAND

ALONG THE OUTSKIRTS of Eureka was a 5-foot parcel of unfinished terrain within a return loop. As with any land development project, I had to consider what lies beneath the surface and behind the walls before work could begin.

On my layout, the L-girder benchwork under this return loop also supports a track on a lower level. The position of the risers dictated the location and depth of the waterway. Additionally, the painted hardboard backdrop and railroad right-of-way influenced where and how I situated scenic elements in the scene.

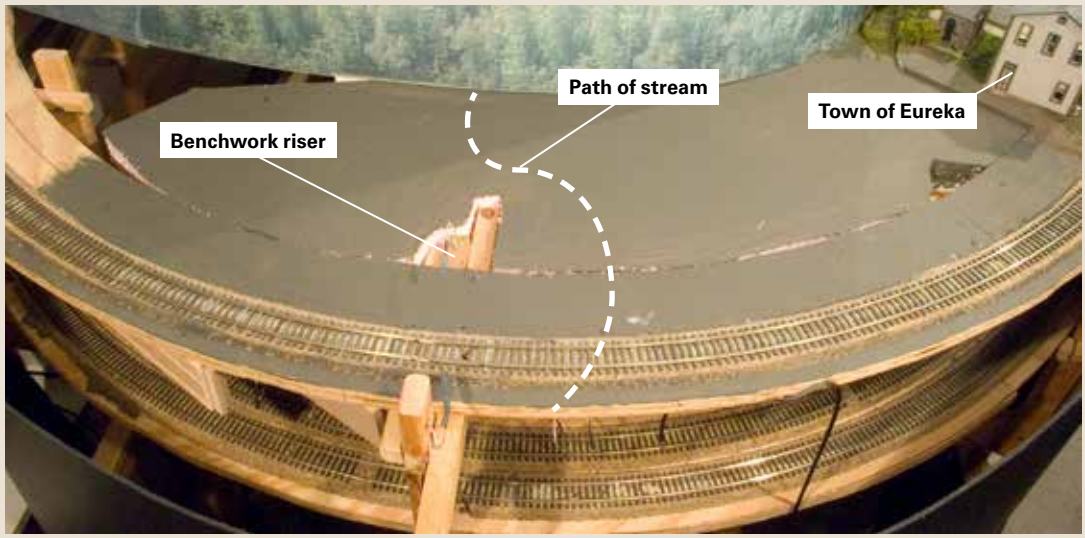


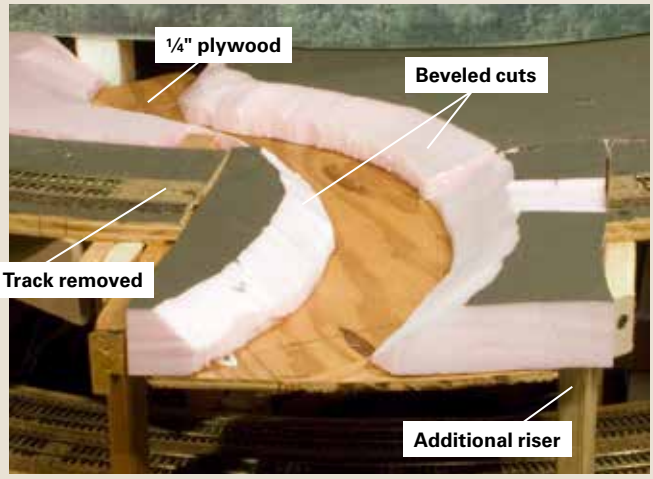
After removing the fascia, Gerry could determine how the benchwork dictated the course of the waterway.

Author Gerry Leone applied a variety of scenery techniques to make the most of the limited space inside a return loop on his HO scale Bona Vista RR. It takes a careful eye to reveal the simple tricks he used to add a greater sense of depth and authentic character to this narrow backwoods scene.

SHAPING THE STREAM

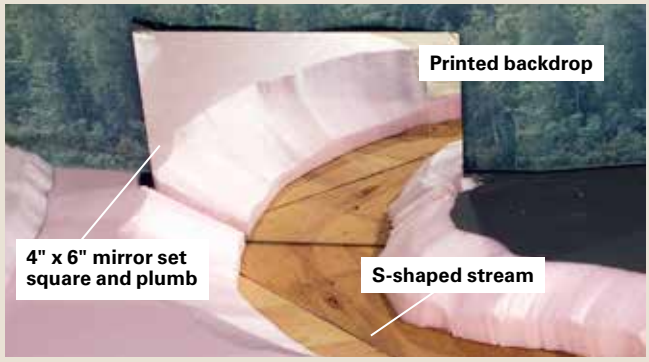
Between Eureka and the backdrop opening, the existing foam insulation board surface spans a 5-foot distance.





After removing a section of track and subroadbed, Gerry cut the foam board and installed new plywood pieces to support the stream.

Gerry installed a small mirror on the backdrop to help disguise the end of the waterway.



Using a hot knife, Gerry sculpted 2" thick foam board into a small hill he later used to help hide the backdrop opening.

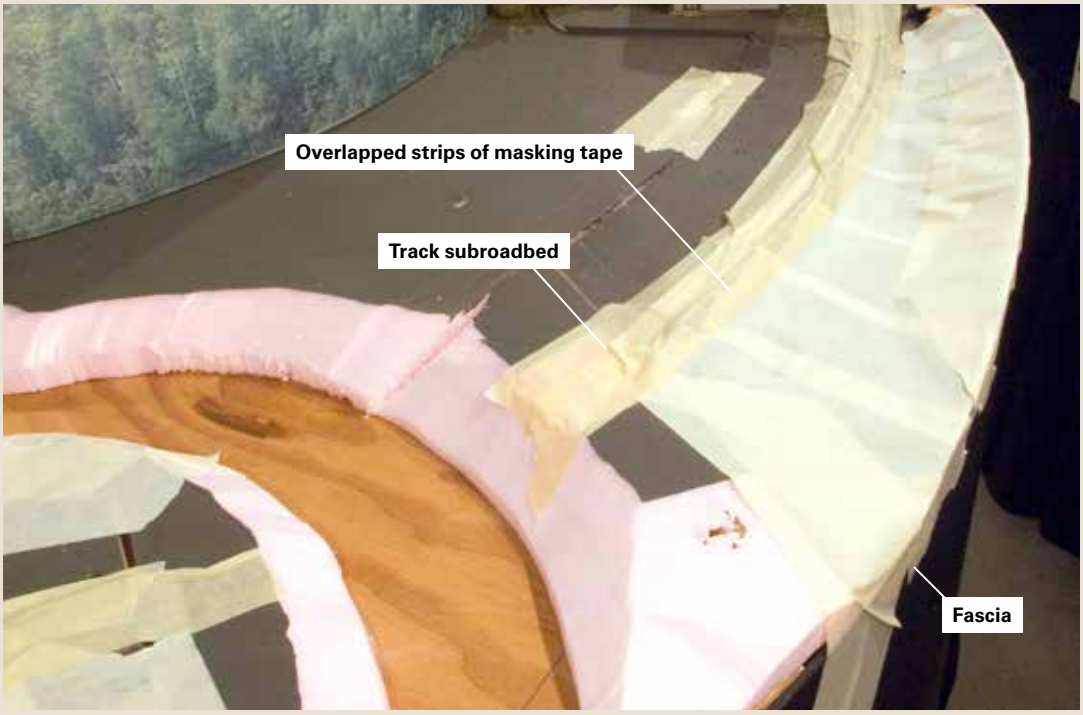
I BEGAN THE PROJECT by marking the path of the stream. After removing the fascia, I found that I could create an appealing S-shaped stream running between fascia and a small mirror set against the backdrop. The mirror creates the illusion that the stream continues beyond the backdrop. The curved path of the stream helps to hide the spot where the stream meets the mirror.

After determining where the tracks would span the stream, I used a razor saw to cut out the rails. Removing the ⅝" plywood subroadbed required the use of a hand saw. Using a hot knife, I cut an S-shaped path into the existing foam board scenery base. Next, I separated the two foam boards and cut banks with the knife held at approximately a 45-degree angle. To provide a flat surface for the waterway, I applied construction adhesive to the underside of both foam sections and attached a piece of ¼" plywood between them.

At the back of the waterway, I also used construction adhesive to secure a 4" x 6" mirror to the backdrop. I kept the mirror both perpendicular and plumb to the stream, because a misaligned mirror will result in a stream that appears to have an angular jog.

Finally, I used the hot knife to shape a foam hill that will help hide the opening in the backdrop and add elevation to the flat area.

PLASTER PREP



Strips of masking tape cover the gaps between the subroadbed and fascia. Gerry used this technique to support the plaster-soaked paper towels.

LINN WESTCOTT, A FORMER *Model Railroader* magazine editor, and others advocated using plaster-soaked paper towels to make landforms. While alternative materials, such as plaster-impregnated gauze, are now available, I still prefer plaster-soaked paper towels as a scenery base. Although the method is messy, it's still one of the easiest and most economical available to modelers.

To avoid damaging the track from this mess, I first covered the rails with low-tack painter's tape. After covering the track, I installed overlapping strips of 2" wide masking tape between the subroadbed and fascia to support the towels.

Next, I spent an evening dunking industrial-strength paper towels into a bowl of soupy Hydrocal and then draping the plaster-soaked towels across the layout. The resulting uniform surface over the terrain and streambed was well worth my effort and clean-up time.

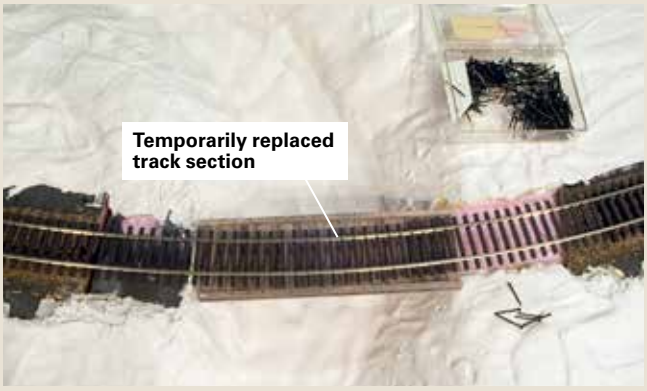
After allowing the plaster to set, but not before it was completely dry to the touch, I used an old wood chisel to clean up the edges that overlapped the fascia.

Gerry used industrial-strength paper towels dipped in plaster to build the base for the terrain and streambed.

Before the plaster set completely, Gerry used an old wood chisel to remove fragments overhanging the fascia.

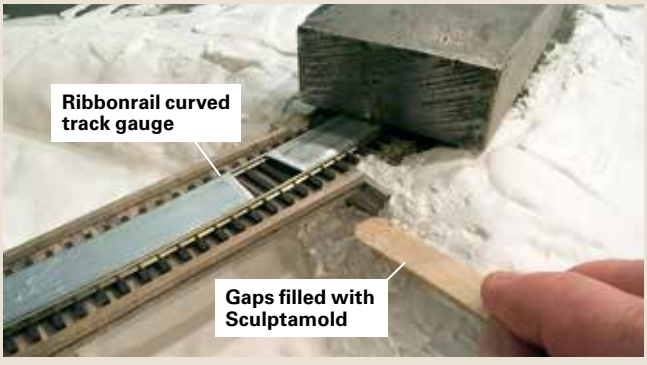
BUILD A BALLASTED TRESTLE DECK

Gerry built a short but interesting trestle based a photo he saw in a book. To install the structure, he modified part of the adjacent terrain.



To accurately position the bridge, Gerry temporarily installed the track over the stream.

To accommodate the wooden dump bents, Gerry used a hobby knife with a serrated blade to carve away the terrain.



Gerry glued the dump bents in place and filled the small gaps in terrain with Sculptamold.

FOR THE SAKE OF VARIETY,

I spanned the stream with a ballasted deck pile trestle. This type of trestle looked rustic enough for the wooded area and easy enough for me to build quickly.

With a single photo for reference, I resolved to freelance the dimensions for my trestle across the stream. I used 10" x 10" HO scale lumber for the longest stringers and ⅛" diameter wood dowels as the pilings. Even though it would be ballasted, I opted to build the deck board by board.

Upon completion of the trestle, I added various sizes of Grandt Line (now San Juan Model Co.) nut-bolt-washer castings along the edges and applied a wash of 2 teaspoons India ink in 1 pint of isopropyl alcohol (70 percent) to give the entire structure a heavily weathered appearance.

Installing the trestle involved sawing out some sections of plaster-covered terrain using a serrated knife. Then, to be sure that the trestle was in the precise position, I temporarily replaced the previously removed section of track. I used several heavy weights and 30" radius curved Ribbonrail track alignment gauges to hold the track in place at a constant curvature.

Inserting slivers of foam board helped shim the trestle ends in place at the proper height. I used carpenter's wood glue to secure the trestle, and then filled the gaps in the plaster terrain using Sculptamold. After allowing the installation to dry, I removed the track from the deck and continued onward.

FIELD AND STREAM ADDITIONS

Small pebbles represent boulders in a stream. Gerry also painted the streambed in two shades of brown to represent varying water depths.

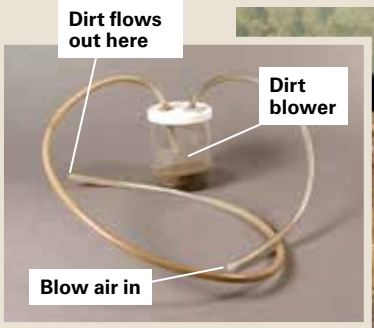
BEFORE ADDING WATER to my stream, I first used white glue to secure pea gravel boulders to the streambed. After allowing the glue to dry, I used a small brush to apply dark brown latex wall paint around the boulders and along the streambed. Before the paint dried, I painted Polly Scale Earth along the shores of the stream. [Testor's Model Master is a substitute. – *Ed.*] Next, I used drybrushing to help blend the two colors together and allowed the paint to dry thoroughly.

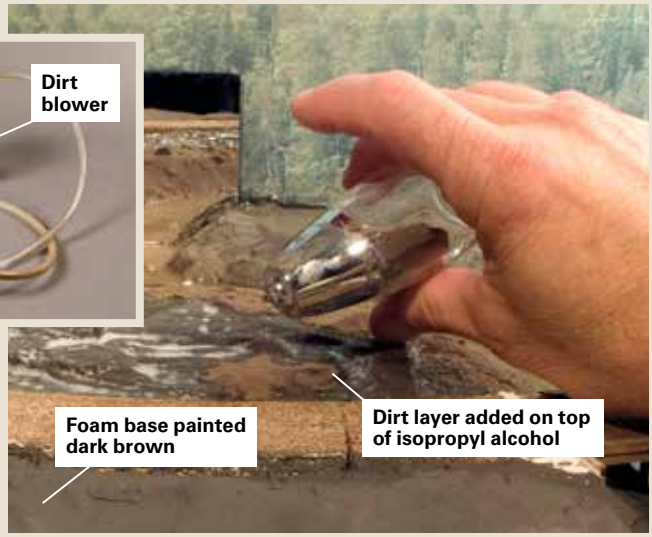
To cover the rest of the terrain, I began by painting the Hydrocal base in the same dark brown color I used for the streambed. After the paint had dried, I sprayed a mist of isopropyl alcohol on the base and used a salt shaker and a home-made "dirt blower" to sprinkle fine dirt over the paint. I secured the dirt with diluted white glue, mixed 4 parts water to 1 part glue.

I added vegetation by applying my own custom blend of Woodland Scenics coarse ground foam. (2 parts medium green, 1 part light green, and 1 part dark green). I secured the foam with more diluted white glue.

Finally, I used Magic Water by Unreal Details to add water to the stream. First, I sealed up the fascia side of the stream using a scrap of styrene, plumber's putty, and duct tape, and then I covered the mirror and openings along the backdrop in a similar manner.

Then, after mixing a batch of Magic Water resin, I poured my stream 3/8" deep and waited 36 hours for it to cure.

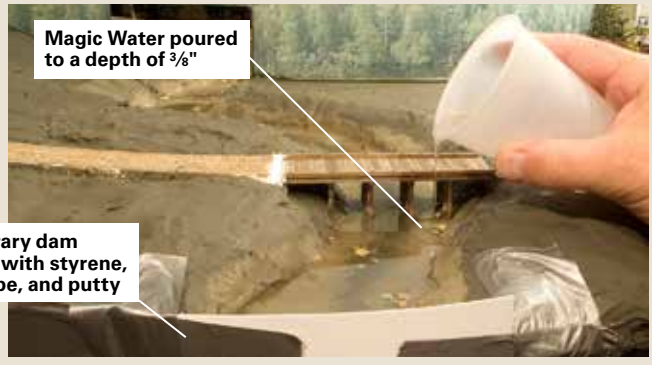




Gerry uses a salt shaker and a dirt blower to add dry dirt over a painted surface.

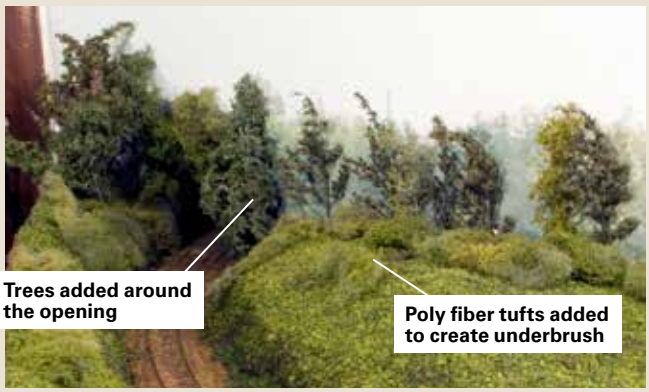
Once the dirt layer had dried, Gerry added a mixture of coarse ground foam over the entire surface.

After sealing the gaps at the fascia and backdrop, Gerry used Magic Water to fill the streambed.



HIDING OUT BEHIND THE BACKDROP

Gerry installed a false hillside behind the backdrop to help disguise the opening.



Even the first layer of trees Gerry planted close to the opening helps mask the track exiting through the backdrop.

Gerry has effectively hidden the opening by adding several tall trees in the foreground.

IN MY BACKWOODS SCENE, I had two elements to disguise along the backdrop. In addition to the mirror I placed at the back of the stream, I also needed to hide a hole used to route the return loop track.

To disguise the hole, I first added a flat behind the opening made to look like a hillside. I built the flat from foam core, and then I painted it brown and covered it with foam ground cover and dirt, just like the rest of the scenery. Over that base I added a few poly-fiber tufts and larger clumps of ground foam, representing woodland underbrush.

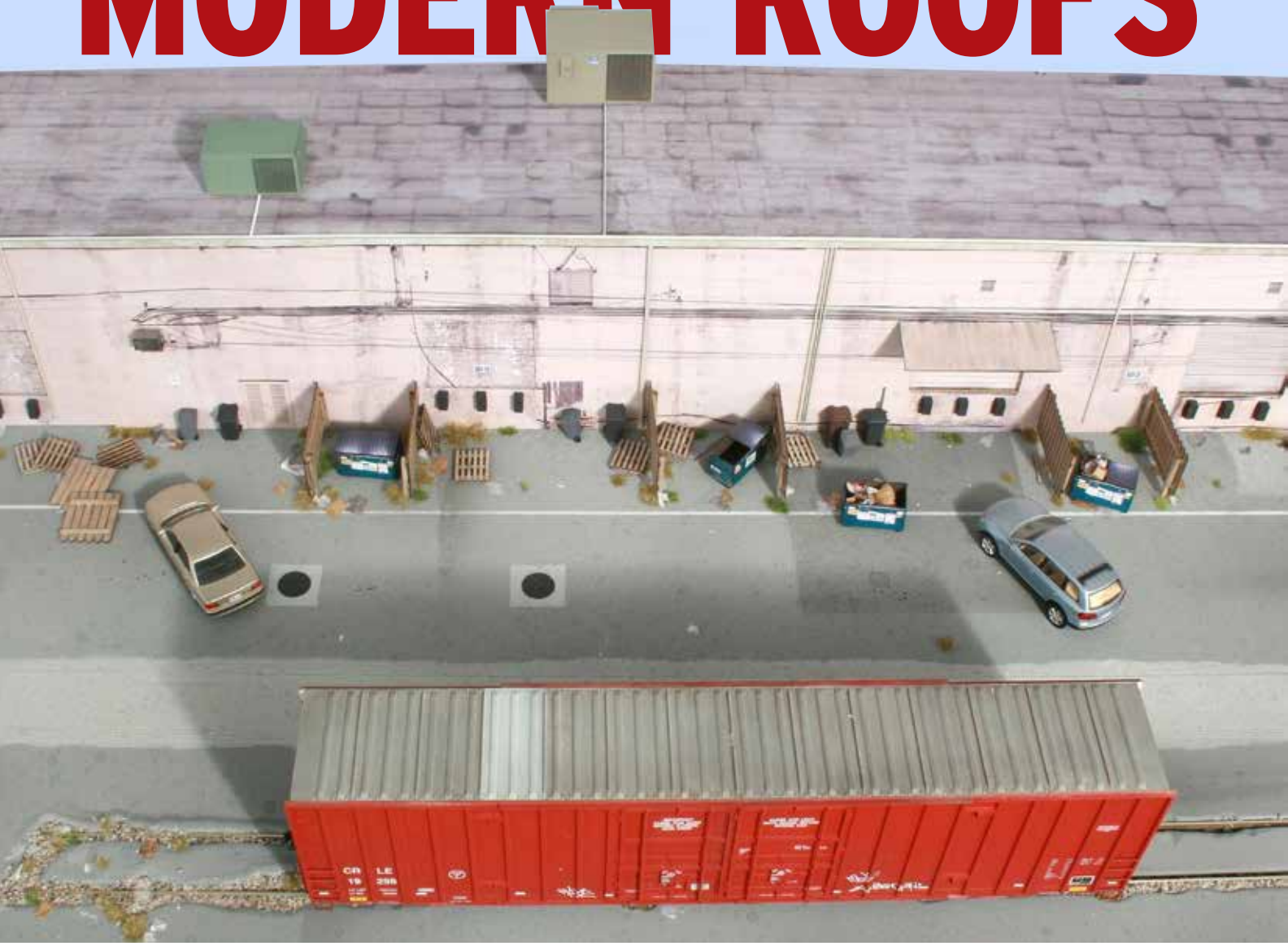
Next, to hide the opening, I added a dense planting of trees around both sides and across the top of the hole. Then I planted tall, view-obstructing trees along the aisle.

To hide the edges of the mirror, and fill in the remaining woodlands, I installed trees made from dried goldenrod sprayed with flat olive green paint. I also used Scenic Express SuperTrees, Woodland Scenics pine tree armatures with Bragdon's Finescale Foliage attached, and Woodland Scenics deciduous tree armatures topped by stretched poly fiber sprinkled with ground foam.

Finally, to disguise the seam where the Magic Water meets the bottom of the mirror, I added several thick layers of Woodland Scenics Water Effects. MR

To disguise the mirror at the end of the stream, Gerry placed trees along each side.

HOW TO MODEL MODERN ROOFS



This overhead view of Lance Mindheim's HO scale layout shows just how prominent the flat rooftop can be.

3 easy techniques for making flat-roof model railroad structures look more realistic

BY LANCE MINDHEIM
PHOTOS BY THE AUTHOR

UNLESS A MODEL RAILROAD is at eye-level or higher, structure roofs are highly visible. Unfortunately, layout builders often forget or dismiss the opportunity they provide to enhance the authentic appearance of a model railroad. But when you add appropriate paint colors, textures, and equipment to the roof of a modern building, layout visitors will be left with the impression that your entire railroad boasts the same level of detail.

Since it's the most popular modeling era, steam-to-diesel transition structure modeling is more frequently addressed in print. However, there are also plenty of products made to enhance the modern HO scale structures I enjoy modeling, such as the building shown above.

In addition to having contemporary products readily available, it's also quite easy to gather information and reference materials on modern structures. You can observe roofs from public parking structures and other raised structures. Research can also be done virtually using satellite views online.

After studying overhead views of several interesting flat-roofed structures, I came up with a variety of techniques for enhancing my rooftops and the mechanical equipment commonly installed on them.

REAL ROOF RESEARCH

The black color and seam pattern suggest that tar paper rolls cover the roof.

WHEN I BEGAN RESEARCHING roof construction, I found that the roofing industry separates them into two categories. A low-slope or flat roof has a pitch of less than 14 degrees, while a steep-slope roof pitch is greater than 14 degrees. Most modern commercial roofs are low-slope, particularly on structures that use rail transportation.

Visually, it's not likely you'll detect more than three basic surface types. The first would be a traditional black asphalt or tar paper surface. Next would be a pale gray material often associated with membranes. Finally, you'll see roofs covered with gray or buff colored pea gravel used as a means of protecting the underlying surface from the elements and the sun's ultraviolet (UV) rays.

Although commercial roofing materials come in a variety of widths, the most common width is 3'-0", and a 4'-0" width is the second most common.

When it comes to modeling a modern flat roof, you can build, paint, and detail the roof surface installed on the structure or as a separate component on a workbench.

One of the most effective methods for giving any modern roof surface a heavily weathered appearance is to apply a wash of 2 teaspoons India ink in 1 pint of isopropyl alcohol (70 percent). Mix a batch of this wash and set it aside for use after you try modeling the three most common roof surfaces.

Judging by the gray color, this is probably a single-ply membrane roof surface.

Gray pea gravel is another common surface treatment for modern flat roofs.

BUILD A MEMBRANE PANEL ROOF

The two structures above feature basic slate gray membrane rooftops, both assembled from .060" sheet styrene.

Lance uses a hobby knife to scribe lines on scale 3-foot centers, a typical width of a membrane panel. He then scribes lines to represent the scale length of a panel between 12 and 20 feet.

To keep the stark white styrene surface from showing through, Lance first paints the roof gray.

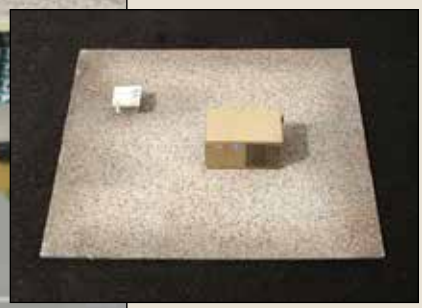
Lance makes long strokes parallel to the seams with a 1"-wide brush to apply a black wash over the surface.

BEGIN BY USING the back of a no. 11 hobby knife blade and a metal straightedge to scribe lines into a molded plastic flat-top roof or a .060" thick sheet of plain styrene. These lines represent the seams of panels measuring a scale 3 or 4 feet wide by 12 to 20 feet long. Use fine-grit sandpaper to lightly sand along the seams and remove any burrs.

Next, select any neutral slate gray spray paint for the roof color. I use Testor's no. 1233 Light Aircraft Gray and Rust-Oleum Light Gray Primer most often. Cover the roof surface with a light coat of paint and allow it to dry. Now, working in the direction of the long seam lines, use a small paintbrush to apply the India ink wash you mixed earlier to the entire roof surface. For stains, I dilute the wash even further and use an eyedropper to add a few random spots on the roof. Once the wash is dry, it will accentuate the seams, tone down any plastic shine, and add subtle and varied weathering effects.

To add a roof patch, use a hobby knife to cut a panel-sized hole into a scrap of cardboard. Place this template over the roof and then use an airbrush to lightly spray Testor's Model Master no. 4887 acrylic Grimy Black paint through the opening.

BUILD A PEA GRAVEL ROOF



Here's a finished example of a typical pea gravel roof modeled using N scale ballast with a mix of light and dark stones.

TO MAKE A ROOF COVERED with pea gravel, start by painting a piece of .060" thick styrene any light gray color. Allow the paint to dry, then use a 1"-wide paintbrush to spread a thin film of full-strength white glue over the entire surface.

For pea gravel, I use Arizona Rock & Mineral Co. no. 138-1 N scale CSX/Southern Pacific/Wabash ballast on my HO scale structures. I prefer the ballast to have a pale gray cast with some mixture of darker and lighter colored stones. Use a broad sweeping motion to lightly pour the ballast over the wet glue on the roof surface.

To seal the ballast, first apply isopropyl alcohol to break the surface tension. This makes it easier for the scenery glue, applied next, to work its way through the granules. I use a fine-mist bottle sprayer to apply the alcohol. Applying the alcohol with a pipette may displace the small stones.

Then I use the fine mist spray bottle to apply diluted matte medium. I like using Scenic Express no. EX0010 diluted matte medium.

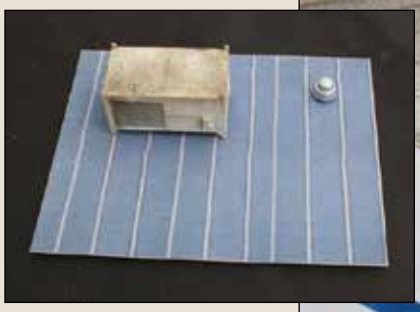
Finally, to break up the uniform look of the pea gravel panel, use an airbrush (not a paintbrush) to add subtle streaks of the India ink wash to the roof surface.

Lance first uses a 1"-wide brush to spread a thin layer of ordinary white glue over the entire rooftop surface.

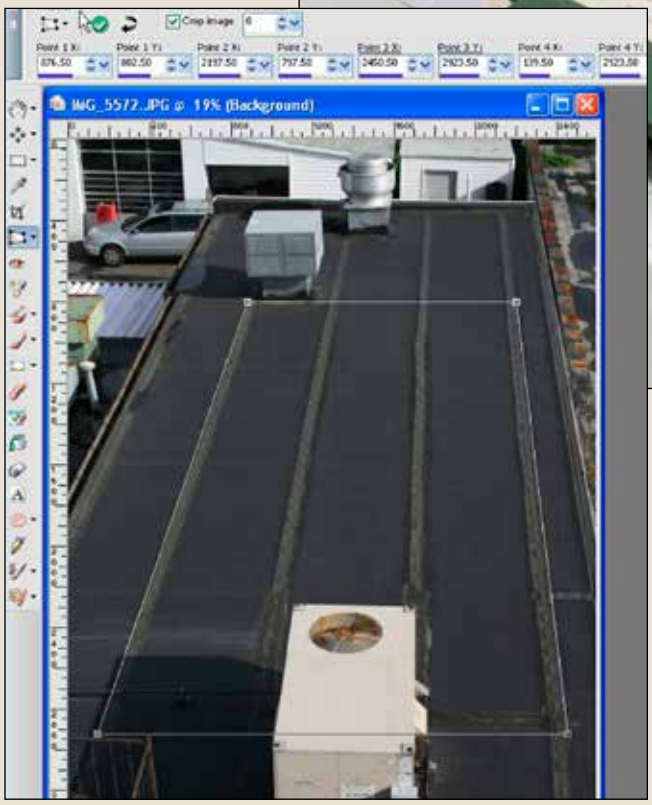
Using a gentle sweeping motion, Lance sprinkles a light layer of N scale ballast onto the wet glue.

To avoid displacing the small stones, Lance uses a fine mist bottle sprayer to apply diluted matte medium to bond the ballast to the rooftop.

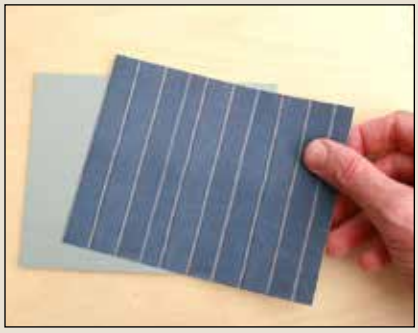
BUILD A TAR PAPER ROOF



A scaled digital print provides an easy way to make an asphalt and tar paper roof.



Lance captures various rooftop images using a digital camera. He then uses photo-editing software to square, crop, and alter the photo.



After processing and sizing a rooftop photo, Lance prints it on matte finish photo paper and cuts it to fit the sheet styrene roof.

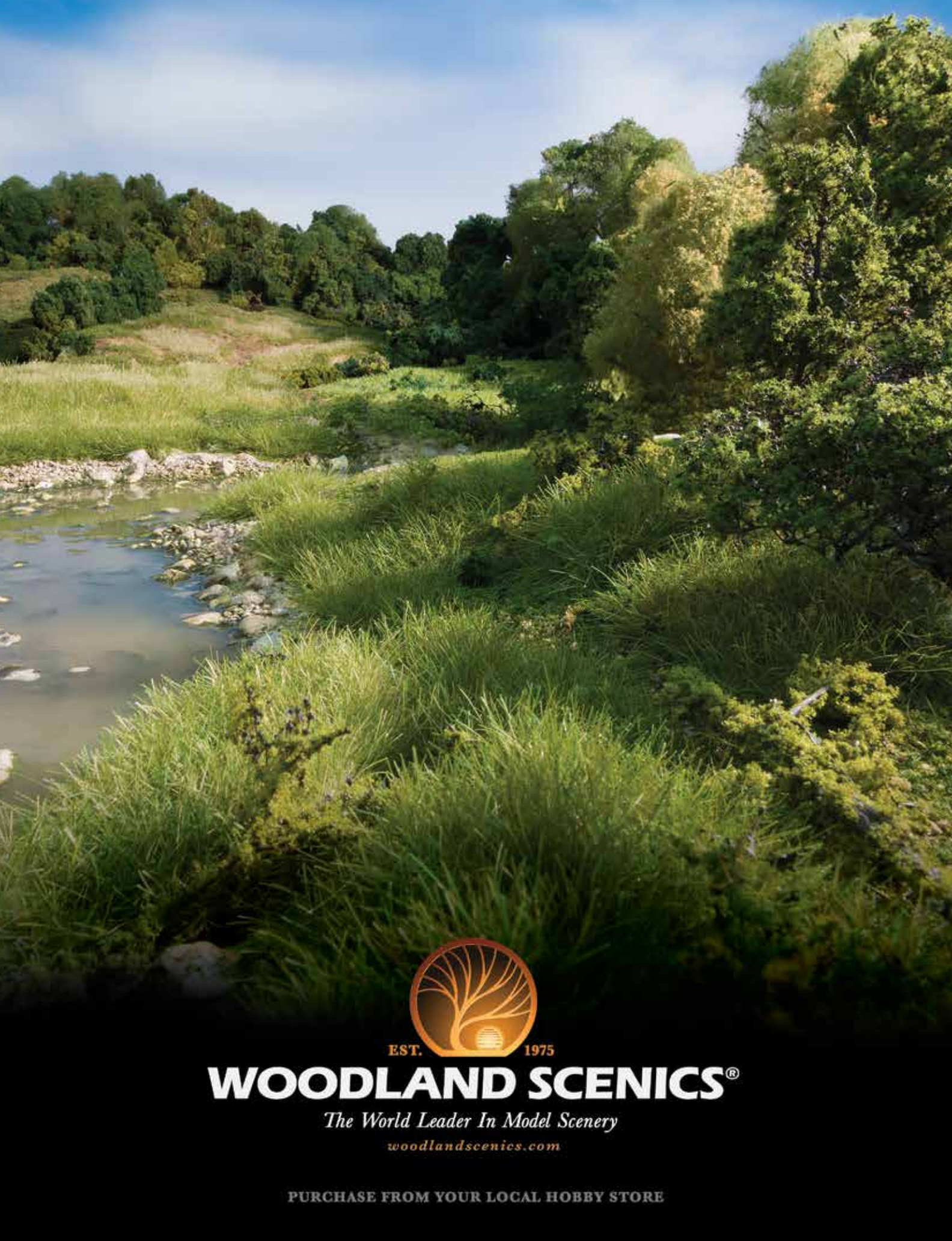
Here Lance uses 3M Super 77 spray adhesive to attach the print to the styrene surface. The rubber roller ensures a secure, even bond.

FOR DARKER ASPHALT OR TAR PAPER ROOFTOPS, you can simply glue a photograph of an actual roof onto a sheet of .060" thick styrene.

To capture an image, drive to the upper deck of a public parking garage and use a digital camera to photograph the roofs of structures below.

Next, use photo-editing software (often supplied with a digital camera) on a computer to square the image and crop any unwanted elements. Print this image on matte finish photo paper and cut it to the size of your roof. Use the typical 3 to 4 foot width of a tar paper roll as your guide for printing the photo to scale.

Finally, cover the workspace with craft paper and then place the printed photo face down. Use 3M Super 77 spray adhesive to cover the back of the photo before pressing the styrene roof squarely into place. The photo doesn't have to be a work of art, since roofs themselves are rather ragged affairs. MR



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