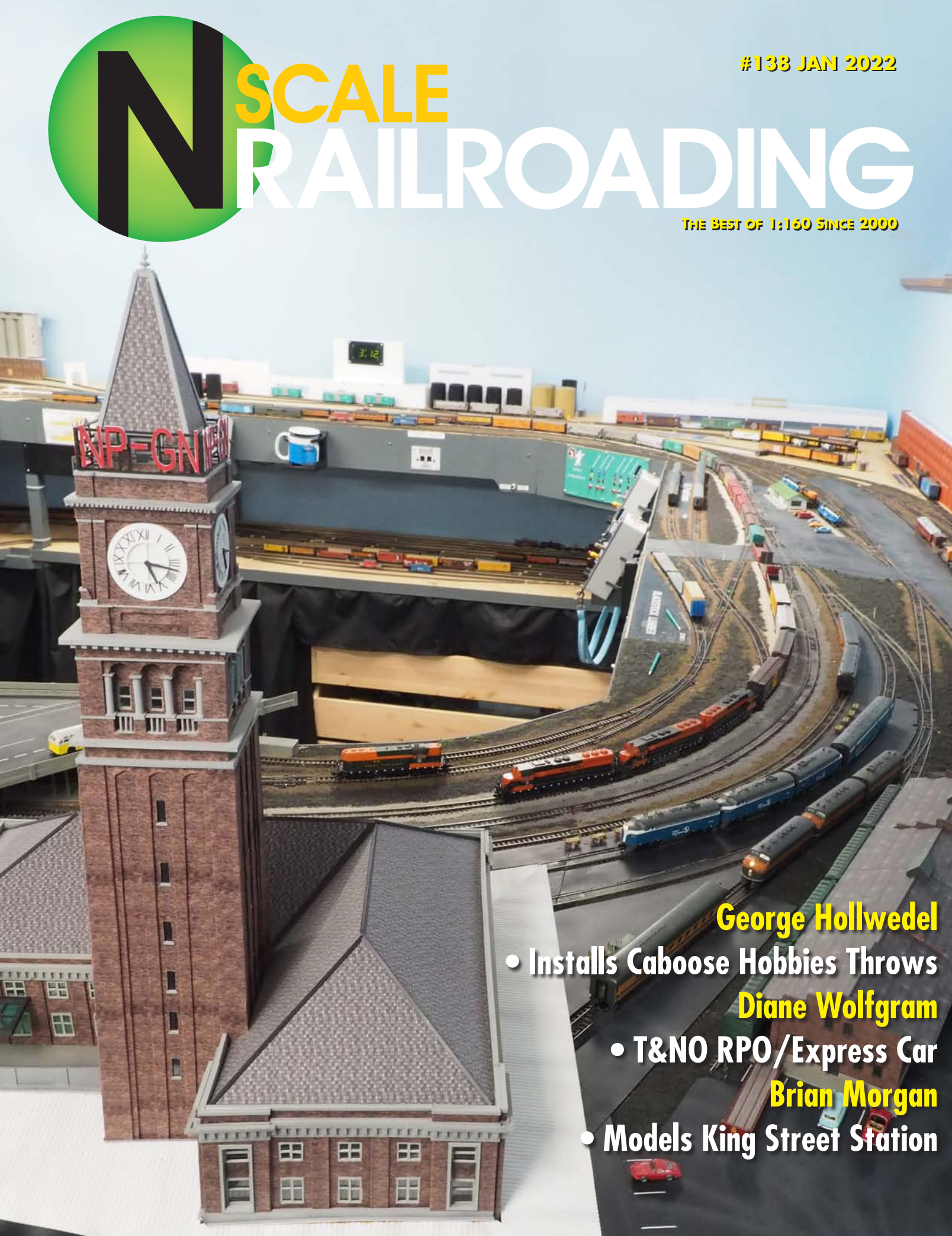
#138 JAN 2022

N SCALE RAILROADING

THE BEST OF 1:160 SINCE 2000



George Hollwedel
• Installs Caboose Hobbies Throws
Diane Wolfgram
• T&NO RPO/Express Car
Brian Morgan
• Models King Street Station

WELCOME!

This issue's cover features an aerial view of the Southwest side of King Street Station. To the right is the REA Express building which was also made with a Cricket Maker and Clever Models textures. Photos and models by Brian Morgan shot on his Great Northern Seattle Terminal layout.

AD INDEX

Welcome to ***N Scale Railroading*** #138, the January, 2022 issue.

Page 04. **New Products.**

Page 06. **George Hollwedel** shares how he installs Caboose Industries ground throws to power his new #8 Atlas C80 turnouts to show route thrown.

Page 25. **Diane Wolfgram** is working on her T&NO Sunbeam and Hustler consists. This issue she shows how she made the heavyweight T&NO RPO/Express .

Page 28. **Brian Morgan** has been one of my favorite pioneers with operations, researching the prototype, and now he shows how he built his model of Seattle's King Street Station using Circuit Maker. It is still a lot of work but this system takes some of the tedium from the precision cutting.

Page 55. **NCalendar** and **NSR Contributor News.**

There has been some concern among fans of the QuadLN_S decoders that they will no longer be available. N3IX Engineering has picked up the line. See their ad on page 55. ◗

N SCALE RAILROADING
JAN
2022
ISSUE 138

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** ESU LokSound Versions are also available by special order - contact your preferred hobby retailer for details and to reserve yours today!*

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N SCALE RAILROADING
NEW PRODUCTS

Oh the sight of one's favorite F units in one's favorite freight scheme! Milwaukee Road 80A and 80B are Kato 106-0429. Another AB set makes for a nice ABBA set. The 80 ABCD was one of the last Milwaukee locomotives in this scheme before switching to the orange, black, and maroon scheme.

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INSTALLING POWER ROUTING CABOOSE INDUSTRIES GROUND THROWS

By George Hollwedel/ Images by author

Image 00. A crossover between Tehachapi and Monolith on the author's Southern Pacific layout. with Caboose Hobbies throws. The throws are oversized but are often the preferred method on operations oriented layouts. The new Atlas #8 Custom Line turnouts are wonderful.

Atlas introduced a number eight code 80 switch to their track lineup recently and I decided that I "needed" some on my layout. I thought they would be terrific for crossovers. Almost all my visible turnouts are controlled by Caboose Industries ground throws. The number eight code 80 switches have a "dead" frog with an external lug for power. I knew I would have to use the 224S power routing version of the ground throw. The packaging says "Code 55" but they work just fine for the code 80 switches. I would like to share with you my technique for this installation.

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Image 01. Here is a pre-ballasted turnout (see NSRR Issue 117 Jan/Feb 2020) and a ground throw ready for installation. I prefer to lay my turnouts on 1/8" basswood.

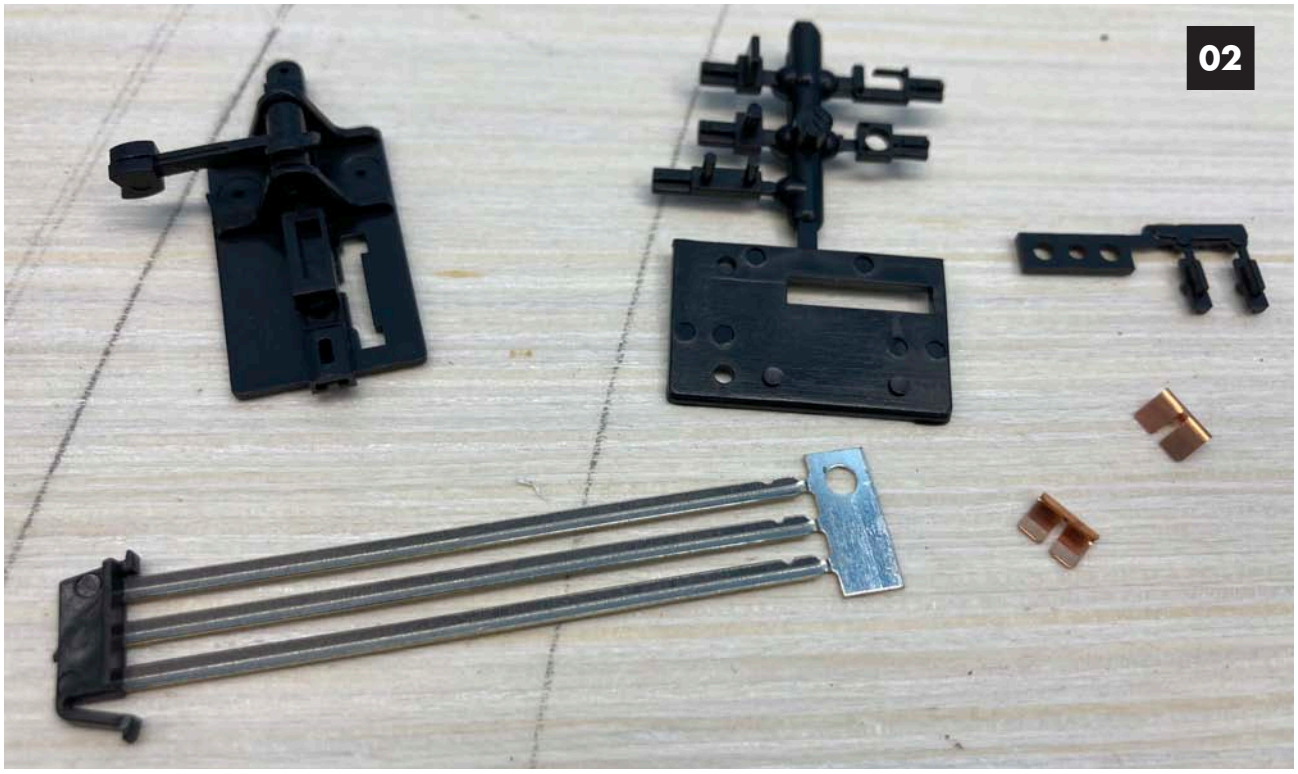

Image 02. These are all the goodies in the Caboose Industries package, many of which are not needed.

LOOK AT THOSE BUSES!

CLICK HERE

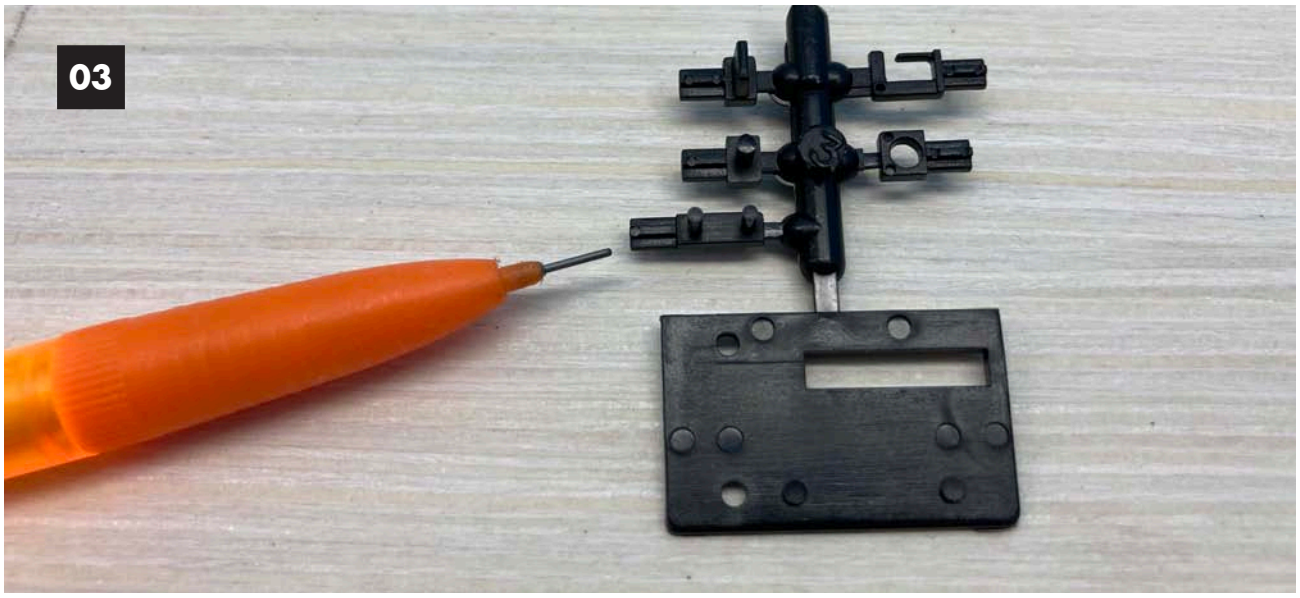

Image 03. This throw attachment is the one needed for this installation. Everything else on this sprue is not needed. The spacer could be used, but I prefer to use the ground throw as is.

Image 04. Here is the ground throw with the proper link added.

Image 05. : I use the inner peg and cut it about in half for this use. If the spacer is used the link peg could be left full length. If there is a need to mount the ground throw further back from the turnout the outer peg would be used.

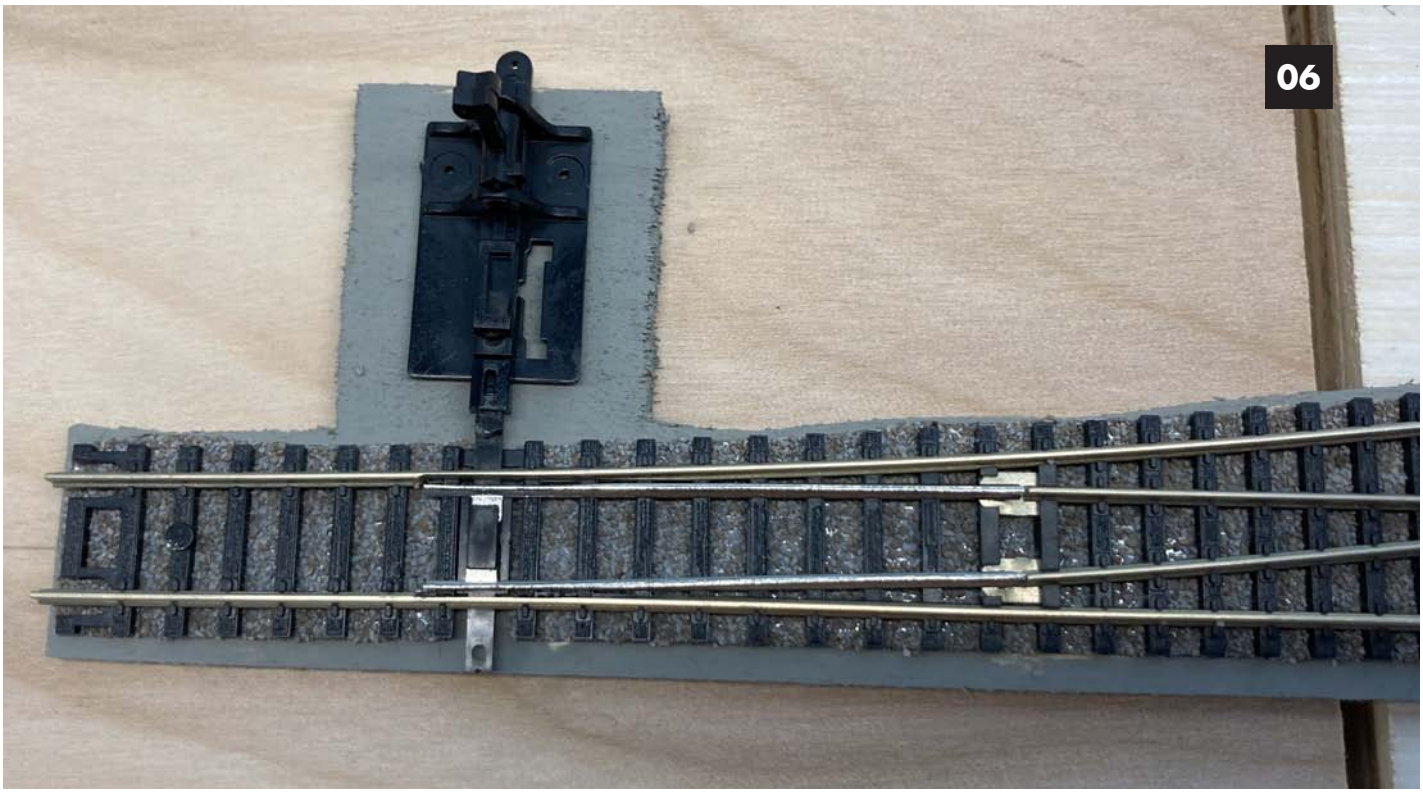

Image 06. The ground throw is placed in position with the switch points centered and the throw in a vertical position to line things up.

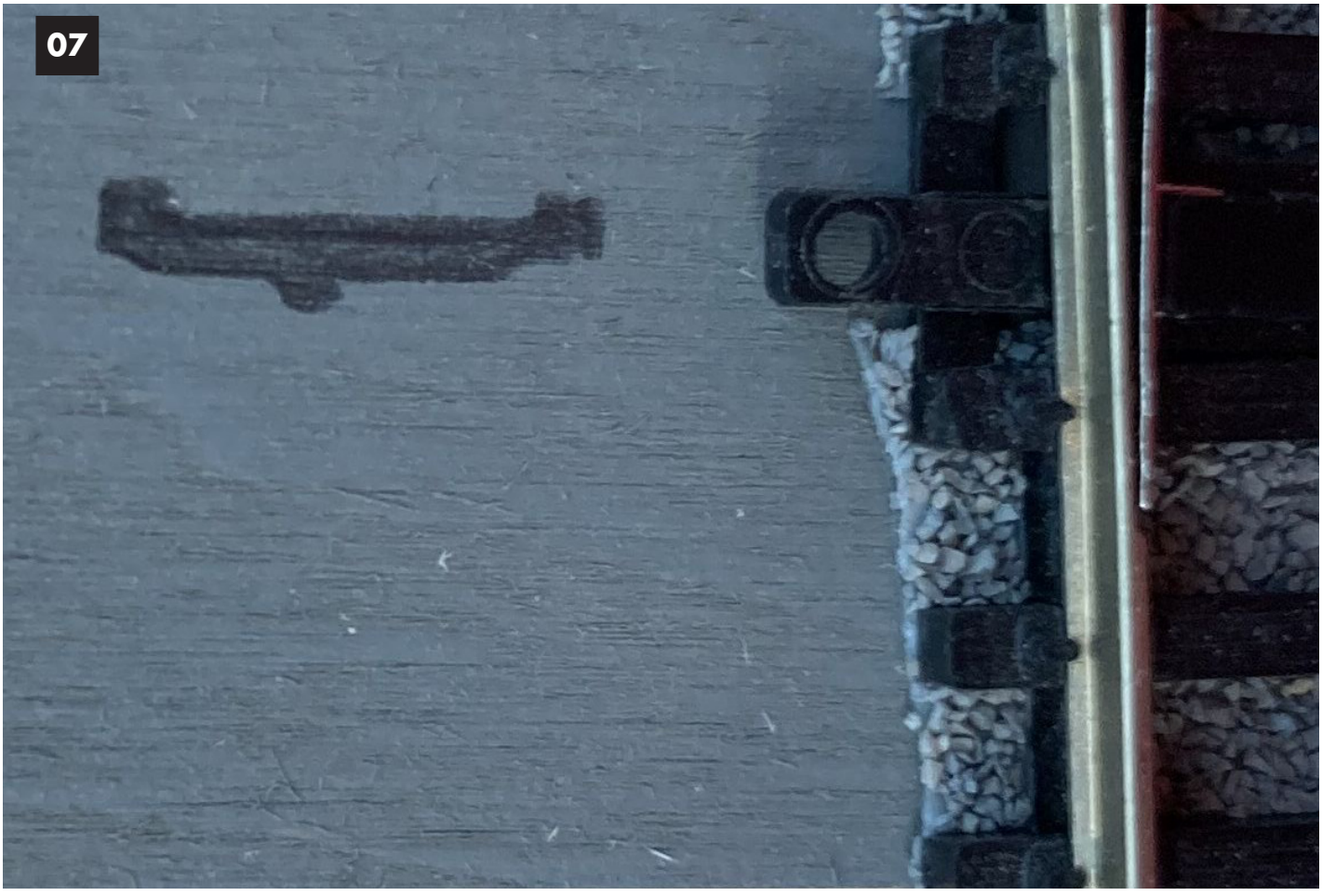

Image 07. This shows the outline made of the slot in the base of the ground throw. This area must be removed all the way through the turnout block and the benchwork in order to install the wiring connector.

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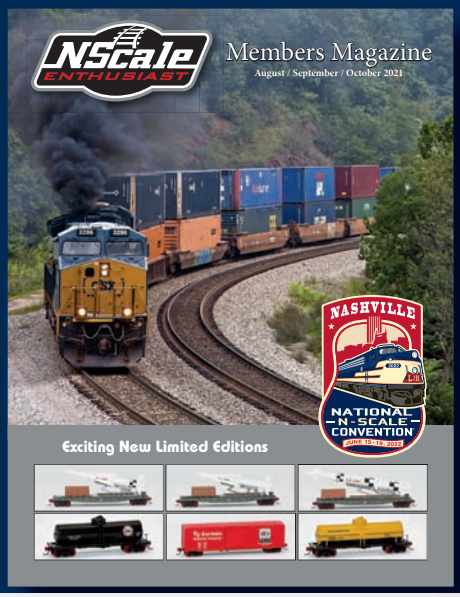

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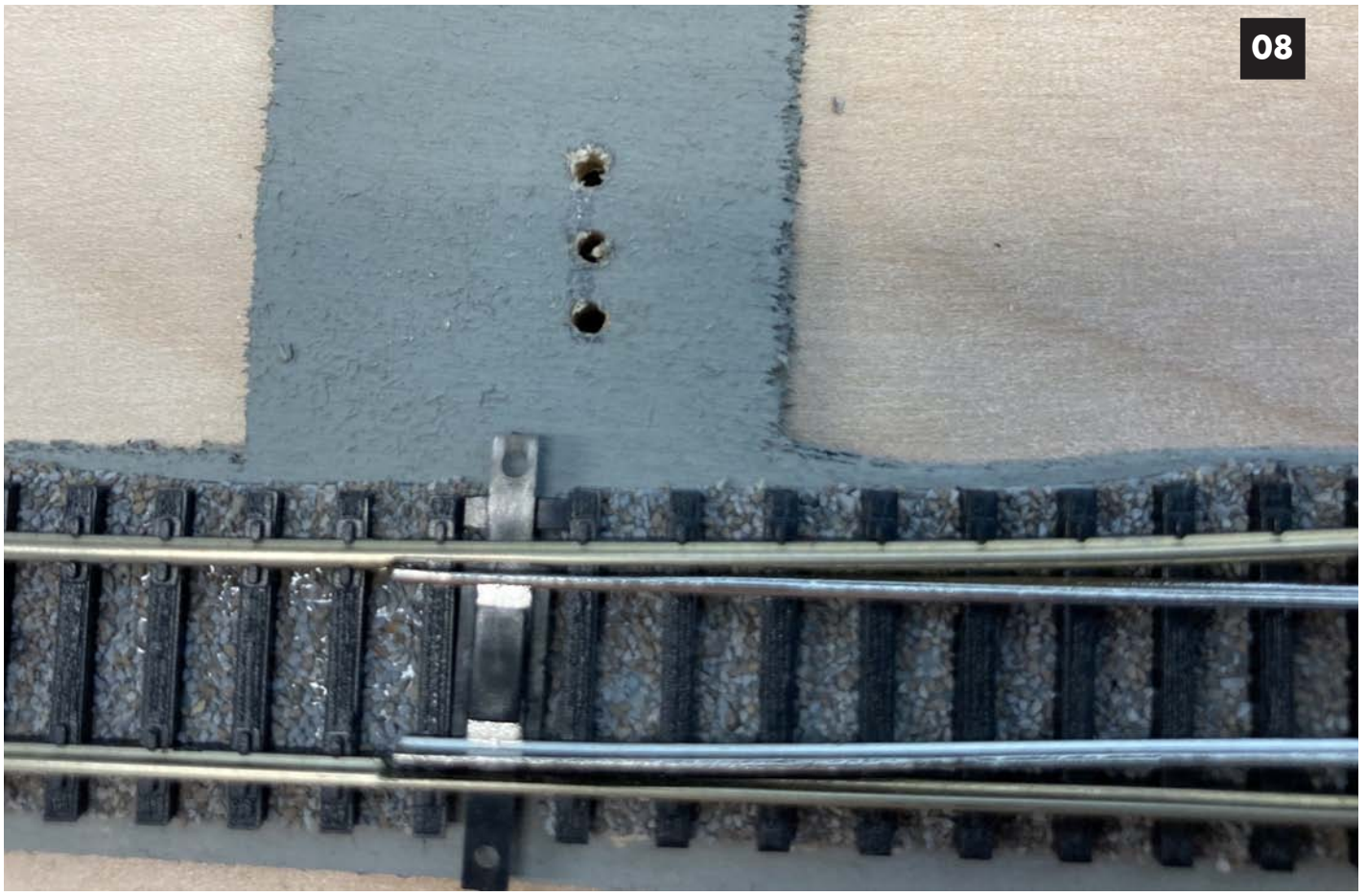


Image 08. Three holes are drilled. I use a #51 drill.

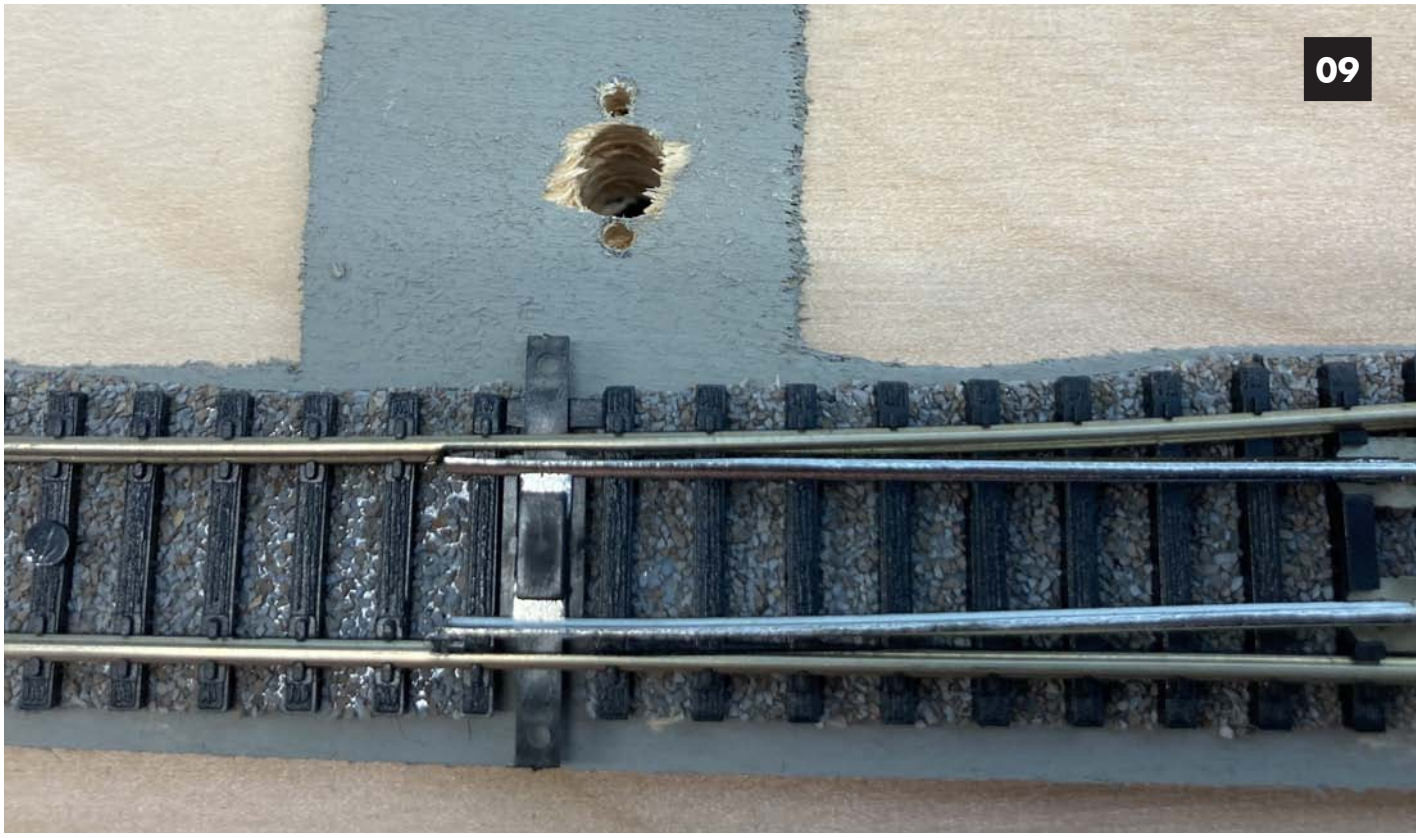


Image 09. Next a larger center hole is drilled. I use a 7/32" drill.

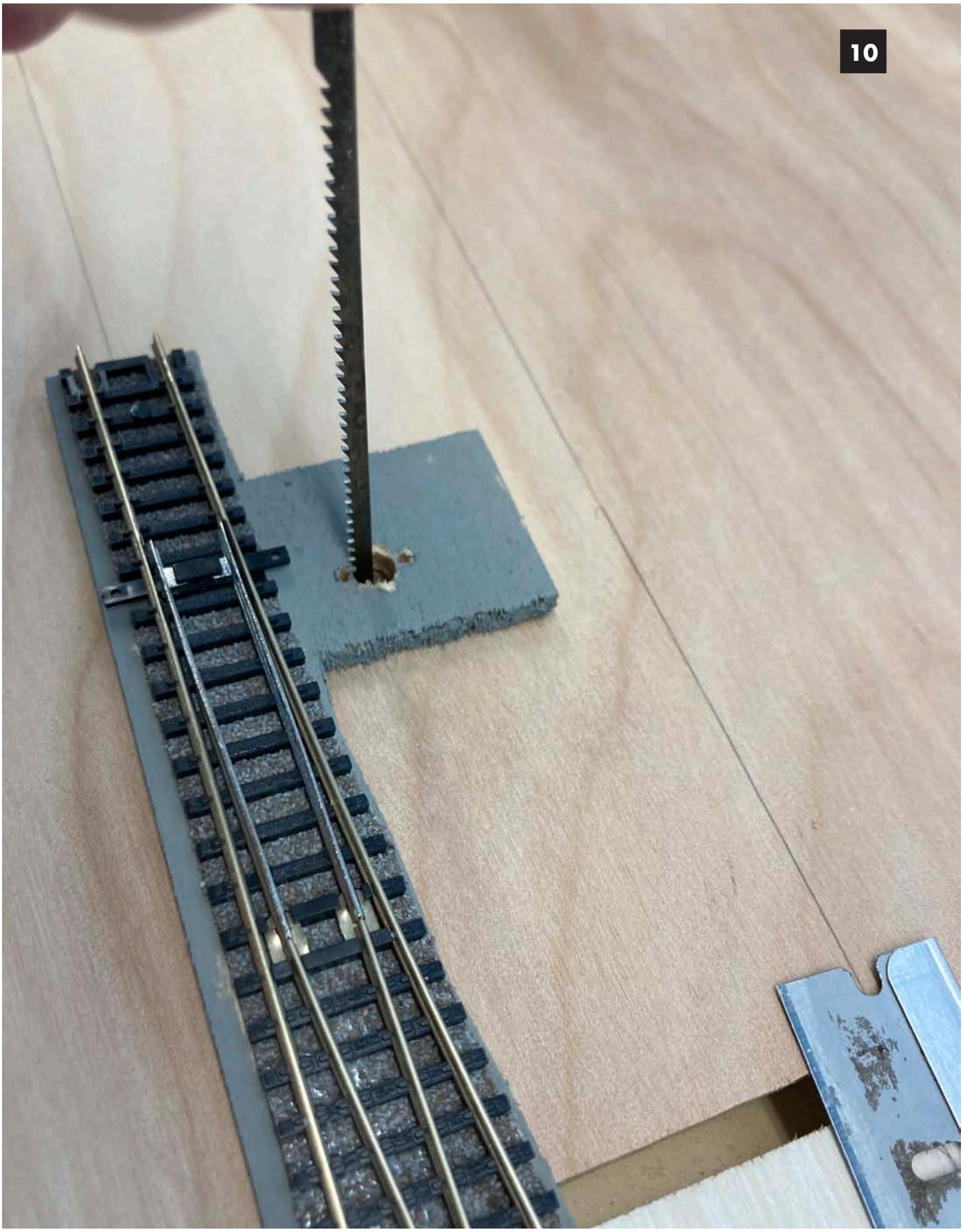


Image 10. I use a naked coping saw blade to carefully enlarge the hole into a slot for the wiring connector. This is truly easier than it looks and sounds. My benchwork here is ½" Baltic birch plywood, if it were a thicker base, it would be a little more tedious.

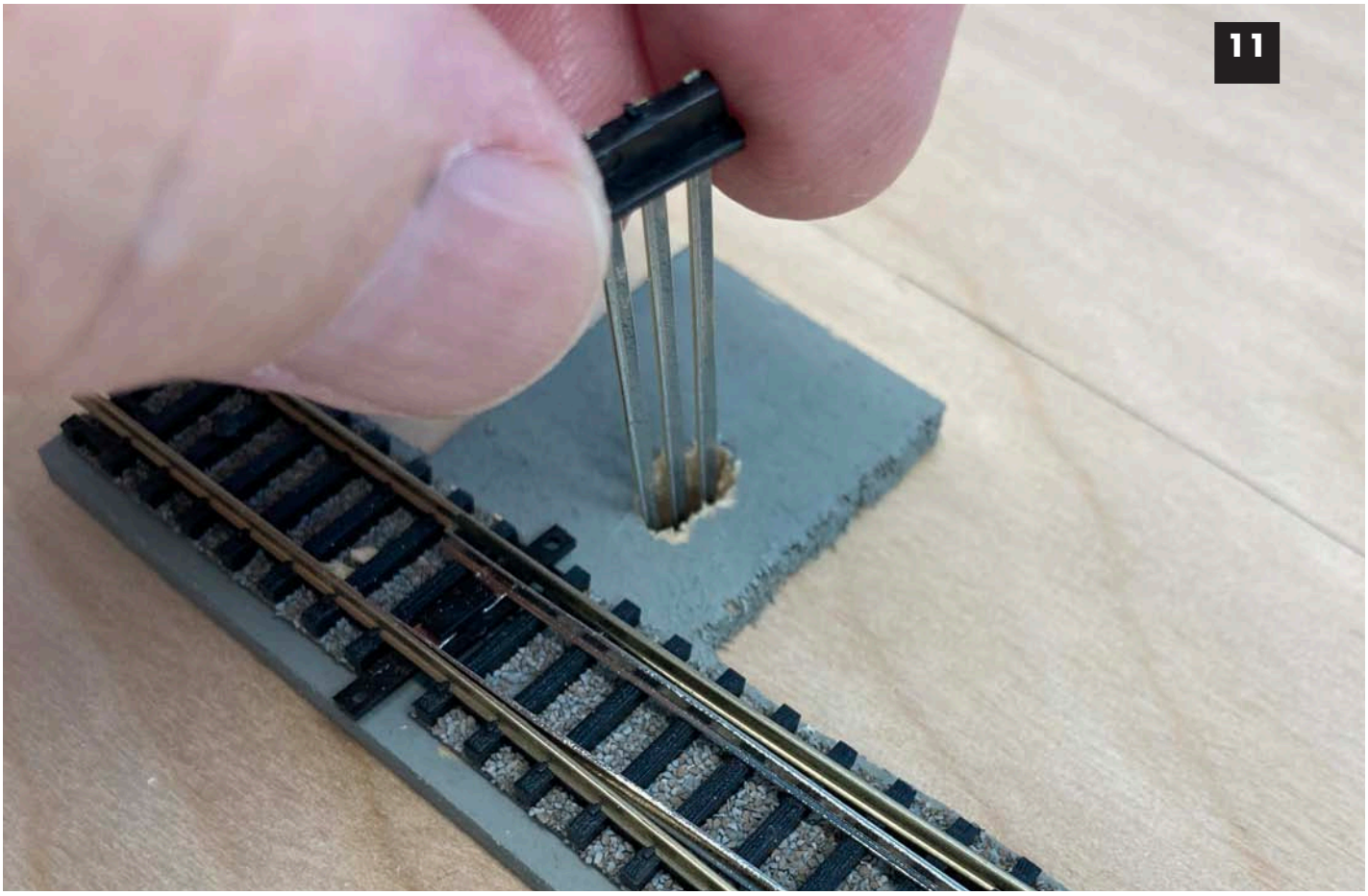


Image 11. Test fit the wiring connector and keep sawing until it fits.

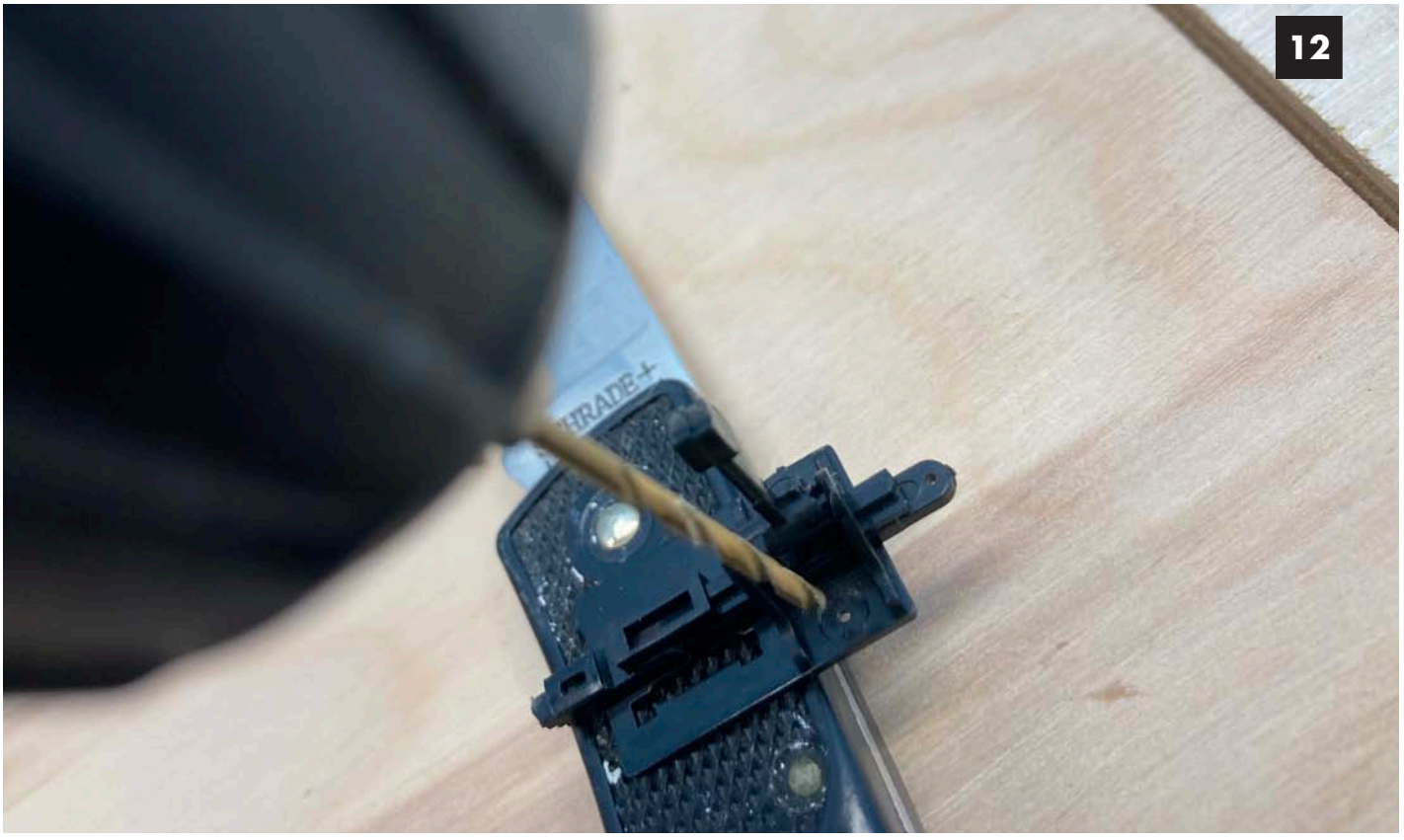


Image 12. I use #2 5/8" wood screws to secure the ground throw in place. The holes in the ground throw need to be enlarged for these screws to fit. I again use the #51 drill for this job.

Image 13. This shows the before and after of the mounting holes.

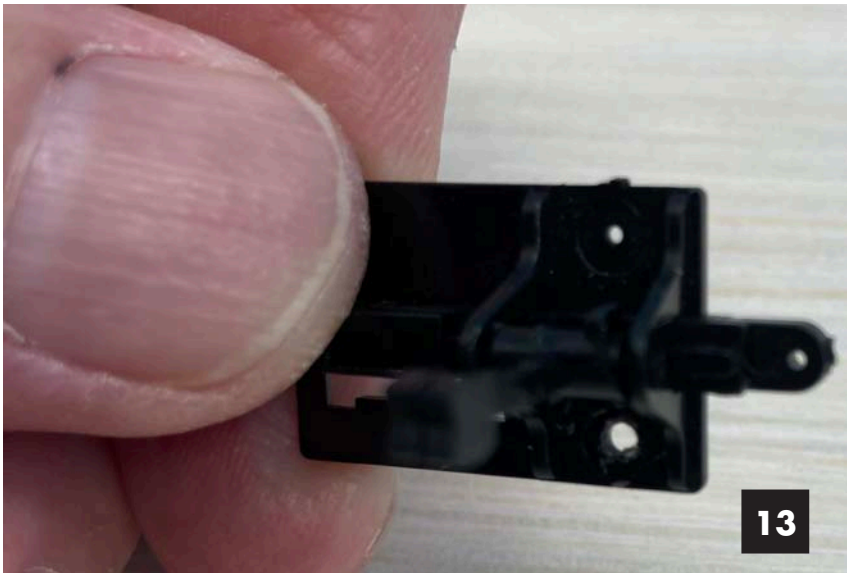


Image 14. Position the ground throw the same way as in Image 6 and drill the screw hole through the switch block and the benchwork. I drill one hole, insert the first screw most of the way and then fine tune the alignment. Then I drill the second hole and insert the second screw.

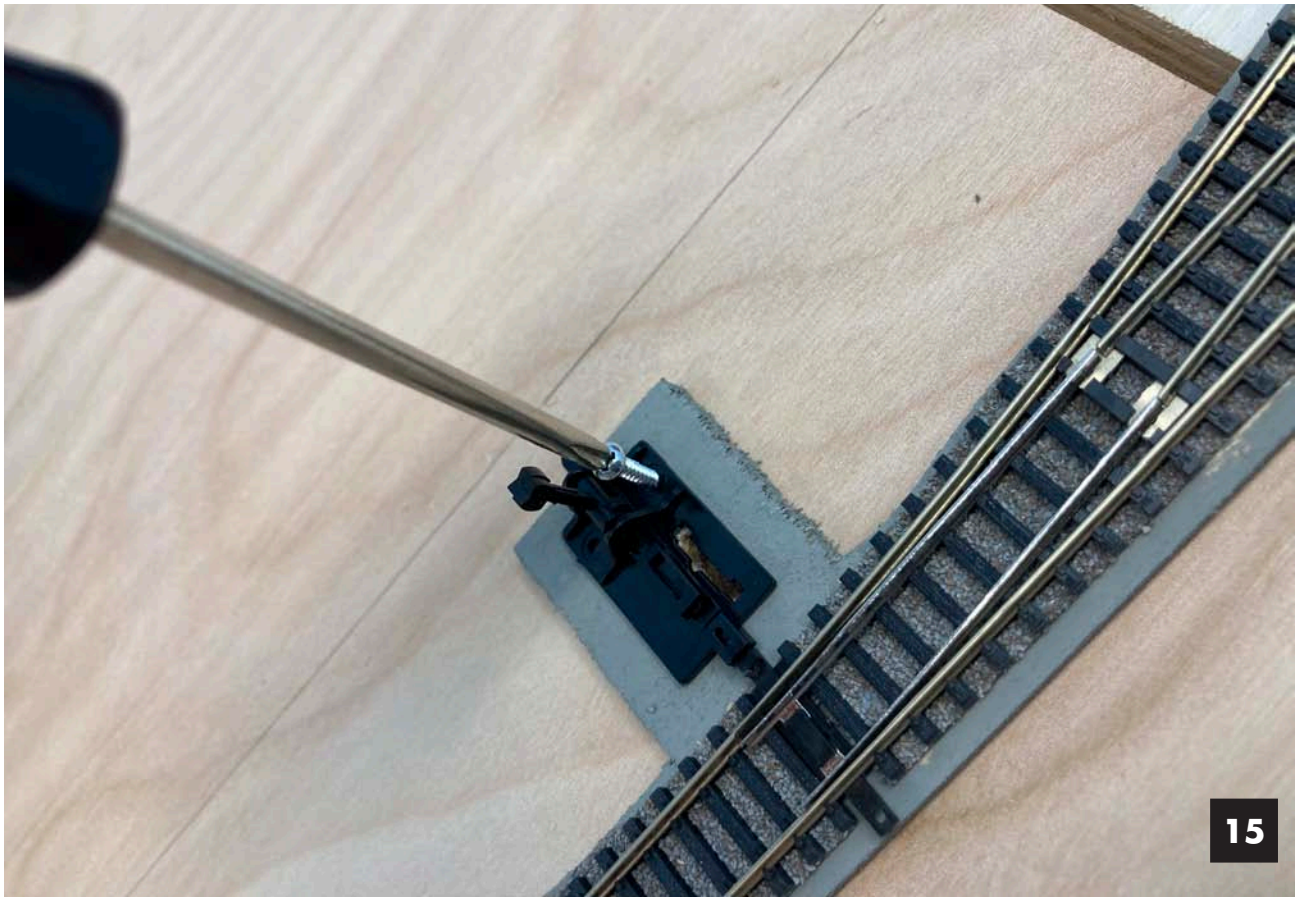


Image 15. Carefully install the mounting screws.

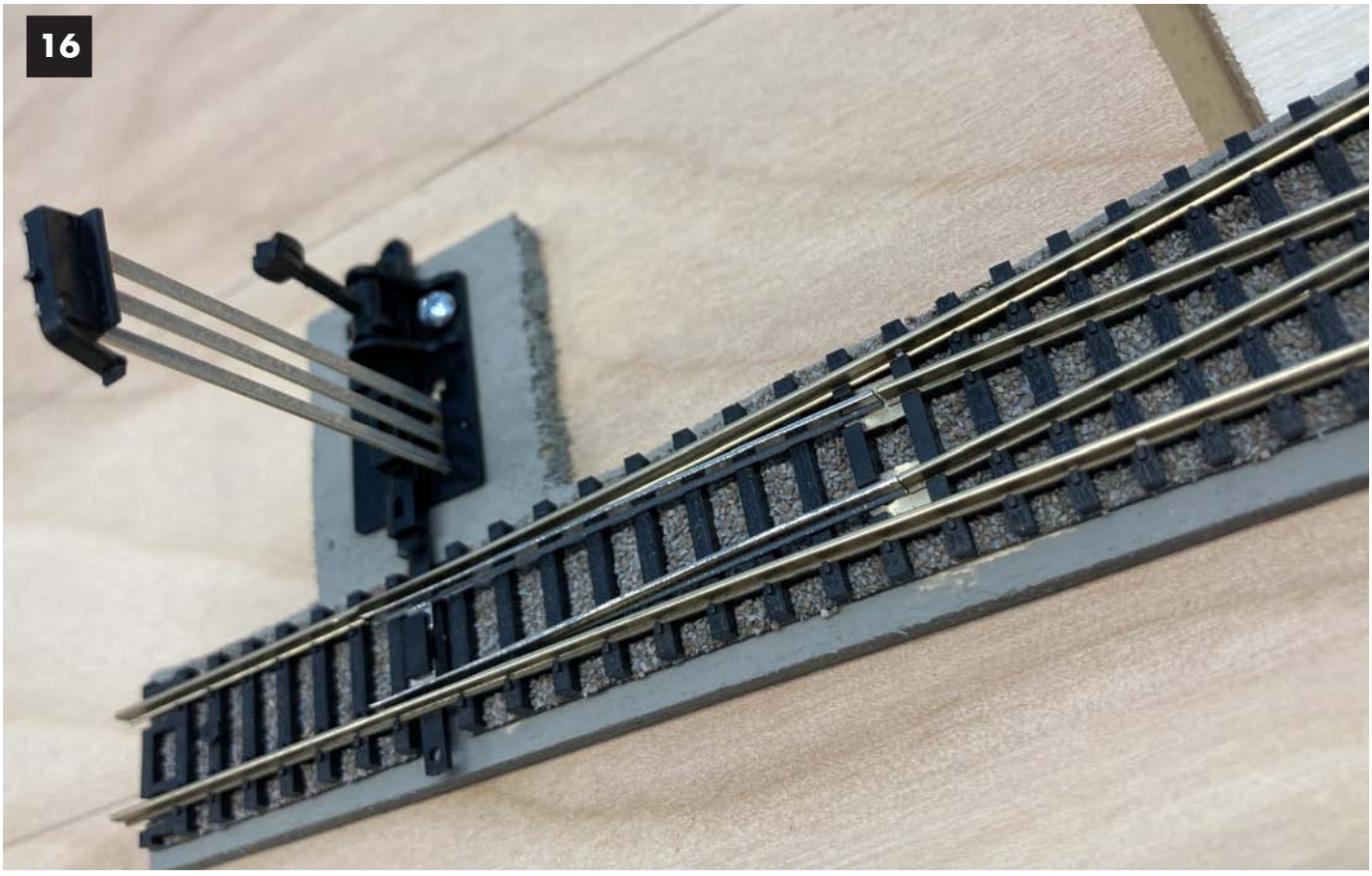


Image 16. Insert the wiring connector.

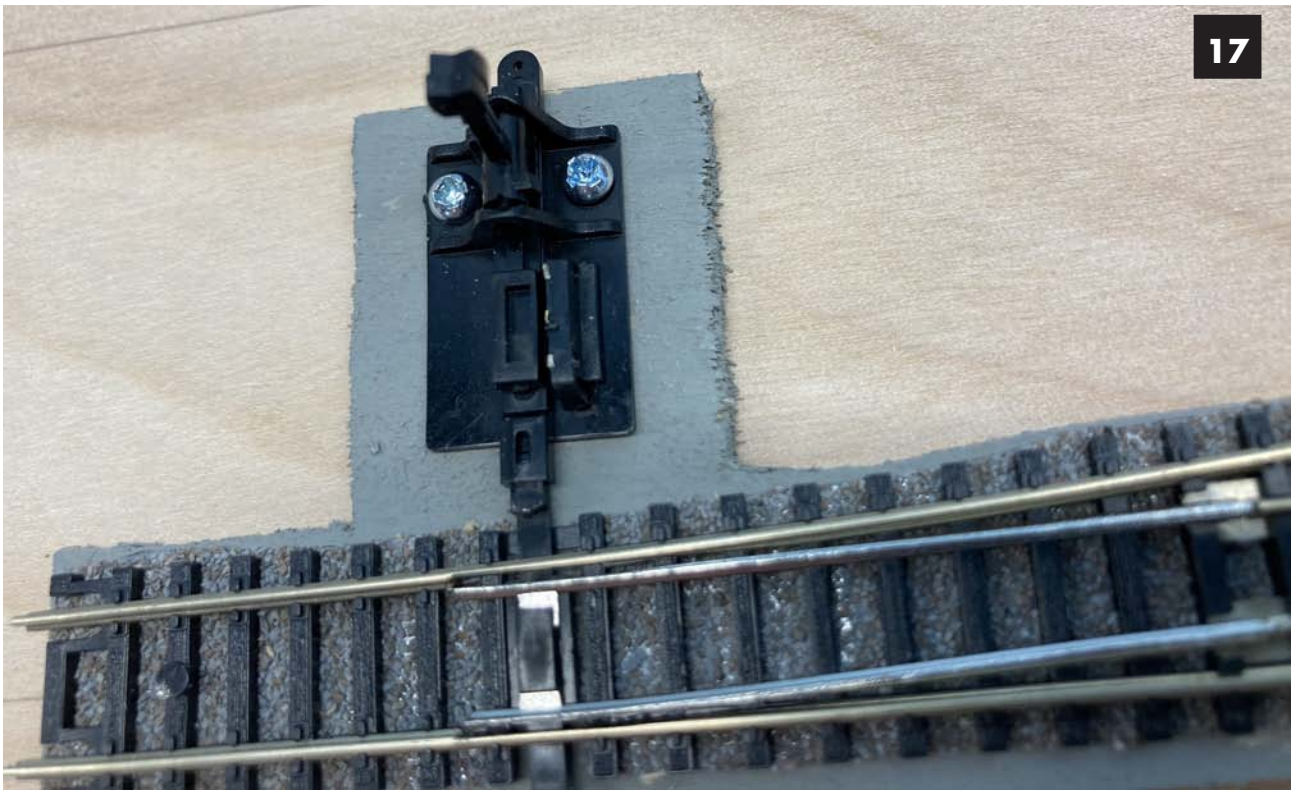


Image 17. After the wiring connector is snapped in place, the tops of the three metal strips are visible.

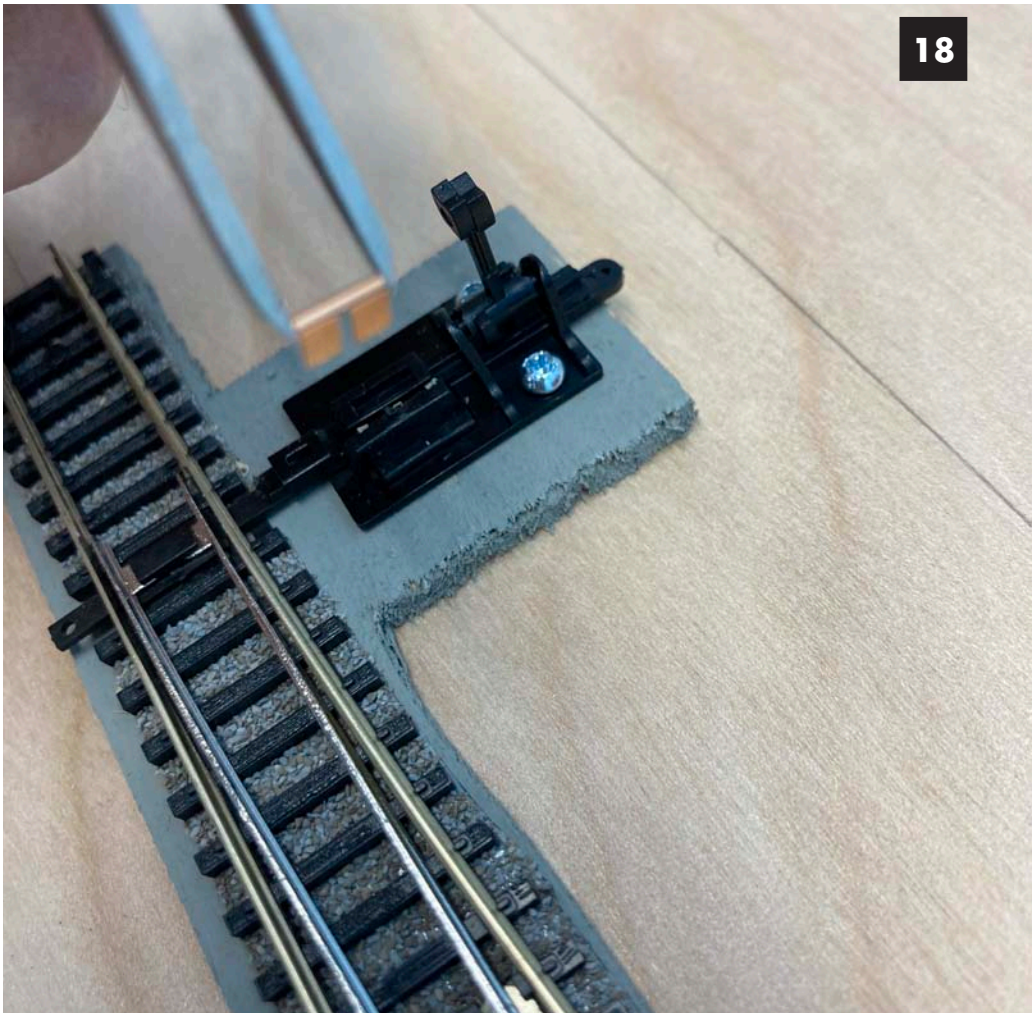


Image 18. Install the copper contact strip. The slot side goes towards the wiring connector.

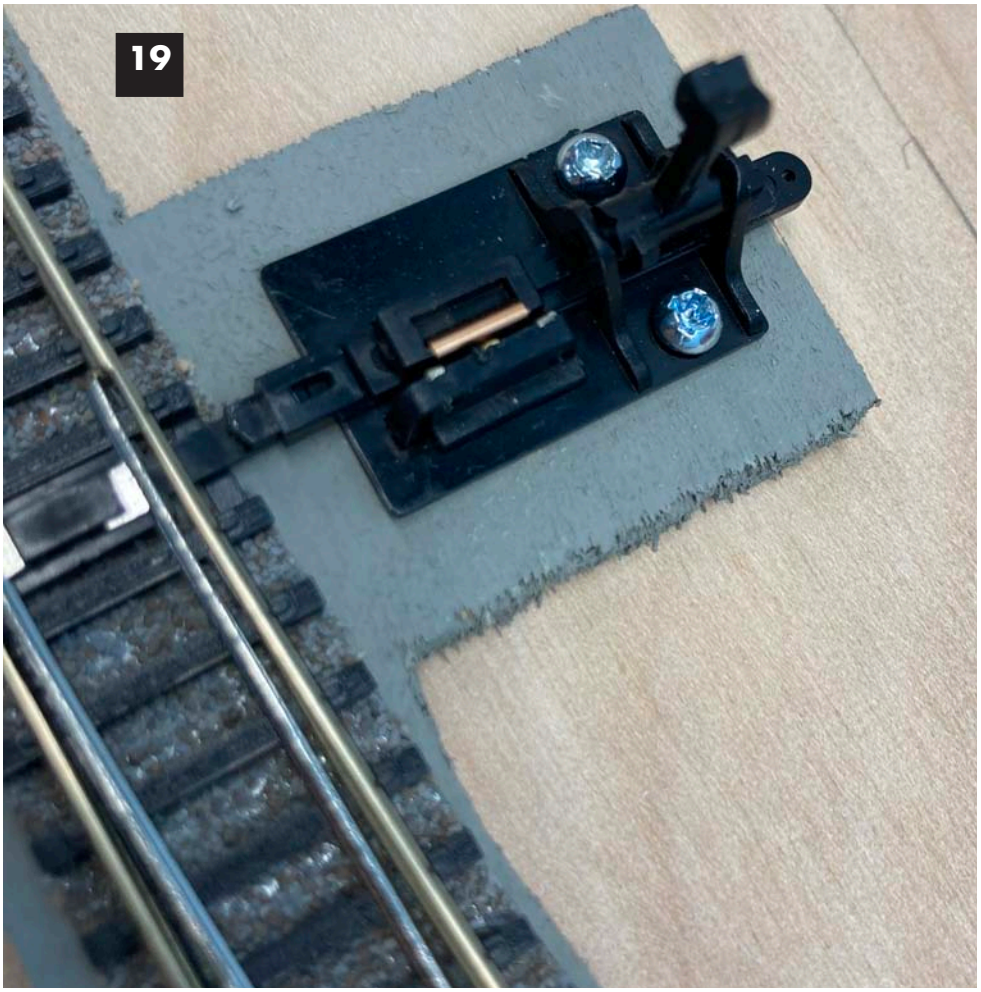


Image 19. This is how it looks with the copper contact strip in place.

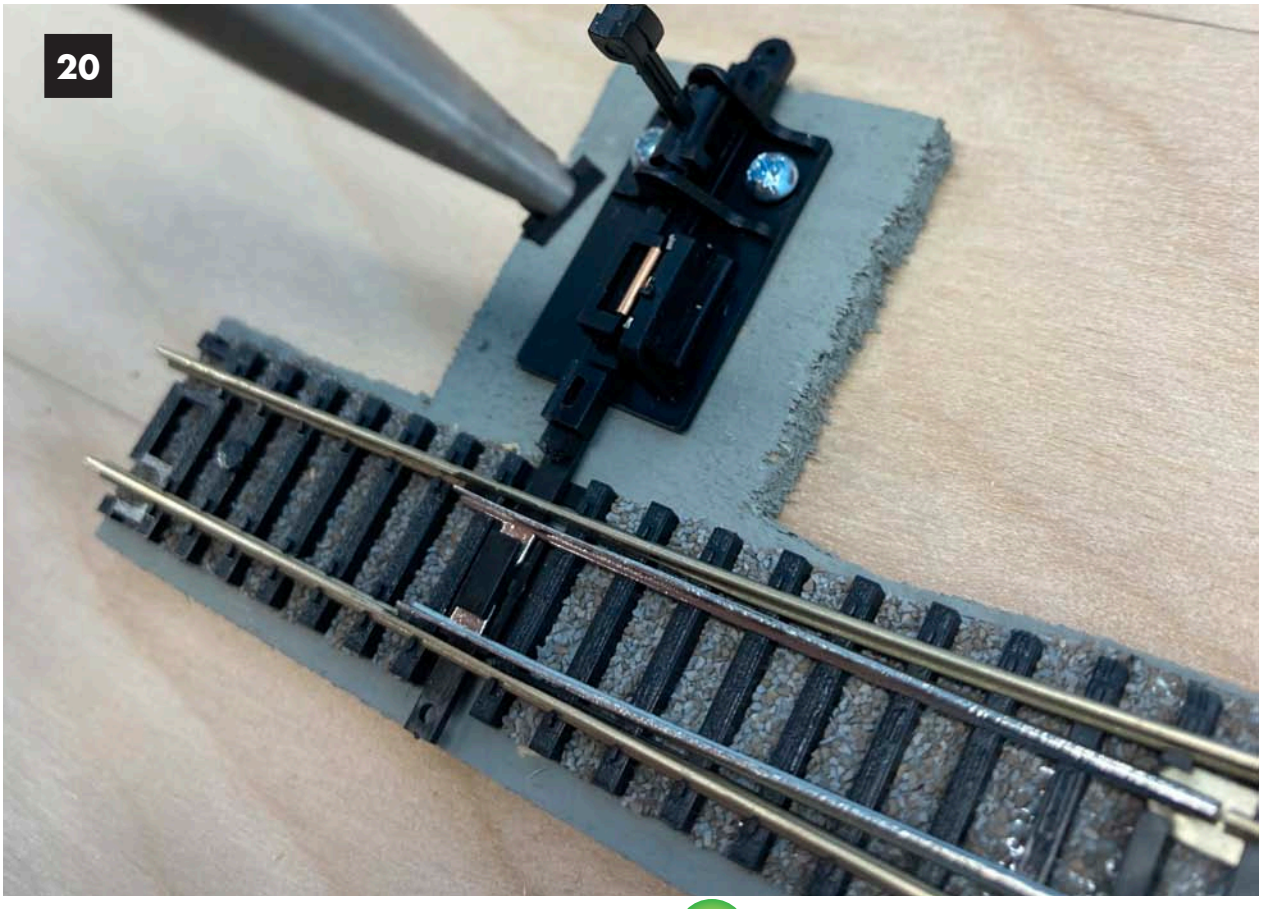


Image 20. The copper contact strip is held in place by a plastic cap, the flat side goes against the copper contact strip.

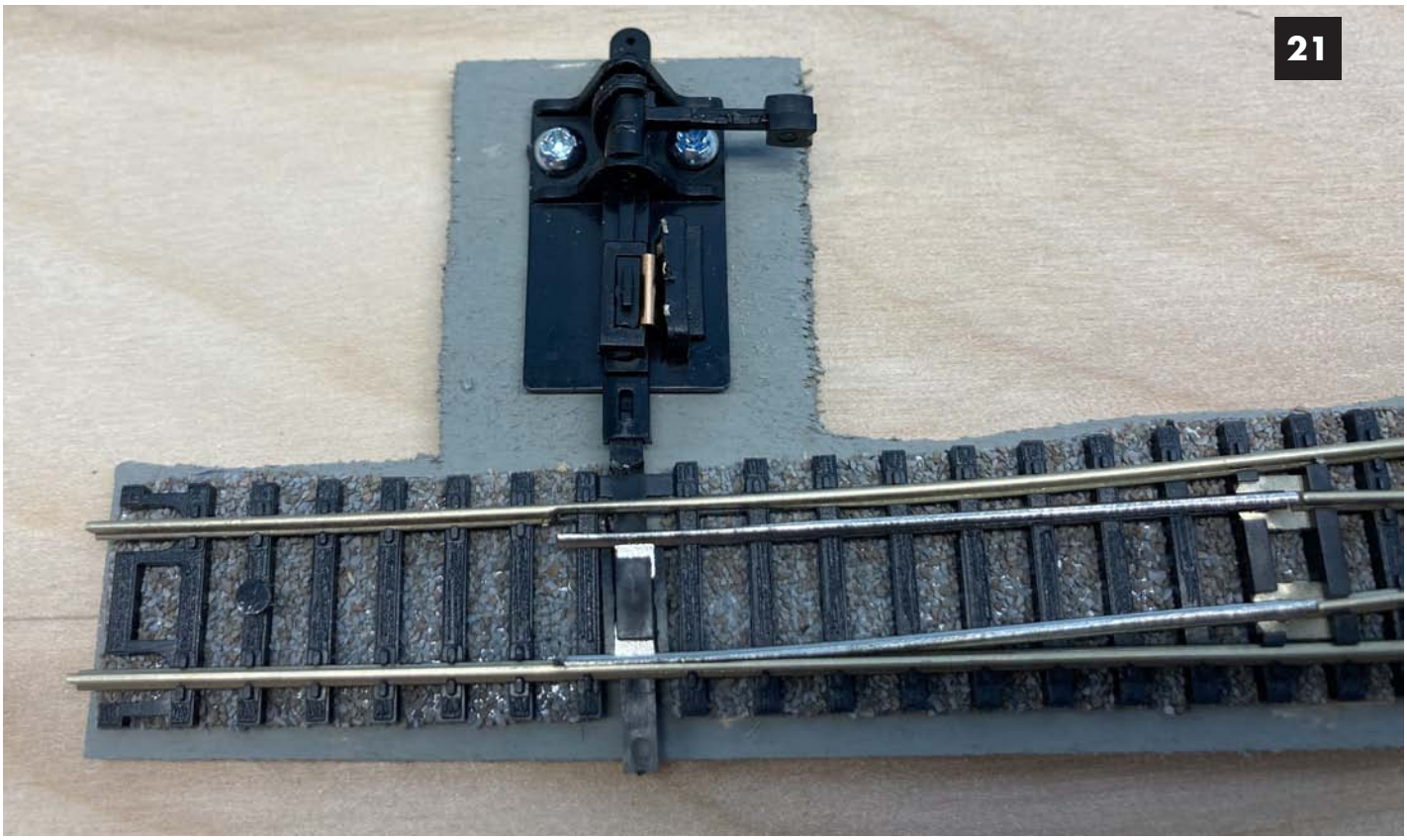


Image 21. Everything is in place and the unit is ready for wiring. Notice how the copper contact is only touching two of the three wiring connectors. The center post is for the frog and the two outer ones feed the correct polarity when the copper contact strip moves into place.

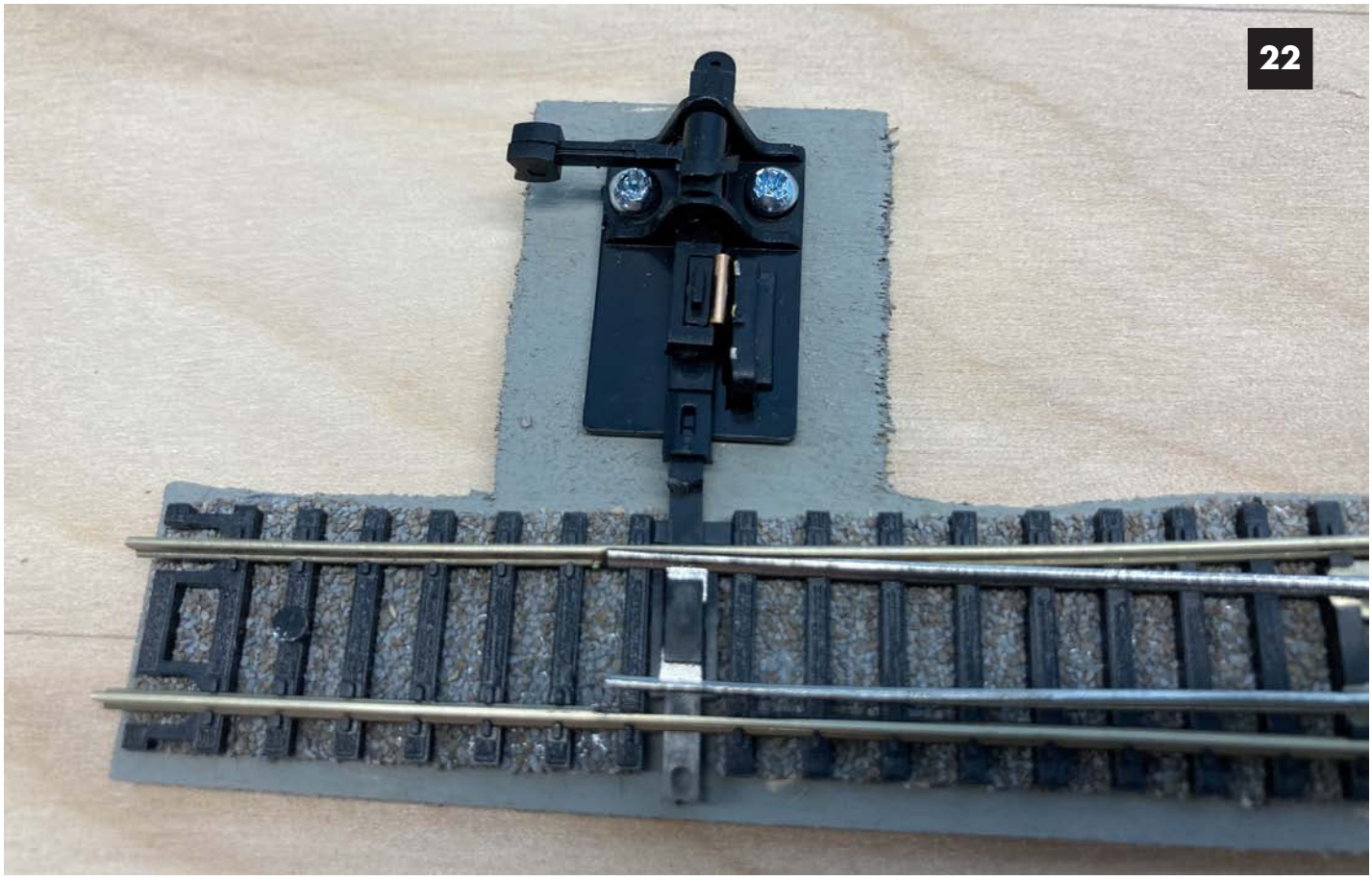


Image 22. The contact strip moves with the ground throw mechanism to correctly line up the correct polarity.

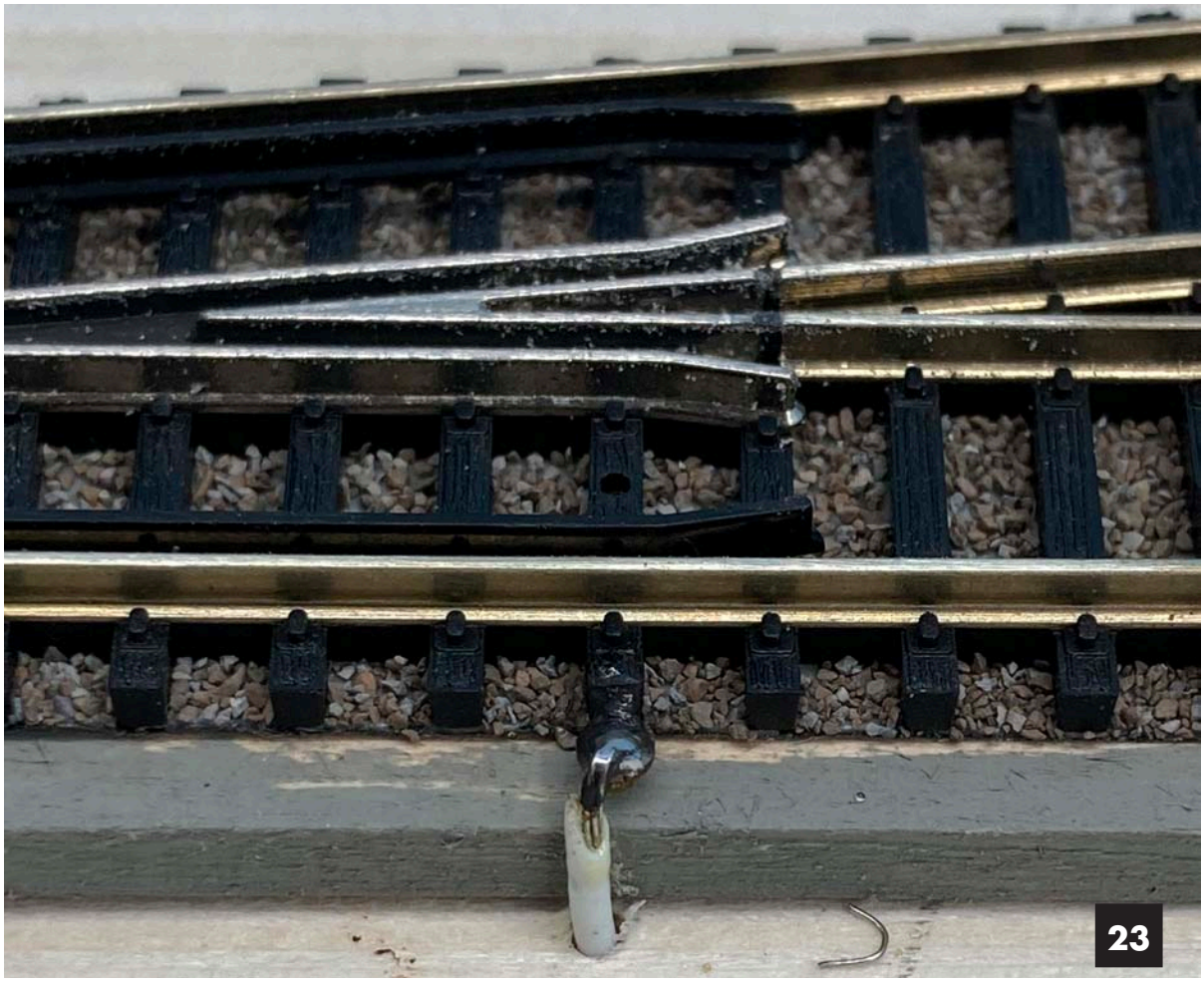


Image 23. Solder a wire to the frog lug.

Image 24. Underneath the benchwork to see that the three-hole spacer is placed on the wiring connector.

Image 25. The wire from the lug for the frog is soldered to the middle post of the wiring connector.

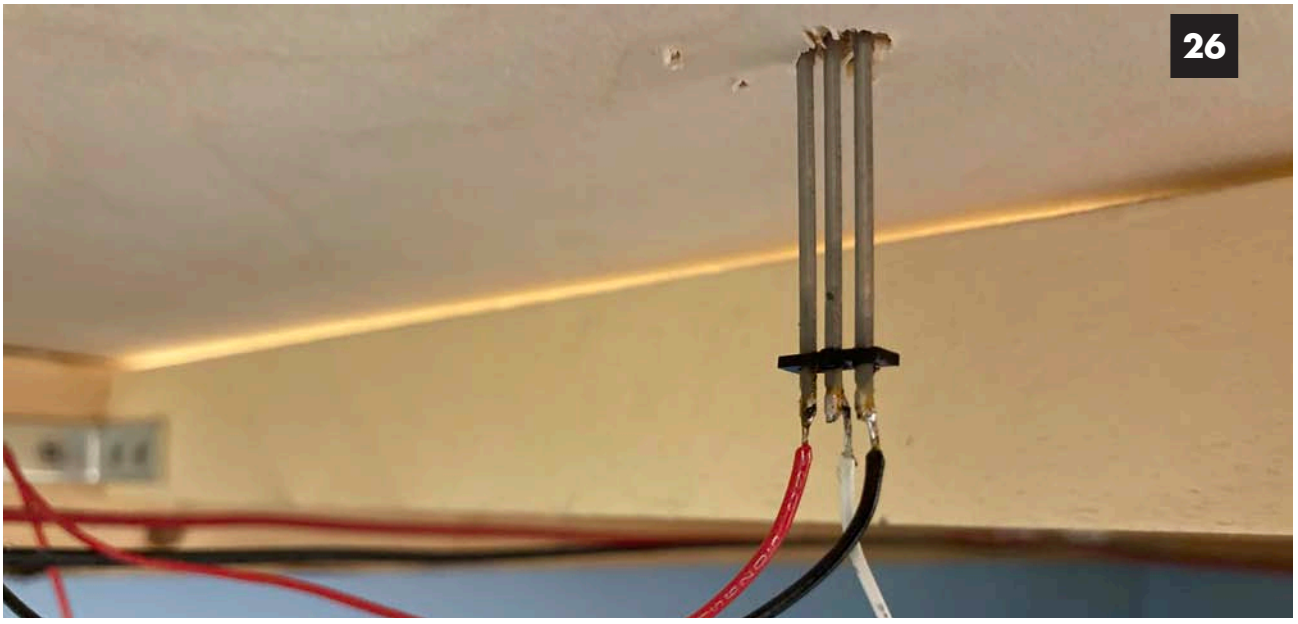


Image 26. The outer wires are to grab power from the bus, and they align with the outer wiring connectors as they are lined up with the inner and outer rails of the trackwork.

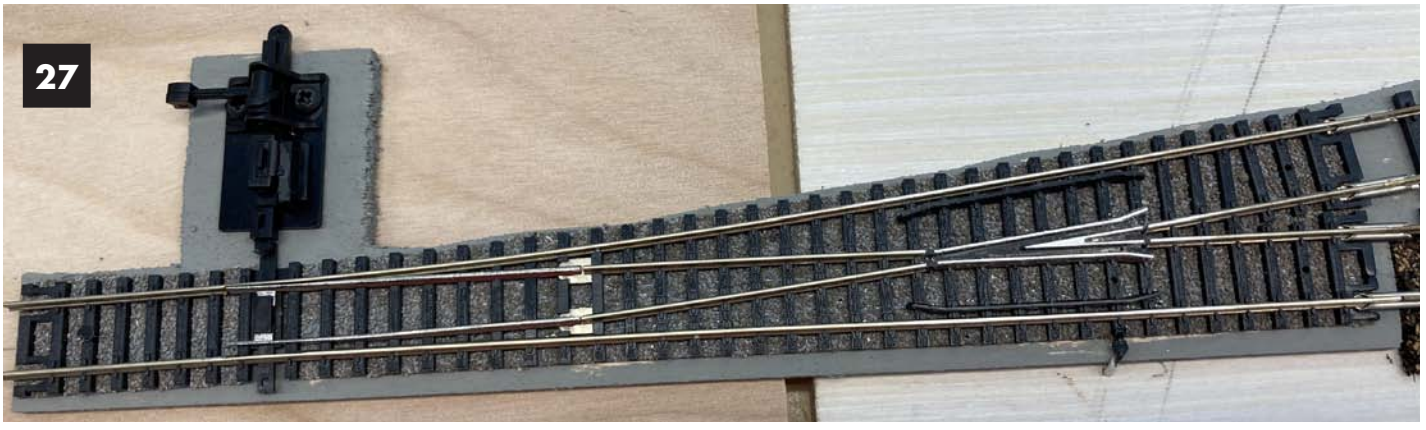


Image 27. The final touch is to hide the mounting screws, dull down the frog casting and disguise the frog wiring lug. I found that Tamiya XF-84 Dark Iron, is excellent for this application.

MODELING THE TEXAS AND NEW ORLEANS
SUNBEAM AND HUSTLER BAGGAGE-MAIL CARS

by Diane Wolfgram/ Images by author

Although the Southern Pacific's numerous Texas and Louisiana lines date back to 1853, they were not consolidated as the Texas and New Orleans, the T&NO, until 1934. According to Steve Allen Goen in his book Texas and New Orleans Color Pictorial, prior to the revision of Texas corporation laws, the T&NO owned its own equipment and locomotives, developed its own streamlined passenger trains, and served as the central link between SP's Pacific Lines to the west and the Cotton Belt to the east.

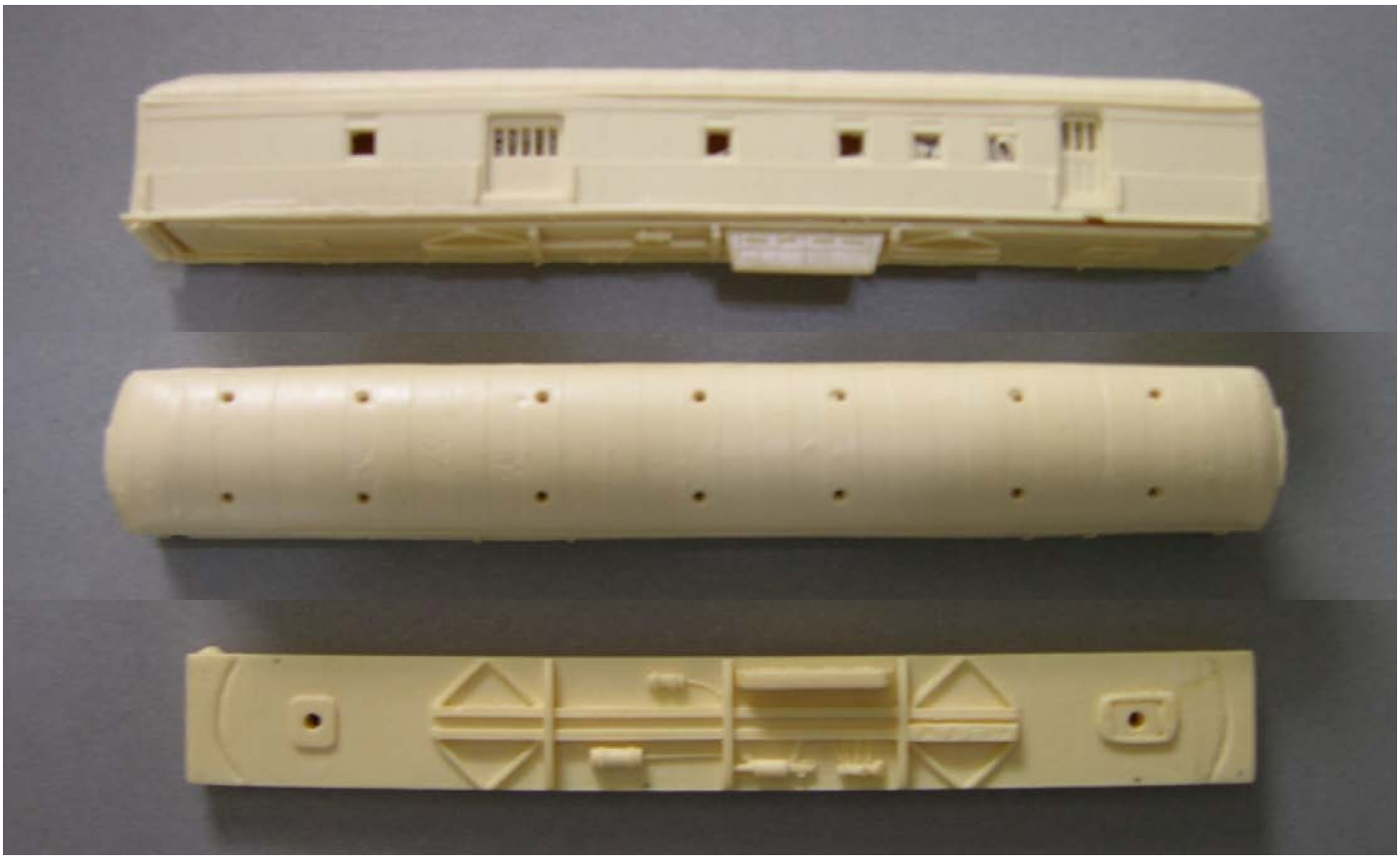
On September 9, 1937, the T&NO replaced the heavyweight cars on the *Sunbeam*, which operated as Trains 13 and 14 between Houston and Dallas, Texas, with new Southern Pacific Daylight-styled lightweight streamlined cars. The *Sunbeam* was joined by a second streamlined train, the *Hustler*, on June 5, 1938. The *Hustler*, Trains 15 and 16, operated on a slower, all-stops schedule between Houston and Dallas. These two train sets (each made one round trip per day) remained the T&NO's only streamlined passenger trains until new equipment for the *Sunset Limited*, Trains 1 and 2, arrived on August 20, 1950. The inauguration of the streamlined *Sunbeam* and the *Hustler* was, undoubtedly, overshadowed nationally by that of the Southern Pacific Lines' *Coast Daylight* on March 21, 1937 and by modelers and model manufacturers to this day.

The streamlined *Sunbeam* and *Hustler* featured matching trainsets of corrugated lightweight cars manufactured by Pullman Standard and painted in Southern Pacific Lines new *Daylight* paint scheme. Each of the two trainsets consisted, initially, of one corrugated, lightweight baggage car, the only ones of their type to grace the Southern Pacific Lines, one divided (racially segregated) chair car and two sets of articulated chair cars. Each trainset had a unique diner-lounge-observation car, but only the *Sunbeam* had a parlor car in the consist. A heavyweight baggage-RPO car was added to the *Hustler's* streamlined consist from the beginning, but not to the *Sunbeam's* until June 1940 (Bill Kelly, Personal Communication).

The *Sunbeam* and *Hustler* were powered by one of the three stream-styled P-14 Pacific type locomotives that emerged from T&NO's Houston General Shops looking little like the P-6 4-6-2s that they had been, formerly, and outperforming them considerably. Although new ALCO PA's arrived on the T&NO in August 1949, the *Sunbeam* and *Hustler* were not fully dieselized until October 1953. The three P-14s were subsequently scrapped beginning in December of that year.

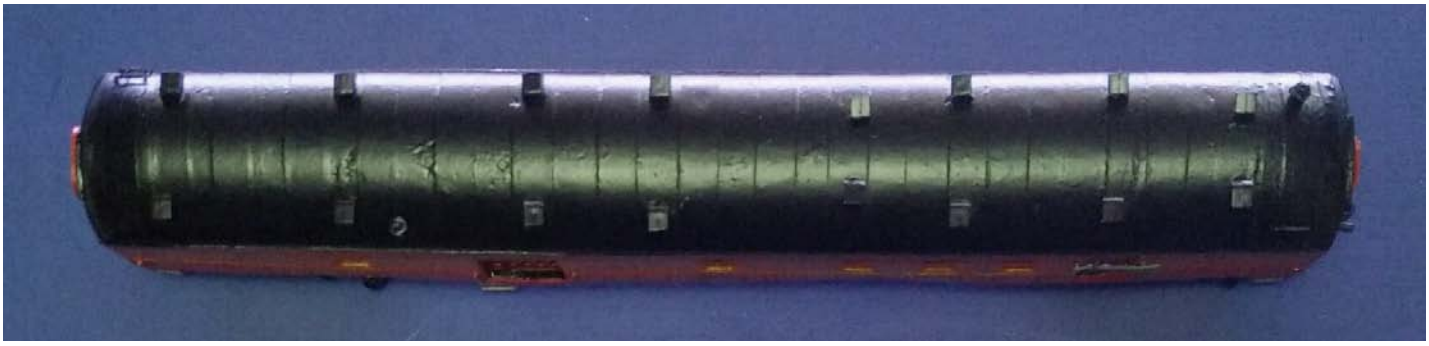
SUNBEAM and *HUSTLER* BAGGAGE-MAIL CARS

These two heavyweight cars became the first cars in the consists of the *Hustler* and *Sunbeam* in 1938 and 1940, respectively. The cars were part of a 12-car series of 69-foot baggage-postal cars with 30-foot postal compartments (69-BP-30-3) constructed by Pullman in 1916 and originally assigned to SP's Galveston, Harrisburg and San Antonio Railway Company (GH&SA). All of these cars were reassigned to the T&NO in 1927. The cars selected for the *Sunbeam* and *Hustler*, T&NO 141 and 148, received HSC braking, modifications to their baggage rooms, and were repainted in the *Sunbeam* paint scheme per a car diagram dated 1940. (Bill Kelly, Personal Communication) I note that the baggage-mail cars did not have a *Sunbeam* logo on their sides, as did the streamlined cars in the consist.



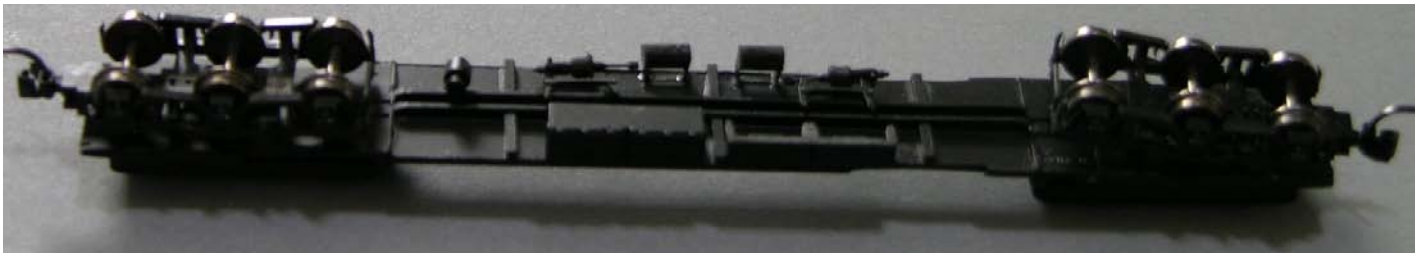
Several years ago, Wheels of Time offered resin-cast kits for earlier 69-BP-30-2 cars and I used one of these kits to construct my N scale model of a *Sunbeam* baggage-mail car. While no longer listed on Wheels of Time's website, these resin kits are still available by contacting Wheels of Time via the website.

The most noticeable difference between the 69-BP-30-2 cars and T&NO's 69-BP-30-3 cars used on the *Sunbeam* and *Hustler* was the type and placement of their roof vents. The 69-BP-30-2 cars had equally spaced, round, globe roof ventilators, while the 69-BP-30-3 cars had unevenly spaced, utility-style roof ventilators. I simply plugged the holes in the roof of the one-piece Wheels of Time car body with white putty and, after sanding the plugs smooth, drilled new holes for the utility-style roof vents. While utility-style roof vents are no longer available from Wheels of Time, 3-D printed ones are available from Keystone Models, which has an online Shapeways storefront.

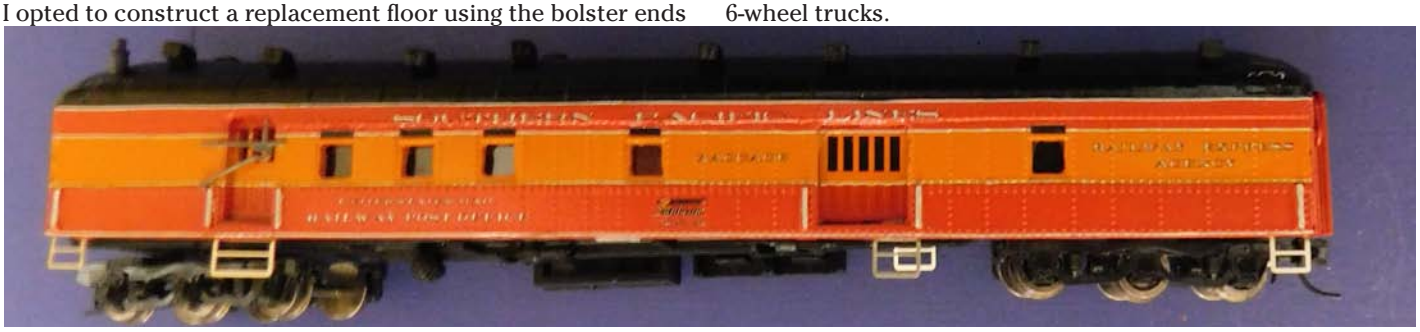


Determining the locations of the utility roof vents was the most demanding and time-consuming aspect of modeling the *Sunbeam*/*Hustler* baggage-mail car because I only had published photographs in the Southern Pacific Historical & Technical Society's book, "SOUTHERN PACIFIC PASSENGER CARS VOLUME 3: Head End Equipment", and photographs of H0 scale brass models to go by. For that reason, I have included a photograph of the roof of my car to guide other modelers. I recently found out that the May 2003 issue of *Mainline Modeler* contained an article by Jon H. Fleming and Nicholas Muff, MD that has detailed plans for the *Sunbeam*/*Hustler* baggge-mail cars, including one showing the placement of the utility roof vents, as well as the ladder rests and grab irons. This and other issues of *Mainline Modeler* are often for sale on Ebay.

The Wheels of Time resin-cast car body had smooth-side doors in the baggage compartment, but the *Sunbeam*/*Hustler* cars retained their original paneled doors. I removed the cast on doors from their backsides using a Dremel Motor Tool and finished the edges of the doorways with a diamond-impregnated, needle file. I replaced the doors with those from a stash of paneled doors from Wheels of Time cars that I had purchased or cannibalized for other projects.



The underbody of the Wheels of Time kit has a low center-beam with cross members typical of "Harriman" style cars, but the holes for truck bolster pins are spaced for the off-center design used on old Micro-Trains 6-wheel trucks with 33" wheels, which are not prototypical for these T&NO cars. The battery box is inset too far from the inner edge of the car's side as well. Rather than making corrections to the resin-cast floor, I opted to construct a replacement floor using the bolster ends from the floor of a newer Wheels of Time injection molded, 70-foot baggage-express car with a center section from an American Model Builders core kit's floor. I added frame cross members, which show beneath the car sides, a dual air brake system, a generator, air reservoirs and battery and tool boxes mostly cannibalized from other Wheels of Time cars. The car rides on prototypically correct Wheels of Time drop equalized 6-wheel trucks.



PAINTING AND LETTERING

My car was custom painted and decaled for me by John Miller using Star Brand paints that are available from P-B-L in Ukiah, California (www.P-B-L.com) and Microscale decals. I opted to have the car lettered for Southern Pacific Lines, rather than post-war Southern Pacific. It's impossible to read without magnification, but the car is numbered T&NO 141 below the *Sunbeam* logo centered on the sides. According to Fleming and Muff in their May 2003 article, T&NO 141 had the logo and number applied directly to the car's sides, but 4' 3" X 2' panels were screwed onto the sides of T&NO 148, like they were to the streamlined cars in the consist, and the logo and car number applied to them. I recently learned from Don Munger (personal communication) that Fleming and Muff are wrong and that these cars did not have the Sunbeam logo and panels were not applied to T&NO 148 at this time. Close scrutiny of the photo at the bottom of page 18 in Steve Goen's book shows that the mail car in it had T&NO 148 applied as a single line centered in the *Daylight* Red band below the car's belt rail. A better photograph of the car at the bottom of page 24 in the "Southern Pacific Painting and Letter Guide", confirms it.

John bent and installed the handrails on the car sides. He also installed the ladder rests on the roof and the steps under the side doors, which were left-over from another project of mine using M&R etched brass car sides. The mail catcher is from a set of Kato details for their smooth side cars.

Modelers should note that the orange stripe of the *Daylight* paint scheme was carried across the front/mail room end of the car, but that the baggage room end was painted *Daylight* Red. I debated over whether or not to install a diaphragm on the mail room end of the car and only recently decided to do so based on the drawing in the article by Fleming and Muff. I already had installed one on the baggage room end which was coupled to the front end of the fluted, 77-foot baggage car.

After John had finished his work on the car, I added Microscale black stripes to the blanked out areas above the mail room windows to create the look of windows under favorable light conditions and in photographs.

EPILOG

Around the time that the T&NO placed the order with Budd for new streamlined cars for the *Sunset Limited*, they decided to have the *Sunbeam* and *Hustler* cars stripped to bare stainless steel with a *Daylight* Red letterboard edged in black like those planned for the *Sunset Limited*. The baggage-mail cars were, of necessity, painted aluminum and had the 4'3" X 2' panels, also painted aluminum, with orange *Sunbeam* logos applied at this time according to Don Munger (personal communication). According to Fleming and Muff, the two trains' exterior remodeling was done over an extended period of time beginning in late 1949 and wasn't completed until after the new cars for the streamlined *Sunset Limited* arrived. The streamlined *Hustler* was discontinued on 8/11/1954 and the *Sunbeam* on 9/11/55. The two baggage-mail cars were subsequently transferred to the SP's Pacific Lines.

I note my error in applying the *Sunbeam* logo to the sides of my N scale model and attribute that to using a photo of an H0 scale model of it by the Coach Yard as a painting and lettering guide. It appears to me that Fleming and Muff did as well, as the Coach Yard model of the car, in the aluminum scheme has it's logo/numberboards painted *Daylight* Red as erroneously shown in the drawing of it in their article. ◗

MODELING KING STREET STATION

by Brian Morgan/ Images by author

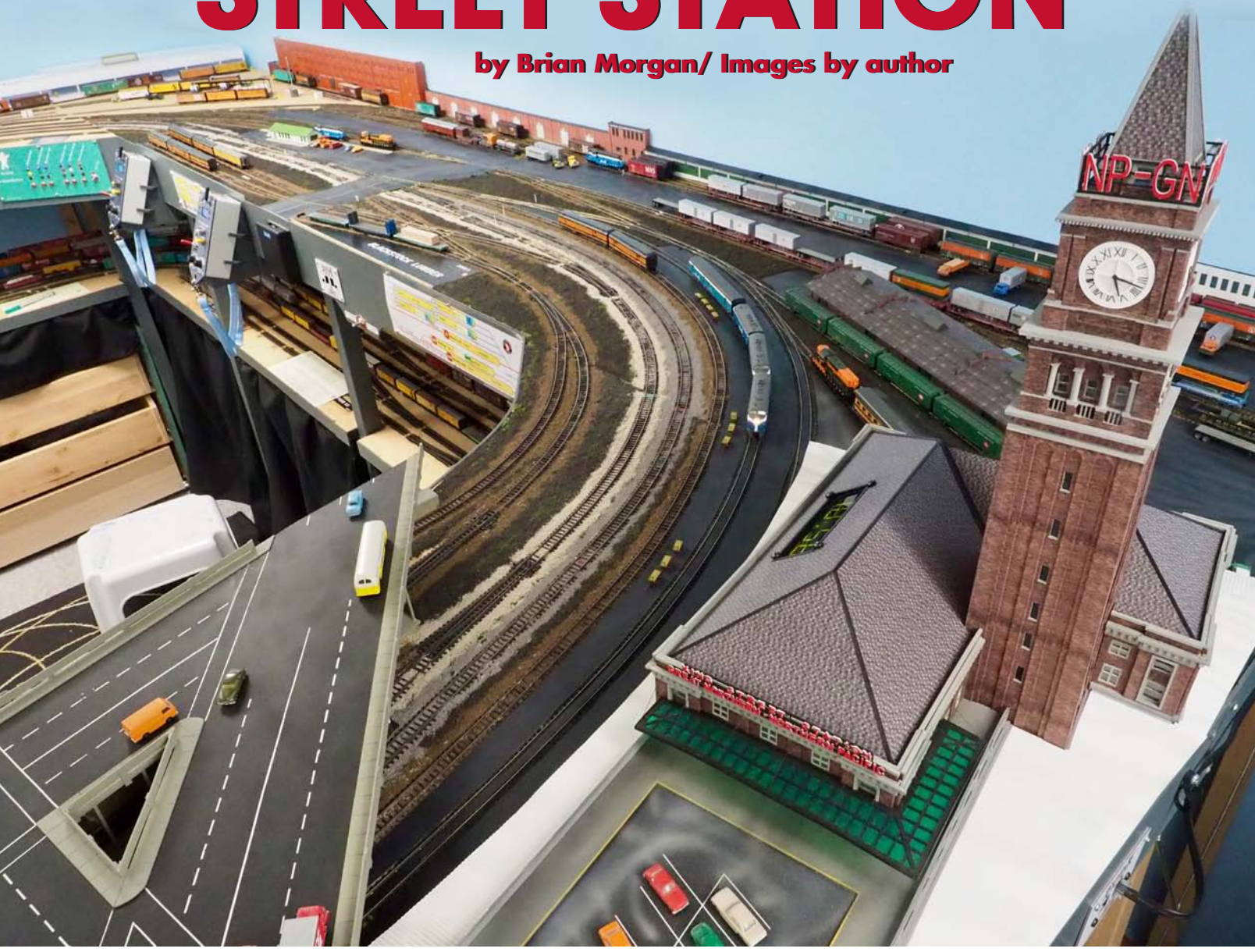


Image 01. Looking South at King Street Station and its surrounding area. Immediately behind the KSS is the REA Express building, along the wall from the right is the GN downtown freighthouse with Universal Carloading adjoining. These buildings were all made with the Cricut Maker.

A basement flood in 2015 caused me to remove my existing layout. With a chance to start over, I changed location, era and converted to DCC. I decided to model Seattle's King Street Station along with the Great Northern downtown freight house and REA Express building as the focal point for this new layout. I knew my biggest challenge would be making all the structures needed for this urban pike.

When March of 2020 arrived with COVID lock downs and uncertainty, things got boring after a week or two. I figured this was the time to tackle those Seattle buildings, starting with the King Street Station (KSS).

The first question was how to model this old (1906) multi-storey brick structure. There are brick embossed N scale plastic sheet material but how would I achieve good mortar lines? I also thought about Monster Model Works brick. The brick looked really good, but how would I cut out the windows? KSS has lots of windows and what would I use for those windows? Should I try a laser cutter or get into 3D modelling? Since I'm in my 70s, I really needed something that would be relatively fast, cost effective and still give a good end product. Since my daughter had just bought a Cricut Maker, see photo 11, I decided to give it a try.

King Street Statiion in 1906.

King Street Station

When you look at the King Street Station it's a pretty impressive structure, see photo 3. But as I looked at KSS, I came to realize that it and most other brick buildings are made up of a number of simple shapes overlaid on top of a preceding layer. By starting with the innermost layer and working out I could use the Cricut Maker along with Clever Models brick textured paper to make a reasonable version of KSS. The trick would be to make this model in a series of relatively easy steps.

I started breaking down my old illustrator drawings into layers, then "joined objects" and exported the files in SVG format to the Cricut Design Space.

Cricut Maker
This machine has a number of different tools (cutting blades) which you can change out to work with different materials such as paper, cloth, vinyl, basswood or chipboard. You select the type of material from a predefined list and the machine's software tells you what cutting tool to use. However there is no styrene plastic listed. It turns out that you can cut styrene by selecting the Chipboard (1.5mm) from the list. The Maker has a knife blade which looks like the tip of a #11 X-Acto blade. With 12 passes of its knife blade the machine can cut through 0.020" thick styrene. However, before I could use the Cricut Maker, I needed to produce a drawing of what to cut. The machine will work with jpg, gif, png, bmp dxf and svg files.

Affinity Designer
More than 10 year's ago, using a vector image drawing program, Adobe illustrator, I had drawn up an N scale version of the King Street Station in PDF format. However, I had not upgraded my illustrator licence as Adobe had gone to a monthly subscription fee. Using the Apple APP Store, I found a program called Affinity Designer which can read and write illustrator PDF files plus export to the SVG (Scalable Vector Graphics) format. Best of all it was not expensive, around $60. I also needed one more feature which Affinity Designer has, the ability to join objects. You can add, subtract, intersect, divide and Xor (merges selected objects into a composite object), see photo 2 & 40. So I could make up a more complex shape from a series of simple objects such as rectangles and circles which the Cricut Maker could then cut out of a sheet of styrene. Most of the time it's relatively easy to join a series of objects into one image, for example a wall with a number of window openings. But at times, I found I had to make up the final joined object, by doing a series of joining operations to achieve the desired object. The clock face in photos 2 & 40 was one of those objects. When this happened, I just kept trying different joining operations until I found the combination that worked. Last of all, since the Cricut Maker can cut to 0.001 inches, when I made up my drawings I made sure nothing was dimensioned to more than one thousandth of an inch. For example 0.001 was good while 0.0001 was not, as the latter will be rounded down when your SVG file ends up in the Cricut Design Space. In Affinity Designer, you can enter a desired width or height directly into the Object Size box in the lower right corner of the screen, see photo 2.

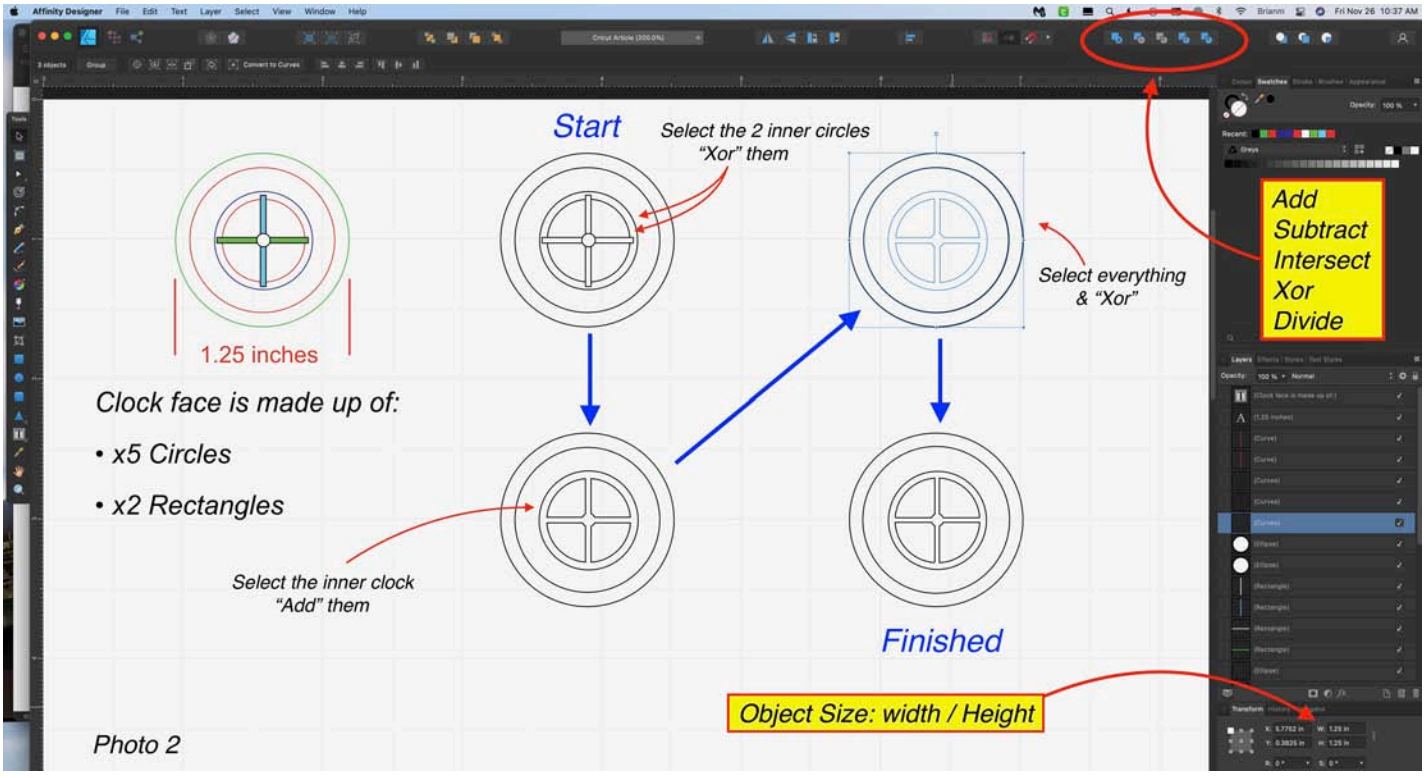


Image 02. The KSS clock face as drawn in Affinity Designer. From left to right: - the clock face is drawn to scale as a series of circles (in different colors to make it easier to see) and rectangles. For some reason when I Xor'd the inner part of the clock it disappeared as the stroke thickness becomes zero. I got around this by resetting the stroke thickness back to 0.5 points, but as it turned out when I did the last Xor, the centre part of the clock reappeared. The Affinity Designer Help menu has a good explanation of the various Joining Operations.

Construction of KSS

I've learned a few lessons when it comes to structures. Styrene structures tend to warp over time, you need to brace any walls or roofs that are less than 0.060" thick. Additionally structures are stronger if they have a rigged foundation (base). In previous years, I'd use 1/4" thick plexiglass for this. But in the spring of 2020 with things locked down for COVID, I decided I'd use 0.080" thick Evergreen sheet styrene, see photo 13. I emailed a list of what I needed to my local hobby shop, they bagged it up and I would pay for it outside on the sidewalk. The stores sales were actually up, even though no one by law could go inside. I had spent more money on styrene and glue a month into COVID than I had in the previous ten years.

One of the key products that I was going to use was Clever Models paper textures: **http://clevermodels.squarespace.com** I've never really been happy with how my plastic painted brick buildings have turned out, I liked the look of the textured brick that Clever Models has. You can down load the textures you want and pay for them via PayPal. You can print them as much as you like, for your own use. For the KSS, I used Old Brick. The textures come sized for different scales, including N scale.

See photos 14 and up for how KSS came together. Initially it took a few days to get use to using the Cricut Maker and getting into a work flow. To date, I've completed six buildings and other than KSS they have been really fast and easy to make. Today, I could not conceive of not having a tool like the Cricut Maker, its just so useful for model railroading.

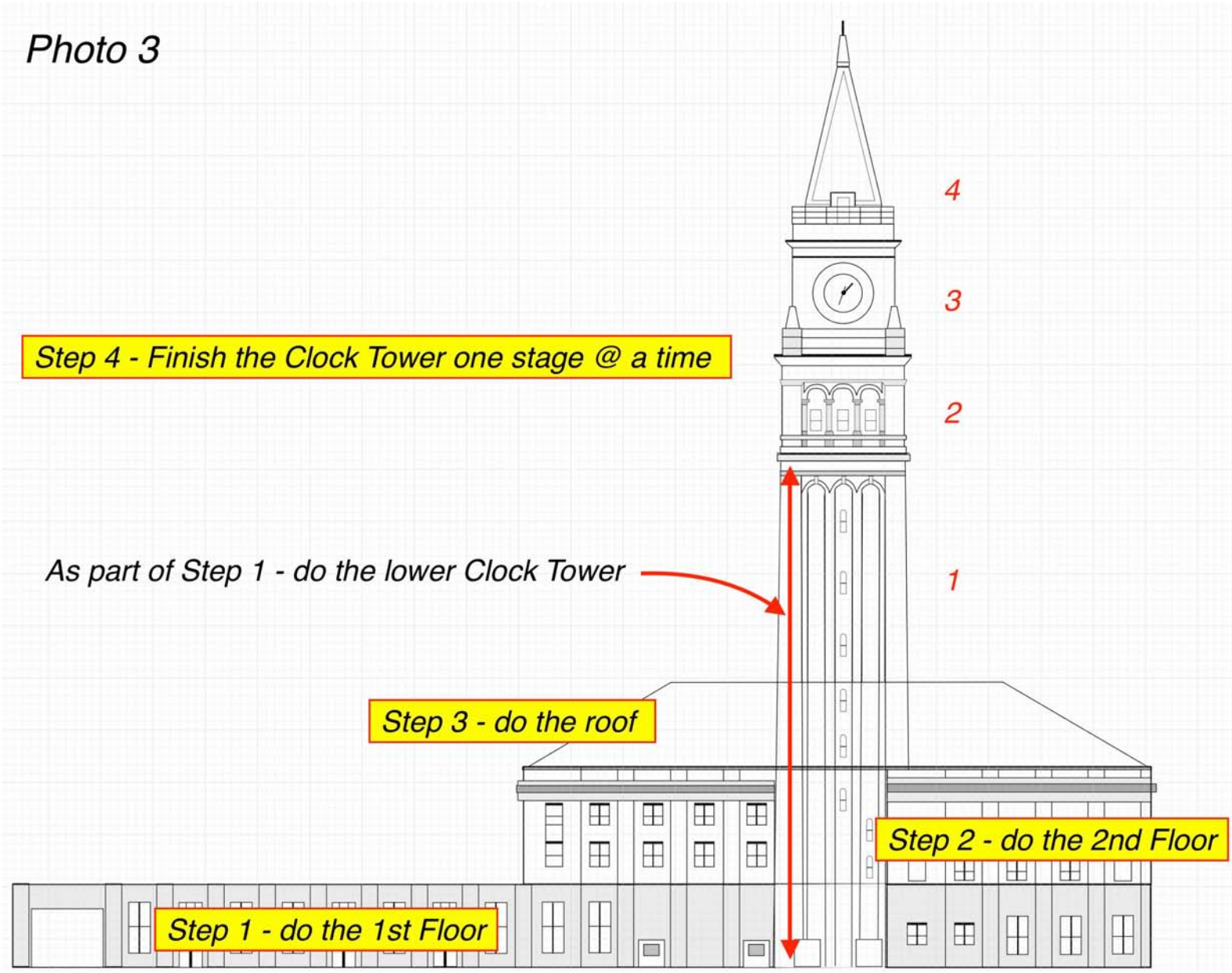


Image 03. One my early illustrator drawings of King Street Station with my basic plan of how I would break down the construction into sections of work.

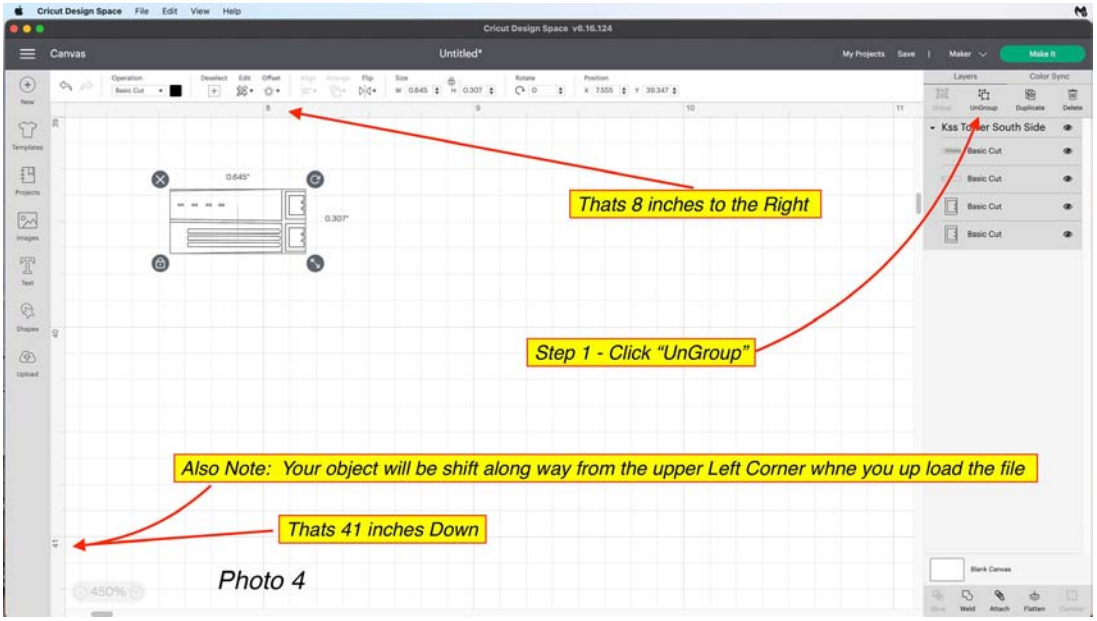


Image 04. A screen shot of Cricut Design Space. As the SVG File is up-loaded everything becomes grouped into one object. Note the overall length is 0.645 inches which is too short. The objects will also be a long way from the upper left corner of the Design Space.

Circut Design Space

Once you have a svg file ready for cutting, you need to upload it to the on-line Circut Design Space. Once the file is uploaded you have to size the image to the correct dimensions, see photo's 4 & 5. Next save your Design Space file to Projects, see photo 6. From your saved projects, you then select one to cut, see photo 7. As shown in the photo, the cutting mat is 12 inches by 12 inches in size. On the computer screen, you can position the objects that are going to be cut anywhere in that 12" by 12" space. Most of my Evergreen sheet styrene were 12" long by 6" high, which was fine as long as I positioned the styrene on the cutting mat to reflect what my computer screen showed. The parts to be cut should to be back from the edges of your styrene sheet by about 1/2 inch, allowing space to place masking tape along the outer edges of your styrene to further strengthen its attachment to the cutting mat , see photo 11. Circut cutting mats come in different colors, the color indicates how sticky the cutting mat is. For styrene, you need to use a purple (Strong Grip) mat. With the objects to be cut positioned correctly and your actual cutting mat taped down, click the "Continue" button, see photo 7.

Next for 0.020" thick styrene, select Chipboard (1.5mm) from the material list. The machine is not going to cut through your styrene in one pass. When you select a material to cut, you select the number of passes and the pressure to be applied. This has all been predetermined by the machine.

After selecting the material, follow the instructions on your computer screen to load the correct cutting tool, see photo 9. Lastly, press the GO button on the actual machine. Once the Cricut Maker starts cutting, it will give you feed back with time remaining. If your project entails a lot of intricate cutting such as windows your time can easily be an hour or more, see photo 10. In 1 day I was able to cut out all the major wall pieces, see photo 12. There's no way I could have done this by hand in that time span. I did not have to stay by the Maker as it did this, but rather came back every so often just to check that everything was OK.

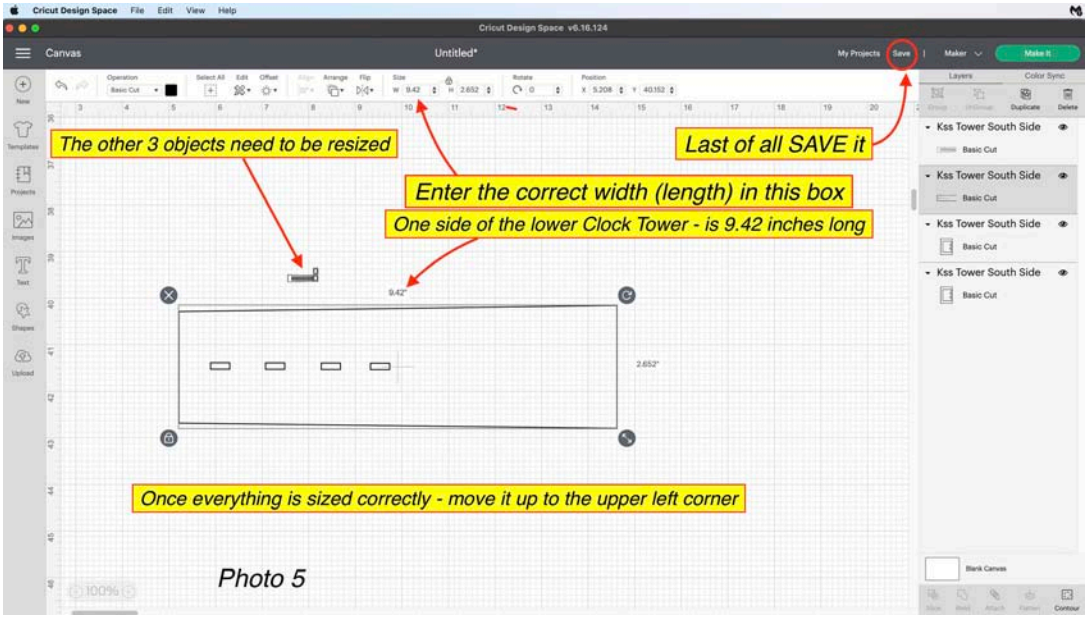


Image 05. In Affinity Designer you can see the length & width of an object that you select. I generally only write down the length as I've found that if I enter the length of an object in Cricut Design Space the width was always correct as they are proportional. One wall of the clock tower has been given the correct length (width), the other 3 objects still need t be done..

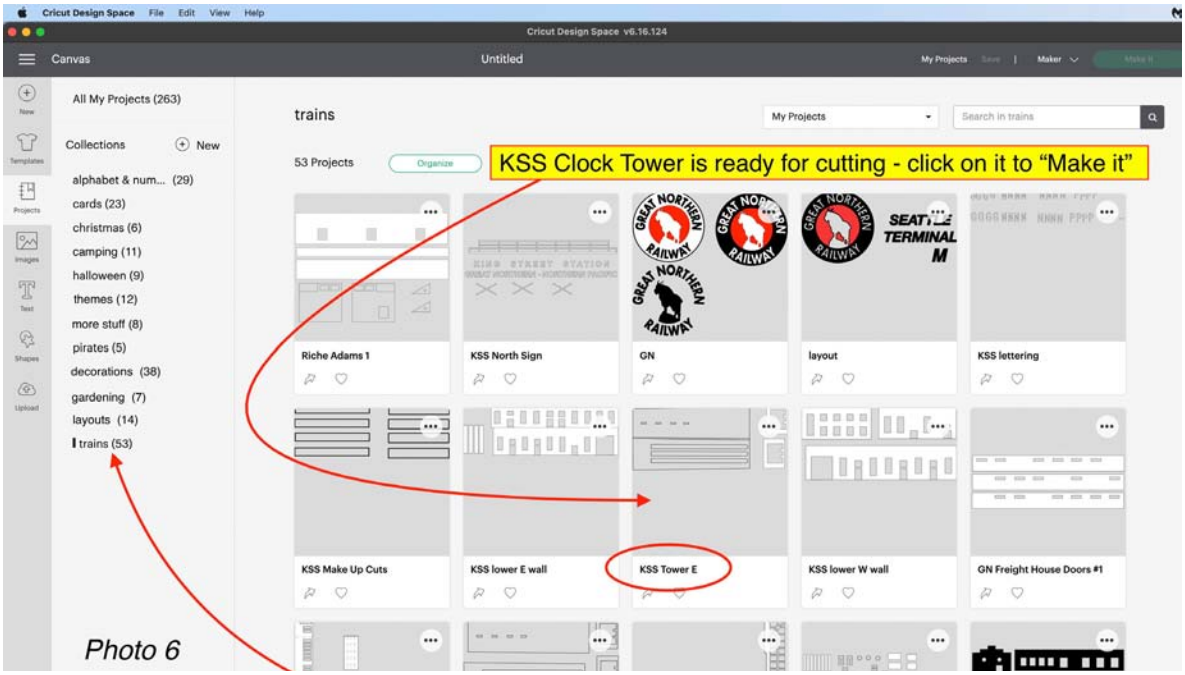


Image 06. Your uploaded projects are saved on the Cricut Design Space for no cost. As shown in the photo, you can group projects into collections to make it easier to find things later. By clicking your mouse on a drawing you can go to the "Make It" step of actually cutting it out. **Most important Turn On your Cricut Maker before you click the Make It button.**

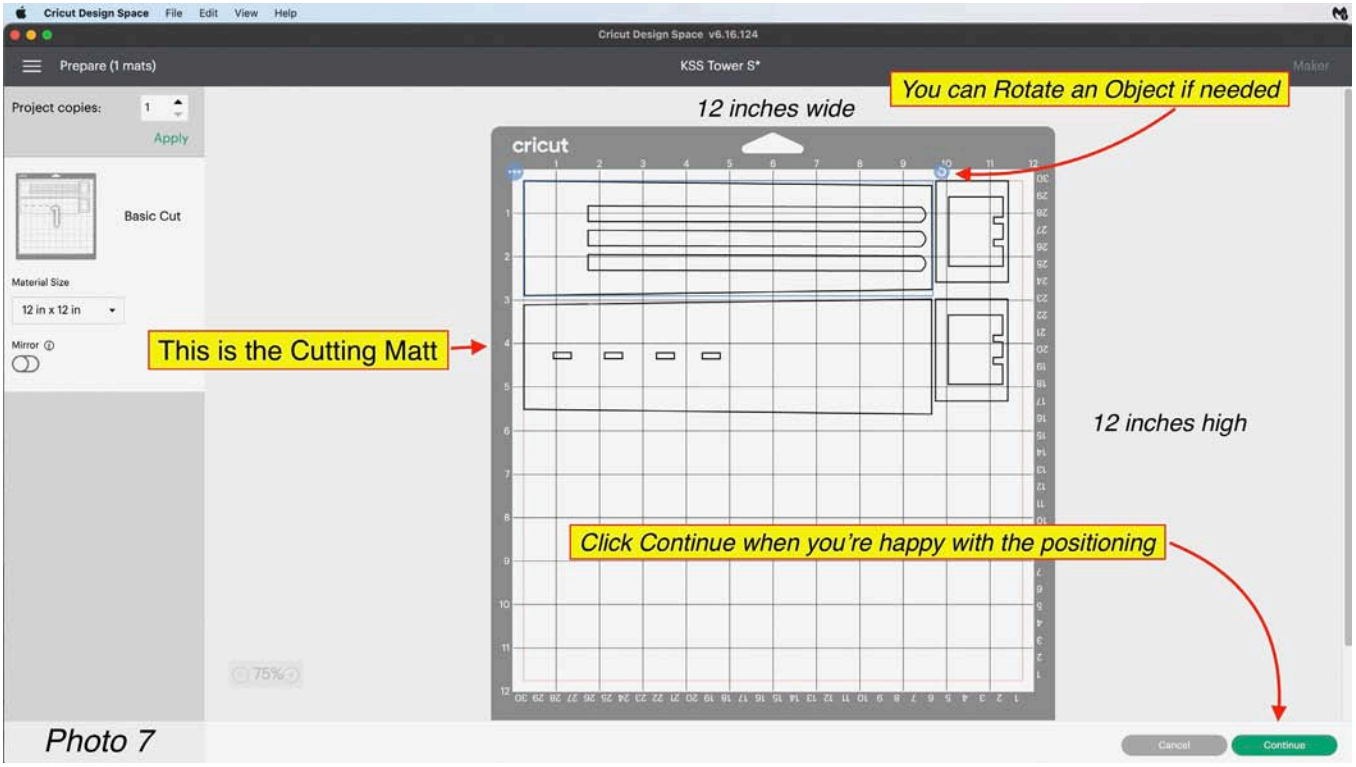


Image 07. The Cricut Design Space software will position things the way it "thinks" is best. I often needed to move things around for a number of reasons:

1) Most of the time the Evergreen Styrene sheets that I use are 12 inches by 6 inches so not all of the cutting mat is covered, I know that, the machine does not. I need to make sure the objects to be cut will actually have plastic underneath.

2) You can score thicker styrene, I've done 0.080" thick and then snap it, thus avoiding having to actually cut through it. When I go this route I preferred to have the various objects outer edges lineup at least on one or more edges, it made for easier and faster snapping out of the parts.

3) If your cutting a lot of small objects the Cricut Design Space software tends to put the individual objects a bit too close. As things are being cut, some of the items can start to detach from the cutting mat as there's not enough "stick" to keep everything firmly in-place. This is one way to cut into the surface of your cutting mat.

4) Often I only used part of a 12" x 6" sheet of styrene, later I reused the part that was not cut for another job.

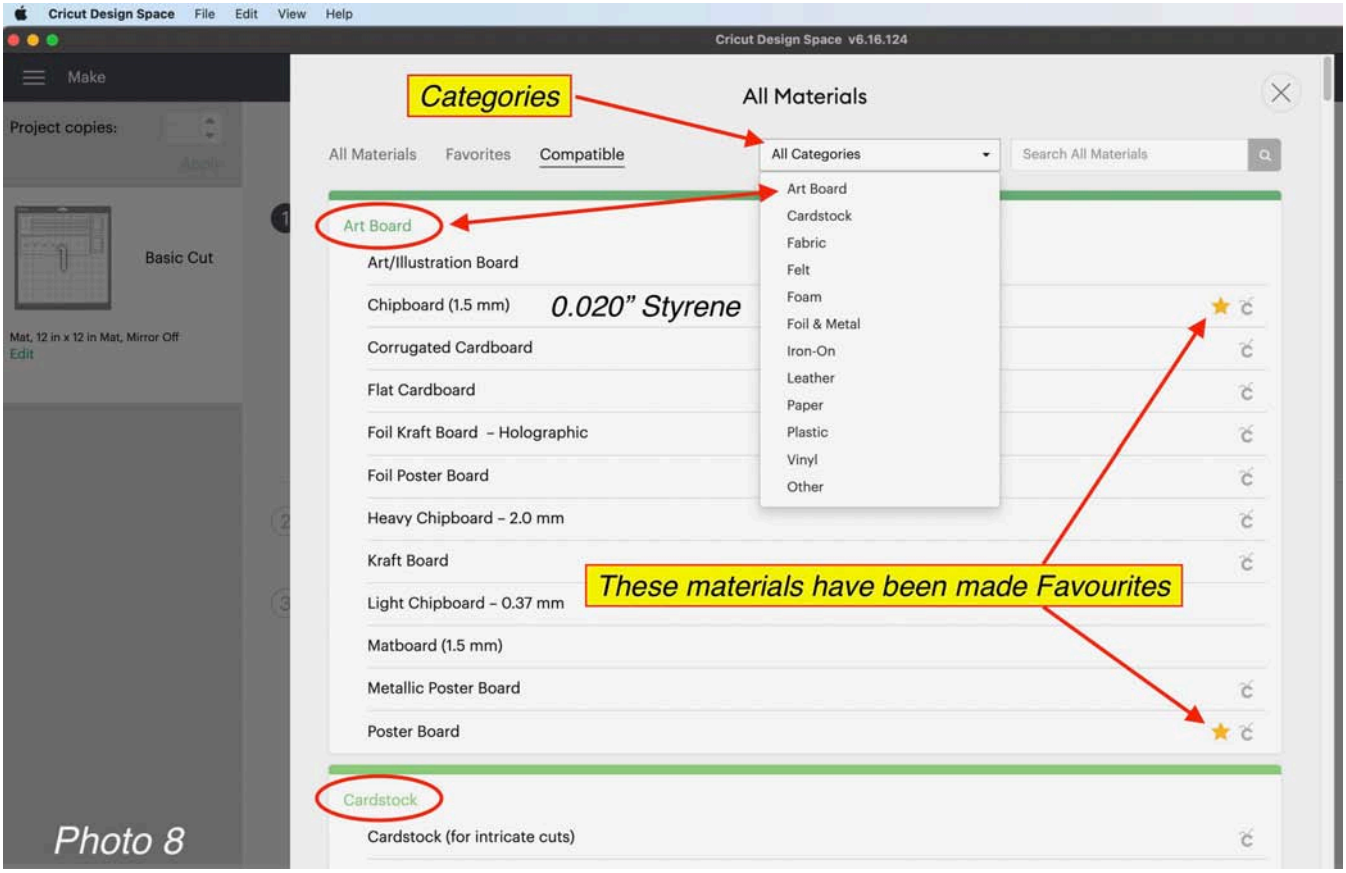


Image 08. Pick the type of material that you're going to cut. By marking you're commonly used materials as a Favorite, you will see them as a clickable selection (Star) and reducing the need to scroll through a long list, as shown in the photo.

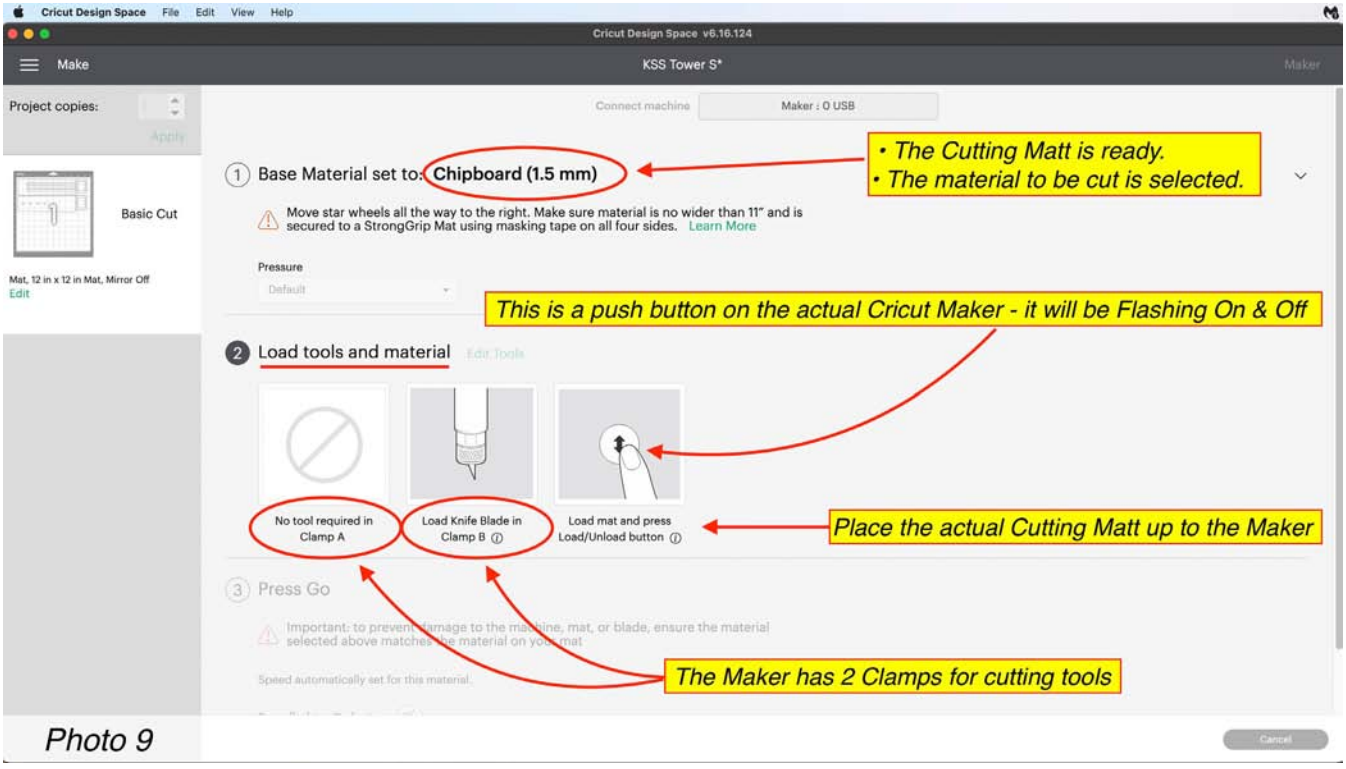


Image 09. On your Cricut Maker machine, you'll now notice that there's a Flashing double ended arrow button. Don't push it yet, but rather follow your computer screen to select the correct cutting tool, place that tool in the correct clamp, in this case, it's Clamp B. Then place the cutting mat up to the Maker AND press the Flashing Double Arrow button. The Cricut Maker will draw in the cutting mat and commence going to work. Make sure to keep a10" space in the rear and front of the Maker as your cutting mat is going to go in and out of the machine.

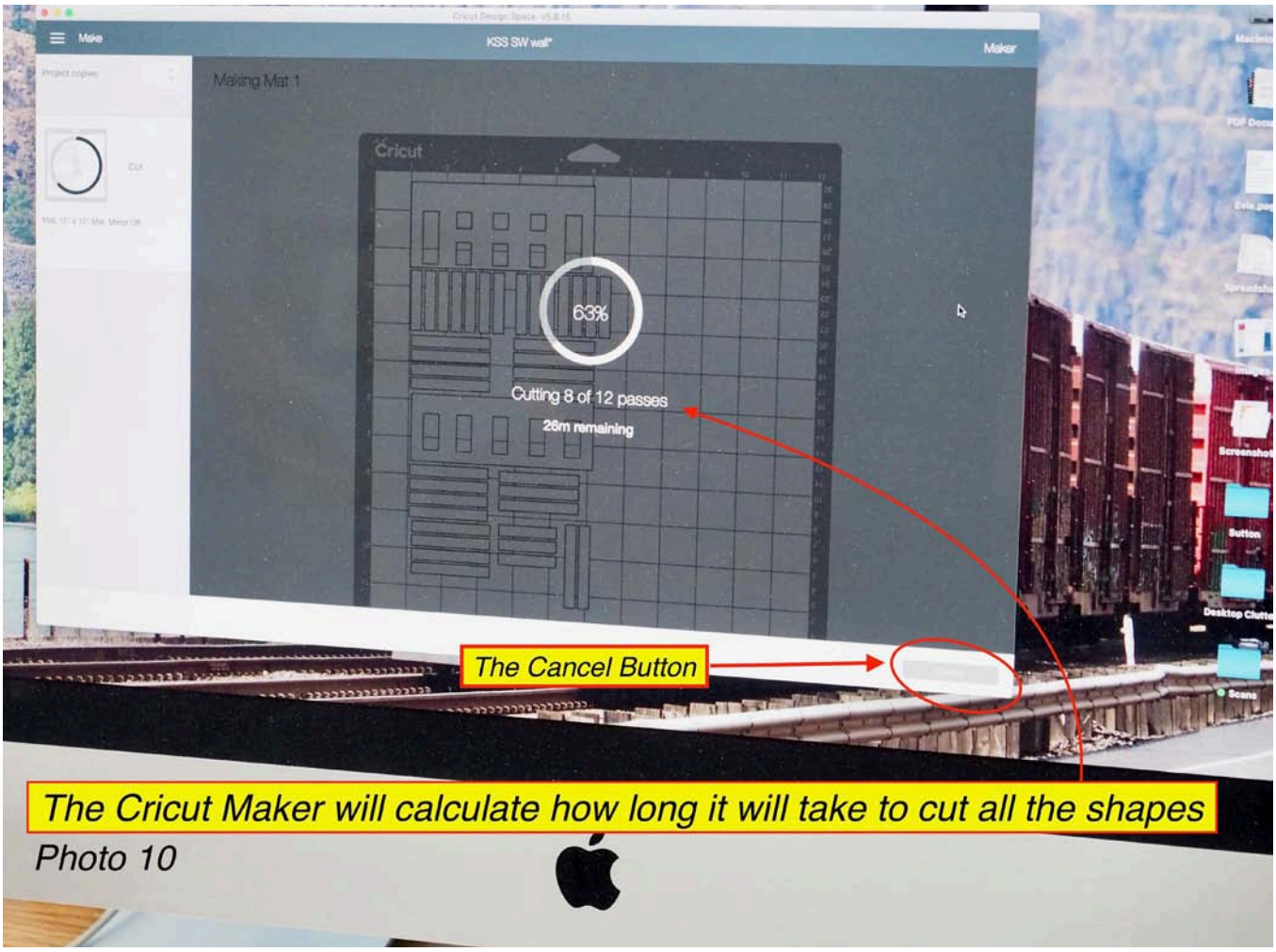


Image 10. After a few minutes, the Cricut Maker will tell you the time remaining for your project to complete. I checked back from time to time to make sure everything was still OK. Near the end, I stayed with the machine to make sure nothing was lifting up. Sometimes I had to stop cutting as various small parts started to lift off the cutting mat. When that happened I finish the cuts needed with a #11 X-Acto blade. This lifting seems to be caused by cutting too many small parts to closely together. See the photo 7, point 3.

Image 11. The Cricut Maker actually cutting. Note the Purple Strong Grip cutting mat & the masking tape around the outer edge of the Evergreen sheet styrene. You can load the cutting mat from either end and you can position the sheet styrene anywhere inside the cutting mats 12"x12" cutting area. By moving things around you can work on a more stickier surface as over time you're cutting mat's sticky surface will deteriorate. I've done 6 N scale buildings and I've only just started a 2nd cutting mat.

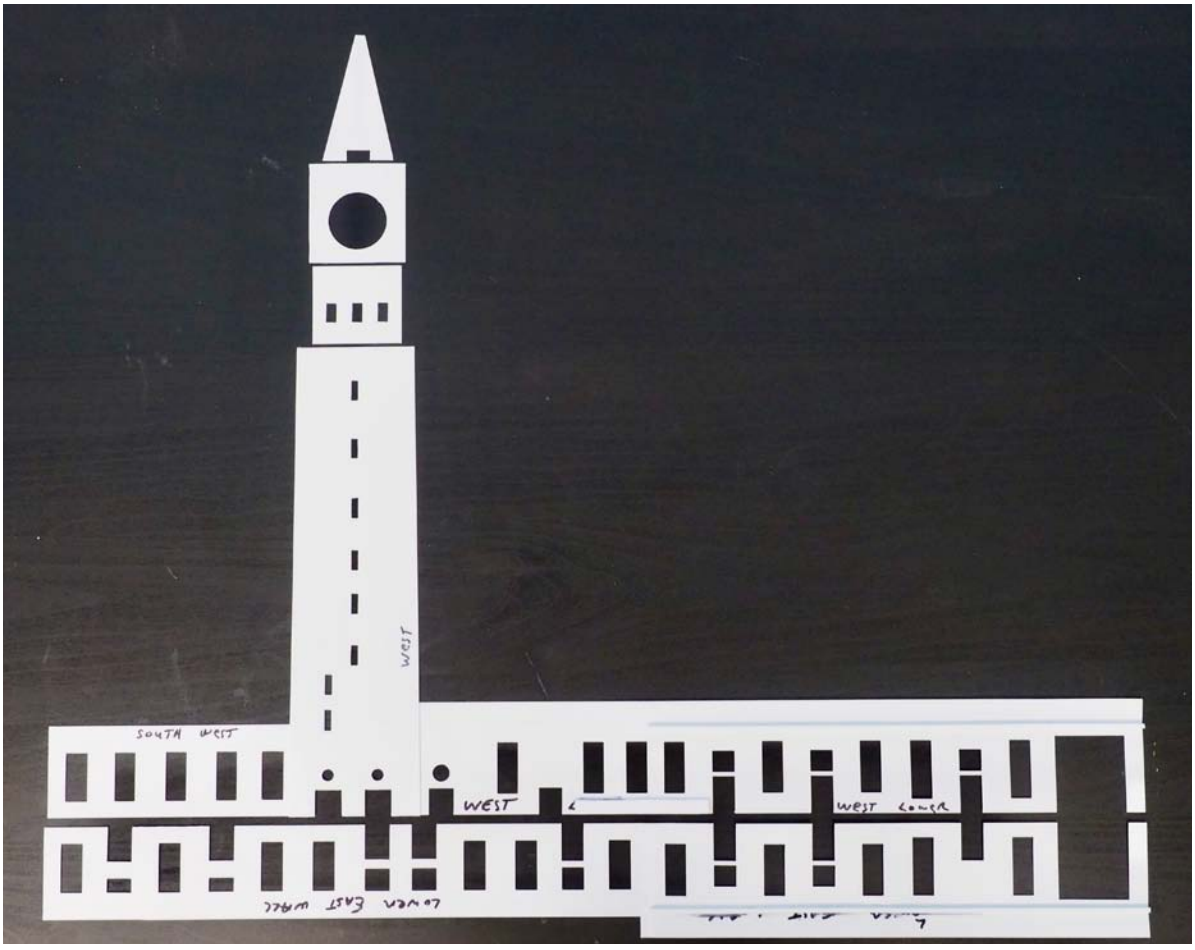


Image 12. The Cricut Maker was able to cut all of the KSS lower walls and basic clock tower parts in less than 1 day. The clock tower still needed a lot more cutting of detail parts.

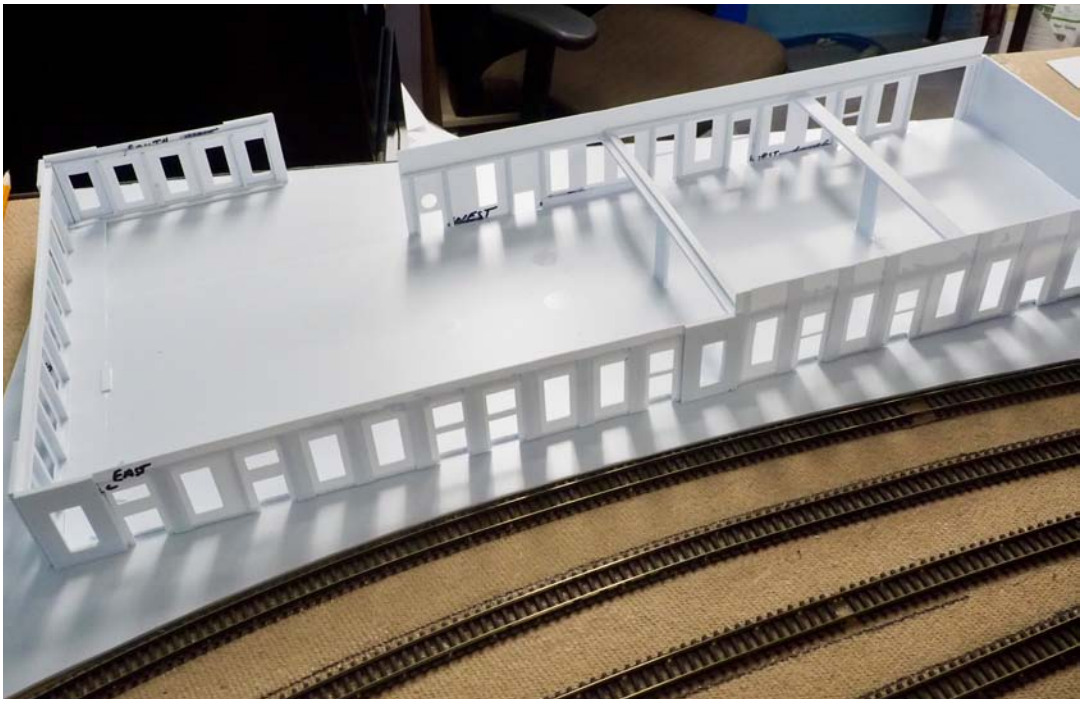


Image 13. I cut the KSS foundation out of 0.080" thick Evergreen styrene sheet using a #11 X-Acto blade & snapping the plastic along the cut line. You can also see some of the initial bracing that I used for the 0.020" thick walls. I generally used Evergreen styrene strips for my bracing, that way I only had to cut each bracing piece to length. In the photo, I used Evergreen styrene **#166 strips** 0.080"x 0.125" and **#369 strips** 0.080" x 0.250" strips. You can also see some suspended bracing, which I needed to support the level 2 parking lot. These bracing strips were cut by the Maker from 0.080" thick styrene as I wanted something wider than Evergreen makes.

Additionally if you look closely, I've added a 0.080" thick floor on the backside of the 1st floor's wall bracing. I did not add this floor completely around the clock tower's south side as I still needed to figure out how to accommodate the clock towers tapering walls. By having the floor installed I could now pickup the KSS and work on it elsewhere.

Image 14. This is the lower section of the clock tower. I braced this with the #166 strips plus scraps of 0.080" styrene. I added more bracing than this photos shows, but you get the idea. I also left the south wall unglued as eventually I would need to add window glazing.

Image 15. To affix the Clever Models paper texture I used 3M's Super 77 spray on glue. Before spraying, I carefully cut one or more of the edges of the texture paper so that I could line those edges up on the actual plastic assembly. I always used a steel ruler and a reasonably new #11 X-Acto blade as I wanted a sharp edge on the texture paper. To further help, I used a 2 times diopter while cutting the paper and later in lining the paper up the paper onto the plastic . Once the texture paper was on the plastic, I pressed down all over the surface to get a firm bond.

Image 16. I cut the excess texture paper by running a #11 X-Acto blade along the edge of the clock tower's wall. The actual clock tower edges were eventually covered by a cap which covered any white plastic from showing through.

Image 17. Two sides of the clock tower have the brick texture in-place, the windows have been cut out with a #11 X-Acto blade. You can further see that floor is not yet 100% around the clock towers south side.

Image 18. The 2nd layer for the clock tower before the paper texture has been glued on.

Image 19. The 2nd brick layer on two sides of the clock tower, the 1st floor KSS wall is now complete and the floor is now 100% around the clock tower.

Image 20. The clock towers corner cap(s) are now in-place, thus covering any white styrene. These corner caps were made out of two pieces of 0.020" thick Evergreen styrene sheet which was cut by the Cricut Maker and then glued into a L shaped piece. The textured paper was glued onto this L shaped corner cap, then folded back behind the two front sides. The backsides had Walthers Goo thinly applied, thus sticking the folded brick texture paper in-place. This capping piece was further glued in-place with some Walthers Goo. Elastic bands were used to hold everything in-place overnight while the Goo dried.

Image 21. The 2nd floor parking lot has been added, it can be removed at this point. The clock towers south side was still removable, you can see that it's popped out in the photo.

Image 22. The foundation has been painted with an air brush.

Image 23. The 1st floor and parking lot have been air brushed. Originally I figured I could use acetate windows printed on a laser jet as seen in the photo. I was not totally happy with this and eventually came up with a better idea (see later in this article). The other thing to notice is the heavy triangular braces that I added to further strengthen the 1st floor walls and lock them to the floor. I made these out of scrap 0.080" thick styrene.

Image 24. The 2nd floor being added, at this point these walls are held in-place by tape. I've got to carefully get the walls to meet up with the clock tower.

Image 25. All the corners of the KSS project outward from the base walls, I was able to simulate this with 0.080" thick pieces of Evergreen styrene, which I scored on the Cricut Maker. I snapped the walls along the outer cut lines. I used a #18 X-Acto chisel blade to finish the cut for the inner window. I placed the #18 blade into the score line and then rocked the blade back and forth while applying pressure to finish cutting through the styrene. This takes time, but it worked.

Image 26. Applying some Walthers Goo to the backside to this 0.080" corner piece, that will keep the wrap around brick texture paper in place and allow for this to be glued onto the actual KSS. I like to use a tooth pick when applying the Goo.

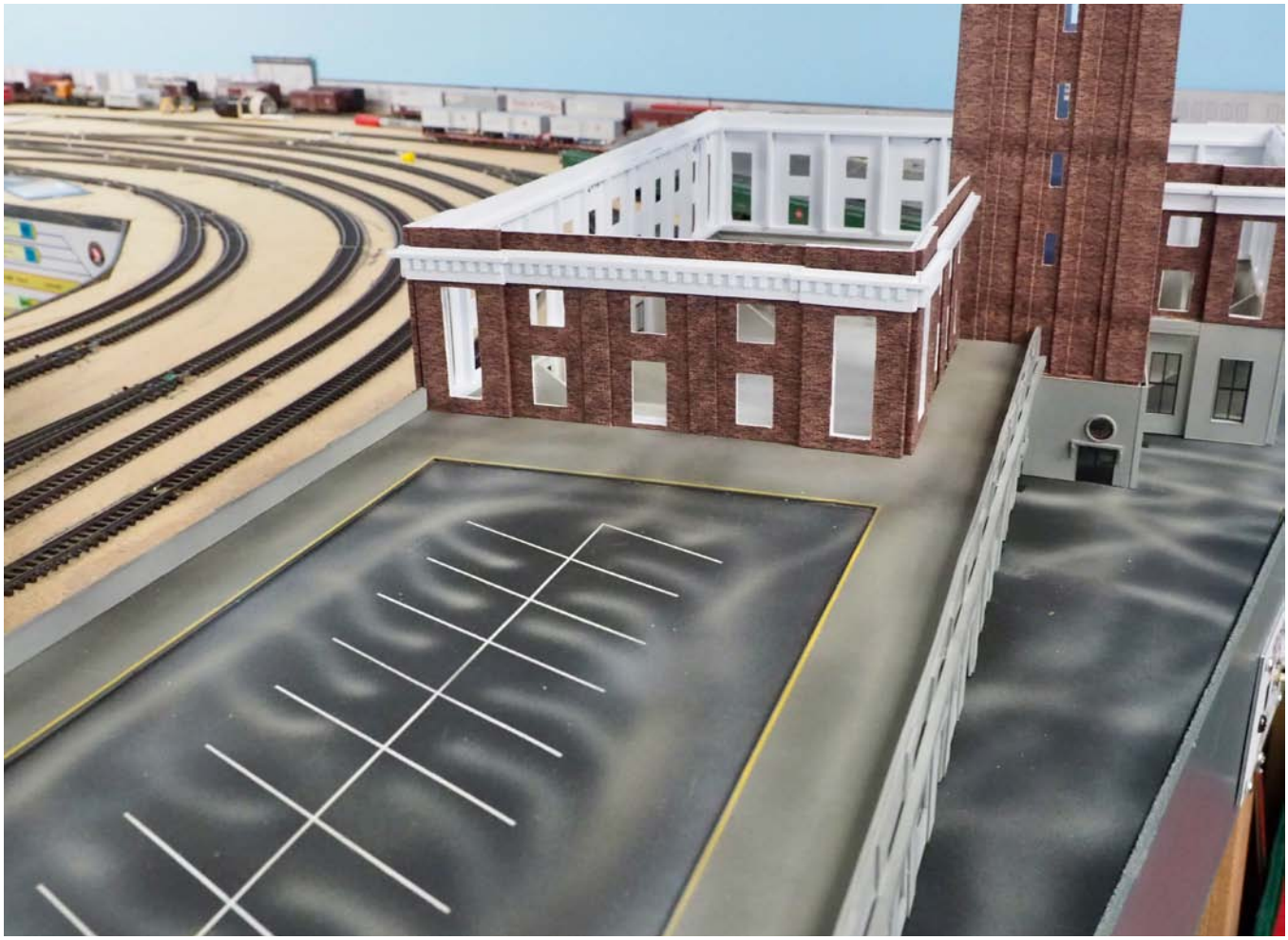


Image 27. The 2nd floor Clever Models Old Brick texture paper is in-place and the corner pieces added. The next step was to tackle the cornice running just above the 2nd floors windows. I made the cornice from Evergreen styrene strips using a Northwest Short Line Chopper, see Figure 1.

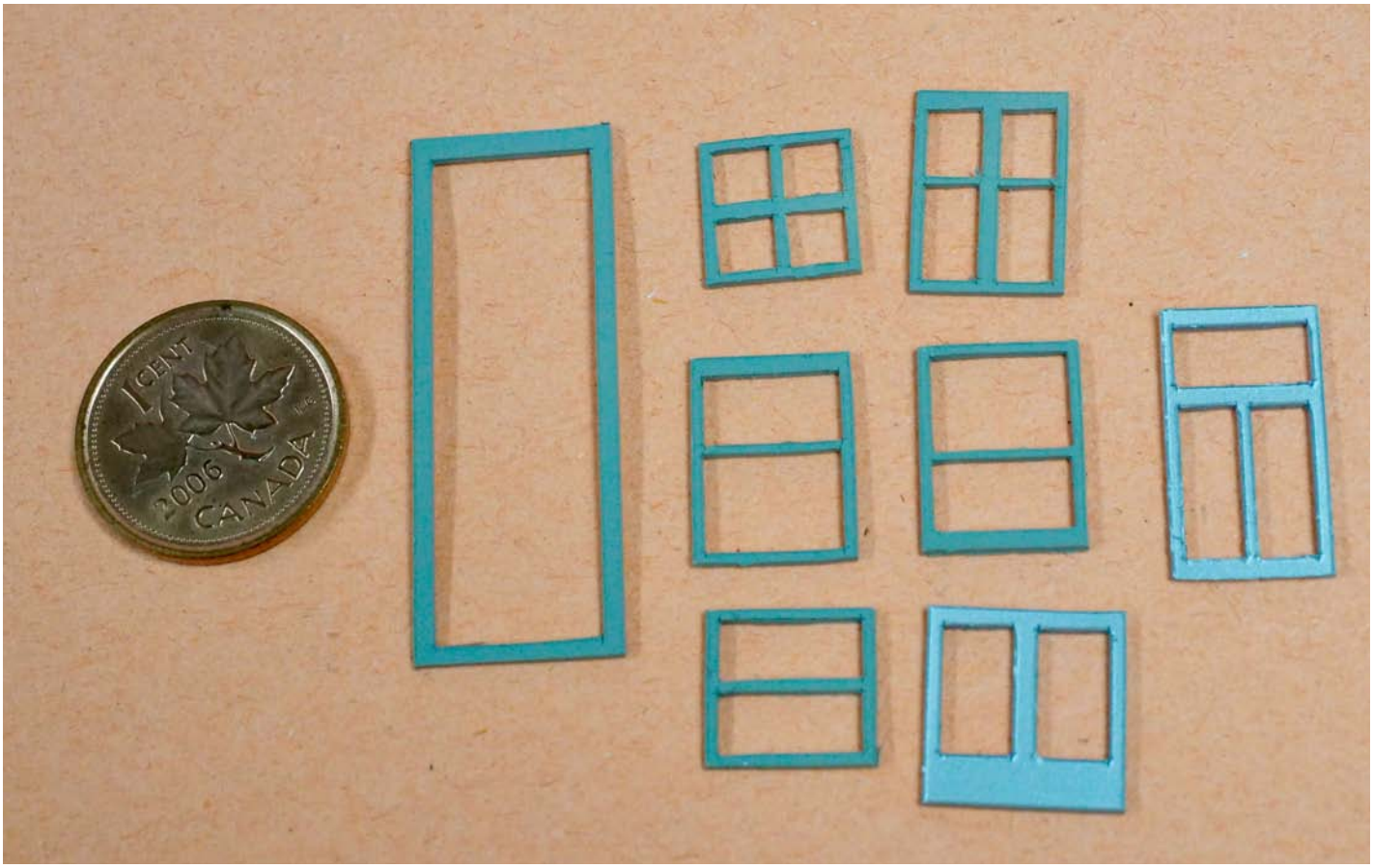
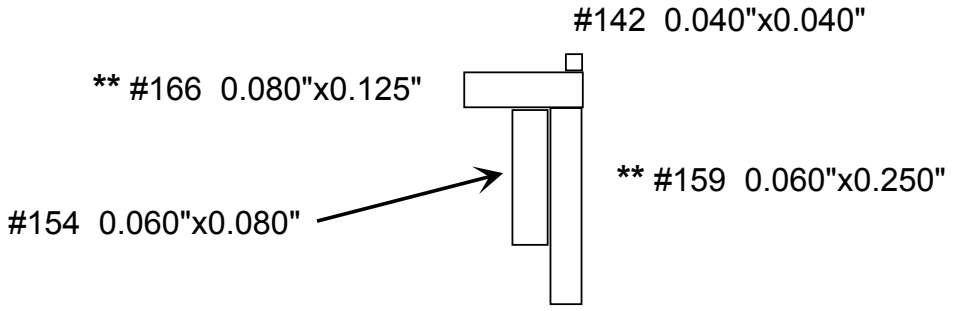


Image 28. As I used the Cricut Maker, I started to try more complex things such as window and door frames. A definite improvement over the acetate I started with.



** Corner Cornice's change:

- #159 to #149 0.040"x0.250"
- #166 to #156 0.060"x0.125"

Figure 1: KSS Cornice *Not to Scale*

Image 29. The cornice is painted, windows are up on the 2nd floor, the clock tower meets the walls but is still removable.

Image 30. The cornice is painted, windows are up on the 2nd floor, the clock tower meets the walls but is still removable.

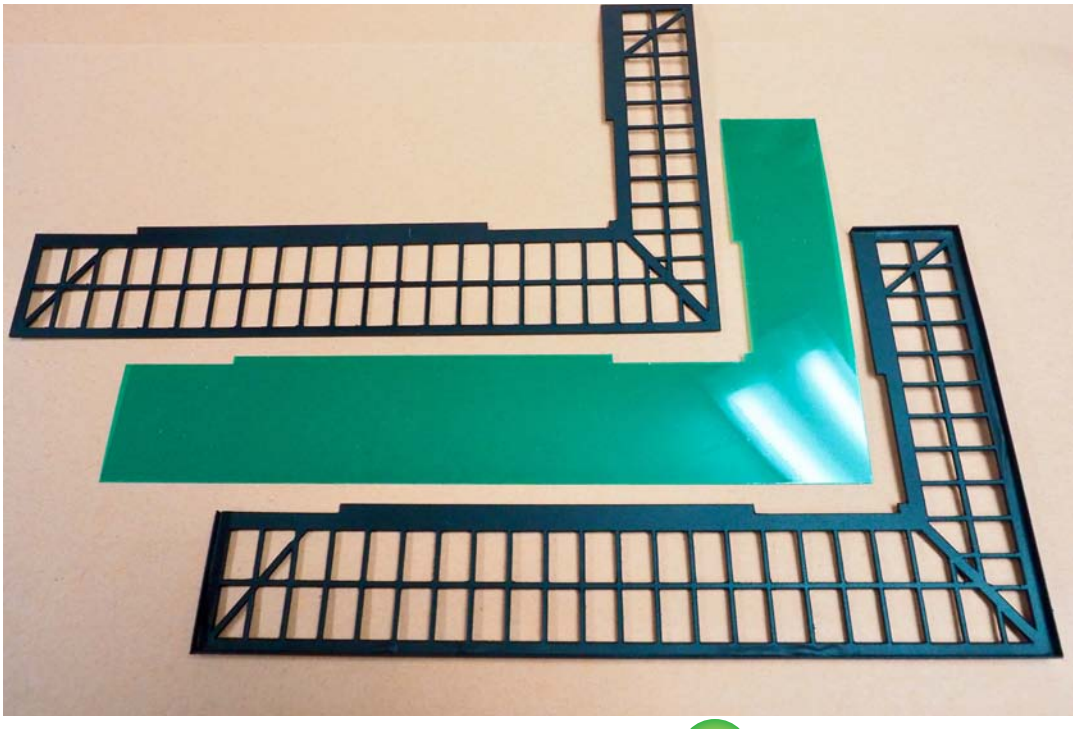


Image 30. Over the entrance portion of the 2nd floor from the parking lot is an awning. I decided to try cut this on the Cricut Maker out of 0.020" thick styrene sheet in 3 pieces as shown in the photo. The drawing is a series of overlapping rectangles that are eventually "Joined". The upper and lower parts have been painted black in the photo. I also ran an L shaped piece of Evergreen styrene along the front edge to make this a bit more ridged. I had thought about making this out of thicker styrene, but it's very time consuming to have to go and finish cutting everything out by hand.

Image 31. Installing the awning using Walthers Goo and eventually drilling #76 holes for brass wire. The lead weights are 5 pounds each. The Parking lot is 0.060" thick styrene with additional bracing underneath. By this point, I have used numerous metal screws through the KSS floor to anchor the entire building to the foundation. Also I've started to go back and add the doors cut by the Cricut Maker.

Image 32. Awning installed, now the roof is next.

Image 33. Using some math, I was able to draw the roof parts in Affinity Designer and cut the pieces out of 0.080" thick sheet styrene on the Cricut Maker. The Maker can not cut through that thick a piece of styrene, but styrene will snap along a partially cut line, which is what I did. The other tricky part was figuring out how the roof interacted with the clock tower. The roof sits inside the 2nd floor walls, I kept it removable. For the shingles, I used Clever Model's Grey Shingles.

Image 34. The clock tower now has acetate windows and the South clock tower wall is being Goo's into place. The clock tower's unfinished 1st section's cap is seen sitting on top.

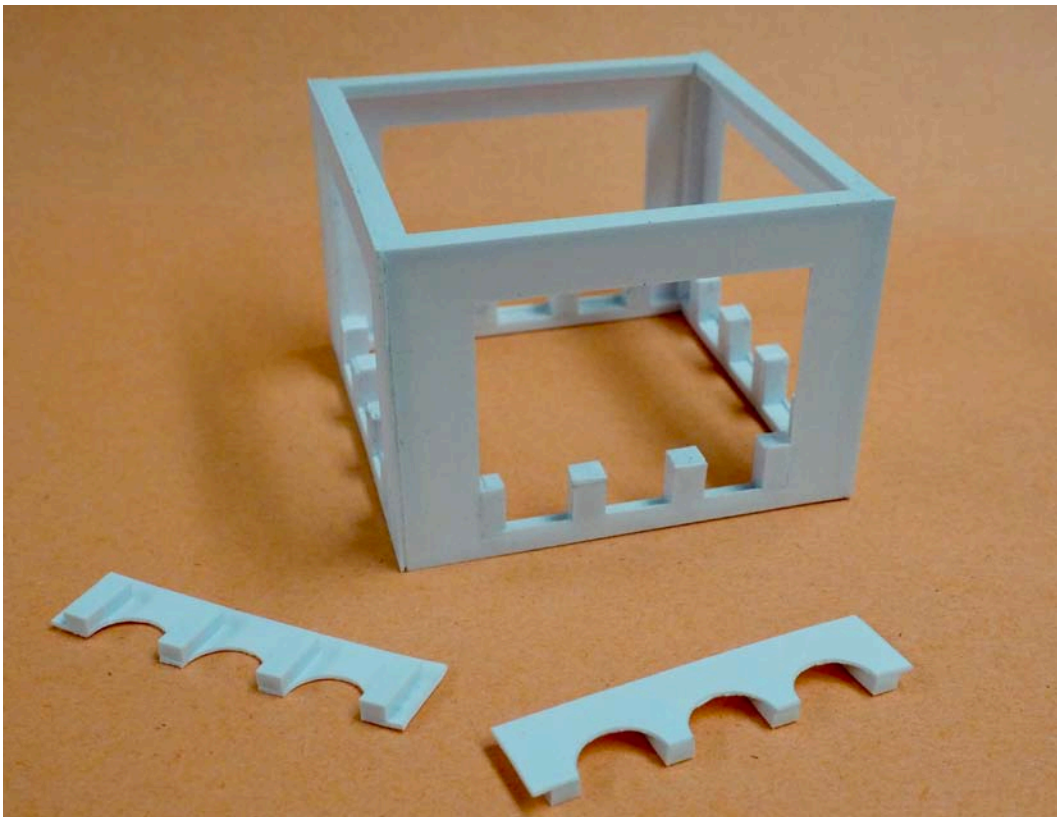


Image 35. The 2nd section of the clock tower. The walls were cut by the Cricut Maker along with Evergreen strips for bracing.

Image 36. The 2nd section of the clock tower sitting on the lower section.

Image 37. The 2nd section was small enough that I could wrap it with paper brick in one go. The texture paper can have horizontal patterns that you will need to ensure you match when joining pieces on a long wall.

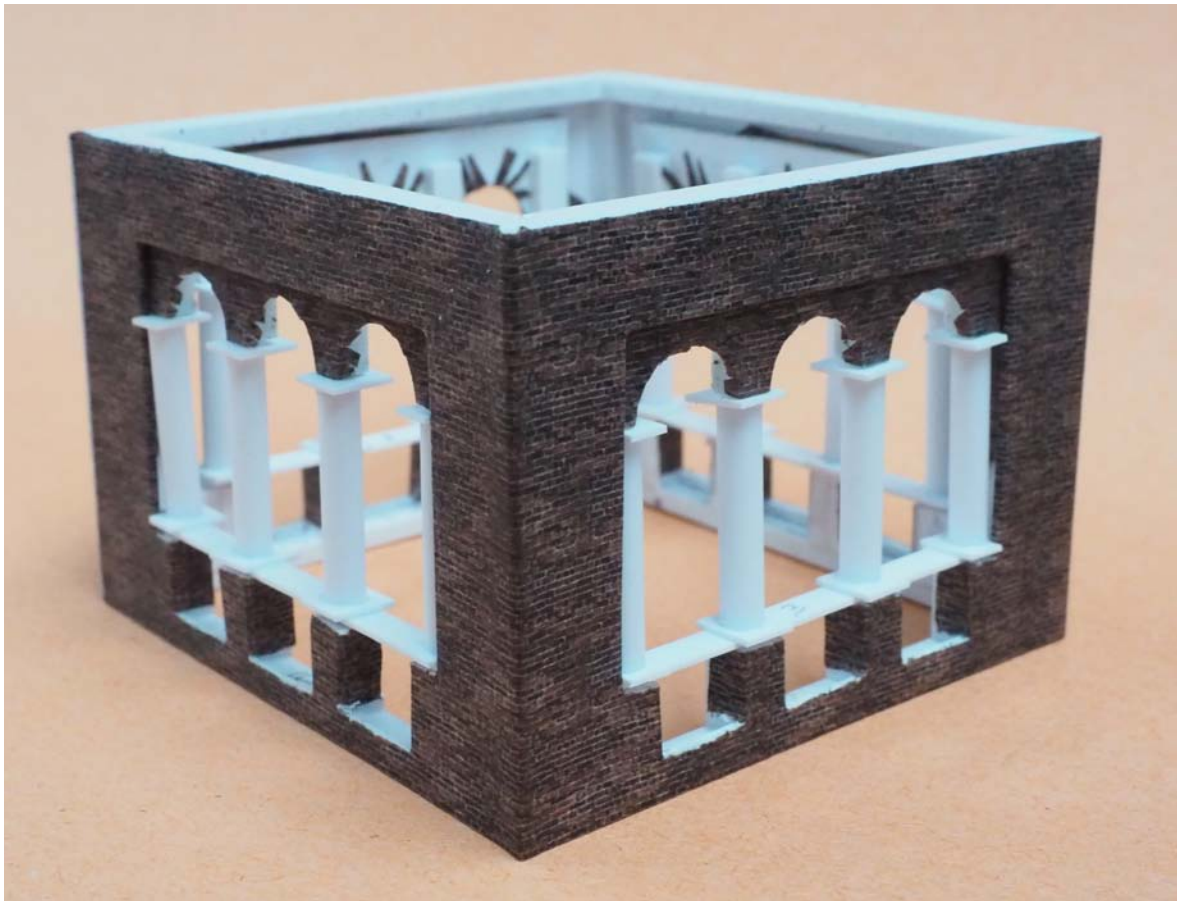


Image 38. I used Evergreen tubing to make the columns. At this point, the column assemblies are removable so they can be air brushed.

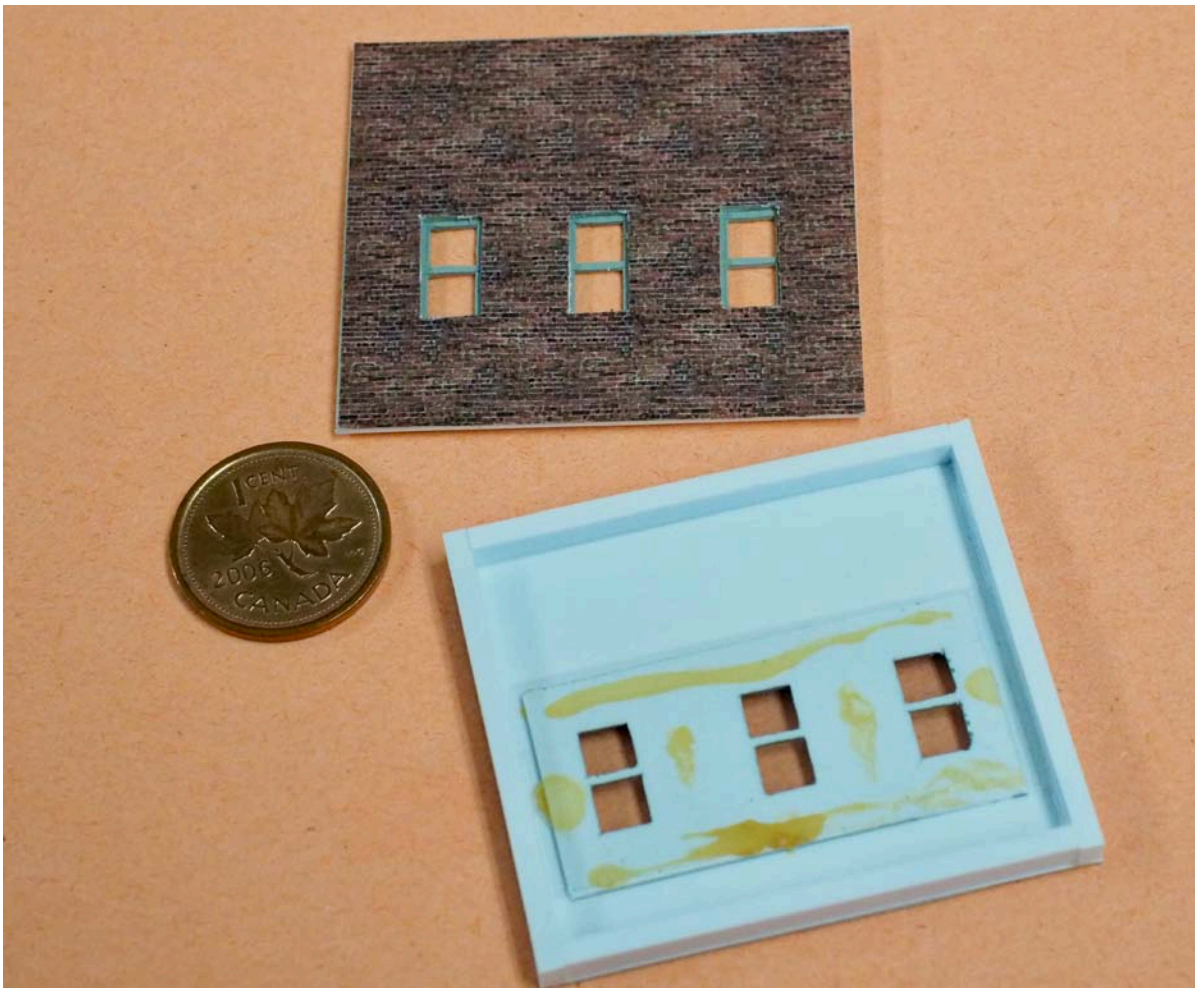


Image 39. The 2nd section of the clock tower has an enclosed space inside of the columns. I made the required windows by cutting a separate window piece to go inside the outer walls. As I went up the clock tower I cut what I needed on the Cricut Maker. I had lots of partially cut Evergreen styrene sheets that I could use for these small detail parts.

Image 40. The components of the 2nd section of the clock tower are finished and ready to be installed.

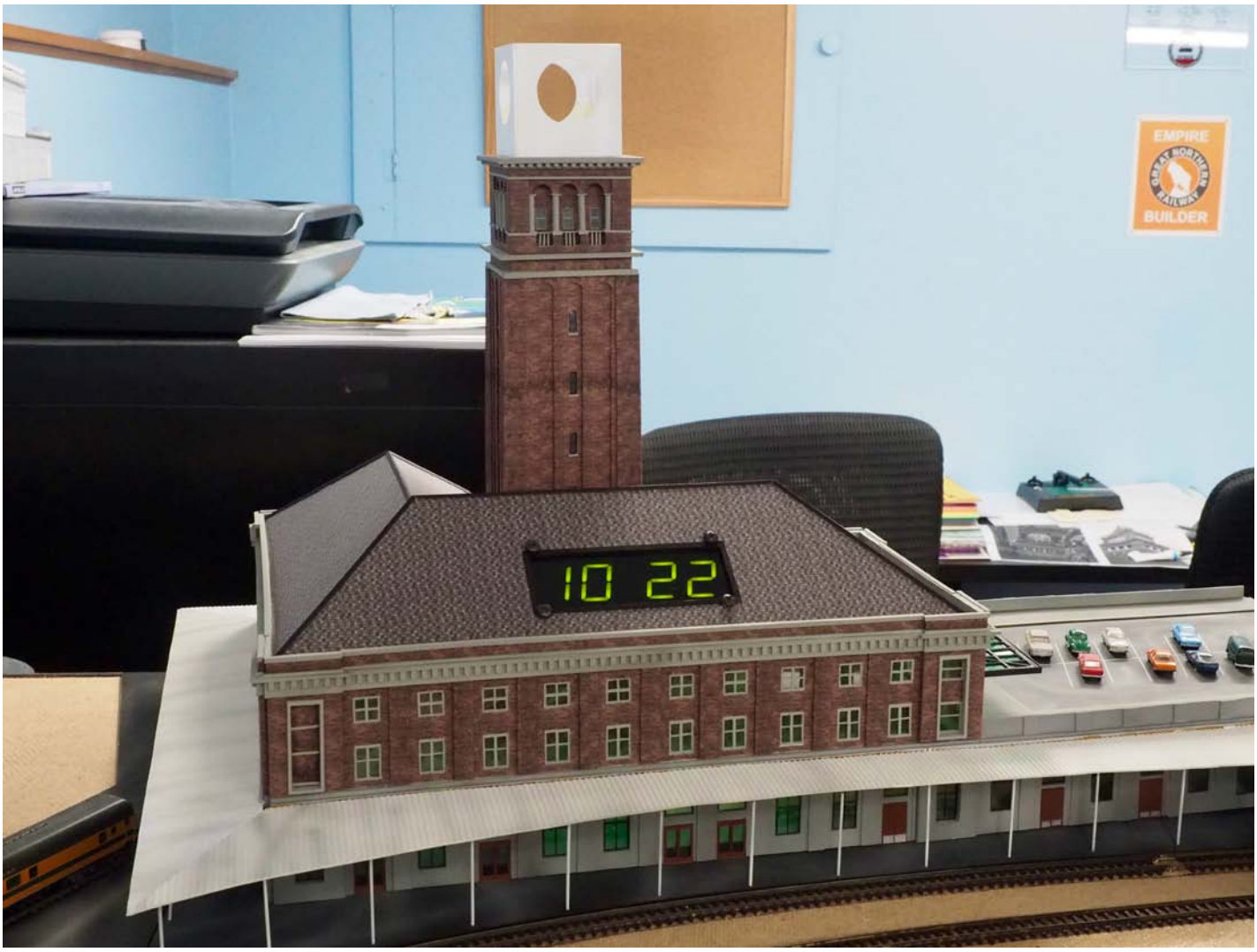


Image 41. I installed an Iowa Scaled Engineering fast clock in the roof. Because the roof is made from 0.080" thick styrene it needed no bracing. The roof also provides bracing for the 2nd floors walls. The 2nd stage of the clock tower is now installed and I've started the 3rd level. The 1st floors awning is complete, I cut that by hand.

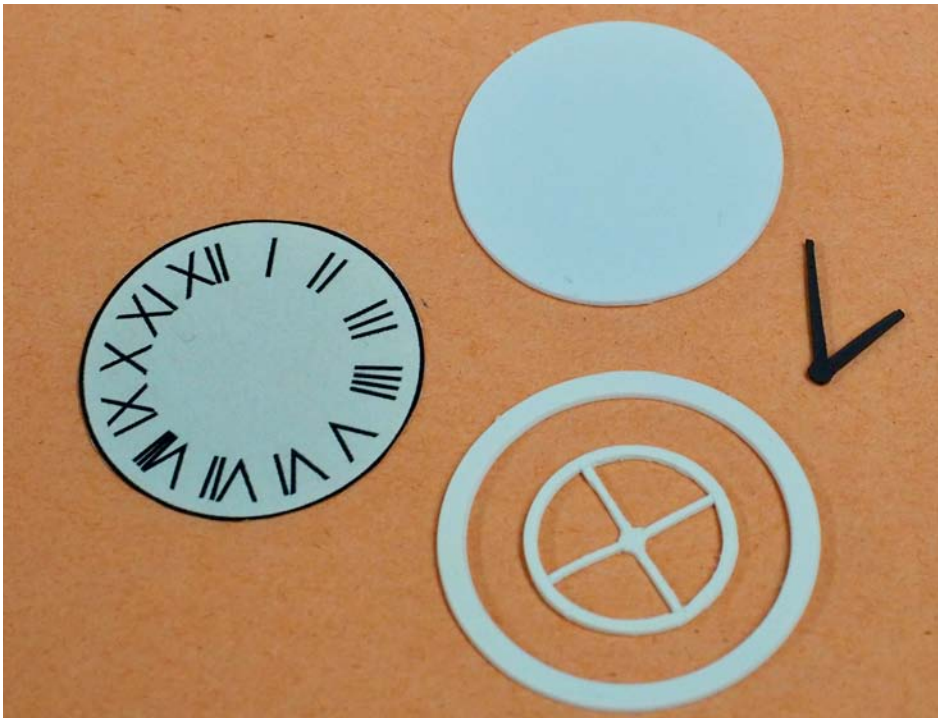


Image 42. The clock face was printed on paper while the hands and rings were cut with the Cricut Maker. The Maker is exceptionally good at cutting circle components out of styrene.

Image 43. The clock assembly being Goo'd together.

Image 44. Starting work on the 4th stage of the clock tower, its roof.

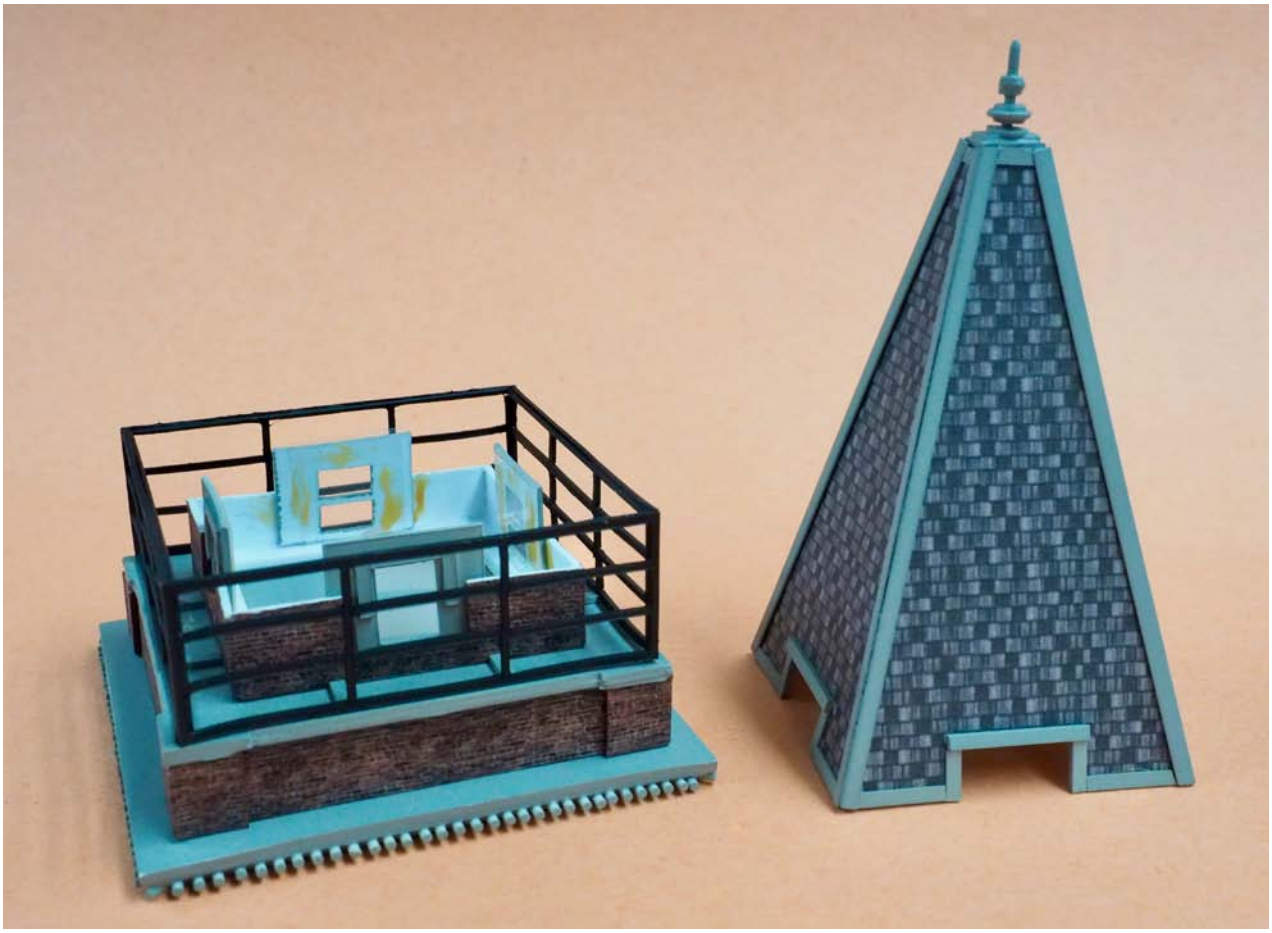


Image 45. The 4th stage ready to be assembled. For the lightening arrester, I used a piece of Evergreen styrene rod, the round discs were cut by the Maker. The black fence which will hold the large GN - NP letters was also cut by the Maker. I reinforced the fence with spring steel rod along the top edge. I used ACC to glue the spring steel in place.

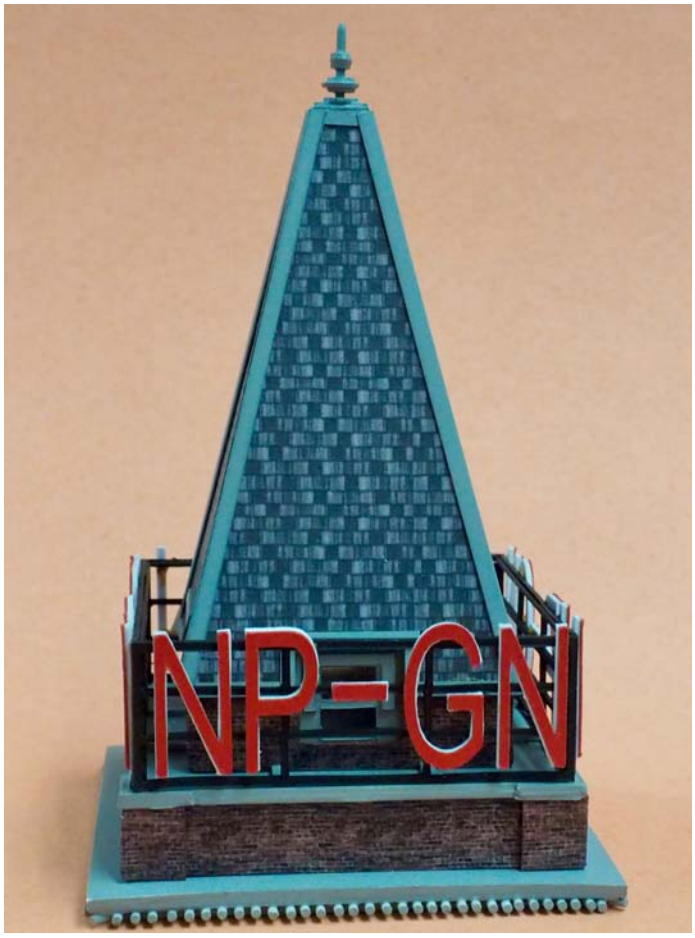


Image 46 The clock tower roof is ready to be installed. The large letters were cut out of 0.020" styrene and then covered with red letters cut out of heavy paper by the Cricut Maker. I used the same technique to make the King Street Station sign that runs along the North side of the station facing the parking lot. The top two clock tower stages are removable as is the entire clock tower and the roof.

Image 47. This is a photo of my 3rd Cricut Maker building, the Great Northern downtown freighthouse. Notice the letters M & N for the door designations, they were cut by the maker from construction paper. The windows are Tichy Train Group #2512 in the upper floor. Given that you can size Maker cuts to plus/minus 0.001", I measured the Tichy windows with my digital vernier callipers and used the Cricut Maker to do all the cutting. This is really easy to do.

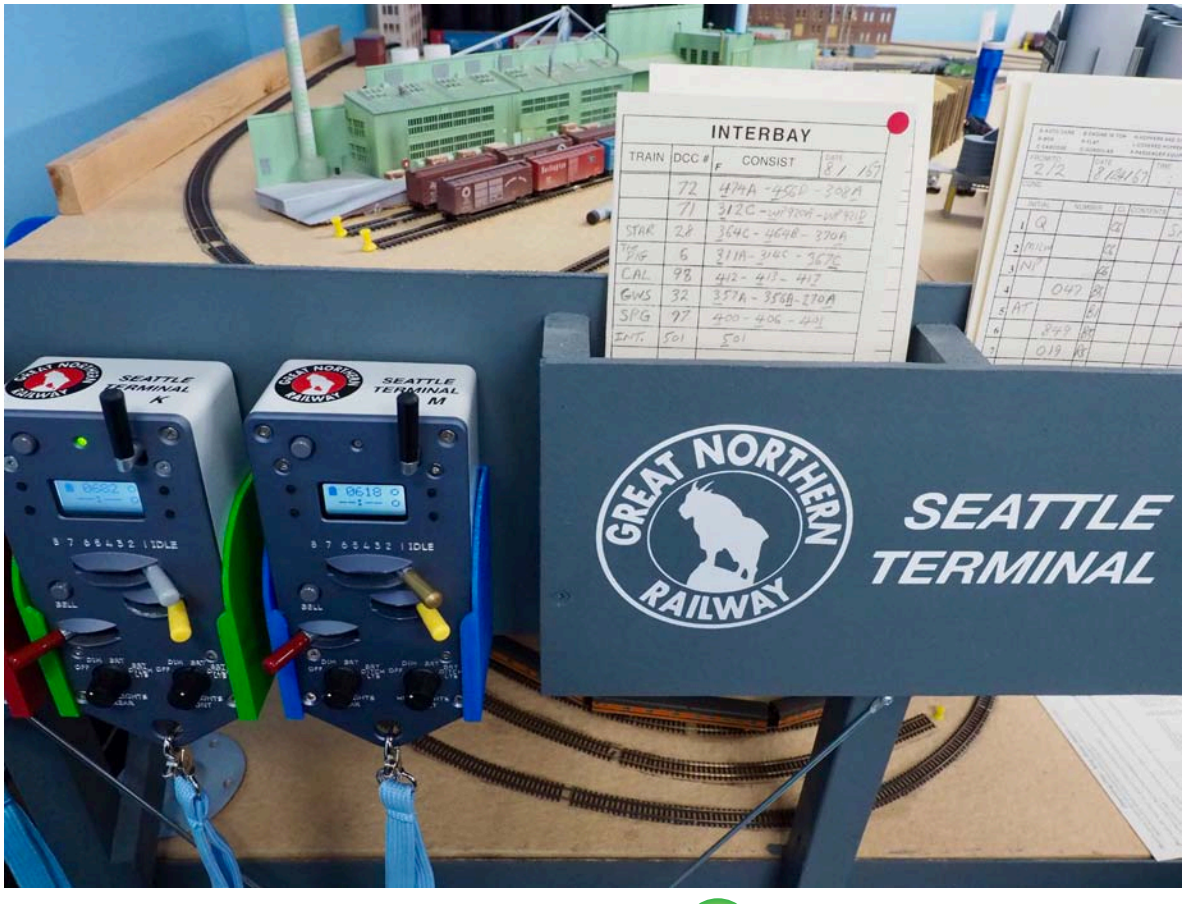


Image 48. Last of all the Cricut Maker can be used to cut vinyl to make signage for control panels, layout graphics and building signs. My ProtoThrottles all have vinyl markings on their top end, plus I used white colored vinyl for my layouts name. I drew the GN logos using Affinity Designer.

TRAVEL GUIDE N EVENTS

2022 JUN 14-19 TN Nashville.
28th Annual National N Scale Convention
Registration opens December 06.
https://www.nationalnscaleconvention.com

2023 JUN ??-?? NV Sparks/ Reno area.
29th Annual National N Scale Convention.

NEWS FROM NSR CONTRIBUTORS

Diane Wolfgram is working on a T&NO fluted baggage car.

Sandy Smith is building bridges.

George Hollwedel, in an unexpected shocker, has announced that the 14 x ~17 Tehachapi Loop RR mainline track is complete! Mojave to Edison, staging is Bakersfield and LA.

SEE YOU NEXT ISSUE!