to remain soft as created by the falling overspray. Using the stencils in order, keep moving down the backdrop to smaller and flatter clouds. Mistakes will happen and they can usually be fixed with a little freehand work with the spray can. I use a detachable handle on the spray cans. It makes them easier to control, and the built-in trigger helps to relieve hand fatigue (37).

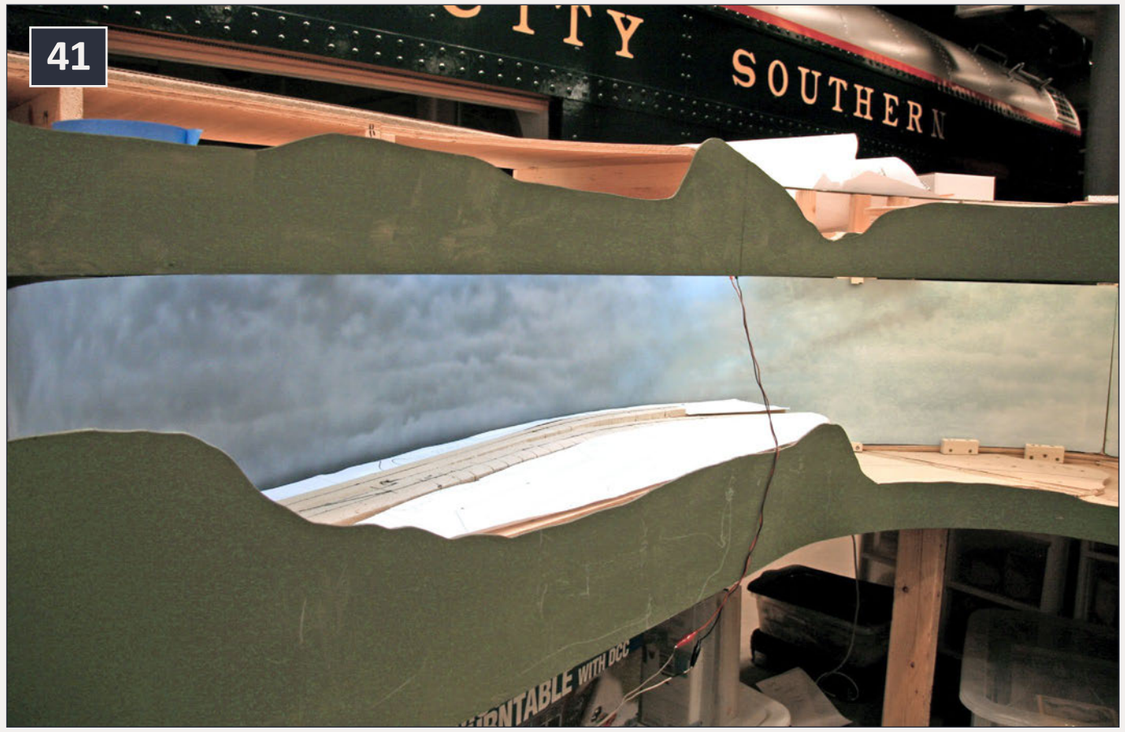
I use sticky notes above the sections of the backdrop, to mark locations on the layout, so that if I wanted more clouds over the swamp and fewer clouds over Vivian, Louisiana, I could tell where that should occur (38). I try to vary the cloud patterns as I move across the backdrop so they do not all look the same. I create bigger clouds in one section, smaller clouds in the next. More clouds here, fewer clouds there.

40: LED strip lights, 15’ long.

Light the lower level

The next step was to provide lighting for the lower level of the layout. I had thought repeatedly of how to do this. The main layout room is lighted using incandescent fixtures which are easy to dim, and to my mind provide a nice feeling of warm bright sunlight. However, under the upper deck of the layout there really isn’t a lot of room for incandescent fixtures, the heat they generate would be a problem, and I have pretty much used up the amps available on the breaker panel!

My good friend Al Carter came to the rescue, encouraging me to try the new LED strip lights. The Warm White color, which is available now, is a nice match for the incandescent light in the room. The strips come in 16’ (5 m) lengths. The cost is approximately $8, or about 50¢ a foot. The LEDs are divided into groups of three, and the strips can be cut apart at any of these junctions. Power for the strips is 12 V DC (40).



41: Cool white LED’s, left fade to warm white LED’s, right.

What I learned is, that with the Golden White LEDs, the strips must be placed about 6 inches apart to produce a lighting level on the lower deck that matches the overall lighting level in the room. This means that for the average section about 18 inches deep, a strip is required at the front, middle, and back of the upper benchwork to provide adequate lighting. The peel-and-stick backing does NOT hold well. Put it up in the evening and it has fallen down by morning. I used a staple gun and 3/8" staples to fix the strips in place. I placed the staples between the LEDs to avoid damaging the LEDs. In all the strips I stapled in place, I damaged only two LEDs.

One change in plan involved the stormy sky over Watts, Oklahoma. This area will be set in the winter season with snow on the ground. Normally I avoid "White" LEDs. They tend to have a blue tint and overall cold-white appearance. But for this section I used the White LED strips which give an

42: Completed backdrop section under warm white LED lighting.

43: Warm white LED strips 6" apart to light the lower deck.

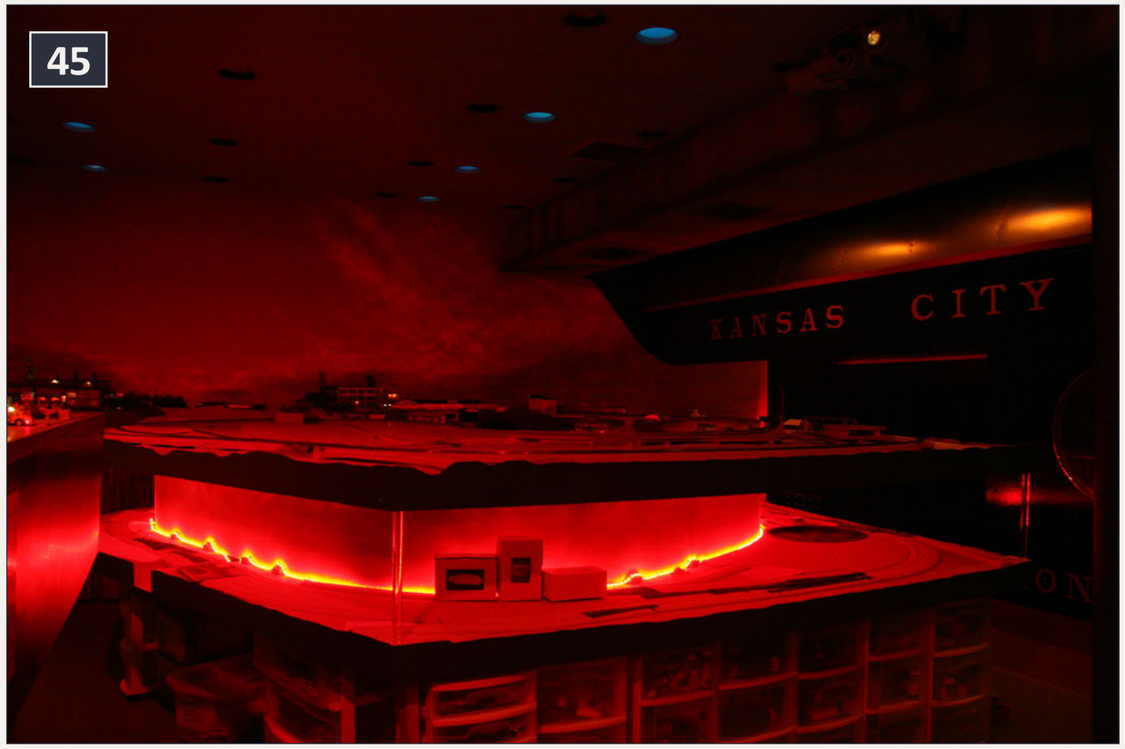
overall cold wintery feeling to this area. See figure 41 with the Blue White LEDs at the left, transitioning to Warm White at the right. Overall Warm White lighting balance is shown in figure 42.

The underside of the upper deck, with the three LED light strips installed, is shown in figure 43. The next step was to provide for "Blue" night lighting to match that in the rest of the room. I was surprised to find that, for this application, a single strip of blue LED lights was sufficient (44). I was also surprised to find that the blue light includes quite a bit of ultraviolet. This causes any paint or finish that would glow under "black light" to glow. You could capitalize on this effect, if desired. The great John Allen used black-light effects extensively in the Port area of his Gorre & Daphetid layout.

Last, I decided to add red lighting to match the red dawn and dusk lighting in the rest of the layout room. In this case, a last-minute decision was made to put the red lights on the layout deck shining up instead of on the top facing down. This will require careful consideration in the placement buildings and

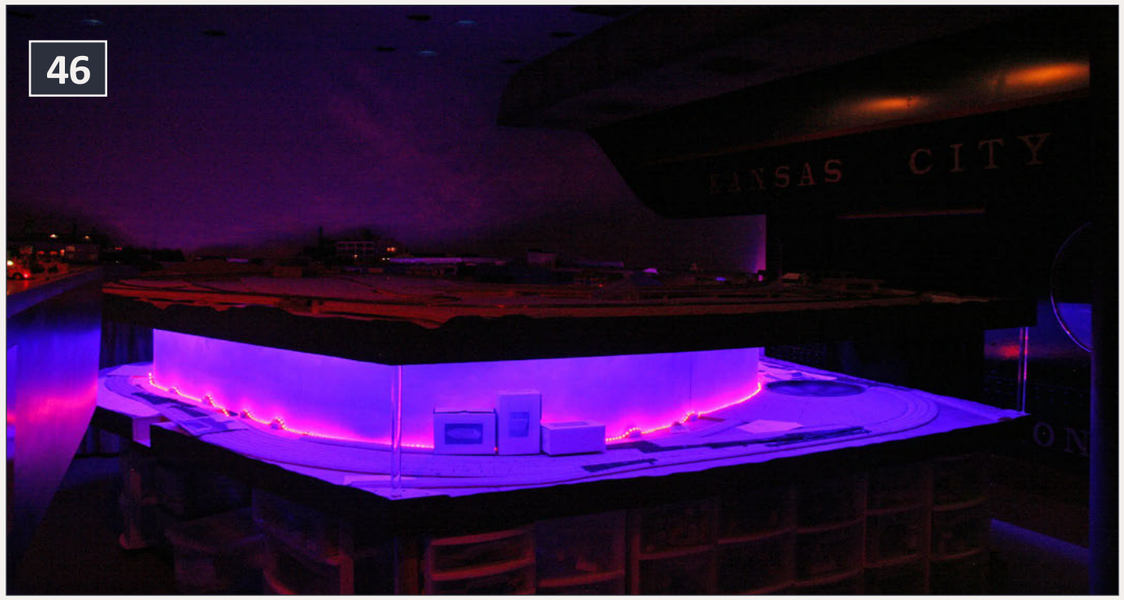
scenery, but I think the effect of sunrise behind trees/buildings/hills will be worth the effort. All this was made possible because of the ½" width of the LED strip. Incandescent or fluorescent red lights, would require a much greater depth to accomplish this. I have placed some boxes in front of the red LED strip (in the center of the photo) to simulate what the glow on the horizon would look like behind buildings and hills with the LED strip hidden behind them (45).

A serendipitous result was achieved turning on both the blue lights above and the red light below. This provides a very nice red/violet/blue transition between night and dawn lighting (46). I was also amazed to discover that the Warm White, Red and Blue strips make up a total of about 10,000 LED's! Only today's cheaper prices make this cost-effective. On an average, using three Warm White strips, one Blue and one Red strip per foot works out to about $3 per lineal foot.



45: Red LED up lighting for dawn and dusk sequence.

44: Blue LED strip for "night lighting".

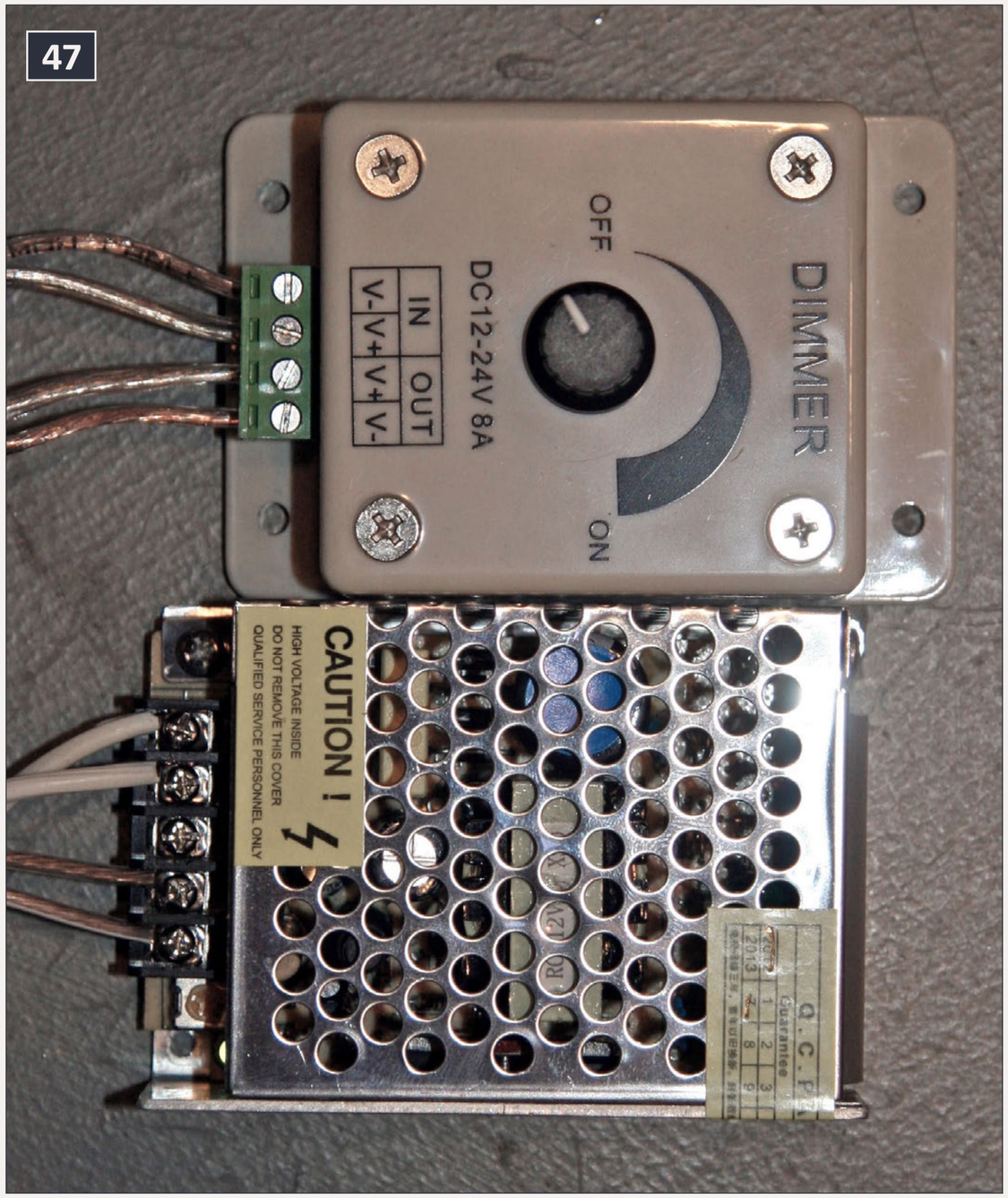


46: Red and blue LED lighting together yields the "purple shades of night".

The last issue is providing power and dimming for the LEDs. That's not much of a problem for the single strip red and blue LEDs. For these I purchased two 12 vdc 2 amp power supplies for six dollars each. However to power the 6000 Warm white LEDs at 1 milliamp per LED works out to 6 amps! So the usual 3A RadioShack wall adapter won't handle the load! A 12 vdc 20 amp switching power supply costs $33. The three dimmers will handle up to 8A and cost $5.50 each. I ordered all of the LED strips, power supplies and dimmers from Amazon.com.

On to track laying

So with this installment, the benchwork, roadbed, backdrop, fascia, and lighting are complete. Now it's time to lay track, install wiring, and ballast. Did I miss something? Oh yes, run trains! ☑



47: LED dimmer and power supply.

Reader Feedback (click here)