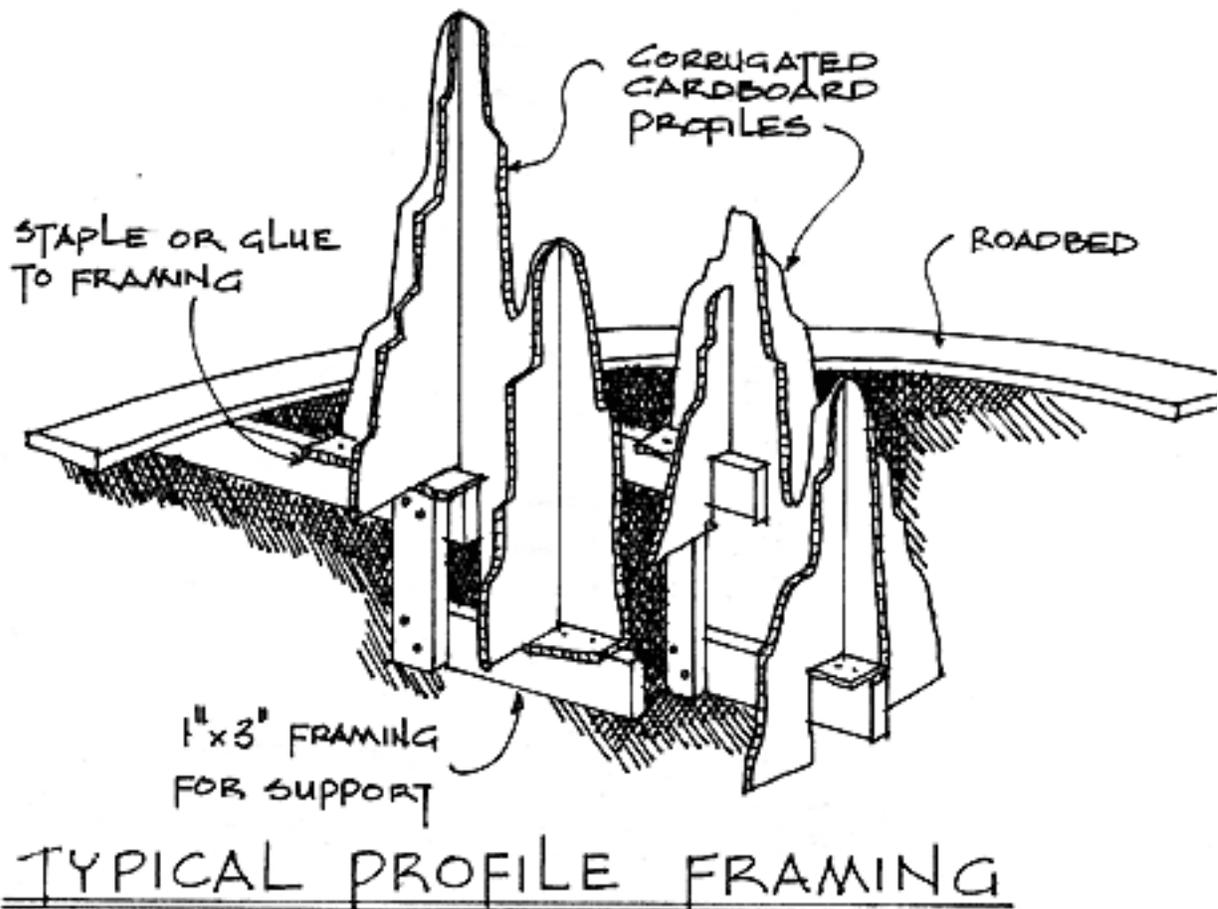


## Phantom Curve ...Hoodoos!

Phantom Curve stretches from milepost 312.20 to 312.50 on the Cumbres and Toltec Scenic Railroad, originally known as the Denver & Rio Grande Western. This scenic wonder is just north of the border between Colorado and New Mexico and just west of Mud Tunnel. The pedestal rocks and tall pinnacles, also known as "hoodoos," are formed from breccias of the Conejos Formation. Breccia is a rock formation of broken angular chunks of rock cemented in a matrix of fine sand and sediment resulting from a volcanic eruption. This material tends to be susceptible to erosion and weathering and because of its source, has many shades of colour from grey to red. A pinnacle typically evolves when protected by a harder material or cap rock that remains intact above it while the exposed material below is slowly eroded and washed away. An excellent photograph of the curve showing the tracks winding through the pinnacles is on page 19 in the publication Ticket To Toltec, by Doris B. Osterwald. During a photo run-by on a rail fan trip, I took numerous photographs of the site for future reference

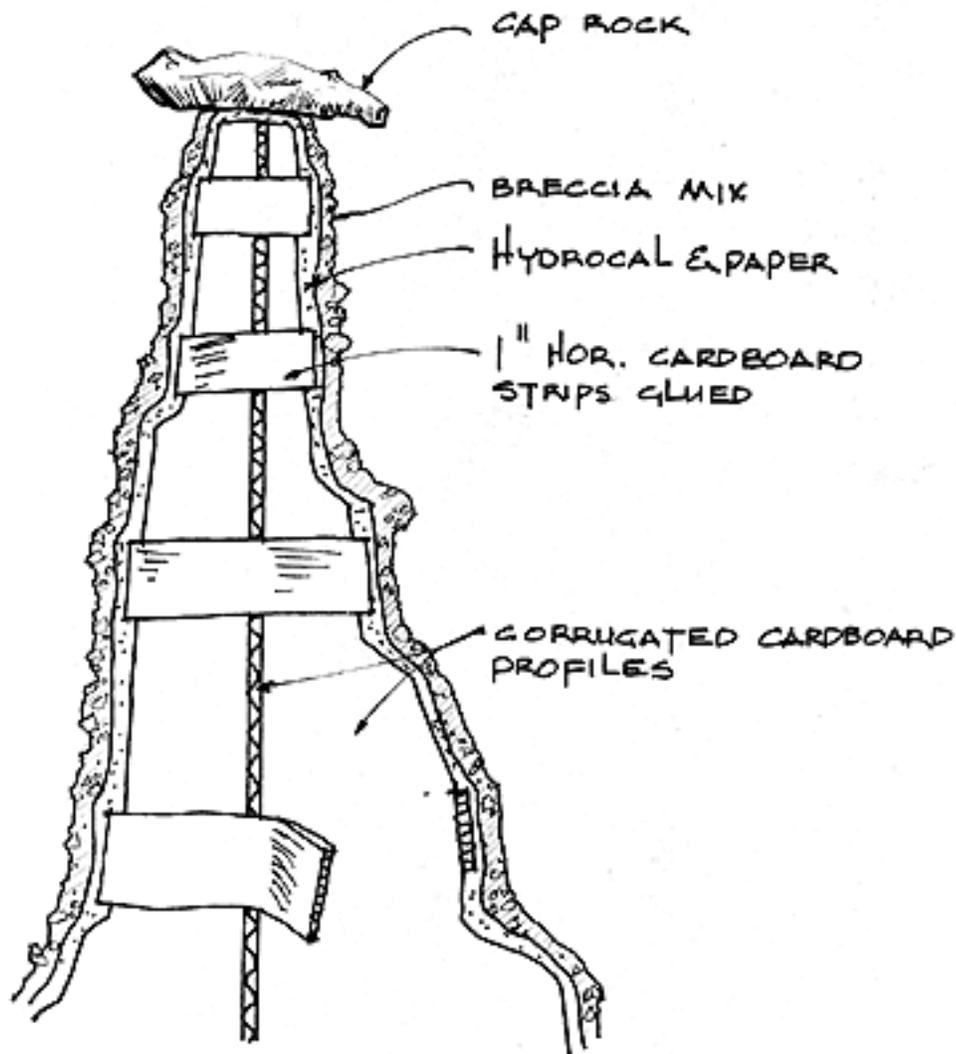


## FORMS

I was extremely fascinated by these formations when I saw them during a train ride I took on my way to the last Narrow Gauge Convention held in Durango. I was looking for a unique scenic idea for one corner of my Denver & Rio Grande Western layout and decided this was it. I wondered how I could do it. Rock moulds would definitely not work. I had not seen these formations modelled before. After much thought, I began by planning the locations for the pinnacles. I had used corrugated cardboard profiles successfully for the last few years to form the general base and support for my scenery and rock walls. I thought this would be the best method for what would turn out to be very heavy scenery. I cut out a general outline to the height required for each spire and attached it to the base of the layout framework. I cut out a similar profile next for each spire, cut it vertically in half and glued half to both sides of each form, creating an 'X' in cross section. Some of these would flow together and some would carry on down below the layout framing for a sloped embankment. Spires located in front as well as behind the tracks added visual dimension. I glued one inch strips of cardboard horizontally around these forms at about 4" on centre to hold news paper balls that were stuffed inside. I occasionally sprayed the papers with water to stop their tendency to spring out of shape.

## SHELL

When I was completely satisfied with the contours, having done some modifications as I went along, I prepared to hold the entire lot together with plaster. This, more than any other form of scenery building, is as close to sculpturing as you'll get. I used Hydrocal because it dries quickly and is extremely hard and strong when cured. I tore up 4" to 6" squares of brown paper grocery bags and dipped them into the soupy mix of Hydrocal covering both sides. Then I laid them onto the framework starting from the bottom and working up. By doing this, I established a strong base to support the weight of the plaster and paper mix. If I had started from the top, the supporting structure could sag and may have collapsed under the weight. The horizontal strips of cardboard soon became useful because I could wrap about one inch of the top of the paper squares over for support. Otherwise, I found that some of them would begin to slide off and down the sides as I began a vertical ascent of application. When I had covered the scenery with the mix, I prepared a little more Hydrocal and smeared handfuls over the entire surface to smooth it out and to make sure I had coated everything. When this base was dry, it was extremely strong. At any time after this I could pull out the stuffed newsprint.



## TYPICAL CROSS SECTION THRU HOODOO

### ROCK FACE

Next, to create the effect of the breccia, I decided that I would have to copy mother nature closely and, as I said earlier, rock moulds would not be the answer. I collected a lot of broken shale and angular stone with a pinkish grey colour. I ordered much of the stone from The Rock Quarry. I mixed all sizes together from fine to course, but no larger than about 3/8". For finished rock work, I prefer to use Plaster of Paris because of its fast setting nature. Of course you can add slow set to it to retard its curing time. I added a dry coloured powder paint, blended pinkish grey, to the plaster and then added about 40% rock mix and several cups of coarse sand. The sand gave the matrix a texture.

I poured water in and stirred the mixture with a very strong wooden spoon. The mix had to be firm enough that it would not run or slide on a vertical surface. Then the breccia was loosely and heavily trowelled onto the forms and very generally smoothed. This time I started from the top and worked down. Each time I worked with an area of approximately a foot in height because I needed to work with it while it was still soft. I varied the surface with bulges here and there and added some contouring to resemble the examples in the photographs. The next step I called a "blasting technique". While the plaster was still somewhat soft, I took a spray bottle filled with warm water. Working from the top down, I vigorously sprayed the plaster, flushing off the surface plaster to reveal the aggregate stone and sand. You can now see why I started the plastering from the top. The excess plaster runoff would accumulate on areas already 'blasted'.

This was the same technique I have used for years when casting rock molds in place, wet on wet. These castings are butted together and the joints filled loosely with plaster or molds are overlapped slightly. Then the blasting technique is used to blend the rocks by flushing out the joint thus blending the moulds together.

#### CAP ROCK

The cap rock had to be cast separately. You may even be fortunate enough to find an actual rock to suit. It generally would be somewhat weathered flat. I glued the cap rock in place on top of only the tallest pinnacles using a little plaster and balancing some precariously. Not all pinnacles would still have them, as they would eventually fall off as erosion continued.



## FINISHING

I mixed acrylic paint and water to suit the desired colour and sprayed areas where touchups were needed. I varied the colour slightly and sprayed different areas to simulate the changes in the rock colour. This light wash also helped pull together some of the rock colours. I sprinkled rocks of varying sizes down the slopes and at the bases of the pinnacles where the eroded pieces would accumulate. If you observe tall slopes, you will notice that the larger rocks tend to roll farther down the slopes while the finer elements remain higher up. I secured all this with white glue, water and a little soap sprayed over everything. Grass, shrubs and trees were added as desired.

Quite authentic in appearance, the pink pebbled pinnacles added a haunting mood to the corner of the layout. Just imagine the images that the crew would have seen on a midnight run as these spires were silhouetted in moonlight or illuminated by headlight!