A New Container Business for the Mountain Electric

By George Paxon

While surfing the net one day I had a look at photos of some old rail container operations. A while back we had scratch built a model of a Cincinnati & Lake Erie traction flat car and its unique containers (**See Photo 1 for my model and Photo 2 for a shot of the prototype.**) The prototype photo is from the Indiana Historical Society, who have the Cincinnati Car Company archives, and used with permission.

An idea began to form in my head for a small container terminal. Not too long ago we wrote an article for *The O Scale Resource Magazine* about a package express car for my Mountain Electric Ry.

Well, the story goes that the package and less than carload lot (LCL) business has been so good that containerization has become imperative to further reduce labor costs on the ME Ry when handling some of this LCL freight.

My initial thinking was that the C&LE container car could be spotted at the container terminal for loading and unloading. And we should also build another traction flat or gon which could bring steam railroad containers to the terminal as well. Our Mountain Electric interchanges with the Baltimore & Ohio at Somerset, Pennsylvania, and the steam road containers could be transferred from steam road cars to ME Ry cars there and then moved over the ME Ry to the terminal at Jacobs Creek.

From these initial thoughts, a new industry was spawned for my town of Jacobs Creek, and the ME Ry was in for some more revenue.

In the early days prototype LCL freight could be rather casually handled by both steam and traction lines. See the unloading operation on the Leigh Valley Transit near Philadelphia, Pennsylvania in **Photo 3**. This view is from the Rockhill Trolley Museum and used with permission. Containers quickly came into favour and were used to package and consolidate LCL freight as much as possible. The first containers were crates, sacks and barrels. Considerable labor was still needed to move these containers from shipper to train station, station to freight car, often car to car, car to station, and then, destination station to receiving customer. By the 1920s, rising labour costs required better ways of handling LCL freight. Several steam railroads experimented with larger containers.

Early containers were wooden and later steel. The New York Central developed a bottom dump container for hauling bricks. Previously, bricks were tossed into box cars, loaded and unloaded by hand and wheel barrow. The brick containers reduced the unloading time for a car of bricks from several days to several hours. And a 50 foot long gon with containers actually carried almost four times the number of bricks as a 40 foot box car had due to the haphazard and partial loading!

Cement was a big product from eastern Pennsylvania, and it needed protection from the weather in transit. There were no covered hoppers then. Containers were developed for that commodity. Before bulk goods containers came along, cement was shipped mostly in bags and barrels in box cars and loaded and unloaded by hand.

Containers were also developed for coke, merchandise, and even refrigerated products. Some railroads jumped at the opportunity to reduce costs of labor in handling and transferring LCL freight and reduce the cost associated with loss and damage of loose freight. They developed special cars to transport the containers. Most were rebuilt flats and gons.

One enterprising firm, the LCL Corporation, provided several thousand containers for this traffic. **Photo 4** shows a B&O gon loaded with the quasi-standard LCL Corporation merchandise containers.

But there was little planning and even less standardization across the rail industry. Each type of container required a unique car type to move it. The Pennsy, in typical Pennsy fashion, rather than settle for the somewhat standardized rectangular container furnished by the LCL Corporation, and used by many eastern railroads, developed a merchandise container of their own that could not be accommodated by cars of any other line. See **Photo 5** from the Altoona Association of Model Railroaders, courtesy of William Burket, and used with permission.

Photo 6

Above is one of our modern cars specially adapted to transport freight in twelve removable protective containers.

The New York Central, always a rival, and not to be outdone by the Pennsy, also developed their own unique merchandise container, it would seem. And, to just keep things interesting, the NYC container cars were built from ex-baggage cars or express reefers. To make matters even more complex, both the Pennsy and NYC also used some of the quasi-standard LCL Corporation containers as well. And, as we saw above, some interurban lines jumped on the band wagon as well and developed their own peculiar containers and container transporting cars as the C&LE car illustrates. Some smaller steam roads even got into the container business as you can see in **Photo 6** where my favorite steam line, the Pittsburgh & West Virginia, had containers and container cars! As far as I can tell, this early U.S. container business was concentrated in the northeast. And, it was probably best considered a failure due to the lack of standardization.

Down here in Australia, they also had early rail LCL containers. And, as you can see from **Photo 7**, even though the rail network was small and consisted of only a very few different rail systems, they also had a problem with standardization**.** Photo is by Brad Hinton and used with his permission.

Photo 7

So, before the rail industry could sort itself out, along came the fork lift, the pallet, larger and more powerful trucks, etc, all of which evolved into the 20, 40 and 53-foot intermodal container business we know about today. This technology was developed by the ocean shipping industry while the railroads had their collective and parochial heads in the sand. Later, the rail industry just worked out methods and cars to load and move the

Photograph by J. Baylor Roberts

ocean containers on rail. And the LCL aspect really disappeared as the ocean containers could hold car load quantities. Also, any LCL freight was consolidated into the larger containers by freight forwarders long before the railroads got involved. But we model the 1930s and are interested in the early rail containers.

And, since space on my layout is always a premium, industries need to be small enough to model and/or they need to use layout space effectively. This objective is extremely critical for us O gaugers as everything is big! I also lean toward quaint structures that remind me of those I saw in my early years. I also like to keep my models plausible as to period, product, geographics, etc. Before charging off and building or buying cars, locos, buildings, I try to ponder how it would fit into the scheme of things for my layout.

With these objectives and constraints in mind, we set off to design our container industry. Further research into early containers, and the container handling business, helped develop the background for our new industry and flesh out the idea further.

My next thoughts turned to the terminal itself. My initial idea was to keep it to an area approximately 10 inches square. This would suit as it will take a standard 40-foot car. The plan was to have an overhead crane inside a roofed but wall-less structure. Many such prototype cranes would have run along ground mounted rails to access several to many rail cars. See **Photo 8** by J Baylor Roberts, of a very large Pennsy container terminal.

But in the interest of economical use of space, we opted for a crane with relatively limited travel that could service only one car**.** We justify that for our country traction line where traffic will be limited to receiving only one car at a time. On the ME Ry, the containers would be craned from the ME Ry car to a truck for delivery to local customers. To support this scenario, we can have some containers stored on the ground awaiting a truck or a rail car to take them further. We would also need a roadway through the terminal and under the crane to enable loading the containers onto trucks.

Some containers could be unloaded while remaining on the ME Ry car. This was often the case with the cement containers in the prototype world. An air compressor was used to pneumatically convey the powdered cement from the container into a waiting vehicle via a large diameter hose.

Another location consideration was that the terminal must be located at the end of a siding. The overhead wire needed for traction would interfere with crane operations and the overhead needed to be terminated at the point where the siding reached the terminal. We try to provide a few industries on each siding to make better use of trackage. Having this at the end of a siding would not present a problem.

With the above ideas rattling around in my mind, it was off to the drawing board to sketch out the container terminal ….

Building the Jacobs Creek Terminal

The basic structure planned was conjured up as a combination of structural steel and wood. The uprights and crane rails would be of structural steel construction and the roof trusses would be of wood. No real reason for this – just what could have been.

When working out your basic dimensions, be sure to take into account your clearance gauge, the envelope for the car, on the rail siding. My dimensions suit my traction cars and could be smaller than yours if you are into larger steam road or more modern cars. The track approaching my terminal will be straight. If the approaching track was curved, additional clearance might be required.

The sketch of the terminal we conjured up is shown in **Figure 1 on Next Page**.

In the prototype world steel uprights are columns and horizontal members are beams. Since Evergreen Styrene did not differentiate at one time neither did we. Now they make both “I” beams and “H” columns. The uprights we made of 5/16-inch styrene “I” beam material. It would be more correct to use the new “H” material for the uprights, but we did not have that luxury. At a scale 15 inches this is quite realistic. As you can see from the drawings, we made craneways and brackets to attach to the uprights. Diagonal rods stiffen and keep the structure square and are located where they will not interfere with rail cars, trucks and the crane. The uprights sit on concrete pads with a bottom plate and gussets as shown in the drawings.

As the shed is open and can be easily viewed, I suggest you detail the trusses. We cut ours from 1/8th inch thick material. You could build the trusses up from styrene also. To model the steel splice plates used to join together the wood beams, cut them from thin styrene. Stain or paint the wood trusses and paint the steel plates a black. Then glue the painted plates over the joints. You can simulate bolt detail on these joining plates. One way is to drill through the plates and add nut-bolt-washers and touch up the paint with weathered black. As an alternative, you can press rivet-like impression into the plates.

Once the trusses are detailed, assemble the roof structure. See the exploded drawing, **Figure 2** (**on next page)**, for our trusses. Install the roof purlins of .060 x .188 styrene or stripwood. Deep purlins are needed due to the long spans between the trusses. Pre paint or stain the purlins before adding them.

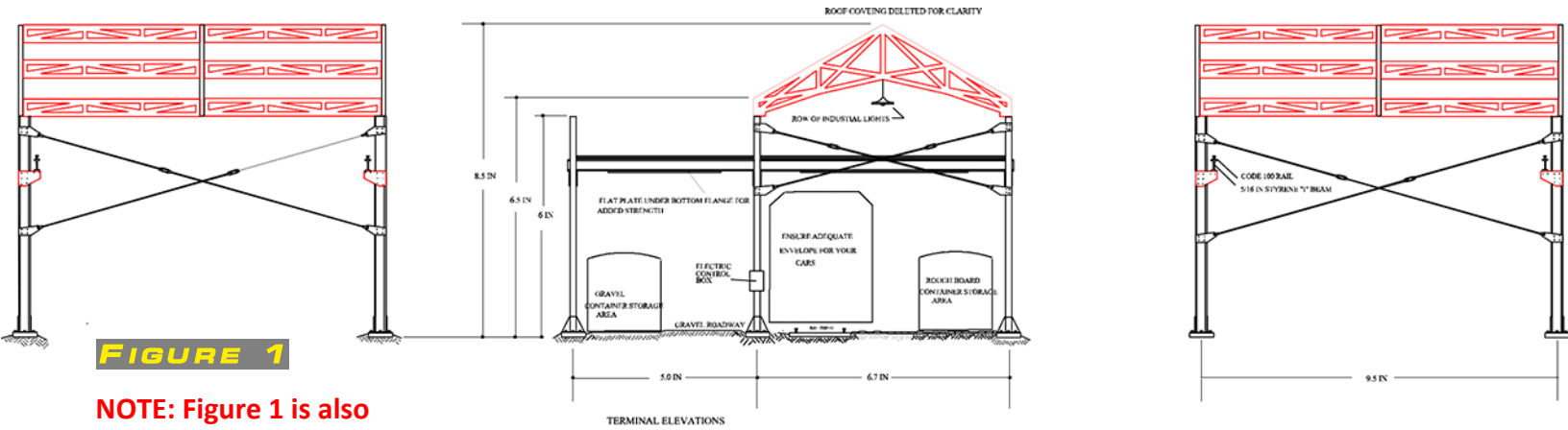


FIGURE 1

NOTE: Figure 1 is also reprinted at the end of the article in a larger format.

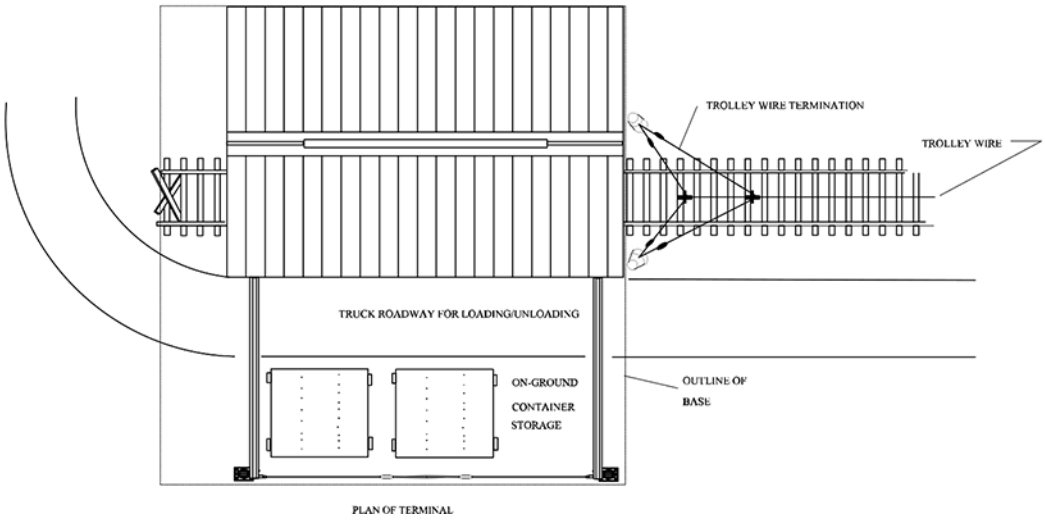


Figure 2 TRUSS CONSTRUCTION

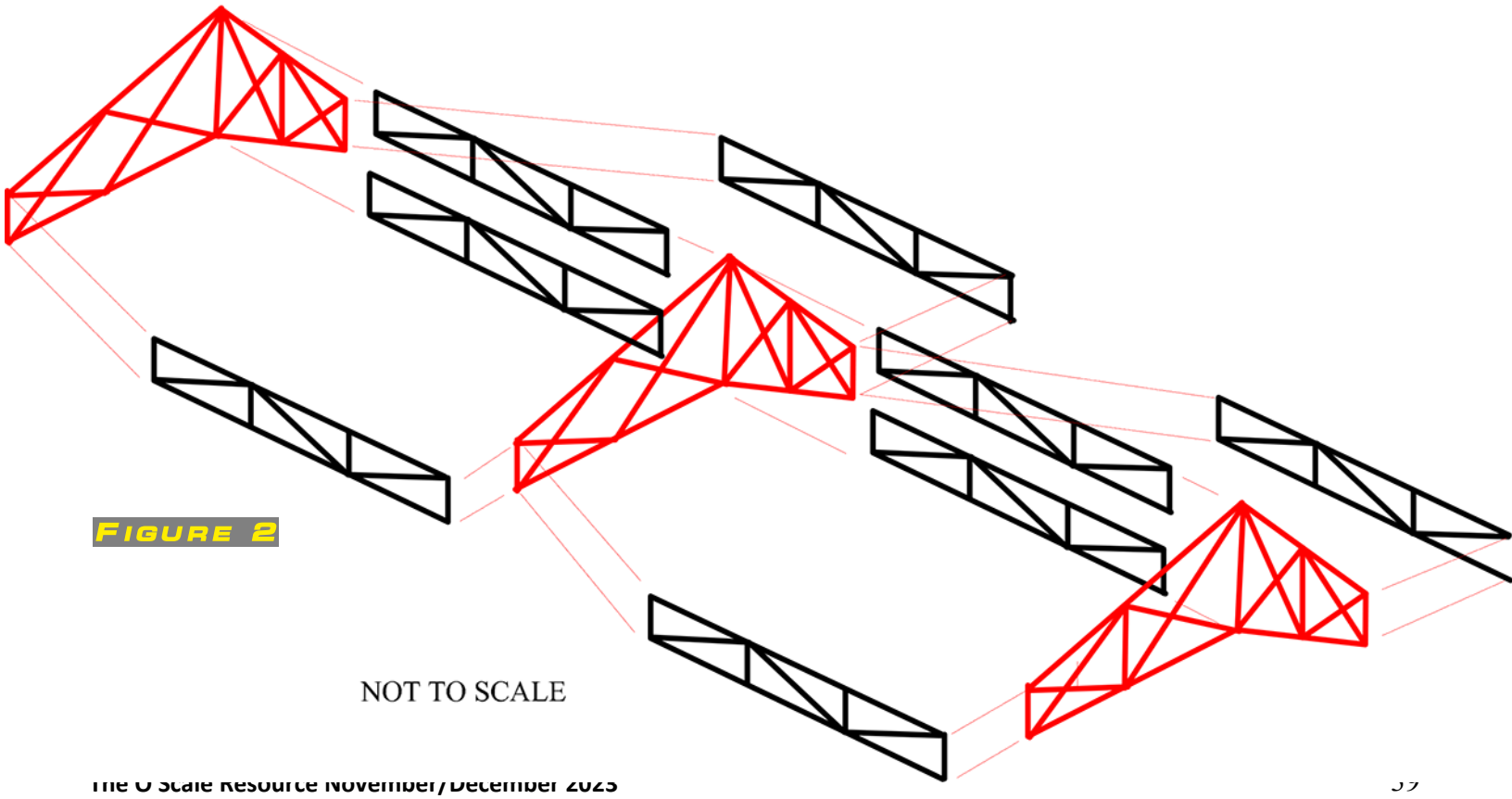


FIGURE 2

Photo 9 shows the roof structure at this stage with trusses assembled and purlins in place and ready for roof covering.

Now is a good time to install lights under your roof if you are planning to have them.

We use LEDs after growing weary changing burned out bulbs. A 20 thou diameter, brass wire was installed down each side of the center truss as a 3 volt and ground bus, and connected to the LED in each industrial style lamp to the wires. I bent the ends of the LED leads into a small hook, hung them over the wires and then touched them with the soldering iron. Nice neat way to route your light power. Be careful to make sure your lights are high enough to clear the crane. With LEDs remember to keep the polarity correct. I made shades/reflectors for the lights from disks of styrene drilling two holes in each to pass the LED leads through.

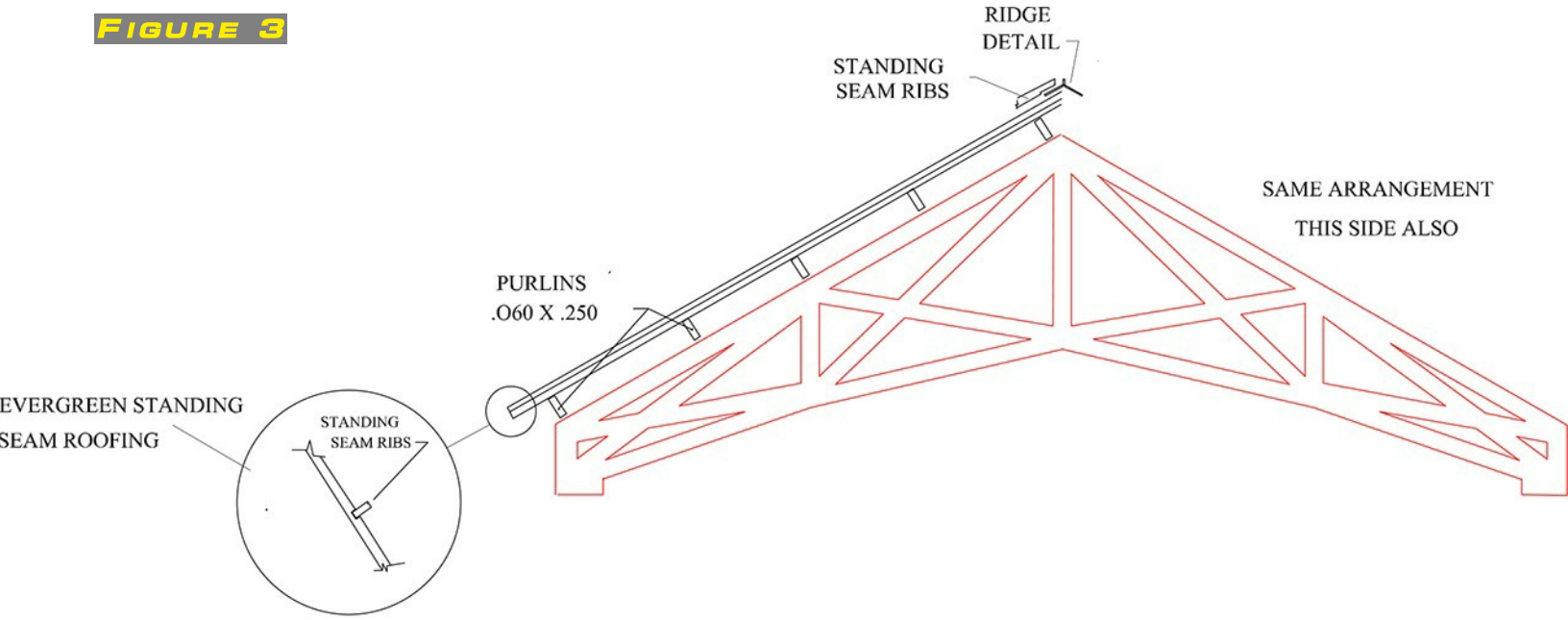
Two supply wires were added by soldering them to one end of each of the two brass bus wires allowing about 24 inches of length for routing the wires to the corners of the roof and down the back of two columns to the ground. A varnished copper wire was used for this as it has a much smaller diameter than plastic insulated wire. This wire is often called magnet wire. This will provide a less conspicuous installation. Run the wires separately to avoid any shorts should the varnish insulation wear off or become damaged.

When installing the structure on the layout the fine wires will be joined to heavier wire just as soon as they go under the layout to reduce voltage drop.

Do run an electrical test at this stage to ensure all LEDs light and that none were installed with the polarity backwards. It will be a frustrating and unrewarding experience if you need to change an LED after the roof is installed. Paint over the brass wire where it might be seen with a suitable shade of grey after testing to disguise it.

Now for the roof covering. We used Evergreen styrene sheet to simulate standing seam steel roofing. You could use corrugated sheeting or whatever roof surface you prefer. If you are working with styrene sheet, it will probably be best to paint the underside of the roof a dull grey of some form as the white plastic would be too bright and unrealistic. The underside of the roof will be quite visible. Since our roof was standing seam we had to install all the seams from 0.010 X 0.030 styrene strips. A ridge cap was formed from some 0.010 x 0.250 styrene strip and round rod. **Figure 3 on next page** shows our roof construction.

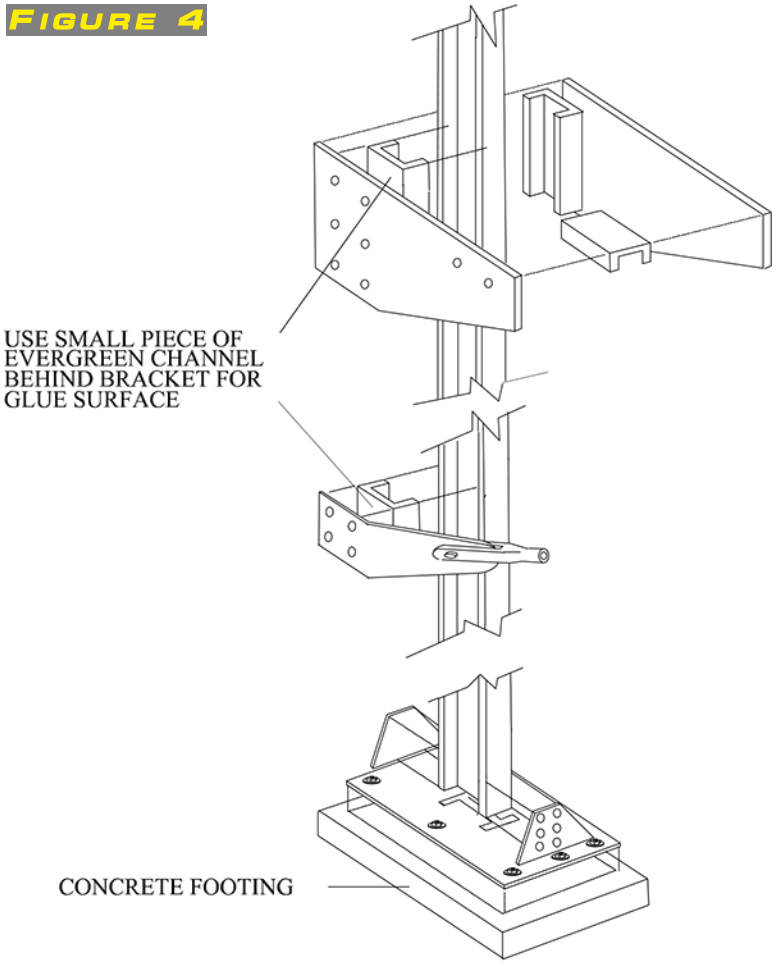
FIGURE 3



When all the steel columns are assembled, paint them. Structural steel was often painted either a black or a red, like freight car red, in the good ol' days. Yours can be whatever color you like. I painted mine a weathered black – basically black with a bit of white added. I rarely use straight black even for locomotives. Black is too dark and hides detail. By adding a little white and making it a very dark grey, your models will stand out better. Ever notice that even when prototype locomotives were photographed at the Baldwin or Alco factory they were painted grey so the details of the loco would show in the photo. Cut the concrete footings for under the steel columns from some 1/8th inch thick MDF, wood, or styrene and pre-paint them concrete color. When dry, glue them under the columns.

Figure 4 Steel Column Construction

FIGURE 4



Make an electrical control box. This would operate the crane and also house the switches for the lights. In modern times a pendant hangs from the crane and an operator can walk along controlling all the crane functions. I suspect in the 1930s crane operation was not so flash, however. Paint the box a drab green or medium grey so you have some contrast with the black column. These were common colors for electrical boxes. After the building is assembled you can install the electrical control box on one of the columns making sure to keep it clear of the rail car envelope. The top of the box should be about head high on a scale figure.

We build almost all our structures on a base of MDF, chipboard, or plywood, whichever is on hand and about the right size. Some of our structures have been on many layouts on two continents and some have survived for fifty years

now. The strong base provides a good footing for the structure and protects it to some degree. And, if the base needs to be set lower on the layout, the plan has always been to just cut a hole for it. From the sketch in **Figure 1**, we worked out our base for the container terminal needed to be 12 X 12-1/2 inches. This was bigger than the original objective, but this sort of thing happens. We cut the base from some chipboard I had on hand.

Assembly

With the roof and steel columns done you can begin assembly of the building. Lay the ties and rail for the siding on the base. We extended our siding about two inches or so beyond the end of the terminal to allow some room for over-running the car spot location. Later we can add a bumper made of old ties when the model is worked into the layout.

At this point, we worked out exactly where the six steel columns will be and marked them out. Sit the four main building columns in their approximate positions and place the roof on their tops. Shift the steel columns as needed to get them correctly under the roof corners and test with a small square to ensure they are plumb. When satisfied, mark around each of the four corner columns. Run lines out from the four main columns and mark out where the 5th and 6th columns will sit.

Add the rough boards for the container storage area next to the tracks. We stained some stripwood from our scrap box and some strips selected from the wood hoard. Use several widths and several thicknesses to get a nice rough look. If you can't find some wood of various thicknesses, sand down the thickness of some of your stock. Run the side of a razor saw along the top surface of the strips to rough it up and add wood grain. Cut some bits off edges here and there. Touch up the stain. Cut to board lengths and cut some short to make some joints. Glue down the boards and then add nail holes to indicate that these boards were fastened to supporting timbers below. Such a deck would be rough, so try to make yours that way, too. We use a straight edge and a machinist's scribe to add nail holes. Rub some black and/or brown chalk into the boards after and it will help accentuate the nail holes.

Install some cardboard where the roadway will run to help better define the road. We put a ridge down the road center made from a few layers of thin card cut into narrow strips. Also, we built up the area adjacent to the roadway a little. The plan was to make the crude roadway appears as two worn tire tracks in the dirt and gravel.

Paint the entire base, except where the columns will sit, with your basic scenery earth color. We usually do this in a two-coat approach. The first coat of earth paint soaks into wood and card very quickly. Then we go back later and apply the second coat and immediately sprinkle on the fine sand, grout, gravel, sawdust or whatever is appropriate for road and ground surface. We do small areas at a time. The second coat will not dry as quickly and will bond the material better. When dry, use more sand, grout or gravel to better cover the road and storage area and spray with wetted water and use white glue or matt medium to bond this material. Add other scenic ground covers of dirt and grass, etc., to the edge of the base outside the boundary of the rough board storage area to fully cover these areas. And, as before, use the wet water spray and glue to bond the scenery in the areas.

Work ballast, dirt, gravel, or your choice of ground cover to the track. My Mountain Electric uses a lot of power plant cinders for ballast, but we used dirt and gravel here for contrast. Some weeds and grass were planted here and there and we will add some more around the bases of the columns once they are in place. Plant some weeds and grass on your railway track, too. This is good particularly toward the end of the siding where they would be less disturbed by the passing of rail cars and work boots.

A material that makes good "earth" is tile grout. I have ground and/or sifted clay from our yard and used it, but if applied too thick it will crack when dry. Grout comes in many shades and does not crack. One caution – grout contains cement which presents a minor problem if used around track. Cement can get into gears and

wheel bearings and wear them out. Grout, like any cement or plaster product, should be well glued and sealed so it cannot come loose and migrate into gear trains or wheel bearings of passing locomotives and cars.

I find it best to do scenery in a few stages. I am not very artsy-fartsy and need to work harder on the more artistic modelling tasks. I put on some scenic material then let it sit a while and go back for another look. Sometimes I just add more, and sometimes I need to remove and rework the area. Although I don't consider myself good at scenery, I do find it a nice relief from the accuracy needed for track, and car construction. Sometimes I get my domestic manager to come look and give an opinion as she has a better eye for color and placement of things than I do. Doing much of the scenicing now will be easier than working under the roof and truss rods later.

With the preliminary scenery on your base dry, you can set the four main columns in place. Do this one-by-one, gluing them down to the base and testing as you go to ensure they align correctly under the corners of the roof structure and are plumb. Drill a very fine hole behind the marked-out space at two of the back columns that will carry the thin wires from the lights.

We did not attach the roof permanently to the four steel columns at this time. It will be easier to install the crane first.

Add each of the other two orphan columns that will support the extension of the crane rails making sure they are in a straight line with the other columns.

Craneways

Cut two lengths of 5/16 inch high Evergreen "I" beams as the supports for the crane rails. We will call these the craneways. Well, that was my plan anyhow. When checking my Evergreen styrene hoard we found it was short of 5/16 beam material. We had to make one beam by gluing together two 5/16 channels back-to-back. This beam was a bit wider than the other, but by putting it in the far side of the structure, the difference will be hard to spot. Running out of materials is one of the hazards of living 10,000 miles away from sources of supply. It is not the first time it has happened, believe me. You learn to improvise down here.

For a bit of extra detail, you can add stiffeners to the bottom flange of the "I" beam craneways. Often a steel flat bar section was welded, or riveted, under the bottom flange to increase its ability to carry the crane load and decrease deflections. Not essential, but an extra bit of prototype detail is always nice. Cut two lengths of code 100 rail the same length as the craneways. Paint the "I" beams with the weathered black and the code 100 rail with a rail brown. Glue the rail to the top of the "I" beams. You can now glue the crane rails to the six brackets, one on each column, provided for this.

Photos 10 and 11 are of work in process on our terminal. We placed the containers in one photo just to see how it was going to look. It is coming along at this stage and starting to look more like the plan.

With the craneways in place, the structure has sufficient rigidity to install the four sets of truss rods and turnbuckles. I purchased some large-scale clevises and turnbuckles from Ozark Miniatures, a supplier to our garden railway brothers, with the intention of using them. The turnbuckles actually looked too large. After some desperate searching in our parts hoard, we found some Simpson plastic turnbuckles made for 1/2 inch scale which were smaller than the Ozark Miniatures ones. These were used instead. We did use the Ozark Miniatures clevises though. These larger scale parts are nice for bridges and structures where larger clevises and turnbuckles would be more appropriate than the smaller ones we use under a freight car. Some 0.040 inch diameter wire between the clevises and turnbuckles will be about right.

When fitting the truss rods, we suggest you sit your roof in place on the post tops. The posts are still quite flexible and it would be easy to push or pull the tops out of plumb when installing a truss rod that was slightly

too long or too short. If this happens, when you go to install the roof later, the roof corners may not line up with the posts. And, don't ask me why I know about this issue…

PHOTO 10

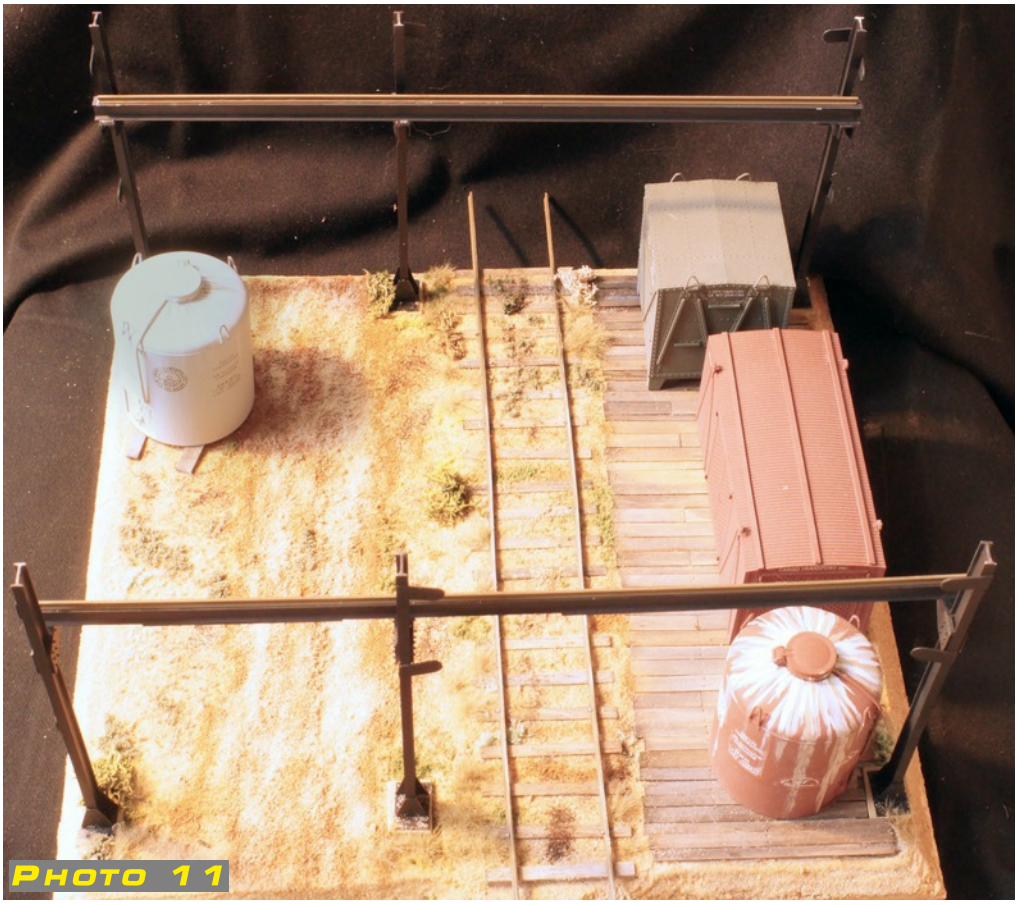


PHOTO 11

With the roof temporarily in place, we measured the length of each truss rod, made it up from two clevises, a turnbuckle and two lengths of wire. Don't put your turnbuckles in the center of the truss rods as they will interfere with one another where they cross. Offset them from the center. After a test fit, we pre-painted the assembled truss rods with the same weathered black used previously on the steel work. When dry, each truss rod was glued in place. Do this for all eight of the truss rods. When the truss rods have dried, you will find the structure has considerably more rigidity.

The Crane

A word about our crane – it is a caricature of a crane at best. We cobbled ours together from some styrene, Crow River Products O-44 and O-56 winch kits, and some On3 wheels. We used wire for the four hauling ropes so they would remain straight. The hooks will be castings by Precision Scale Company and I'll install them if they ever show up in the mail!

By the way, if you have not worked with any Crow River Products items, you should give them a serious look as they are very nice.

We decided to make our basic crane color yellow for contrast to the drabness of the dark structure. Down here most such travelling cranes seem to be painted yellow. I am not sure what the prevailing color was in the US in the 1930s, but yellow will do for me. You can have yours pink if you so desire.

With the roof in place you will not be able to see much of the crane unless you stand on your head. What is most important is that the viewer understands the crane is there. We just wanted an assortment of thrashing gears, a motor, etc., to create the look of this sort of machinery would have in the 1930s. You could spend a modelling year doing a perfect scale model of such a crane. But, you really can't see much of it, and as we have other fish to fry, chose not to do so. In the real world such a crane would have three drive systems. One would move the entire crane bridge along the rails on the craneways. Another would move the trolley side to side along the length of the crane bridge. And the third would operate the hoisting ropes. The fellows on my Mountain Electric Ry are so clever they get by without all this non-sense though and use one drive system.

We painted our crane as parts before assembly. The non-machined and non-meshing parts of the gears were dirty yellow, but the electric motor I did in a contrasting color. All the shafts and gear faces I left unpainted to represent clean work-polished steel.

For the wheels that roll along the rails on the craneway, I pulled some 26-inch dia On3 wheels from the axle and used them. I painted them, except the treads, a dirty black-brown and pinned them in place after the crane bridge was painted.

When our crane was together, we gave it some overall weathering. The "SAFETY FIRST" signs were added to both sides of the crane bridge. You see this on lots of cranes and it makes an extra a bit of detail. Not sure when they started using such a slogan, but on my railroad it started in the 1930s. Modern cranes are required to post a safe working load on the crane bridge as well-such as "Maximum Load 10 Tons", but I think this all started long after the 1930s. **Photo 12** shows our crane bridge assembly before installation in the container terminal. You can see that the hoisting hooks are still missing. I'll close the loops in the wire and paint them rust once the hooks are in place.

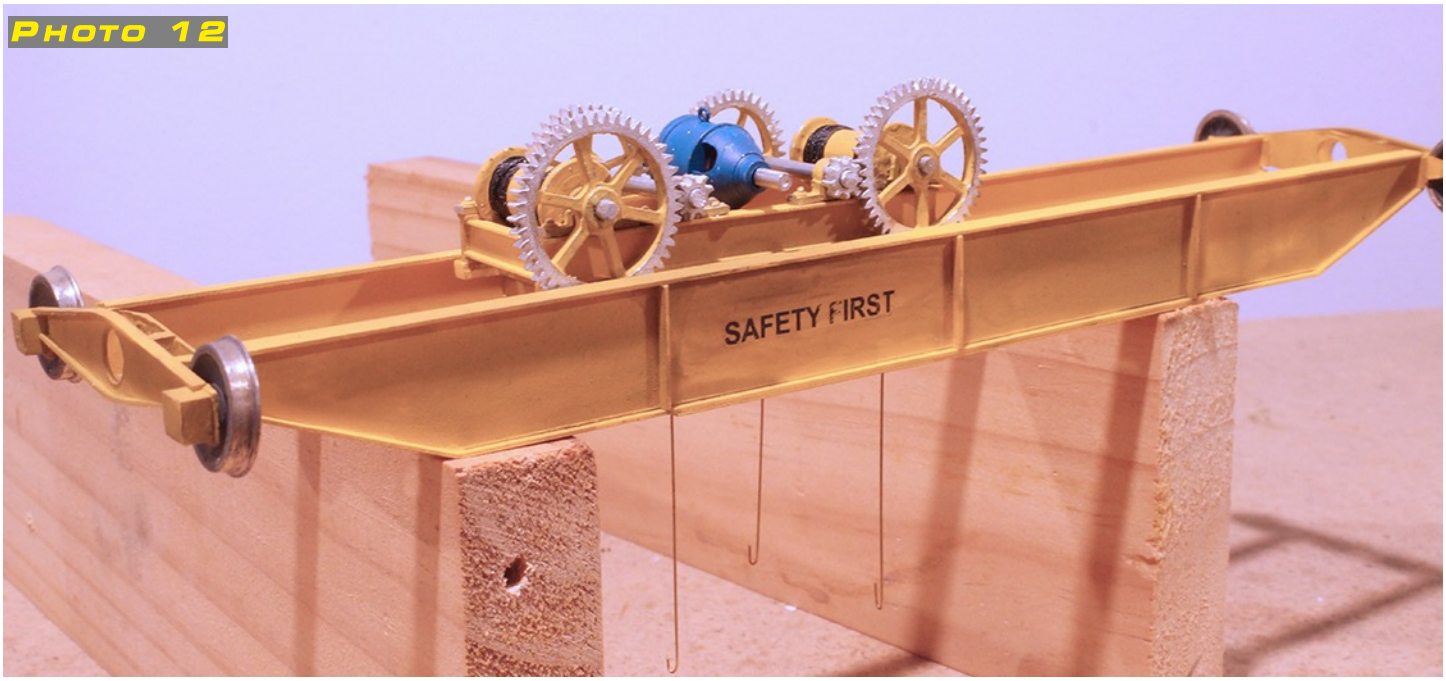
We took care to place our crane away from the lights under the roof for two reasons. One was to ensure the light beams were not blocked by the crane as, if they are, the light will not fall on the terminal floor. LEDs are very directional and narrow beamed devices. And, second, we did not want to light the crane that was cobbled up as a caricature only. If you spent the modelling year building a perfect scale model of your travelling crane, you may feel differently about lighting it.

Also, you need to make sure hanging container hoist ropes and hooks do not interfere with rail cars.

Our crane is glued down to the rails and is not a working model as a result.

Now you can permanently glue the roof to the four posts. I made a few brackets and painted them the weathered black and glued them over the joints between roof trusses and posts.

Place a few containers in the two storage areas. They can sit loose or be glued down as you see fit. We have a flatbed trailer, and, when we find it, will place it on the roadway. With that, if you have been building along with me, your terminal should be about ready for a container car. We now need to get busy and get our container terminal installed on the layout**. Photo 13 (next page)** is of my finished terminal ready for layout installation.



When eventually installing the structure on the layout, I wished I had used a thinner base. The container terminal was to be located on top a section of 3/4 inch thick plywood directly over a hidden return loop and I could not easily cut a hole to drop the base into the plywood here. Since the base was also 3/4 inch thick, we would need to build up the track, and road, approaches in a ramp like fashion to get to the right height. So much for forward thinking. But a strong stiff base is more than justified for what would be a fragile and unstable structure if a strong base was not used. We finally, after much effort and quite a few nasty words, managed to cut a squareish hole in the 3/4 inch thick ply so we could imbed the model in the table top. I glued blocks at each corner to hold the square model's base packing them up a bit so the terminal would be higher than the surrounding ground just a little.

Some heavy wire was soldered to the thin bare copper wires at the base of two or the steel piers and extended to the power bus under the layout. Scenery was worked into the crack where the base of the terminal was dropped into the hole just cut.

We used cardboard to build up the roadway that brought truck to and from the terminal to collect containers. The road crosses the track in the yard in several places and crossing were built for these. The road when exiting the terminal makes a sharp right turn to avoid another industry behind the terminal. There was only 4 inches between the back of the terminal and that industry and the layout edge, so the tight turn was needed. A minor problem was that the short overrun track almost reached the layout edge. A concern, of course, was that a serious overrun of a car when being spotted at the terminal could push the car off the edge of the layout. We knocked up a block to avoid the unpleasant trip to the floor by extending the adjacent industry just a little. Now an overrun would have the car smack into the wall of the extended structure which, although undesirable, will result in much less heartache.

When the cardboard was dry, some newspaper was glued over it to form edges along the road and then the area was painted using our standard earth color. Fine sand and ground cover were worked into the wet paint as usual to provide some scenery. The roads were modelled as minimal gravel over dirt, so some fine grey material

was used to model these. Coarser gravel was used at the center of the road and along the sides. Weeds and shrubs were worked into the scene particularly to disguise the edge of the terminal base.

With this done, I only have one remaining structure to complete the Jacobs Creek industrial area. Slowly, but surely, we are getting there.

Containers

While researching on the net we ran across containers made by MTH for the tinplate market. A few were purchased via EBay to have a look. We found them to be very nicely made and quite true to prototype in size and detail. (**See Photo 14**.) After some study, we decided a new paint job, lettering, and weathering was all that would be needed to turn these toys into useful models. **Photo 15** shows these containers after a bit of work. New decals were drawn, printed, and the containers were re-lettered and weathered after painting.

The two containers on my C&LE flat car were scratch-built, and one more was wanted to place on the ground at the container terminal. Rather than make another single set of laser cut parts and build another from scratch, we purchased one from Berkshire Car Shop. It is a very nicely done 3D printed model. It is much finer and has somewhat greater fidelity than my scratch-built ones. For example, the doors include the actual number of indentations as on the prototype. We had to reduce the number of indentations on the scratch- built ones to accommodate the laser cutter technology used. The Berkshire Car Shop's C&LE container came fully

assembled except for the three wood battens that hold down the corrugated steel roofing. Otherwise, only painting, a little lettering, and weathering was required to turn this in a complete and very nicely detailed model.

I think Berkshire Car Shop also now has the C&LE container flat car available for purchase if you want one. I know Ed was working on it after the containers were done.

As a side, we had not been able to find decent photos of, or other information on, the prototype coke containers. We certainly wanted to know more about them as well. Since our layout is based in the Coke Region of southwestern Pennsylvania, we certainly could use some coke containers. We assumed they had bottom drop doors to discharge the coke similar to the brick containers. From what I have been able to learn, they were also open at the top. We continued to research these coke containers as we saw them as another container commodity for the Mountain Electric. Finally, we ran across a photo of coke containers in a gon. We built some as a part of our removable load project a while back. Loads of these containers will also use the new container terminal.

Photo 14

While checking out the vendors at a local train meet one day, I ran across some kits for the rail containers used down here some years ago. Some of these are pictured in **Photo 7**. I bought a bag of two, assembled them, painted them orange and lettered them for the Mountain Electric. This fits in well with the historic trend in that they are totally different than the other "quasi-standard" containers

Photo 15

in use by some of the northeastern US roads. My finished, and repatriated, Aussie containers are shown in **Photo 16.**

These new ME Ry containers will be used to move LCL lots of merchandise from the joint traction freight terminal in downtown Pittsburgh via the Pittsburgh Railways and Mountain Electric to the end of the line at Somerset. They might even be interchanged with the West Penn Railway at Scottdale and work their way to Brownville or Connellsville on that line if the West Penn gets busy and builds container handling facilities as has the Mountain Electric. Of course, the new container terminal at Jacobs Creek will see delivery of these containers as well.

Building Container Cars

To get the most use we could out of the new container terminal, we decided to knock up a pair of container cars to supplement the traffic that could be generated by the single C&LE container flat already on hand. And, of course, our first thought was we needed cars that would accommodate both the LCL Corporation and oddball Mountain electric containers. We could just include the Mountain Electric containers as loads for my interchangeable load gons we built a while back and dodge building new cars. But, it's more fun to complicate your modelling!

In pondering what to build in the way of LCL container cars, we came up with a few criteria. They should be traction trailers capable of street running with radial couplers. And, they should be "new" cars. Our ME Ry is famous for its antiquated equipment – almost a rolling museum. So, we thought it best to shock the traction community by building something "new and modern" for the container service. Well, not really all that modern as we are modelling the 1930s. We could have just added container restraints to some old sagging wood frame gons, but the ME Ry faces enough criticism for this all-to-common practice already.

What ended up on the sketch pad after a doodling and drinking session (besides some spilled red) were two approximately 40-foot-long low side gons with steel frames and bodies. The initial intention was for the inside length and width of the cars to accommodate either of the MTH containers. But the round and square containers could not both be easily carried in the same car length. Recall what I mentioned earlier about the lack of standardization for rail containers. We finally arrived at a compromise. The car for the round containers had sides and ends while the car for the rectangular containers had only sides. The basic idea is shown in the sketches at **Figure 5 on the next page**. If any of you out there are draftsman, you will quickly note that there is no danger of me putting you out of work. Our drawings are a bit rough, but hopefully you can get the idea of what we have done.

Finally we decided to limit the new cars to moving the rectangular and round quasi-standard containers and deal with the oddball ME Ry containers using the flats and gons previously built for the interchangeable loads. We already have a removable coke container load for these cars, so adding the oddball merchandise contains to their workload fits the scenario.

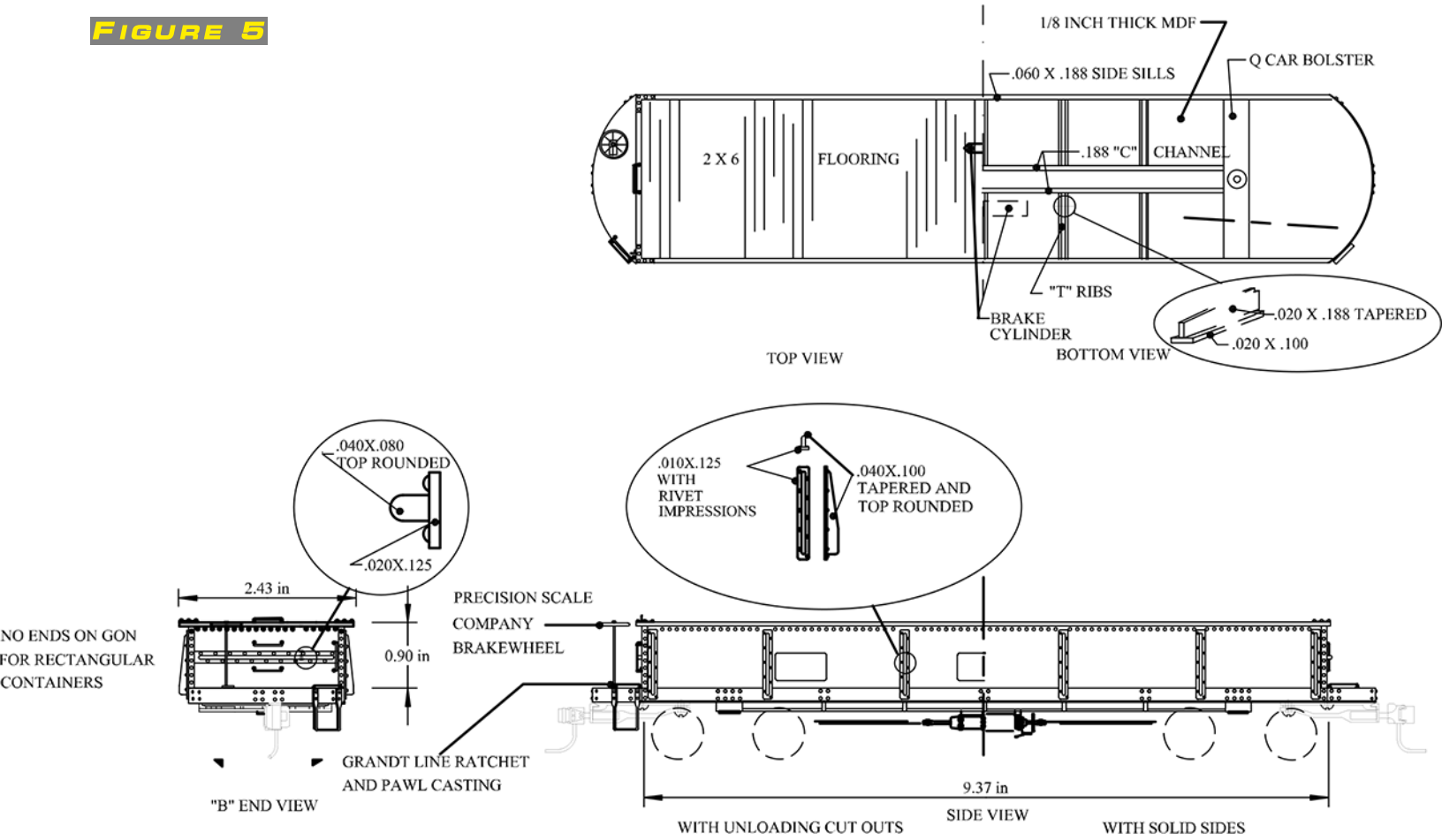
We usually build freight cars with a thin wood, styrene, or MDF floor. The underbody detail as a result is not as deep as the prototype would be to help disguise the presence of the 1/8 inch thick sub-floor sandwiched between the underbody and the floor. The sub-floor construction gives some strength to the model as well as provides a platform on which to build up the detail.

Also, our usual approach to open freight car construction is to make a center sill filler of 1/4 x 1/4 inch key steel drilling and tapping holes for the truck screws. This provides a bit of weight low in the car. We do like to build cars a little on the heavy side to ensure they will operate through spring turnouts as traction lines usually have quite a few of these. For traction, a little extra weight is not a major operational hindrance since traction freight trains are usually short. Car weight is a matter of compromise and requires caution though. If cars are too heavy, they cause unnecessary wear on truck bearings as well as increased friction. But for these gons, the key steel in the center sill was deleted since we will be able to add any needed weight in the bottom of the containers.

One car, intended for the round bulk material containers, has the side cut outs, as per prototype steam road gons. This allows access for unloading without the need to remove the container from the car. The other car has solid sides and is for the rectangular containers. **Photo 17** is of the finished cars loaded with their respective containers and ready for service on the ME Ry.

The design of the gons assumed the ME Ry bought in some off-the-shelf parts to hasten construction in the Company shop. Sides and ends are braced with stakes and stiffeners made from standard pressed steel parts.

FIGURE 5



The sketches included on **Figure 5 above** show how these parts are made from scratch. Otherwise. the cars are modelled as constructed of standard angle and C channel shapes and steel sheet.

My cars are mostly styrene with the MDF sub-floor, brass for grabs and steps, and a strip wood floor. There are a few commercial details such as brake wheel, brake cylinder and white metal Q Car bolsters.

The cars are modelled as riveted construction. The rivets on the “pressed steel parts” were made using a Northwest Short Line rivet press, a very handy tool. But all other rivets are done with decals. If you have not tried the new rivet decals, you should. They are a very welcome addition to the scratch builder’s arsenal. If we had a dollar for every piece of brass or styrene tossed out over the years after making a mistake while pressing rivets, we would be rich. Decal rivets are much more forgiving, speed up the building process, and greatly reduce waste. If installed properly they are quire durable, too.

My cars are equipped with type K brakes and arch bar trucks both of which were common on traction line freight cars to the very end. The radial couplers use brass investment castings made from our own patterns and take the new Kadee 700 couplers. The cars have all common brake rigging modelled which is particularly important for traction freight cars as they ride so high with much of the underbody detail quite visible.

Some with keen-eyes, the nit-pickers, and/or the rivet counters might notice the odd arrangement of grab irons, steps, etc. Traction lines did not interchange such cars with the steam railroads and were not bound by Association of American Railroads (AAR) rules and Master Car Builder (MCB) conventions. They often did as they pleased with many appliances and fittings. Grabs and ladders on the center line of car ends was common on traction lines such as the Indiana Railroad. Unfortunately, the ME Ry is equally oblivious to modern train crew safety appliance trends and similarly inclined. If you were going to build such a car for steam road

interchange it would not have rounded ends and radial couplers, and would follow AAR and MCB design requirements for safety appliances and fittings.

Restraining the Containers

The traction clearance gauge was generally tighter than that on steam roads, traction cars were often a bit narrower than steam road cars, and that is the case here. There were many different restraint systems used due to the different container configurations. We had to cobble up an approach to restraining the containers for my narrow cars that made some sense and hopefully looked like it could have been. But, I am sure it is far from prototypical. **Photo 18** of a very fine model O scale car by RY Models, used with Rich Yoder's permission, shows the restraint detail in a standard rail gon for round LCL Company bulk containers.

For our round container car, we made the restraints from some angle and strip styrene. A four-sided bracket made of scale 6-inch angle stock sits on the car floor. A similar three-sided bracket is also at the top, but this one has longer legs and sits on and is attached to the top angle of the car side. Guide plates made of .020 x .250 styrene strip were glued between the two brackets. The tops of these guide plates were curved toward the car sides by rolling them over a jeweler's screwdriver shaft. These plates were to help guide the containers into position when lowered by crane into the car. The sketch at **Figure 6 on the next page,** might help you understand what we did here. These were somewhat fiddly to make since we needed six of them and they could not be built in place in the car. The restraints needed to be installed after the car interior, and the restraints, were painted, and the wooden floor was installed. We drew a template on a bit of scrap card and used it for cutting and assembling the styrene angle material. This approach helped us to get them close to the same size and shape.

I assume the rectangular containers were restrained by pins on the car floor that engage sockets or holes in the four feet at the corners of each such container. Therefore, we did not add any special fittings to that car for them. Had we only partially loaded the car, i.e., left one container out, it would have been necessary for me to add such fittings to the car floor. Taking the easiest course of action as usual meant that we totally filled our car with rectangular containers to avoid the need to research and model the restraint feature for these containers. As you can see in the shot of the Pennsy flatcar, they used a different system of restraint for their unique rectangular containers.

When we built our coke load for one of our interchangeable load gons, we left one container out and modelled the locator pins using the pointed ends of truck axles.

Finishing the Cars

The cars were sprayed with primer before the decal rivets were applied. With rivets and all other details finally complete, the cars could be finished.

The ME Ry has been experimenting with new paint schemes in a probably futile attempt to modernize its image. Like many traction roads, the early ME Ry standard color was a drab dark green. The newest scheme is a bright orange body with a dark red roof – when there is a roof. And, given these gons are modelled as having been in service for a while, they have some weathering of course. The insides of the cars particularly take a beating from crane men who are in a hurry to load the containers.

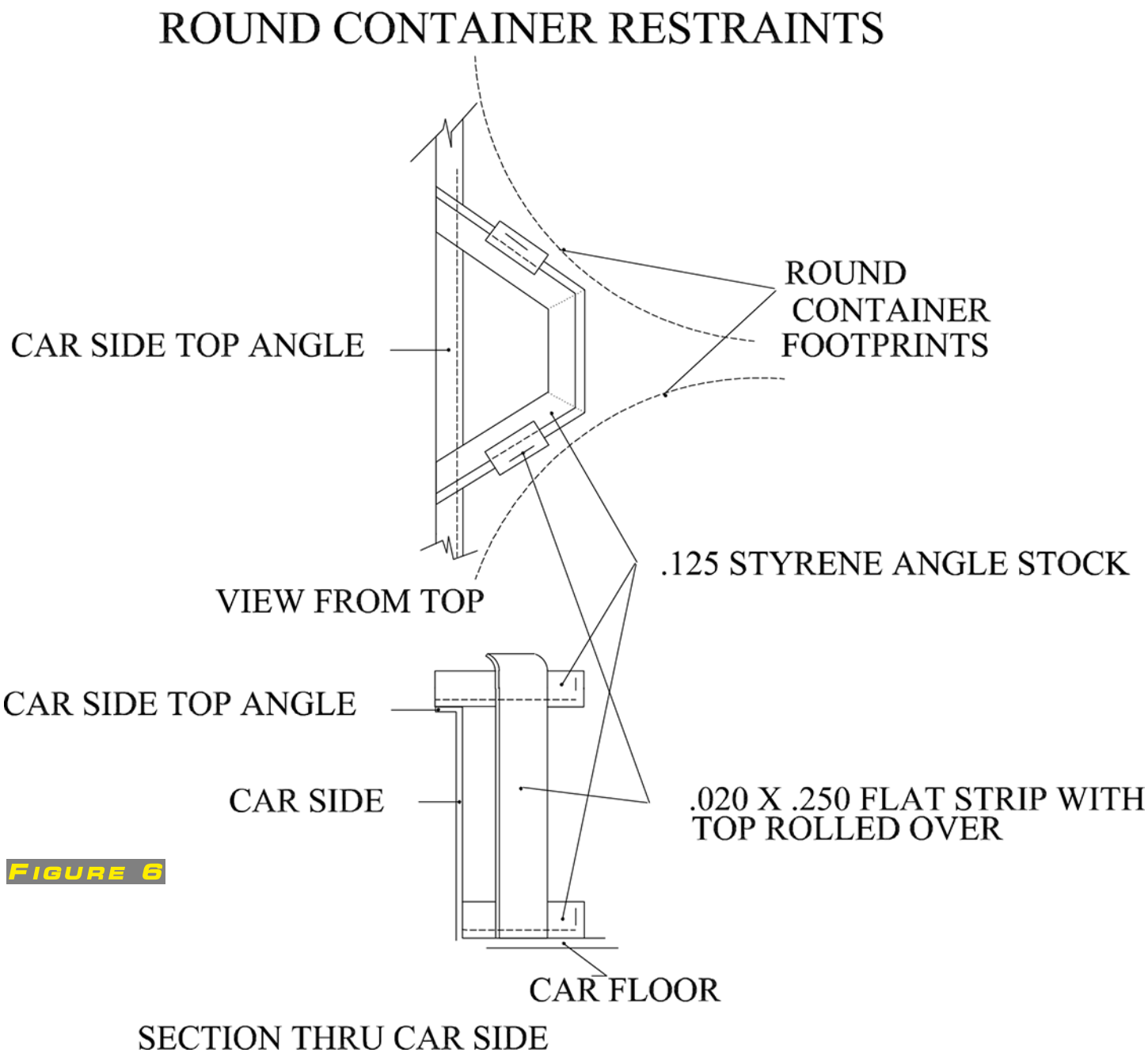


FIGURE 6

The cars are lettered with our own decals. Well, we do the art work in Corel Draw and a train friend prints them. The car lettering even advertises the "***EXPRESS CONTAINER SERVICE***" and reflects the hopes of ME Ry's management for this relatively new business line. One reason the cars have radial couplers is to permit them to be added to express passenger trains to expedite their movement when necessary.

Container Operations

So far the container service is well patronized by our ME Ry freight customers, is earning reasonable revenue, and is justifying the investment in container terminal and special cars.

Many different commodities can be accommodated in the rectangular merchandise containers. We have been thinking about what these are in anticipation of working out a waybill system add-on for LCL shipments. So far we have identified hardware, furniture, non-perishable groceries, general store merchandise, school books, etc.

The small but somewhat capable ME Ry Traffic Department has been directed by management to look around for bulk commodities, in addition to the commonly handled cement, that can be moved in the round containers. Rock dust has been identified as a relevant bulk commodity. Rock dust is a powdered limestone used in coal mines. It is blown on the walls, roof, and floor of coal mines to cover coal dust and lessen the chance of an explosion due to airborne coal dust. Traditionally rock dust has been shipped to the mines along the ME Ry in sacks by box car. Mines were required to order large quantities of the sacked rock dust, commonly 20-30 tons or so, to make delivery by box car economical. Such large quantities were costly to store for long periods until used. The ME Ry has convinced several of its mine customers to receive their rock dust in the bulk containers where as little as 6 tons can be ordered. These mines are very satisfied that the ME Ry is looking after their interests.

The Traffic Department also needs to come up with some other bulk materials for our new service. In pondering this further, we do have an off-line automobile tire manufacturer in the town of Jacobs Creek that ships and receives goods via the local team track. We began wondering if this customer could get some carbon black needed for his tires in bulk containers. We decided to do a bit of research and see how carbon black was shipped in the real world before covered hoppers came along, and/or how it was transported when smaller lots, less than a covered hopper load, were needed. This could be another commodity for the container terminal.

After a consultation with Dr. Google, it appears carbon black is nasty stuff to transport. It is explosive; difficult to unload by gravity; is carcinogenic; contaminates the container making extra cleaning necessary, difficult and expensive; and is a mess to clean up when spilled. At one time it was shipped in box cars in big bags that were put in a frame of some sort so the contents could be vacuumed out and pneumatically conveyed to mixers where it was added to the rubber in making tires. Sounds like just the sort or product we really don't need on the ME Ry. But then any revenue will do in a pinch particularly during the Great Depression. Occasionally carbon black arrives by box car in the vacuum bags. But the tire firm has been using trucks to get smaller quantities. Business during the depression is, well, depressed. Orders for tires are not as frequent and smaller quantities are being made to keep finished goods inventories from getting too large. Using the round containers might just maintain this business for the ME Ry. The ME Ry management will look into this further I am sure.

Other bulk commodities might include small lots of palletized fertilizer, and dry feeds, etc. We will research this further.

We are also pondering a procedure for adding waybills for container commodities and using them to control movement of the containers on the layout much like car loads of freight. We shall give this more thought. Having such a system that could also work for non-containerized LCL freight would be a good operational add. But getting this all done and working is another story for another time.

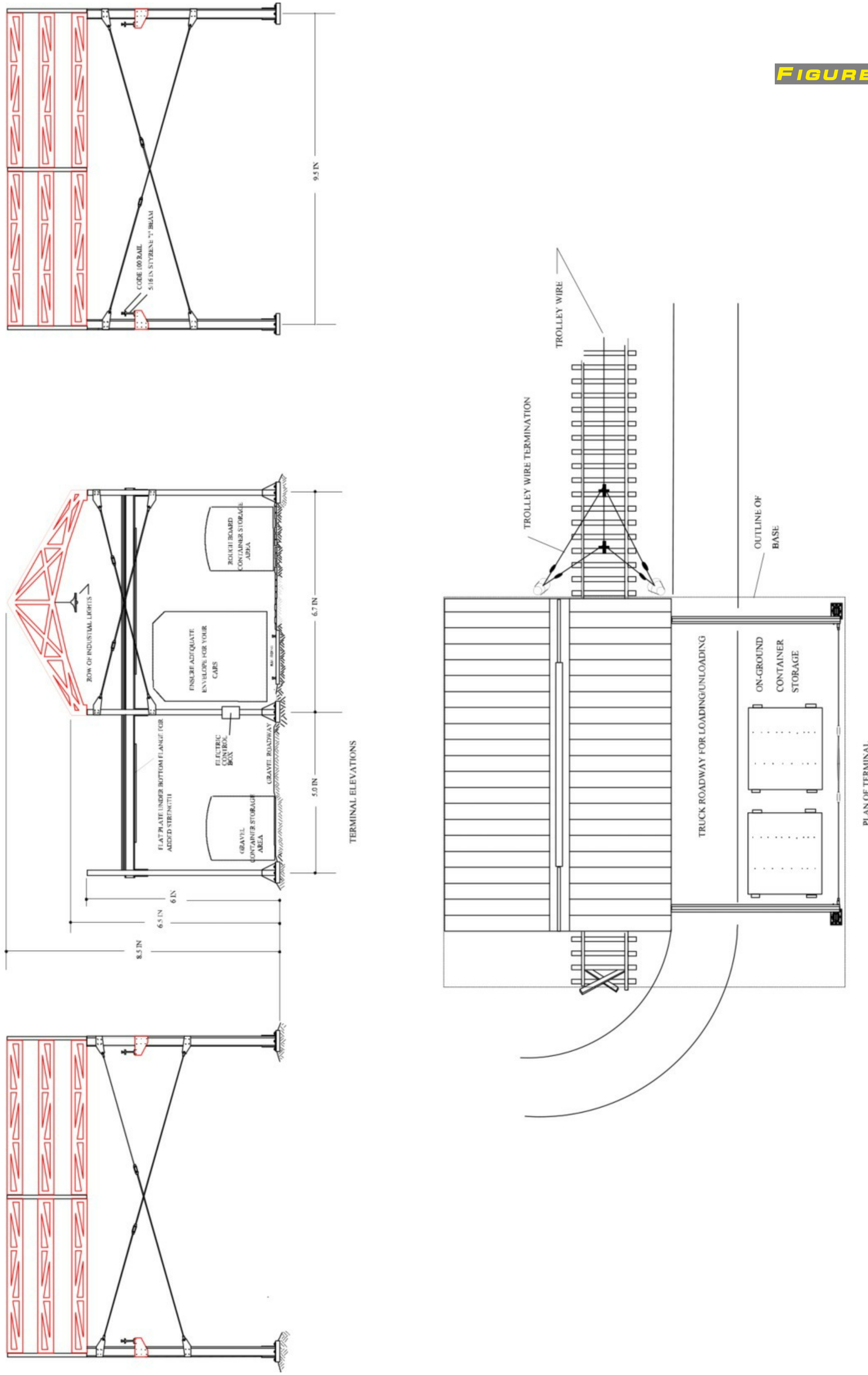
Photo 19 shows a container car at the new terminal on the layout. We have installed the line poles for terminating the overhead wire, but the wire is not yet up.

In summary, this new LCL container service has been so successful, management is now looking into a possible piggyback service such as that introduced on the Chicago North Shore & Milwaukee and the South Shore, traction lines in the Chicago area, in the 1920s. **See Photo 20** of a nice model of the flat car and road trailers used in the Chicago operation. We just might need to build a model of these for our operations on the Mountain Electric. But, that too, is another story for another time.

Photo 19

Photo 20

FIGURE 1


CODE 100 RAIL
5/16 IN STYRENE "I" BEAM
9.5 IN
ROOF COVEING DELETED FOR CLARITY
ROW OF INDUSTRIAL LIGHTS
ROUGH BOARD CONTAINER STORAGE AREA
ENSURE ADEQUATE ENVELOPE FOR YOUR CARS
FLAT PLATE UNDER BOTTOM FLANGE FOR ADDED STRENGTH
ELECTRIC CONTROL BOX
GRAVEL ROADWAY
GRAVEL CONTAINER STORAGE AREA
6.7 IN
5.0 IN
6 IN
6.5 IN
8.5 IN
TERMINAL ELEVATIONS
TROLLEY WIRE
TROLLEY WIRE TERMINATION
OUTLINE OF BASE
TRUCK ROADWAY FOR LOADING/UNLOADING
ON-GROUND CONTAINER STORAGE
PLAN OF TERMINAL