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Nickel Plate Road Modeler's Notebook

Richards Brick Company Clay Loading Facility at Gilmore, IL as an Operating Point on a Model Railroad Layout

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By Jon Marx, #18

While researching the article on Richards Brick Company in Edwardsville, IL, for the Spring 2012 *Nickel Plate Road Magazine*, I thought the clay loading facility at Gilmore, IL, has the potential for a modeling project for a layout. The mine was located about 25 miles east of Edwardsville and about two miles west of Sorento. It was just south of the Nickel Plate Clover Leaf Division's Fourth Sub main line.

The facility can provide operating interest by having not only an industry that generates rail traffic, but the source of raw material for brick making coming from another part of the layout not that far away. It could be adapted to almost any size layout. If the prototype is followed, the operation can be a challenge because the switch into the brick yard points in the opposite direction from the switch to the loading site siding.

Throughout the 19th Century and early 20th Century brick companies established their kilns next to or near their clay source. In some locations, like Edwardsville, there were coal mines nearby as well. It makes sense and keeps costs to a minimum. Also, in the 19th Century clay would have been transported in much smaller wagon loads. Richards Brick was no exception. The original kilns were established next to the clay sources for raw material and along the north side of the Clover Leaf Fourth Sub main line. The company was able to access sources within a half mile or so of the plant for several decades, but these were eventually exhausted or impractical to expand.

The company continued to grow and as production expanded the need to go further afield for raw material was pursued. Benjamin H. Richards III, grandson of the company founder and a trained geologist, traveled along the NKP main line taking core samples to find a good source of raw material.

Trying to stay close to the NKP would provide a handy means of transporting the clay to Edwardsville. A new source was discovered about 25 miles east of Edwardsville near an existing siding referred to as Gilmore.

While no documentation was found to support the idea other than NKP track diagrams, I think there was an existing siding in place when Mr. Richards found raw material nearby. At that time, about two miles east of Gilmore and just west of Sorento, there was a steam-powered pumping station for an oil pipeline constructed by the Ohio Oil Company in the early 1920s. The location of the siding near the pumping station was called Bunje in the track diagram book and the siding was call an oil siding. The first siding at Gilmore may have been used to store hopper cars, because it was called the Bunje siding on the NKP track diagram book and coexisted at Gilmore with the Richards Brick siding until the early 1940s. After the Bunje siding was removed, the remaining Richards Brick siding was 1950 feet long, clear length, according to the 1963 NKP track diagram book.

The clay mine was on the south side of New Douglas Avenue and the loading facility was erected on the north side near the NKP main line. There was probably little difference between this facility and many other similar facilities that loaded products from nearby mines. The main difference here was the inclusion of a shelter over the track holding loaded hoppers until they could be transferred to Edwardsville. The shelter served to protect the clay loads from the elements so the cars could be unloaded with minimum difficulties at the plant.

Steve Grigg, author of the Clover Leaf issue of the NKPHTS Reflections series showed me the facility about 1987. I did not learn my lesson well during my days in LaFayette, IN, and that is: when chasing right-of-way facilities, always take paper, pencil or pen, and measuring tape. When Steve and I visited I had none of these. I did not even consider the modeling possibilities of the operation until that part of the NKP had been abandoned by the Norfolk Southern. (I admit it. I was focused on the presence of NKP hoppers still in original paint some 25 years after the merger). It

was not until I was researching the Richards Brick article that I visited the site with the goal of taking measurements. By that time the structures were, except for the new section of shelter built in 1991, seriously deteriorated, as can be seen in the photos. A gap was bulldozed across the ramp, probably to prevent someone driving up the ramp and going off the end. Enough of the structures remained, however, and I was able to take some basic measurements to generate these drawings. These drawings should be considered to be a best approximation and generalization. Some measurements could be physically measured from remaining structures and vary from section to section while others are estimated from photos.

The operation at Gilmore consisted of bringing the clay from the mine on the south side of the road to this facility by dump truck. The trucks were brought forward enough to be backed up the ramp, using the small pole at the top to sight for backing. (Figs. 1, 2 & 3) There were wood blocks at the top to alert the driver when to stop and dump the load. The siding was on a slight incline with the low point furthest from the loading ramp. When the hopper car was loaded to capacity, the brake was released and the car rolled, by gravity, down a slight incline to the end of track or the previously loaded car. (Gravity: not just a good idea, it's the Law!) Two or three times a week the loads were picked up by the local and empties left at the siding for loading.

NKP three-bay offset side hoppers were used in dedicated service. The Traveling Agent for this area was a former NKP employee and he worked to be certain these hoppers remained in this service as long as possible. There were also some N&W hoppers in the mix as shown in some of the photos. It was the presence of NKP hoppers that prompted our visit in 1987.

The drawings with this article are not exact with regard to many of the dimensions. Part of the reason is that some older sections had deteriorated. Many of the supporting poles had fallen over or disappeared. In other cases the tallest parts were not accessible to measure with accuracy. Based on actual measurements and semi-educated guesses (eyeballing) when comparing parts in photos of the inaccessible sections these drawings should be a reasonable representation. The same size lumber did not seem to be used consistently in some instances. For example, more than one size seems to have been used for cross bracing. Also, there seems to be more than one size pole employed. I measured both 10-inch and 12-inch diameters for the poles at ground level. When this shelter was constructed, some leeway in the material used was probably employed, which makes a certain amount of sense. This was a single-use structure for a single company. The main question at the time of construction was probably that it served its purpose.

In 1991, a few months before the Norfolk Southern announced it planned to abandon the line, Richards Brick spent several thousand dollars for plant improvements and expand the loading facility. Included was an extension of the siding and a new shelter over the new section of track. This section appears to have been constructed like the first section. Some of my measurements are from this newer section.

Originally, I had considered constructing the model in HO as part of this article. Then I wondered, what will I do with it then? I don't have layout space for it. I would have wanted to accommodate at least six or eight hoppers, some loaded and some empty to capture the essence of the operation. So instead I decided to describe the structures as a supplement to the drawings. This facility consists of three parts: the access road, the loading ramp, and the shelter over the loaded hopper cars.

Notes on the site plan (Fig.1):

Click here for a larger image.
Larger Figs. 1,2,& 3 are located in the Appendix.

Fig. 1 - Overhead diagram of the facility. The trucks entered at the lower right, pulled past the ramp, and backed up to transfer the load to the hopper.

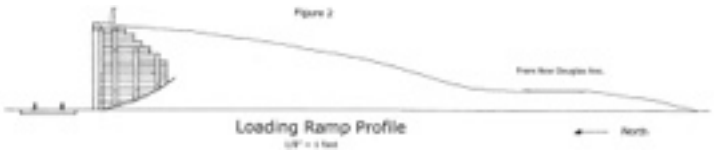
The loading facility is on the north side of New Douglas Avenue and the clay mine is to the south side. The entrances to each are opposite each other so the trucks from the mine cross directly to the loading facility.

From New Douglas Avenue to the loading ramp is about 900 feet including the section for the trucks to pull forward far enough to be able to reverse up the ramp to unload.

The distance up the ramp is about 80 feet, estimated from aerial photos. In its current state, the ramp is not completely accessible having had a section bulldozed out of it, probably for safety reasons.

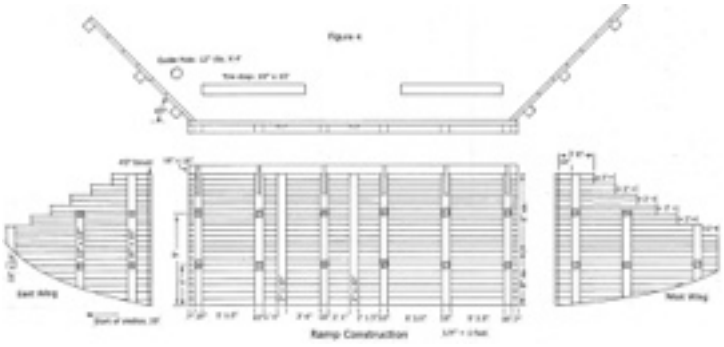
It is easy to see that a scale model would take up a lot of layout space. So a reduced-size model would be necessary.

Notes on the ramp (Figs. 2 & 3):



Click here for a larger image.

Fig. 2 - Loading ramp profile. The road rose a little on approach to the ramp to make the ramp incline less steep.



Click here for a larger image.

Fig. 3 - The front wall and wings of the loading ramp. Top view, front wall, and wings.

The ramp consists of a vertical timber wall about 32.5 feet long and 14 feet tall, reinforced with 10” x 10” and 3” x 10” vertical timbers. Anchor bolts (Fig. 4) are inserted through the 10” x 10” timbers about four feet above ground level and about 9 feet above ground level.

Fig. 4 - One of the anchor bolts with the plate and angled washer. There are two in each of the vertical front wall 10” x 10” timbers and in the vertical timbers of the wings.

The anchor nuts were about 1.5 inches across with an angled washer on a 9” x 9” 3/8” thick plate. The top timber is a 10” x 10” held in place with about 3-inch wide metal straps that are formed over the top timber and attached to each of the 10” x 10” vertical timbers (Fig. 5).

Fig. 5 - This photo is from 1988. Although there is a hopper waiting to be loaded, the construction of the upper part is visible with the 10” x 10” horizontal timber on the top and the metal straps holding it in place.

The track was probably about three to four feet from the wall, calculated so the transfer from the trucks would be efficient (Fig. 6).

Fig. 6 - This view from 1988 is from the top of the ramp and gives an indication of the nearness of the hoppers to the loading ramp.

There are two wings set at about 45° to hold the earthen ramp in place at the sides (Figs. 7 & 8).

Fig. 7 - This photo and Fig. 8, from the present, show the deteriorated state of the ramp and this view gives a good view of the east wing. Note the placement of the visible anchor bolts is level with those in the front wall.

Fig. 8 - Here is the view with the west wing. More of the wing is visible. Note here also the placement of the visible anchor bolts is level with those in the front wall.

The wings are 10 inches shorter than the front wall, not having the top horizontal timber, and the timbers are cut shorter with the increase in height. Each wing is reinforced with three 10” x 10” vertical timbers. Anchor bolts are included in these verticals as well and set at the same height above ground level as those on the front wall.

The present deteriorated condition of the facility has exposed one vertical timber on the ramp side of the east wing. Only a technicality that would not concern a modeler.

It is constructed of creosote-treated timbers. The first four feet of the front wall is constructed of eight 6” x 8” timbers stacked with the eight-inch dimension forward. Next is a stack of 15 - 4” x 6” timbers with the larger dimension vertical, adding 7.5 feet to the height. Add the 10” x 10” and 3” x 10” verticals and the 10” x 10” top timber, the wall is complete.

The wings are built with the same sequence of timber placement. The lengths of the timbers vary with the level of the earthen ramp. The ends of the timbers abutting the front wall are beveled at a 45° angle and set back from the ends of the front wall by about four inches, adding support to the two wings.

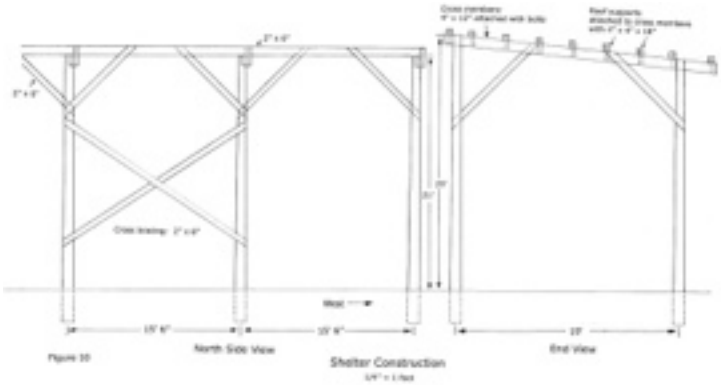
When the earth was moved to form the ramp, part

of it also covered part of the lower wings.

Fig. 9 shows a 1988 view looking up the ramp from the bottom. The sighting pole the drivers used to help guide the trucks in reverse is seen.

Fig. 9 - View looking up the ramp to where the loads are transferred. Note the pole to the right of center was probably used as a backing aid.

Notes on the shelter (Fig. 10):



Click here for a larger image.

Fig. 10 - Two views of the shelter. The end view is the east end so the viewer is looking west. The shorter poles are to the right. The side view of the first two poles in the shelter show all of the construction elements. Shown is only the north and shorter side. The south side would be about two feet taller.

Most of this discussion concerns the older section of the shed as seen in 1988 and estimated from the photos taken at that time (Figs.11 & 12).

The shelter is constructed of vertical poles about 23 feet tall on the south side and about 21 feet tall on the north side starting about 20 feet east of the

Fig. 11 - A 1988 view of the now deteriorated shelter from the loading ramp. Not noted on the drawings is what appears to be metal strips from the corrugated roofing down the sides of the poles. Perhaps for helping secure the roofing.

Fig. 12 - Another 1988 view of the shelter. Here along the south row of poles can be seen the apparent inset of the further poles by about three feet or so. This leads me to wonder if this shelter may have been built in two sections as the need grew for more clay. Also visible here is the sighting pole and one of the tire stops.

loading ramp. This difference provided for rain run-off from the roof. Poles were both 10” and 12” in diameter. The average distance between poles on each side was about 15' 6”. This is a rough average of actual measurements of 15' 2” to 16'. The distance between the two sides is about 19 feet.

The tops of the poles were cut halfway through 12”

from the top (Fig. 13). This half is removed to place the 4” x 12” lateral cross members between the poles over the rail. These were attached to the poles with bolts. (Fig. 13) These laterals extended a few inches from the south pole and two to three feet from the north pole. This was probably to get rain run-off a little further from the track area.

Fig. 13 - This contemporary photo shows the state of deterioration of the early section of the shelter. It also show well how the roof supports were attached.

Figure 14 shows this on the newer section.

The shelter had about 19 or 20 poles on each side. Considering an average of 15.5 feet between poles, the older section of the shelter would be about 260 feet long, or over three feet of HO layout space.

The shelter as seen in 1988, may have been built in two sections. Fig. 12 taken from the top of the ramp shows the distant poles on the south side set in a few feet.

Nine rows of longitudinal boards were attached to

Fig. 14 - This is the end view of the new shelter with the deteriorated older shelter in the background. The view is to the west and to the right of the earth mover in the distance is the remains of the ramp for loading hoppers. This photo show the roof overhang on the right that is not present on the left. It also shows the spacing of the longitudinal roofing supports.

the laterals with the help of 4” x 4” x 18” boards (Fig. 13). These longitudinals were about 2.5 – 3 feet apart in the middle area and slightly closer toward the ends of the laterals (Fig. 14). Overlaid on these, and not shown in the drawings, was corrugated sheet metal for the roofing material.

Cross-bracing, 2” x 6”, was attached between poles 2 and 3, 6 and 7, 8 and 9, 10 and 11, 12 and 13, and 17 and 18 on the south side (Fig. 11). On the north side the cross-bracing was between poles 4 and 5, 6 and 7, 8 and 9, and 11 and 12 on the north side. This again points to a more “relaxed”

construction standard. Cross-bracing was a bit more regular in the new section built in the 1990s. Diagonal bracing was attached between all poles and the longitudinals as well as to the laterals.

Summary

If you are looking for something different to add to the operation on your layout, consider a clay loading facility and companion brick company. If prototype conformity is followed as was in operation here, the switch to the loading facility will face the opposite direction from that entering the brick plant. It just depends on how much of a challenge you want.

My thanks to Dale Allen for his assistance in measuring the structures as they appear today. To measure anything this large is a lot easier with good help.

This 1988 view give an idea of the distance between the loading ramp on the left and the start of the shelter on the right.

Here is an overall semi-panoramic view of the facility. The newest part of the shelter is closest on the right. The road is the approach to the ramp in the background.

APPENDIX

FIGURE 1

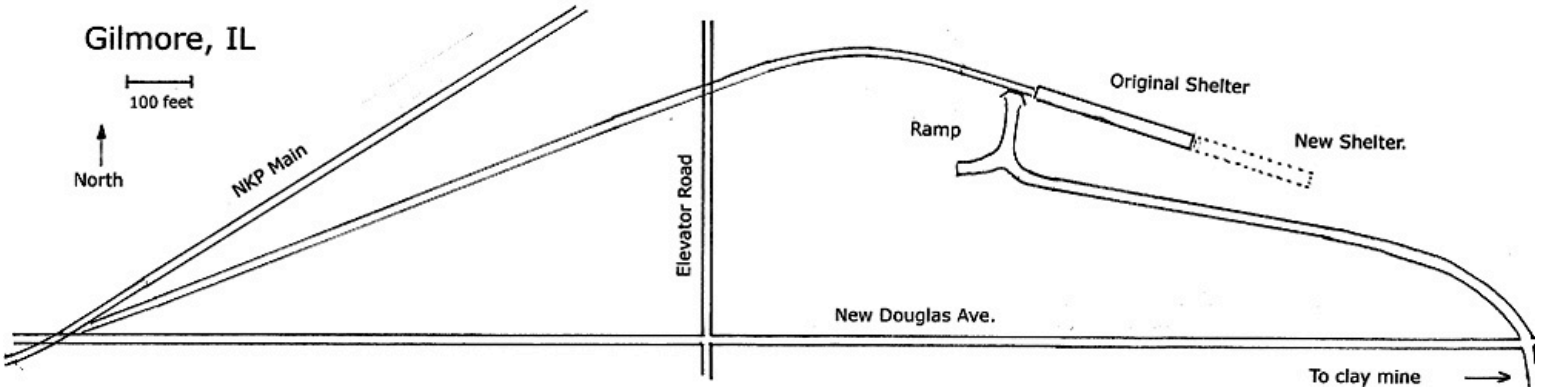


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FIGURE 2

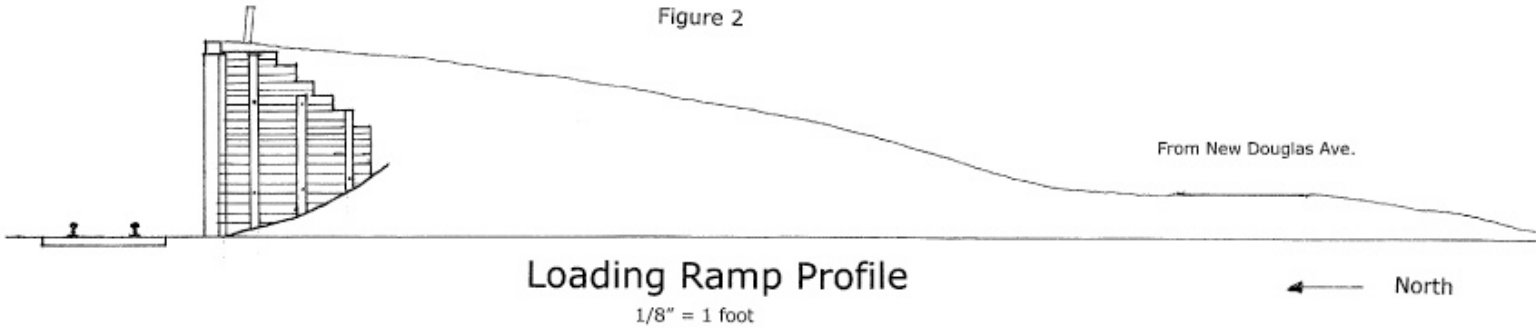

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FIGURE 3

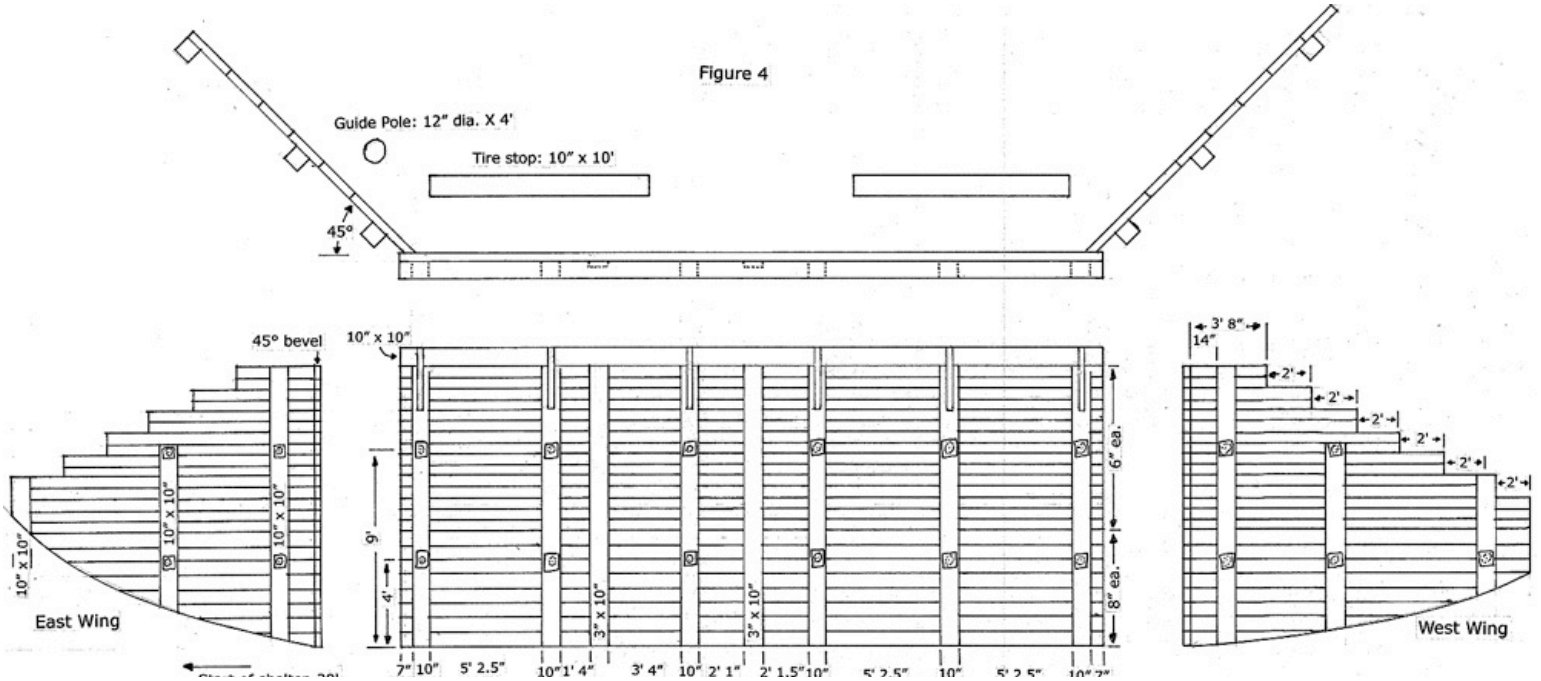

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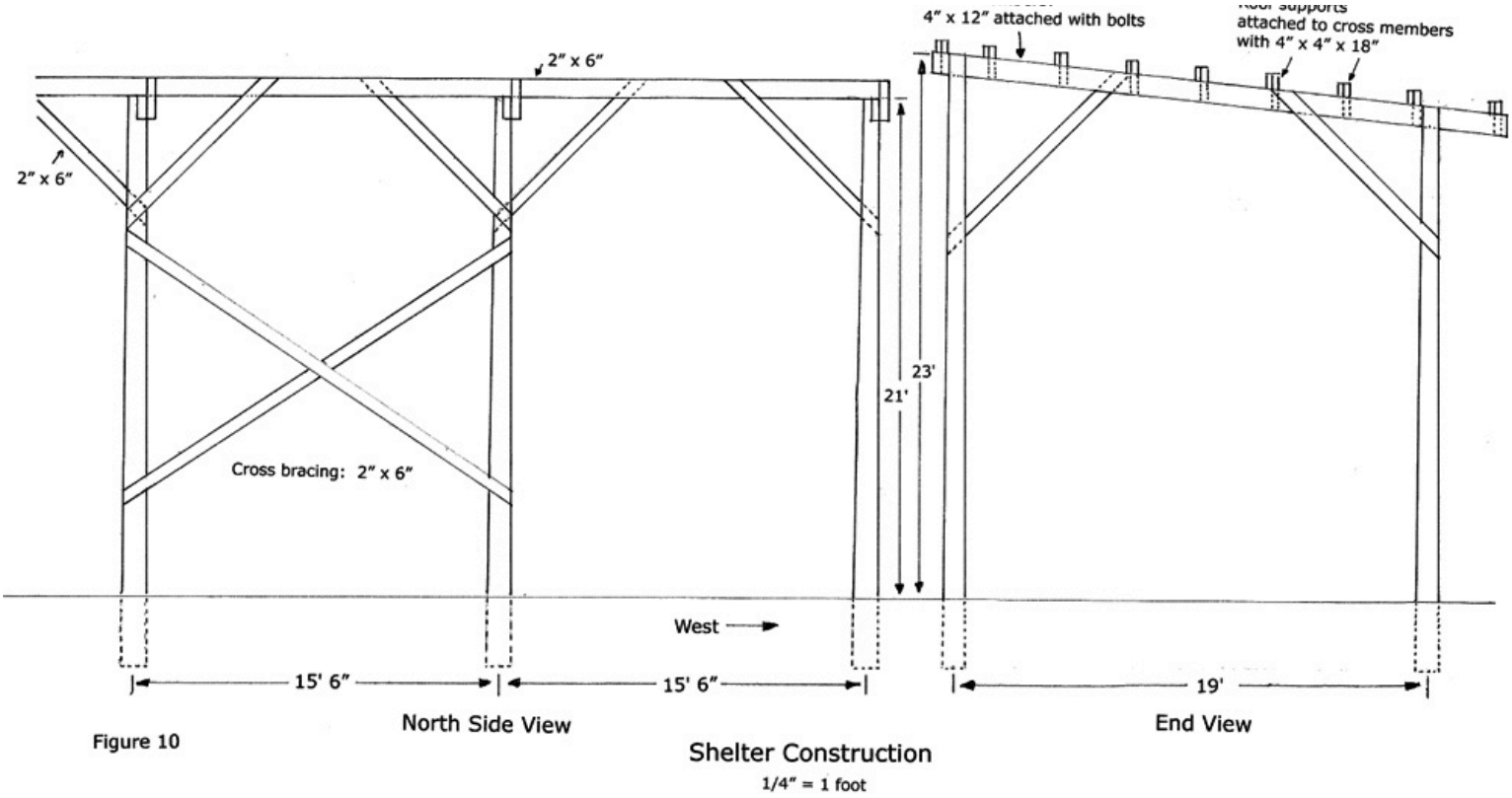
FIGURE 10



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1962 aerial view of Gilmore. Clay mine opened 1927 is in lower right quadrant and the clay loading area is at upper center. The road between the two is visible. The NKP main line runs from the top left to just below the top right corner, above the line of trees. Photo: Richards Brick Co.