LAYOUT DESIGN
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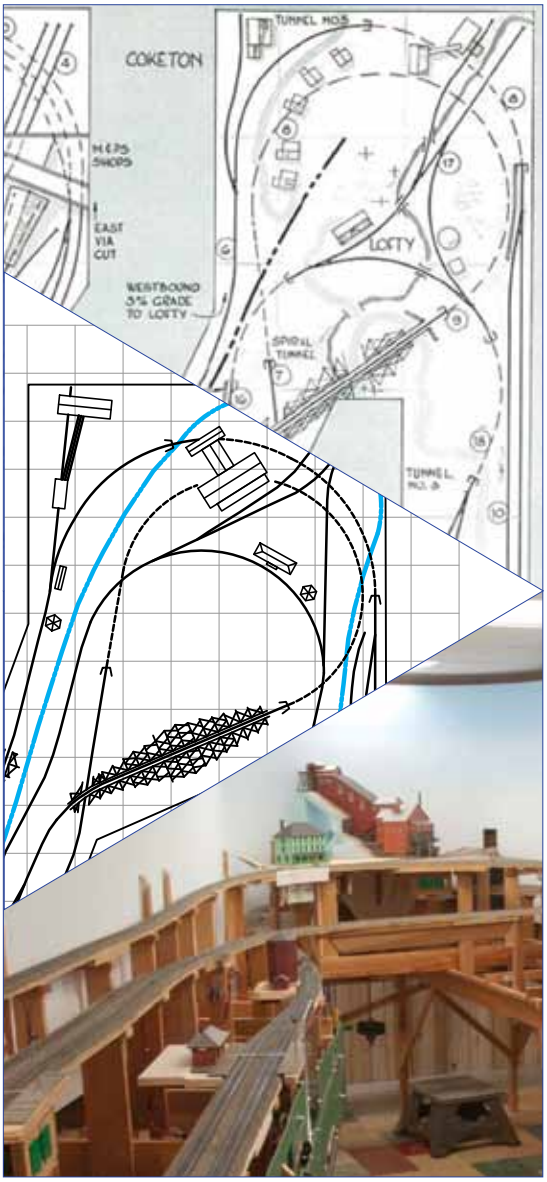
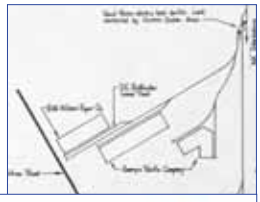
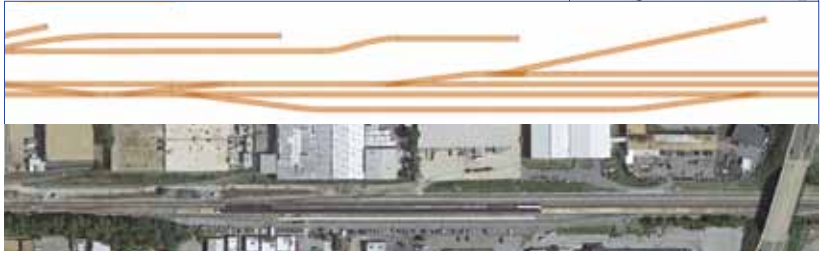
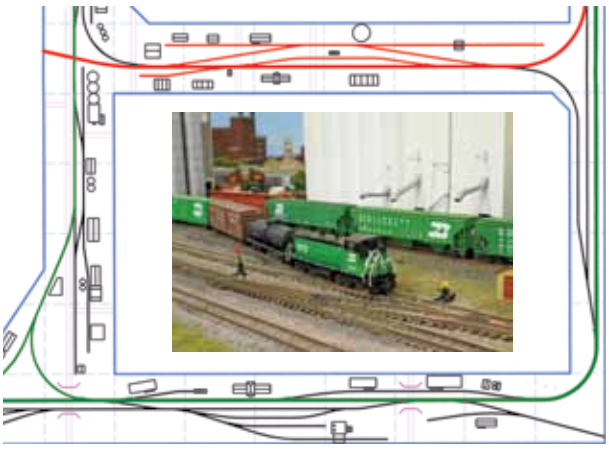


Adapting an Armstrong Classic
Cimarron & Northwestern Ry.
LDEs from Proto Documents
Three Granger Switchers in N
Sacramento & Tulsa 2016 Meets







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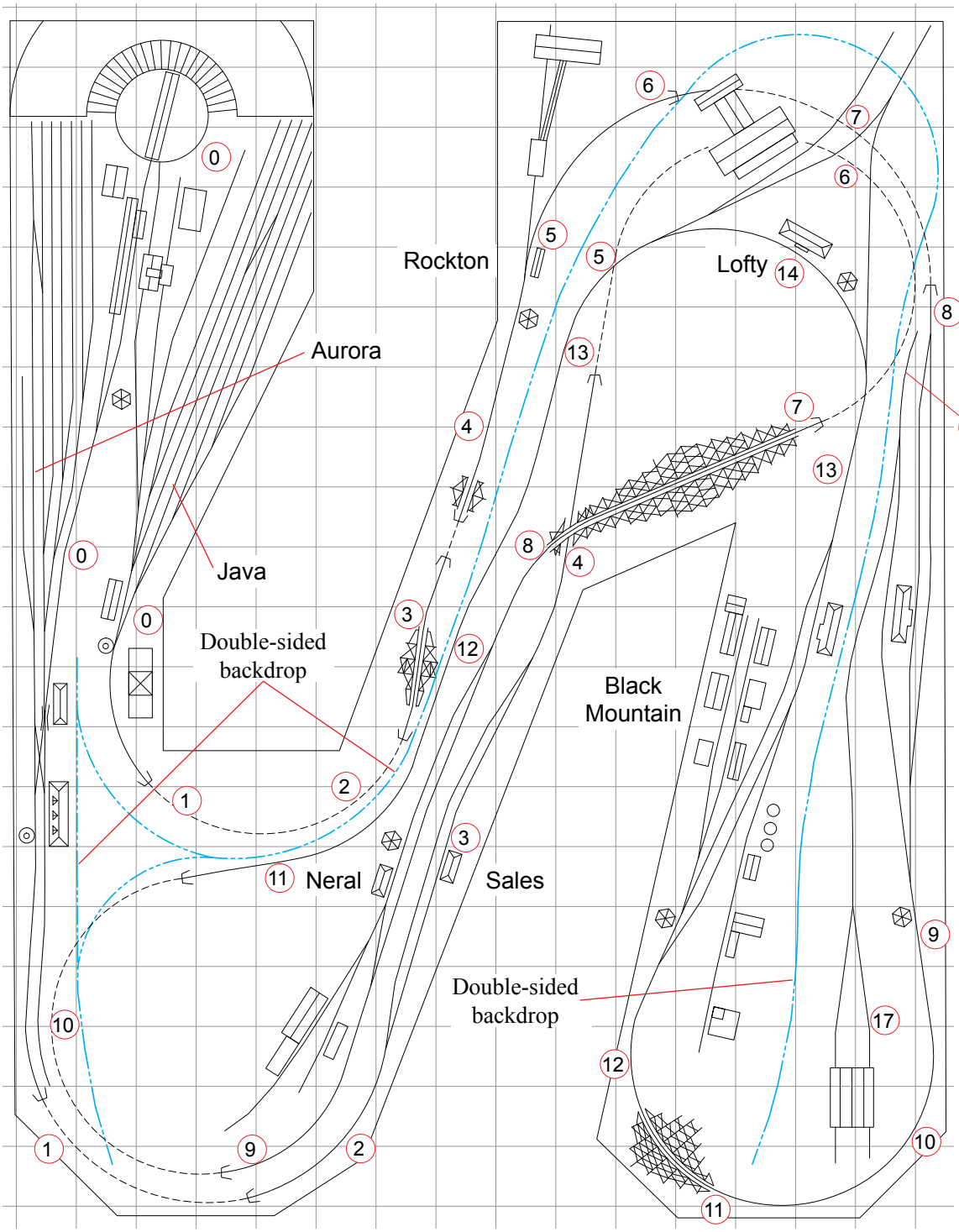
a two-car garage with approximate overall dimensions of 16 by 22 feet while I had the good fortune of possessing a layout room measuring 20 by 24 feet. When it comes to layout design, one can never have too much real estate – but how could I best use this extra space? Two obvious answers came to mind: One was to increase the width of aisleways and the other was to enlarge the layout itself. In the end, I did both, albeit with some compromises in both categories.

Although 24" radius curves were considered quite generous in 1959 when John conceived the design, this is not the case today.

When Mike re-designed the plan to permit broader curves and turnouts, it expanded substantially in size compared to Armstrong's original design. Shifting to a point-to-point short line concept and minimizing passenger traffic eliminated the need for staging tracks below the visible deck. Numbers in circles are elevations in inches from the 40" baseline elevations of the end-point terminals (which share a turntable and no other connection).



Western Midland
HO scale, 16' X 20'
(20' X 24' with aisles)
1-foot grid
Mainline min. 30" R
#8 min. turnout
Mainline max. 2.6% grade

Therefore, my first step was to redraw the layout with 30" minimum radius curves. Six inches doesn't seem like a great change, but this had the unexpected effect of causing the layout to "balloon" outward occupying much of my extra space. As a result, while I was able to increase the width of some aisles, two remained at 24 inches. Our hobby is full of compromises (and this is just another example), but I did manage to maintain a minimum radius standard of 30" throughout.

Turnouts on John's original design were generally number sixes on main tracks with number fours on some industrial spurs. For my layout, I standardized with number eights throughout. As well as appearing more realistic, I believe the larger turnouts have resulted in additional reliability of operation. As we all know, larger turnouts require more space – but my layout was larger than John's original design and my sidings could be shorter as a result of adopting a short line concept. So for those reasons, the shortened sidings didn't impact me in a negative way.

The unique side-by-side, but operationally separate, terminal yards of Aurora (left) and Java share a common engine terminal. The turntable provides the only track connection between the two yards. Note the "basic black" telephone handset mounted at the bottom of the fascia at middle lower right (see sidebar page 9 for a description of the phone system). All photos by the author.

Short line vs. mainline

The concept of John Armstrong's Montana & Puget Sound and my version could hardly be more different: John's intention was to have the M&PS represent a mainline mountain railroad extending from Montana to the West Coast – while my layout is a short line which never leaves Montana. In order to minimize any confusion between the two, I've named my freelanced version the Western Midland (WM).

This simple change of concept necessitated major changes to the terminals. Instead of an out-and-back design, which was a popular style of operation in the 1950s, I revised the railroad's end points to become two separate terminals (Aurora and Java, photo lower left) with a common engine servicing facility between them.

Looks like one, works like two

From a visual perspective, the two yards appear as one large terminal with a receiving and a departure yard, but in reality these yards are only connected by the turntable. Since the Western Midland represents a complete railroad, the need for staging yards is eliminated and trains are run from terminal to terminal with provision for interchanging with Class 1 roads at each end.

The end points on my Western Midland are Aurora at the south end and Java at the north end. My connecting roads for interchange purposes are: Milwaukee Road and Northern Pacific at Aurora; and Great Northern at Java. There are no specific interchange tracks. Instead, the yardmaster for the yard concerned (there is one for each yard) simply designates one of the yard storage tracks for interchange traffic.

With major connecting roads at both ends of the Western Midland, one might expect to see a lot of bridge traffic, but that is not the case. Almost all traffic originates or terminates on line. Initially, I had considered setting up the WM as a serious bridge line but that would have required staging yards at both ends.

The Cimarron & Northwestern Ry

Mountain Challenge "scouts" a proto-freelance path

by Don Winn

When I first read about the Mountain Railroad Challenge, I knew immediately which line I would like to model: the Cimarron & Northwestern Railway in Northeast New Mexico. I have a personal attraction to this land, but more about that later (page 20).

Prototype history

The town of Cimarron sits at the eastern foot of the Rocky Mountains in northeastern New Mexico. For a small town, it has a rich history, with residents like Kit Carson and Clay Allison, and was an important stage coach stop on the mountain route of the Santa Fe Trail.

The Cimarron & Northwestern Railway Corporation (CMNW) was formed in 1907 for the purpose of supporting the logging operations in the Ponil Valley northwest of Cimarron. The railroad ownership was controlled by the Continental Tie and Lumber Company to transport logs down to their mills in Cimarron. The Douglas fir and Ponderosa pine were processed at the mill into railroad ties and mine support timbers. 22 miles of rail were constructed from Cimarron up to Ponil Park, and the railroad became fully operational in 1908.

Gotta' have connections

The business case for the line was viable only because of the arrival of the St. Louis, Rocky Mountain & Pacific (SRMP) into Cimarron a year earlier. The SRMP was built southwest out of Raton to Cimarron and beyond to Ute Park, and east of Raton to Des Moines, NM, for a total of 105 miles. They fell about 1,000 miles short of both St. Louis and the Pacific, but hey, how many roads did actually make it to their namesakes?

In addition to transporting the lumber products out, the SRMP brought finished goods into the area and carried the mail to Cimarron and Ute Park. Of course, the railroad was also an important lifeline for connecting passengers to the national rail network through the Santa Fe in Raton (see map lower left).

Fallen Flags

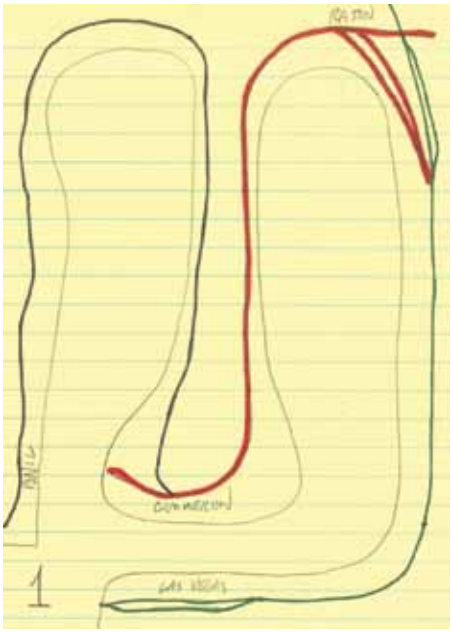
The Santa Fe line through Raton, of course, is still in play today as part of the BNSF network and hosts Amtrak's Southwest Chief. The Cimarron & Northwestern, like most logging roads, ceased to have a reason for existence after the timber had been cut and pulled out of the mountains. The rails were torn up in 1921 and officially abandoned in 1930.

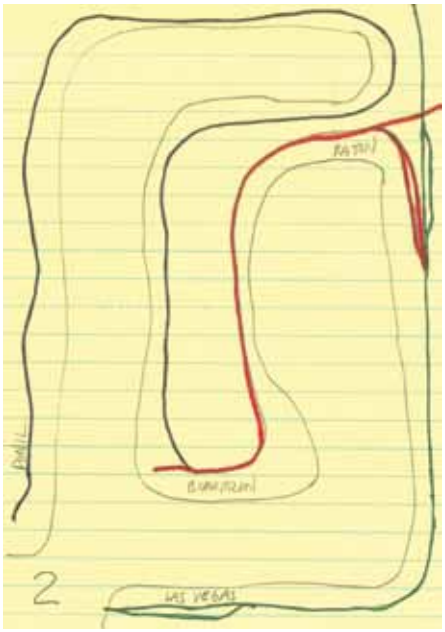
The St. Louis, Rocky Mountain & Pacific was bought out and absorbed into the Santa Fe in 1913. By the 1930s, though, the merchandise traffic had declined and the mail contract was lost. The last scheduled train rolled through Ute Park and Cimarron in 1942. The rails were then pulled up to help with war-time scrap metal drives.

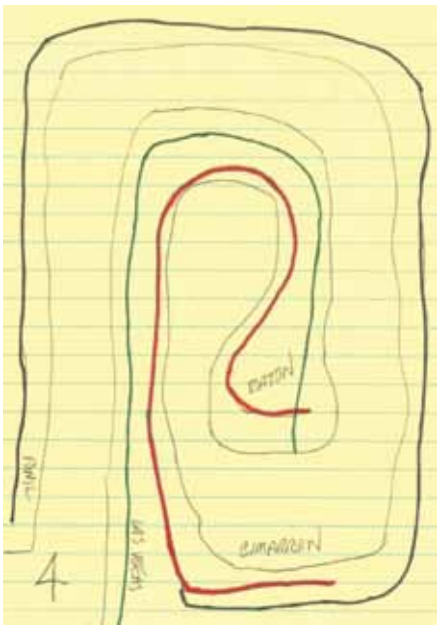
Concept & vision[1]

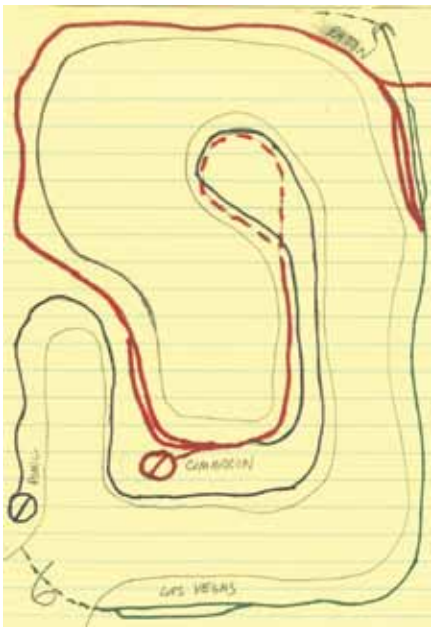
The primary focus of this HO layout is the Cimarron & Northwestern line, with logging operations in the mountains along with a saw-

1 Don is following the three-phase Conceptual/Structural/Detail layout design process I described in LDJ-40, Fall 2010. – BH









mill and tie plant in Cimarron, making the primary role of the CMNW on the layout to pick up logs from the cutting sections and deliver them to town. Staging is needed to represent Denver/Kansas City at the north end of ATSF and Albuquerque/Santa Fe at the south end. Loop staging for Ute Park at the west end of the SRMP will add a train for that run, along with providing a convenient way to turn the train. The line to Des Moines can be dropped, as that is not critical to the plan.

Considering which side operators should face, the two lines coming out of Raton can be viewed and accessed as shown in the map on page 13. Moving past Cimarron, the CMNW line can be operated from the same orientation, if we can work around the Ute Park staging. Fortuitously, this ends up with the accepted modeling convention of a north-facing view[3]. It's nice when things work out.

Before I started plopping down rectangles (Byron is working with me on my rectangle-dependency[4]), it's good to look at the space. I wanted to avoid duck-unders or lift-outs if at all possible. That suggested to me to look at locating the extreme ends of the system – Las Vegas and Ponil Park – near the doorway, to allow a walk-in design.

Preliminary sketches

I sketched out a number of different arrangements on some note paper while I was at the national convention in Portland (at left). [I always feel inspired at those events and usually go home with ideas for far more projects than I can possibly work on.] The first sketch ("1" top left) was a simple, single blob design, but that helped to size up the relative locations and what aisle widths might be possible in the room. One negative is that it lacks space north of Raton to model the pass.

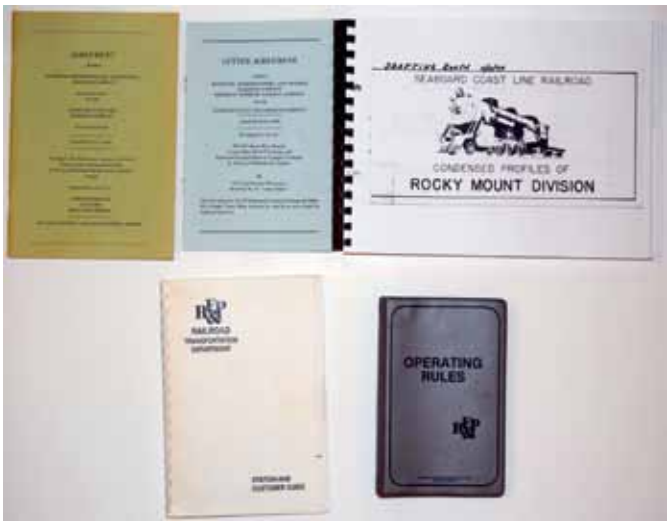
Sketch 2 was an evolution of that, adding in an additional alcove for the logging

3 "Map conventions" of viewing from the south (placing north to the "top") and placing west to the left are sometimes suggested as a way for operators and viewers to quickly become oriented to the layout. A broad discussion of layout orientation is found in Layout Design News #20, Summer 1998. – BH

4 "See the space, not a rectangle" – BH

times in the lifecycles of the railroads, so former rail features may show on a map today as a parking lot – or the track layout may have changed as a new bypass line was cut into service. In the case of the track being taken up, the earlier right-of-way may still sometimes be spotted via site visits, USGS maps, or perusing Google Maps/Earth.

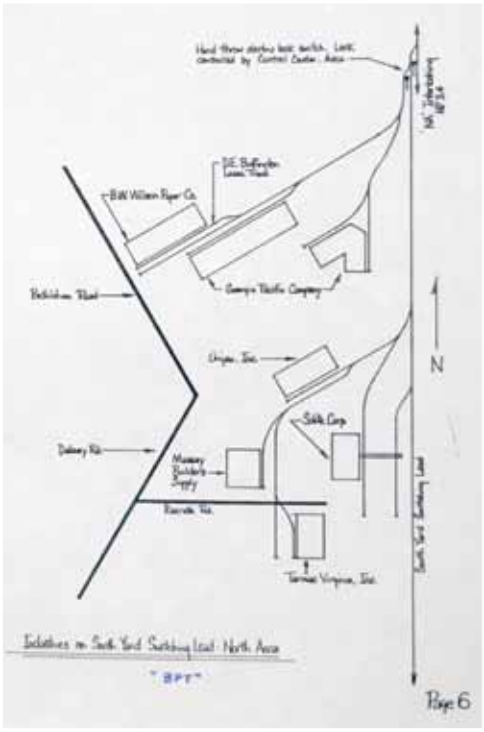
An example from my trove of documents is a detailed to-scale diagram showing the large number of customer spurs and spots around the Acca Wye (map at bottom).



Example – the Acca Wye

The wye was built to connect the existing tracks to the James River Branch that was built in the late 1880s and completed in 1891 with a single track bridge over the James River. Until this time, the connection between north and south was through the City of Richmond on the "Connection Railroad".

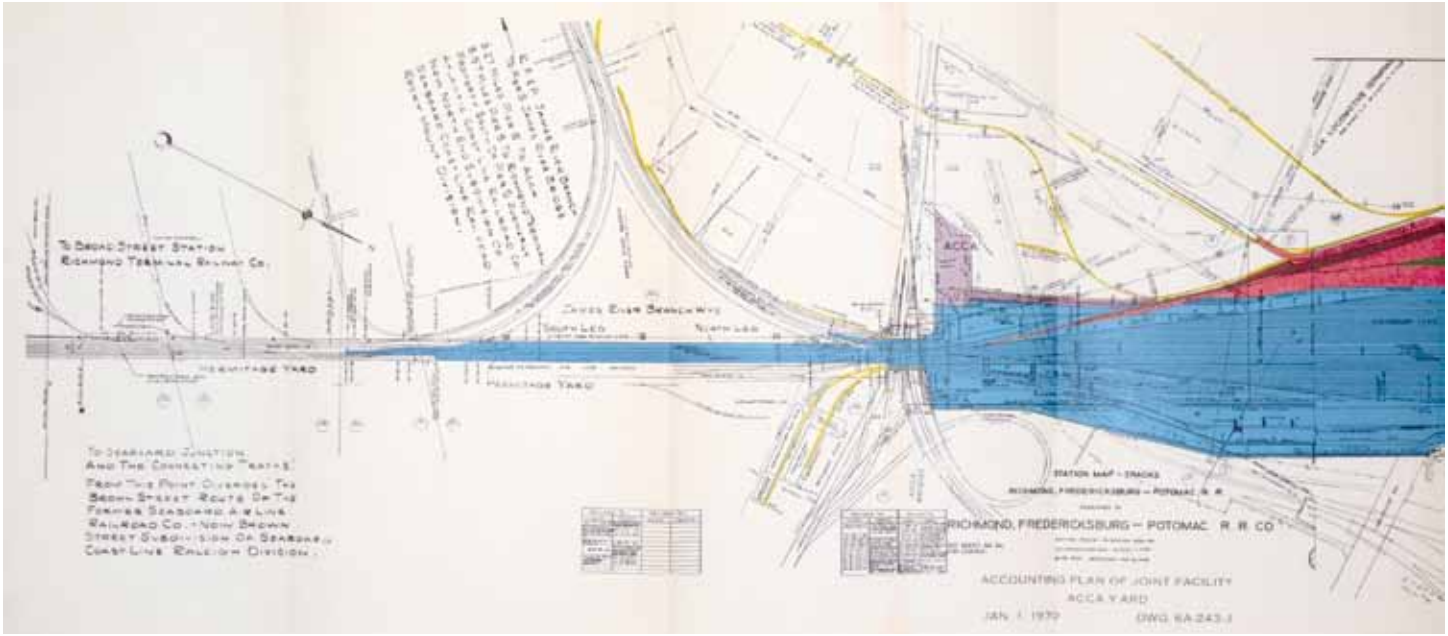
This line was just over a mile long, but was a point of contention with the city due to the many at-grade crossings as well as the smoke and cinders from locomotives.



(Top right) Part of Rick's collection of prototype documents.

(Middle right) The RF&P Station and Customer Guide provides details that aided crews in serving customers – and help modelers recreate LDEs. Track names and nearby streets are included for reference.

(Bottom) This detailed map outlines track, railroad structures, and customer tracks in the dense Acca Wye area.



Operating the Farmers' Line – 1960s

Great Northern granger branch offers work for two crews

by Olaf Melhouse

The Farmers' Grain and Shipping Company began as a group of growers who wished to market their own grain to nationwide buyers. As part of this effort, they built a railroad line from their home town of Devil's Lake, ND that eventually reached north to Hansboro, near the Canadian border. From early on, the line was controlled by the Great Northern Railway (see sidebar below right). This branch was known as the "Farmers' Line" or Hansboro Line.

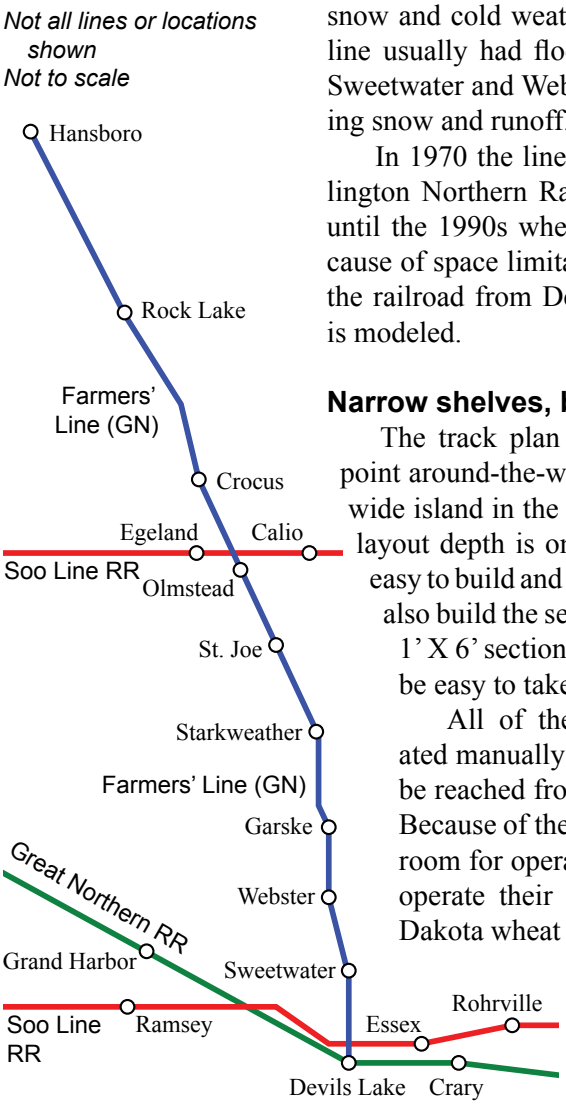
The era modeled is the 1960s, so trackage is still operated by the Great Northern. The Farmers' Line was known for hauling long trains of grain, so the fall was a busy time. In the winter there was always a battle with snow and cold weather and in the spring the line usually had flooding problems between Sweetwater and Webster because of the melting snow and runoff.

In 1970 the line became part of the Burlington Northern Railroad and was operated until the 1990s when it was abandoned. Because of space limitations only the portion of the railroad from Devils Lake to Rock Lake is modeled.

Narrow shelves, broad aisles

The track plan (page 31) is a point-to-point around-the-walls design with a 3-foot-wide island in the middle. With most of the layout depth is only one foot, it would be easy to build and attach to the wall. I would also build the segments along the walls in 1' X 6' sections so that the layout would be easy to take apart and move.

All of the switchpoints are operated manually because the turnouts can be reached from the front of the layout. Because of the design, there is plenty of room for operators to move around and operate their trains. Scenery is North Dakota wheat country with flat fields of wheat, barley, oats and soy beans. Some farms have beef cattle, but most are grain farmers.



Small towns and leisurely switching

The bigger towns on the layout are small farming communities with a main street that includes a bar, bank, drug store, grocery store, gas station, lumber yard and hardware store. The smaller towns like Sweetwater, Garske, and St. Joe would only have a bar, gas station, and maybe a few other businesses.

There are no large bridges, only wood-pile trestles and culverts for the small streams and drainage ditches. Small pot holes and sloughs abound for the production of ducks and geese. Minimum radius is 15 inches and there are no grades. Train speeds are less than 25 mph so everything will be done at a leisurely pace.

Farmers' Line History

The Devils Lake and Northern Railway Co. was an association of farmers and land owners in Ramsey County (North Dakota) which funded and built a railroad from Devils Lake to Starkweather (23.486 miles) between 1900 and 1902 and placed it into operation on September 15, 1902.

On October 16, 1902 a charter was issued to the Farmers' Grain & Shipping Company, creating a North Dakota corporation for a term of 20 years with principal offices in Devils Lake. The Brandon, Devils Lake & Southern (owned by the Great Northern) owned 4,841 of the 8,000 outstanding shares of the capital stock of the Farmers' Grain & Shipping Co. and Farmers' Grain was thus controlled by the Great Northern.

On September 26, 1905 a 29.71 mile extension was completed from Starkweather to Rock Lake where it connected with the Brandon, Devils Lake & Southern built north from Rock Lake to Hansboro (13.05 miles). Farmers' Grain & Shipping Co. leased this portion of the line from the Brandon, Devils Lake & Southern for access to Hansboro. Thus the branch line became known as the Farmers' Line or Hansboro Line.

On November 23, 1943 the trackage was formally sold to the Great Northern Railway. It barely lasted into the BNSF era as the Hansboro Sub (North Dakota Division) and was abandoned in 1997.