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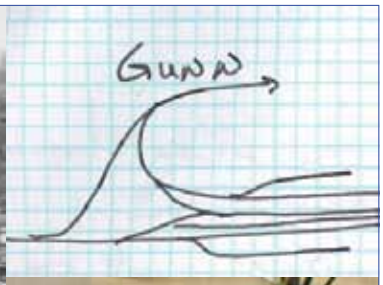
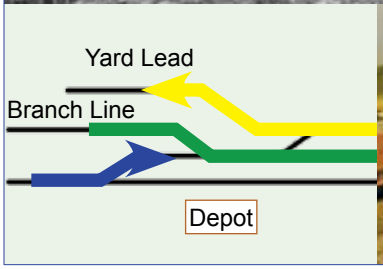
LAYOUT DESIGN

JOURNAL 55

Sacramento Belt Line
Planning a Branch Junction Yard
HO Shortline for a Spare Room
New Yard from Best Practices
Board Election; Portland NMRA





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The Sacramento Belt Line

Former interurban lines moving freight in California's capital

by William Burg

My Sacramento Northern Belt Line is an HO standard gauge shelf layout in an 11'x24' room, with a current main line run of approximately 46 feet. Operation is based on the Sacramento Northern Railway (SN) within the city limits of Sacramento, California from 1947-1953, using electric and diesel-electric motive power.

Layout design principles incorporated include congested industrial settings, sectional construction, use of Layout Design Elements and restricted views to create an effective illusion of greater distances, and simple but robust one-person operation.

"... create an effective illusion of greater distances ..."

A perfect fit

Despite growing up in the Sacramento area and living in the heart of the neighborhood SN served most directly, I was unfamiliar with the railroad until 2003. Since my main interest is small industrial locomotives and industrial switching, the SN fit my modeling interests perfectly. Living in the same neighborhood I model also had appeal, since many of the buildings along the line, including industries, still existed, and were within walking distance of home.

Sacramento's flat geography also added to the appeal, as I am not particularly interested in mountain scenery or modeling complex terrain. Buildings and street trees are the main landscape elements. The prototype ran on city streets through residential neighborhoods connecting the city's industrial corridors. This meant ample opportunity for scratchbuilding and kitbashing unique Sacramento buildings, a primary area of modeling interest.

Freight on the belt line

Although interurban tracks crisscrossed Sacramento for passenger service, freight traffic was confined to the outlying Belt Line that roughly surrounded the city center (see map page 6). This included Sacramento Northern tracks as well as a segment jointly owned by SN and Central California Traction Co. (CCT). Much of this trackage was street-running. The SN worked from its two freight yards, Haggin Yard north of the city and Westgate Yard, to the west across the Sacramento River. The Southern Pacific and Western Pacific were also prominent, and serve as interchange opportunities in my modeled scenes.

A hot August day in 1964 finds SN GE Steeplecab #654 hard at work on Plumas Street in Yuba City pulling cars from the Del Monte cannery. William set his layout in an era when electric freight locomotives were still in use on the Sacramento Belt Line to replicate this kind of electrified freight street running. #654 has been restored and is in operation at the Western Railway Museum in Suisun City, CA. Photo by Drew Jacksich

Sectional for portability

The layout is designed for disassembly and portability. Each section is no larger than 3' X 6', the size of a Volvo station wagon's cargo bed, to allow easy relocation.

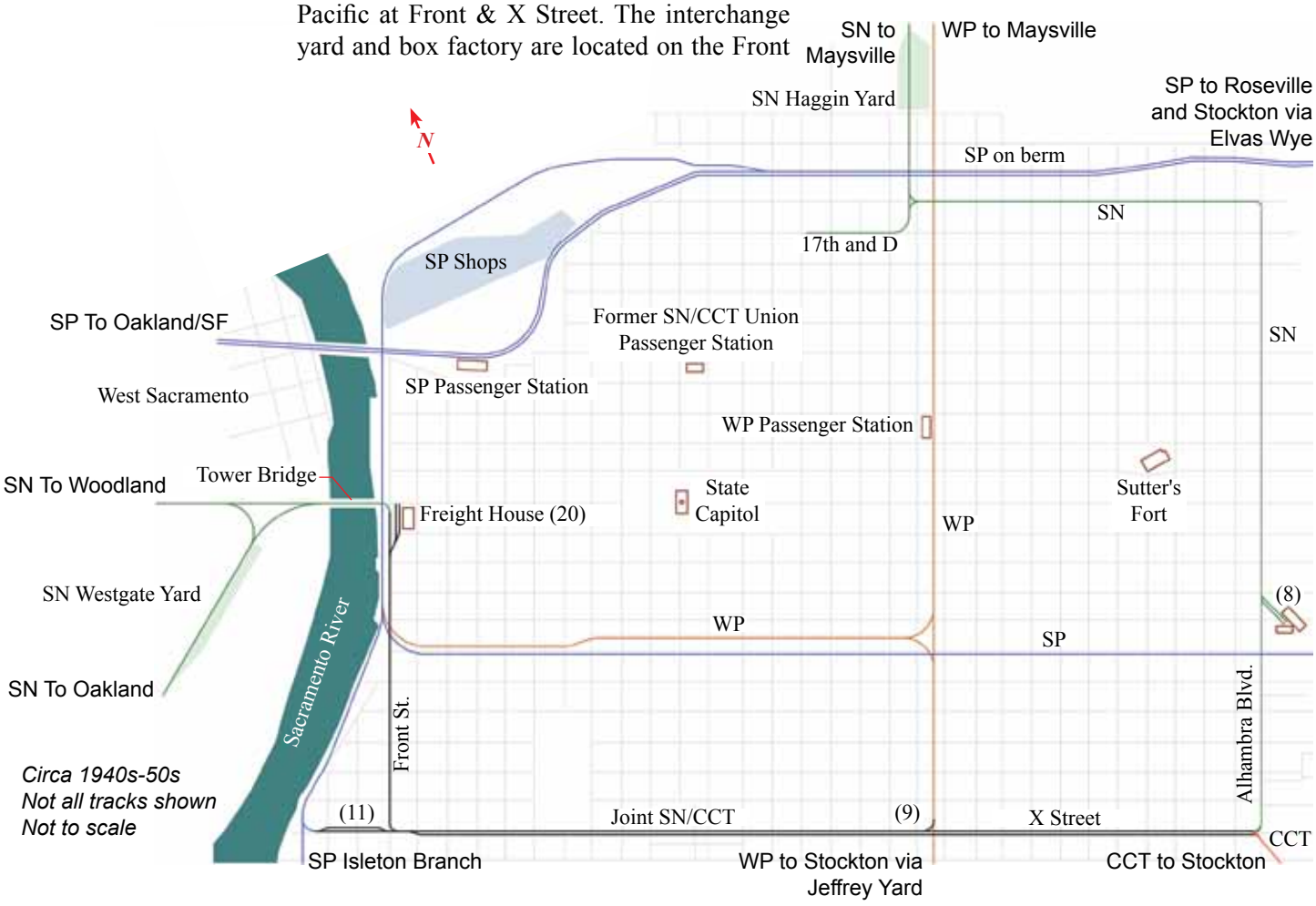
The layout sits on a wooden shelf with metal brackets, with sections connected by C-clamps (photo page 12). The sections allow easy access and repair as well as layout relocation without demolition.

adjacent Haggin yard, located a few hundred feet east of SN's yard on the prototype. Haggin Yard also includes caboose and maintenance-of-way tracks.

The Alhambra Boulevard section's main feature is the Libby, McNeill & Libby cannery. The large cannery building breaks up the view between 17th & D and X Street, separating the scene visually. South of the cannery is a two-leg wye at Alhambra and X Street where Central California Traction, another electric interurban (de-electrified after 1946) shared the belt line. The CCT track down Broadway is functional but dead-ends behind a building. It can be used to simulate arrival or departure of CCT locomotives and short trains.

X Street is a long double-ended siding, allowing runaround moves for trains up to 16 cars long. Industries include a Western Pacific interchange where the WP main crossed the Belt Line at 19th Street, a cannery and box warehouse, and an interchange with Southern Pacific at Front & X Street. The interchange yard and box factory are located on the Front Street Southside section. The WP interchange and crossing at 19th Street extends onto a peninsula into the room, with industrial buildings blocking the line of sight between Alhambra Boulevard and Front Street.

Front Street's Southside section is another narrow section, with a lumber mill and grocery warehouse. Its most visible structure is a large natural gas tank, an iconic fixture of the Sacramento waterfront until its demolition in the 1960s and originally built as part of an illumination gas plant. In the foreground are an interchange with Western Pacific that runs off the layout edge and a foreground track serving another California Packing Company cannery, planned as a foreground flat with open loading docks. The foreground cannery and gas tank serve as view blocks. Southside was Sacramento's Portuguese and Italian neighborhood, and several buildings and industries modeled represent these ethnic communities.



By the author's modeled era, passenger traffic had ceased on both the Sacramento Northern and the Central California Traction, but freight traffic continued on a Belt Line around Sacramento. SN and CCT once had extensive trackage within the city, as demonstrated by the location of the former joint SN/CCT passenger station. Numbers in parentheses represent numbered locations on the track plan at right.

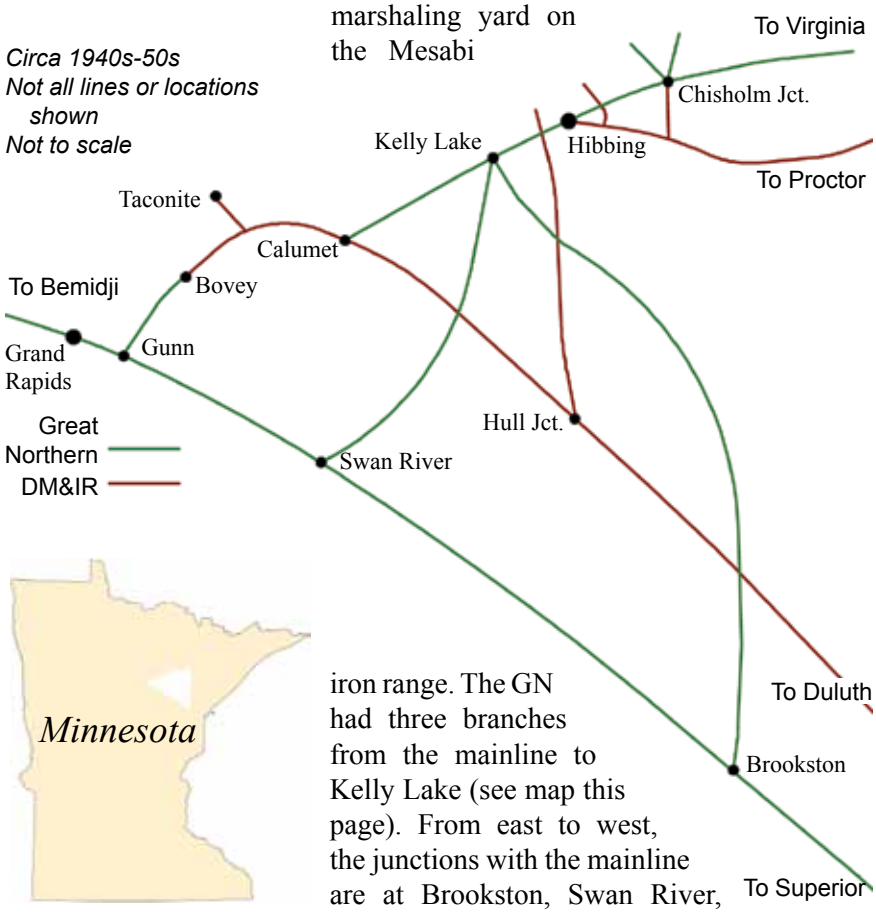
Planning a Yard for Operation

Gunn Yard on the GN as a Layout Design Element

by Bob Hanmer

My primary interest is in operation. So when I started designing my current railroad, it was important that it support the prototype-based operation that I wanted. I'm modeling part of the Great Northern's (GN) east-west mainline from Superior, WI to Grand Forks, ND in 1958. The railroad is roughly centered on Grand Rapids, Minn. The westernmost end of the Duluth, Missabe and Iron Range (DM&IR) is also represented.

One of the key locations on my railroad is Gunn. Gunn is the junction of the east-west mainline and a branch from Gunn to Kelly Lake, the GN's main ore-marshaling yard on the Mesabi iron range. The GN had three branches from the mainline to Kelly Lake (see map this page). From east to west, the junctions with the mainline are at Brookston, Swan River, and Gunn.



The branch connecting at Brookston primarily carried loads from Kelly Lake to Superior with little or no on-line industry. At Swan River the double-track mainline from the east went to single track, and the branch from here to Kelly Lake was used almost exclusively for empty ore car movements to the range. Similar to the Brookston-Kelly Lake line, there is no on-line industry on this branch.

A more attractive junction

Gunn is the junction of the westernmost branch, and it differed from the other two branches in three regards. First, it followed the iron deposit, so mines were scattered all along its length. Second, several small towns dotted this line, so it hosted on-line industries that the other branches did not. And third, due to the ever-changing landscape of the iron mining region, the DM&IR shared GN track for part of this branch, and in some places the GN used DM&IR track. Because of the mines, and the existence of small yards along the "Gunn Line", the branch was used for both ore loads moving from Kelly Lake to Superior and for commercial non-ore traffic.

The area was ABS signaled time-table-and-train order territory, but after 1958 CTC (Centralized Traffic Control) was installed over the territory and the Swan River-to-Kelly Lake branch was abandoned.

Photo clues for realistic modeling

In designing an operating railroad, I've been striving to model according to the real-life operations and the timetable. I want the track plan to work like the prototype – no model railroad "gotchas". I also want the traffic to reflect what was really present in this territory. The photo of Gunn (page 15 middle right) was taken in the early 1940s. The view looks east and was taken from the railroad's water tower.

The first things I see in this photo are a long, straight yard that parallels the mainline and an ore train coming off the branchline and joining the main. Looking closer, it seems that the yard is *not* set up for access from the mainline to the west, which heads off to the lower right (toward the photographer).

There's a nice little depot with a cinder platform in the middle of what I know from maps to be a wye. Past the depot there's a line coming off the wye into the yard that has what appear to be between two and four tracks – there are cars on two of them. There's also a

Planning for yard work

I started thinking about kinds of activities that would occur at the yard and came up with this list:

- Block swapping between road freights and locals
- Road ore train setout/pickup
- Sorting of cards for local destinations, including for the paper mill at Grand Rapids
- Trains passing each other
- Originating mine runs
- Originating local freights

Since this is the major GN yard for my layout, I wanted it to be staffed by a yardmaster. The yardmaster job had to be interesting enough that someone who likes working in yards would want to take the job. The variety of trains and kind of work I envisioned seemed to fit the bill.

I also considered the various traffic patterns or routes through and into the yard. These are listed in Table 3 below.

Type of Train	Route
Road ore trains	Branch to eastbound main
Local mine run ore trains	Branch to westbound main
Mainline local freights	Mainline to mainline, possible setout/pickup in the yard
Branch local freight	Branch to yard, setout/pickup, runaround Yard to branch
Mainline trains	Mainline to mainline

Table 3. Traffic patterns through Gunn Yard

Sketches and practicalities

I started designing the new railroad about two and a half years before it began operation (two years before house addition work ended and railroad construction could begin). Figure 1 (below and sidebar on page 17) shows my first sketch of the yard in my design notebook. It's based on the photo on page 15. It looks like the prototype, which I researched and sketched out (not to scale) in Figure 2 (below).

A number of practicalities came to light early. Among the first is that I did not have space for the wye at Gunn. This changed the needs for the yard because the local mine run, coming from the north on the branch, needed to enter the yard, make a runaround move, and then depart westbound on the main.

Two other realizations that aren't obvious from what I've written are that this territory has relatively few sidings on the single track. So I wanted to be able to meet two trains at Gunn station, so a main and siding arrangement is necessary. The final one to mention now is that Gunn is just three miles east of Grand Rapids. Grand Rapids hosts a major paper mill, meaning that Gunn Yard might be used for some of that traffic. I'll discuss this aspect more later.

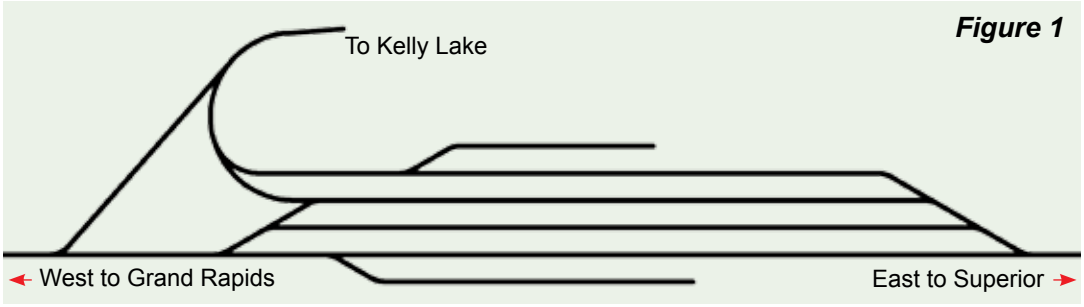
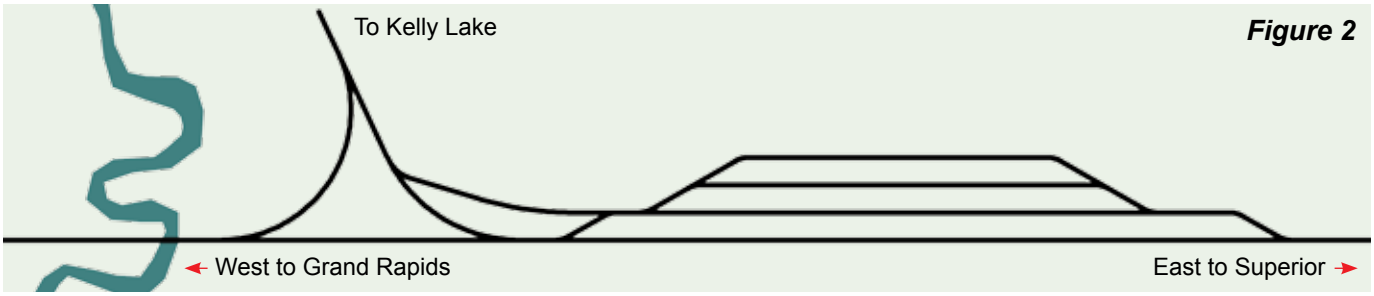


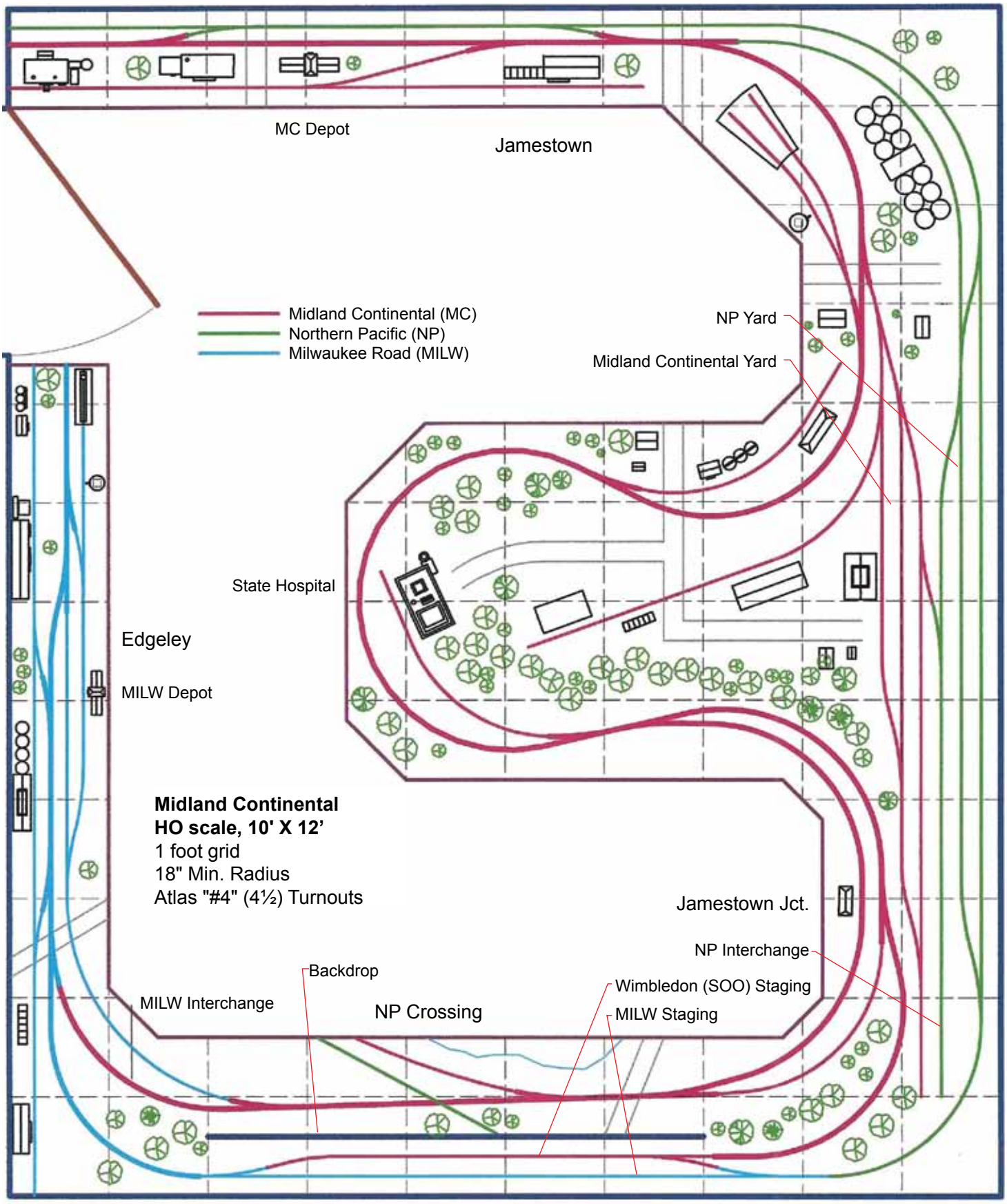
Figure 1 (above). Bob's initial dimensionless sketch captured many of the necessary operating elements without regard (yet, at least) to space.

Figure 2 (below). Great Northern track maps allowed a more-accurate sketch, but Bob realized that he would need to make a number of compromises. Overall length would be reduced and the wye could not be accommodated.

Ideas from the UCW

I had the opportunity to operate on Lee Nicholas' Utah Colorado Western later that same year. The UCW has a junction yard that sure looks like something I could





Olaf's mid-sized plan for the Midland Continental offers both on-line industries and representations of all three interchange partners. Up to four operating jobs may be supported by the trackage, so he left space for reasonable aisles allowing easy movement around the room.

Designing a Yard with Best Practices

"10 Commandments" as a checklist on the Boston & Maine

by Paul W. Schenk

"... one of my major goals was to be able to have operating sessions."

With the move in 2012 to our "retirement" home, my wife and I both gained some features missing from our previous home. My Northeastern-themed layout and workshop moved from a basement-level two-car garage into a real basement. (For the first time we are actually parking cars in a garage!)

The workshop now has its own large room at one end of the basement, so dust from the workshop no longer incrementally "weathers" my layout. The 14' x 20' space for the previous HO layout is now 13' x 28' in the main room, with additional space available as I expand through the walls, under the stairs and into the next room.

Yard lessons learned

The freight yard in my last home was limited to a space roughly 2' X 6'. The schematic for it is shown below left (Figure 1). The layout used a double-track mainline. As the schematic shows, a through freight on the outer mainline had no choice but to go through the yard. This was one major shortcoming I wanted to avoid on the new layout.

The much longer space in the new room meant the freight yard and engine servicing area in the freelanced town of Allston could increase to 20' in length. I was also able to add additional depth. Combined, this allows for much more traffic to be handled without crowding the yard master's space.

Nominal benchwork height in this area of my layout is 37.5". At the front of the benchwork the mainlines drop to 36" to help provide some variation from a totally flat tabletop.

In redesigning the layout for the new space, one of my major goals was to be able to have operating sessions. Towards that end, I have benefitted from the help and wisdom of several colleagues[1].

In April 2014, David Yeager, Crew Heimer and I summarized our progress up to that point in a workshop for the Piedmont Division of NMRA that we titled, *Lessons Learned Designing a Freight Yard*.

We focused on Craig Bisgeier's *The Ten Commandments of Model Railroad Yard Design* as modified for freight yard operations (see sidebar page 31). While I still do not yet have all of the mainline track in place to start formal operating sessions, I think the yard addresses each of the key points in a satisfactory manner.

Dimensionless sketching to begin

Initially, not paying attention to the actual angles associated with turnouts (#4 to #8), I thought I might be able to enter and leave the yard from both the front (east) and back (west). (See Figures 2 and 3, upper right page 27).

I also considered putting the icing track on the right (north) end of the yard on classification track #6. This way, the yard switcher could easily push a cut of cars into place. However, it also eliminated the option of using that space for an additional classification track. Moving it to the left end of the yard meant providing a runaround track for the switcher.

Figure 1 above. Paul's previous layout had a very limited space for a freight yard. The schematic for the 2' X 6' yard is seen in this photo of the former layout's fascia. One of the major issues Paul had with this arrangement was the need for one of the mainlines (at bottom of the schematic) to pass through the yard itself. All photos by author.

1 David Yeager continues to provide me with excellent design advice and history of the railroads in Northeast New England that I model. Crew Heimer, George Bloodworth, Joe Nichols, Sr. and several members of the LDSIG have also provided invaluable help with design ideas.