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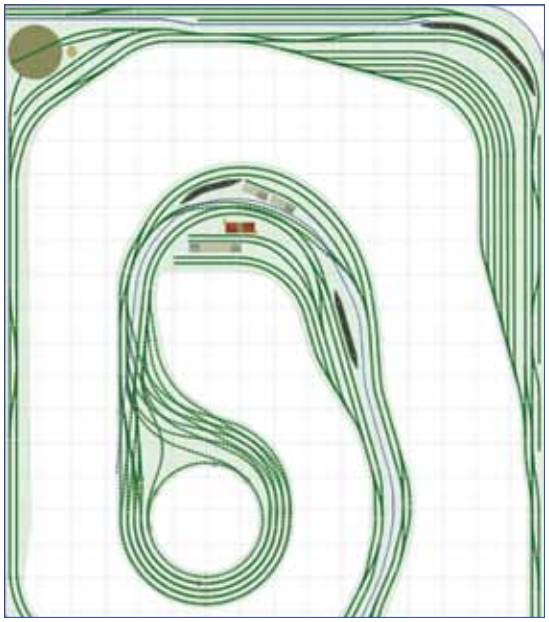
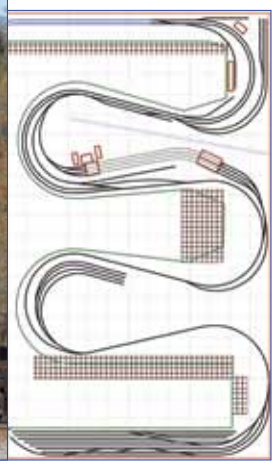
LAYOUT DESIGN

JOURNAL 59



Summer 1953; NP in Montana
"The Pokey" in 1975
N Scale BN Crawford Hill
Benchwork Ideas
Design Challenge: Switching



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from Great Falls to Billings, providing a rail connection to Glacier National Park.

CB&Q interaction

Two lines of the CB&Q reach the NP mainline in the vicinity of the town of Billings. At Huntley, 13 miles east of Billings, there is a junction with a CB&Q line that runs southeast and connects with Omaha Nebraska and Kansas City Missouri. Fifteen miles west of Billings is Laurel and a junction with a CB&Q line that runs south to Denver Colorado.

CB&Q has trackage rights and track leases that allow its trains to operate on the NP mainline between Huntley and Laurel. CB&Q's Omaha and Kansas City passenger trains use the NP stations in Huntley and Billings. The Denver trains use the NP stations in Laurel and Billings. South of Laurel on the Denver line is a branch that runs between Frannie and Cody, Wyoming, one of the entrances to Yellowstone National Park.

Farther west on the NP mainline is Livingston. An NP branchline runs south to Gardiner and the Park. Buses are displacing trains in 1953, so visitors typically detrain at Livingston and transfer to a bus to enter the park via Gardiner. Sleeping cars belonging to tour groups are parked at Livingston station until reboarded.

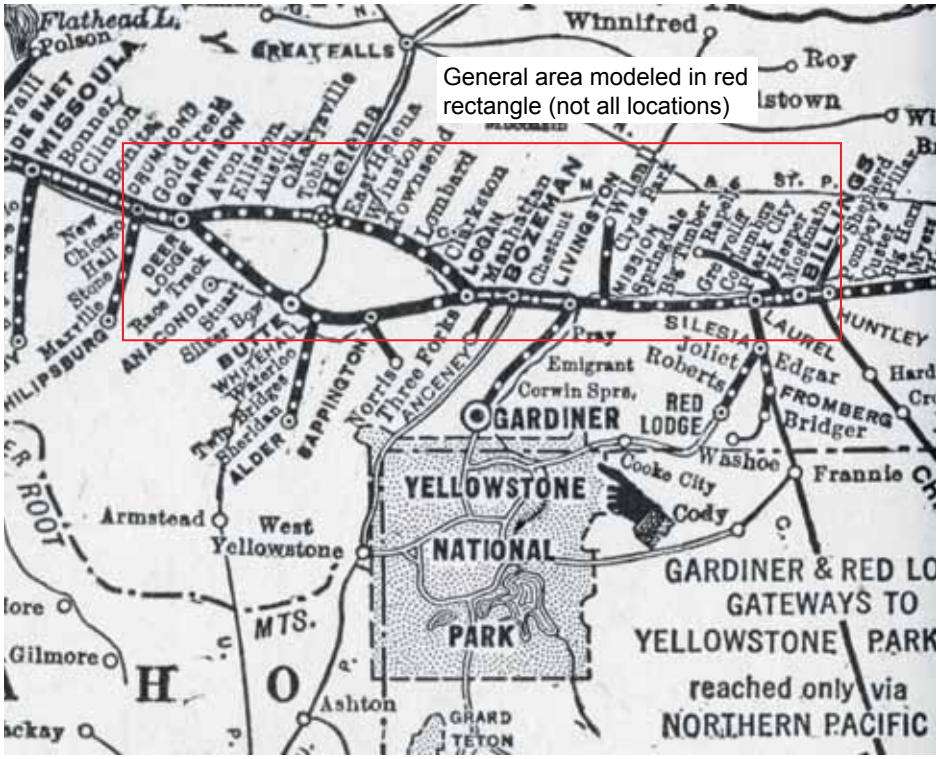


Figure 1. Map of the Northern Pacific (NP) and connections in Central Montana; north is towards the top of the map. The thick black east-west line is the NP mainline. Double-tracked sections of mainline are drawn with a white dash between the white dots of towns that run along the length of the mainline. Author collection.

Passenger traffic

In the summer of 1953 Northern Pacific operates two Chicago-Seattle transcontinental passenger trains: the streamlined *North Coast Limited* (*NCL*) and the mostly heavyweight *Mainstreeter*. Northern Pacific courts summer vacation traffic by advertising train services to Yellowstone National Park, some in partnership with affiliate CB&Q (Figure 5 on page 7).

Examples of NP services from Chicago and the North Pacific Coast, and joint services from Kansas City to Yellowstone (Cody and Livingston/Gardiner) are shown in the table (Figure 4) on page 6.

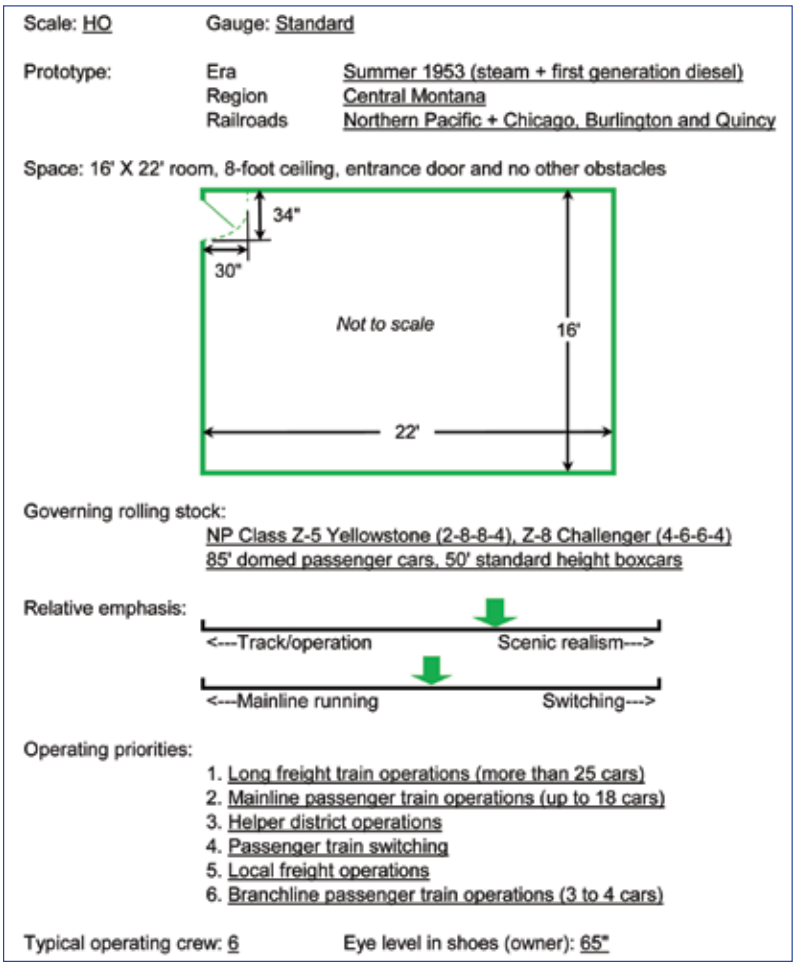


Figure 2 (right). John Armstrong-style "Givens and 'druthers" for the layout allowing for full-length passenger cars as well as 125' long Yellowstone (2-8-8-4) and 126' long Challenger (4-6-6-4) articulated steam locomotives.

Northern Pacific in Montana
HO scale, 16' X 22'
1-foot grid
Mainline min. 27⅝" R
Roco C83 15° min. turnout
Mainline max. 2.9% grade

Developing a track plan

The model layout design (Figure 6, below) is in keeping with the prototype themes and the "Givens and 'druthers" outlined on page 5. A single-deck design was chosen to simplify construction and optimize the elevation of the layout for viewing trains. As Armstrong often suggested, a spiral benchwork plan maximizes running length while reducing overall curvature. The

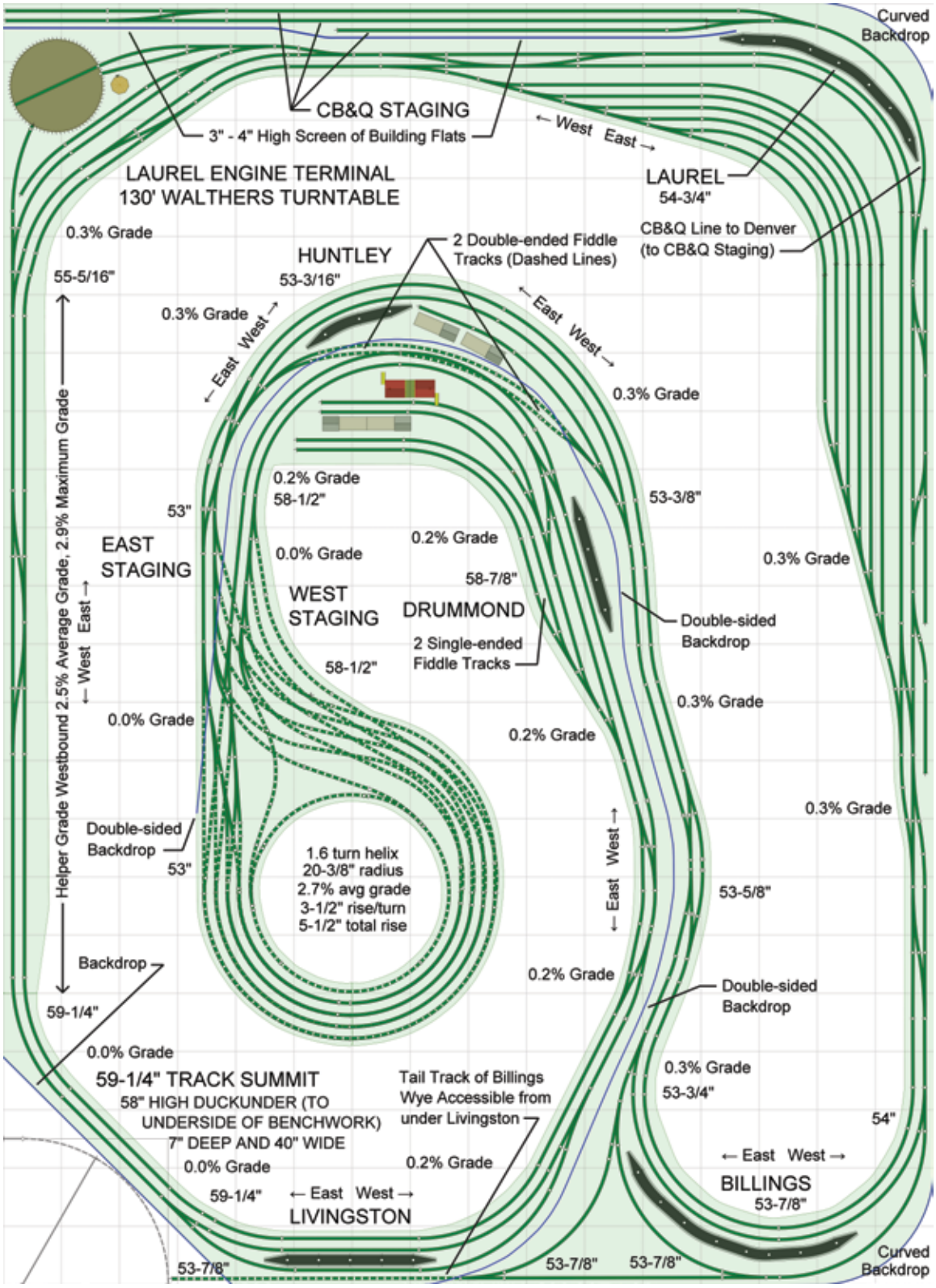


Figure 6. Doug's plan incorporates a spiral peninsula with a single turnback curve to use space efficiently, maximize mainline run, and reduce overall curvature. Stacked loop staging tracks make the most of the "blob."

N&W Pocahontas Division, 1975

Three Mountain Challenge track plans with climbing decks

by Bob Osborn

I decided to explore HO multi-deck designs for the Norfolk & Western Railroad, Pocahontas Division in Virginia and West Virginia (see map lower right). I chose this area because many years ago, I railfanned that area and remember the great scenery and the impressive power of the diesel locomotives of the 1970s, attacking and conquering the grades and curves of that line. Based on my personal memories, and my attraction to large 6-axle EMD power like SD-40-2s and SD-45s, I have chosen 1975 as the era.

The "Pokey"

I am loosely representing the track from Bluefield, WV west to Williamson, WV. The line traverses both Virginia and West Virginia on its way and everywhere you look, coal was king. Bluefield is the highest point on the section of the prototype and the elevation generally decreases, with many grade changes heading west. The N&W's mainline runs from Norfolk, VA through Roanoke, VA, Bluefield WV, Williamson, WV and Portsmouth, OH where it splits off to Columbus and Cincinnati.

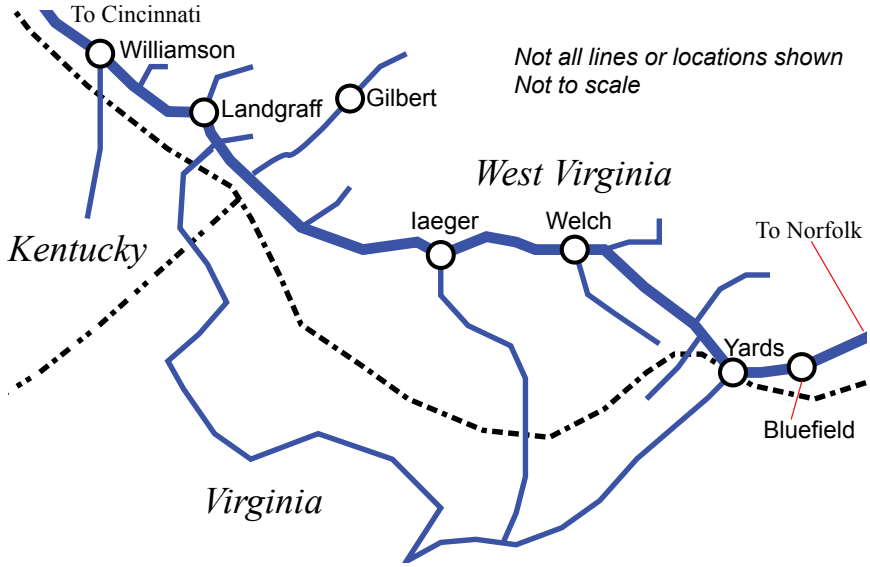
The line travels through the towns of Yards (which, of course, contains a rather large railroad yard, straddling both VA and WV), Powhatan, Welch and Iaeger, before it reaches Williamson. There are many very small towns and branches along the line, but I picked these five cities plus a couple of major branches to include in my design.

Operations the goal

The main emphasis of my designs is model railroad operations. When trying to emulate a real-life railroad, I believe that it is important to choose one with ample through traffic, interchange with other railroads, and local switching.

Unfortunately, by virtue of its location, this mountain railroad set in the West Virginia coal country has notoriously little online freight traffic (other than coal) and few interchanges with other railroads, so two of my three real-life railroad elements needed for a good operations are lacking. To enhance the operating potential of the model railroad, I have embellished some of the online industries in the towns I am modelling and have included the only interchange (with the C&O) on the line. I also chose to single-track much of the plan, even though the prototype was double-tracked (see below).

Bob's track plans are set in 1975 on the Pokey, when the diesels would have been Norfolk & Western. The N&W is no more, but remnants remained until very recently, like the Pennsy-inspired N&W Color Position Light signals that Norfolk Southern C40-9W 9363 is rolling past here. Photo courtesy Russ Swinnerton, Luxury Rail Travel, www.LuxRailTravel.com



approximately +/- 2.5%, which is appropriate for helper service. I have used the around-the-walls transition nolix design in two of my own previous model railroads as well as my current, more compact, layout; and it does, in fact, maximize the visible mainline run.

I have hosted well over one hundred operating session on my own layouts dating back to the late 1970s. Based on the fact that operators keep coming back for more, I believe the designs with the transition nolix have produced reasonably good operating results. (Although maybe it's the good cookies that I serve rather than the actual operations that bring back the operators!)

Around-the-room benefits

Around-the-room designs accomplish many of the important factors for operating layouts. They generally will yield the maximum mainline run for any given space, especially with two decks and a transition grade connecting them, as well as enough running length for several stations/towns along the mainline. The aisle space can generally be maximized and the long mainline can usually allow space for at least one, and possibly two, classification yards. Finally, this layout footprint can usually give the operator the ability to follow a train around the layout while providing a consistent direction of travel when viewing the layout (e.g., left is always west, etc.).

Favorite layout elements

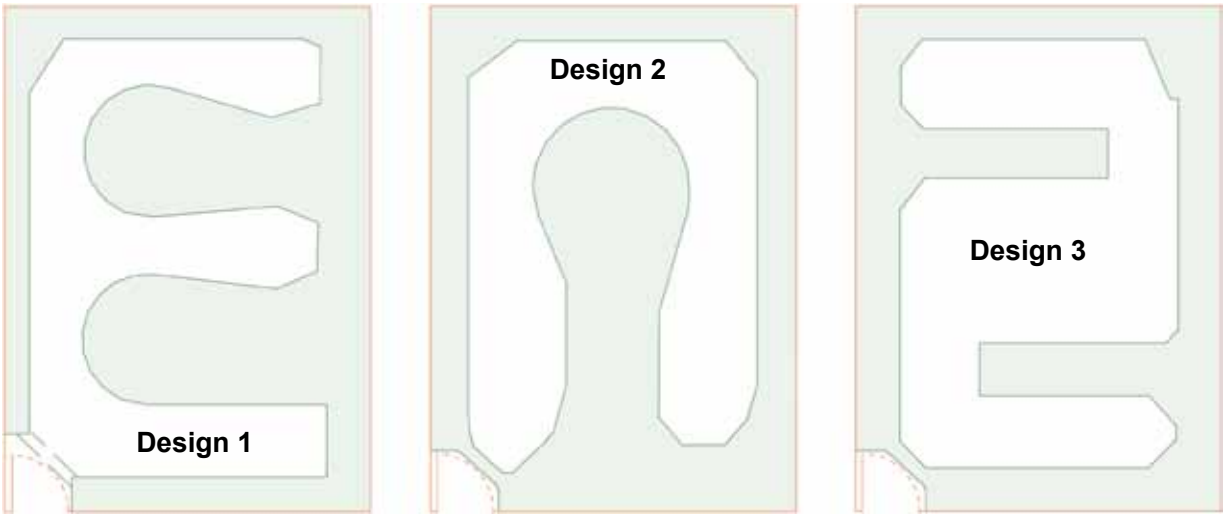
I like switching, be it industrial switching or just switching off the mainline. I also like mainline freight trains as well as passenger trains. So my designs tend to have lots of industrial switching areas, both on the mainline and isolated from the mainline, as well as the capacity for running many mainline trains with switching along the way. Passenger service in the 1975 era is certainly well past its glory years, but could still provide an interesting and enjoyable element to the overall operating experience, so sidings and express facilities next to stations are also included.

I came up with three footprints within the 16'X22' Mountain Challenge space (see below). Design #1 is based on double "blobs" (turnback curves) from the long wall away from the doorway. Design #2 incorporates a single peninsula from the middle of the shorter wall with the door. Design #3 is around-the-walls with no blobs, but with two narrow offset peninsulas off of the opposite long walls.

Two blobs for mountain curves

Design #1 (page 20) probably best exemplifies the spirit of a West Virginia coal railroad, at least on the right-hand wall of the track plan. The two peninsulas offer five 180 degree turn-back loops on this wall, but the trackage on the other three walls is pretty straight.

Williamson is a roughly ten-foot-long yard on the bottom wall of the lower level. East is to your left while facing the layout (yes, I usually like to have east consistently going to the right to match map conventions, but the best laid plans). The next town is Mingo and the Gilbert Branch, which interchanges with the C&O railroad up the branch at Gilbert. This is the only railroad interchange on the layout, except in the two classification yards.



Bob explored three different around-the-room footprints in the Mountain Challenge space, seeking to maximize operating potential while preserving room for operators.

Burlington Northern Crawford Hill in N

Moving coal and freight with lots of help

by Olaf Melhouse

"... truly mountain railroading with steep grades, tight curves ..."

If you are thinking about mountain railroading, you don't usually think of Nebraska – but in the northwest corner of the state is Crawford Hill. This is truly mountain railroading with steep grades, tight curves and heavy coal trains crossing the Pine Ridge hills. (They call them hills, but they are actually mountains in this part of the country.)

History

The trackage over Crawford Hill was originally constructed by the Chicago Burlington and Quincy (CB&Q) Railroad in 1888 when it extended its line from Alliance, NE to Edgemont, SD. To climb over the Pine Ridge escarpment engineers needed to construct Belmont Tunnel, the only railroad tunnel in Nebraska. When the CB&Q was combined with the Great Northern Railway, Northern Pacific Railway, and Spokane Portland & Seattle Railway in 1970, this route became property of the Burlington Northern Railroad.

Pouring on the coal

In the early 1970s low-sulfur coal deposits were discovered in the Powder River Basin of Wyoming south of Gillette, Wyoming. A line was extended south from Donkey Creek Jct., (east of Gillette) into the coal fields and unit coal trains started hauling coal east to power plants in Nebraska, Iowa, Missouri, Arkansas, Kansas and Texas. The line south of Gillette eventually was built further south to Orin Jct., WY and became the Orin Line. With this new line, coal trains could be routed both north and south. Trains from the north end routed to Donkey Creek Jct. and east to Edgemont, SD over Crawford Hill to Alliance, NE.

Crawford Hill became a bottleneck on this route, so in the late 1970s and early 1980s work was done to reduce curvature, install double track, and reduce grades on the hill. Trackage was routed around Belmont Tunnel and it is no longer used as a railroad tunnel (now it's an access road).

I'm modeling 1995 because the SD70MACs are being used with the "Grinstein Green" paint scheme (see photo at left and sidebar below). This is a heavy

A heavy coal train crawls up Crawford Hill west of Belmont, Nebraska, on July 7, 1996. Three Burlington Northern EMD SD70MACs in "Grinstein Green" power the train and it is getting needed help from a just-visible pusher set of four Cascade green BN SD40-2s splicing a fuel tender. The train is wrapped around the large horseshoe curve below Belmont, with the head end passing Windy Point, sometimes also referred to as Breezy Point. All photos by Mike Danneman.

A Different BN Green

An "Executive" paint scheme was introduced in 1990 on the company's newly rebuilt F9 engines BN-1 and BN-2 and business car *Stevens Pass*. Known as "Grinstein Green" for BN President Gerald Grinstein, it was a departure from the standard BN colors. The livery consists of Brunswick green on lower frame and upper hood with a crème band around the middle and accented with red pinstripes separating the two colors. In 1993 BN placed a first order with EMD for its new model, the SD70MAC, which received the Executive colors – as did hundreds of SD70MACs that followed. – BH