Layout design element

Test fitting standard gauge into an On3 space

To make sure his new aspirations fit in the same space devoted to his old layout, Andrew used surplus HO track to make a full-size mock-up of his new Basalt, Colo., plan on the floor directly under Como on the still-standing On3 layout. His Plexiglas building cores were covered with ¼"-scale CAD drawings to help check clearances.

Planning an O fine-scale Colorado Midland RR to supersede the current On3 narrow gauge Denver, South Park & Pacific

By Andrew R. Dodge//Model photos by the author

This is a story about change. It's also a story describing how I approached planning and building a new O scale standard gauge railroad in the space still occupied by my current On3 narrow gauge layout, thus confirming the viability of my plans without risking what I already had. I doubt any MRP reader will closely follow my new track plan, but I hope many of you will benefit from the rewards of test fitting a well-planned change.

New mountains to climb

As modelers, we enjoy planning and building our dream model railroads. However, after years of dreaming, planning, building, and operating my "ideal" layout, I realized that I had "no more mountains to climb." After years of modeling layouts with narrow-gauge themes, I felt it was time for a change.

I've enjoyed model railroading ever since my father introduced me to it as a child. Years later, the initial model railroad I built in my own home was a large HO and HOn3 Denver & Rio Grande Western layout that had too many engines and cars. I soon lost interest in the railroad because of its operational shortcomings and my lack of focus and attention to quality during its construction.

As I explained in *Model Railroad Planning 1997*, my interest in the hobby was revived when Overland Models imported brass On3 models of the Denver, South Park & Pacific's Mason Bogies. My long-held desire to create a

19th-century replica of the South Park was now feasible, even though I knew it would take many years of scratchbuilding structures and rolling stock.

The aspirations for my modeling passion seemed to be set for life, and I actually finished my On3 layout (see *Great Model Railroads 2009*).

One step at a time

In 2009, I participated in a long weekend of operating sessions in Kansas City. When I mentioned that I'd finished my layout, several people said, "That means trouble." At this juncture I came to a very important decision. For anyone relocating, choosing to build a new layout isn't really an option. But if, like me, you're making a change because you want a new challenge, how do you proceed? Picking up a crowbar and ripping up the old railroad may not be the answer if the new railroad or time period isn't supported by commercial motive power and rolling stock.

Each of us has to confront the what-to-model question from his or her own perspective, which includes abilities, experience, layout space, available time, interests in a specific period and geographical location, and, equally important, the specific railroad or type of railroading that best holds one's interest.

I remember being intrigued with a layout plan in the March 1958 *Model Railroader* depicting a large, freelanced logging railroad. I also considered returning to the type of layout my father began building in the 1940s, which was based on the Southern Ry. in the steam-to-diesel transition era. Each had its own appeal and drawbacks compared to my own interests. I was concerned about the operational limits of running a logging line, with repetitive movements of empties going up and loads coming back *ad nauseum*, or interpreting the transition era that's been done so well by so many others.

Top: The need for proper clearances near buildings such as the icehouse and the turntable in the corner is evident. **Above:** The track with the paper under it represents the elevated coal dock, and it showed the need for this structure to be on a slight curve that wouldn't adversely affect the scene.

Andrew appreciates the greater heft of O scale models – note the size comparison between an HO 2-8-0 Consolidation and one of his scratchbuilt Proto:48 Colorado Midland 4-6-0s. A 19th-century CM Ten-Wheeler locomotive would be very small in HO, but its compactness is a virtue in ¼" scale.

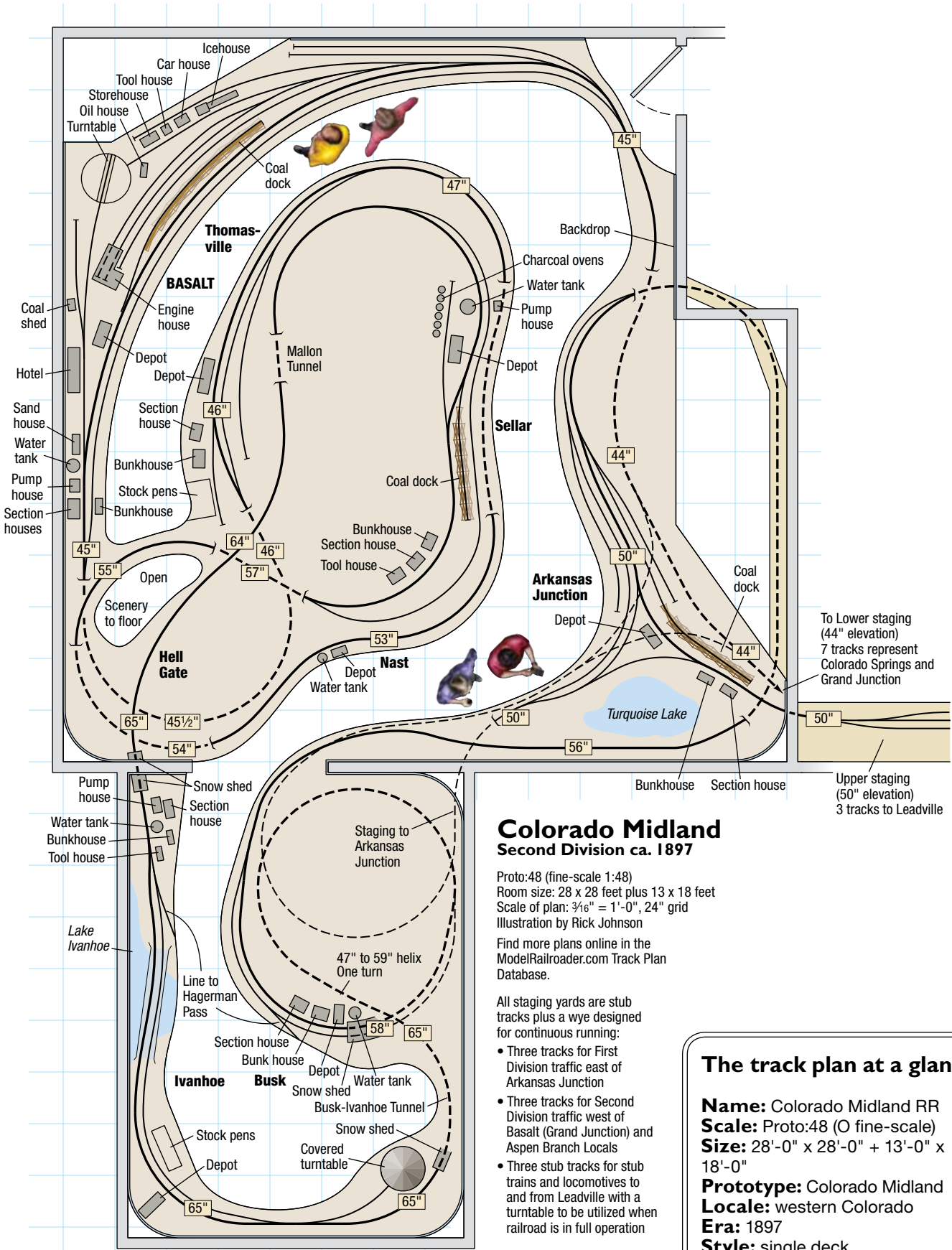
Same basement, new railroad

I have an operating railroad and enjoy running it with other modelers. Therefore, one of my first concerns was the time element involved in replacing my current railroad with something close to an operating layout. "Too long" was the answer if I followed the usual approach of dismantling and building anew. Why not enjoy what I have while I'm building equipment and structures for the new railroad?

Only three locomotives were operational during the seven or eight years I was building my South Park layout, and this greatly reduced my operational enjoyment. This time, I plan to continue operating my current layout while work continues on projects for the new railroad. This will greatly reduce the transition from removal of the old layout to my first open house or operating session on the new one.

After discounting many of the popular prototypes and periods, I decided to examine another former Colorado railroad to see what it might offer. I've never lived in Colorado, but I've the fondest memories of the area from many family vacations in the 1950s and my own trips in more recent years. Also, the sights, sounds, and smells of steam engines battling steep grades to move traffic over the mountains were and still are awe-inspiring.

These sentiments led me to a railroad that had first captured my imagination in 1965 when my father gave me a copy of Morris Cafky's *Colorado Midland* book for my birthday. "The Midland" was the first standard gauge line built through the Colorado Rockies. It operated from 1887 until World War I, when the United States Railroad Administration (USRA)



Colorado Midland

Second Division ca. 1897

Proto:48 (fine-scale 1:48)
Room size: 28 x 28 feet plus 13 x 18 feet
Scale of plan: 3⁄16" = 1'-0", 24" grid
Illustration by Rick Johnson

Find more plans online in the ModelRailroader.com Track Plan Database.

All staging yards are stub tracks plus a wye designed for continuous running:

- Three tracks for First Division traffic east of Arkansas Junction
- Three tracks for Second Division traffic west of Basalt (Grand Junction) and Aspen Branch Locals
- Three stub tracks for stub trains and locomotives to and from Leadville with a turntable to be utilized when railroad is in full operation

The track plan at a glance

Name: Colorado Midland RR
Scale: Proto:48 (O fine-scale)
Size: 28'-0" x 28'-0" + 13'-0" x 18'-0"
Prototype: Colorado Midland
Locale: western Colorado
Era: 1897
Style: single deck
Mainline run: 300 feet
Minimum radius: 48"
Minimum turnout: no. 6
Maximum grade: 2 percent
Train length: 8 feet

diverted the Midland's through traffic to the Rio Grande, and a judge ordered the line to cease operations. Some areas west of Colorado Springs survived until February 1949 as part of the Midland Terminal, which served gold and silver mines in the Cripple Creek area.

One can still follow the Colorado Midland right-of-way between Colorado Springs and Grand Junction, where it climbs through the Front Range via Ute Pass. Its alignment parallels today's U.S. Route 24, just west of the Springs, into the upper end of the South Park, up the Arkansas Valley past Buena Vista toward Leadville, over Hagerman Pass and the Continental Divide, down Frying Pan River to Basalt, and on to Glenwood Springs and Grand Junction.

All of these locations offered interesting modeling opportunities, such as tourist traffic to the summer resorts, the railroad's famous Wildflower Specials, and Rocky Mountain railroading at its best.

Some practical considerations

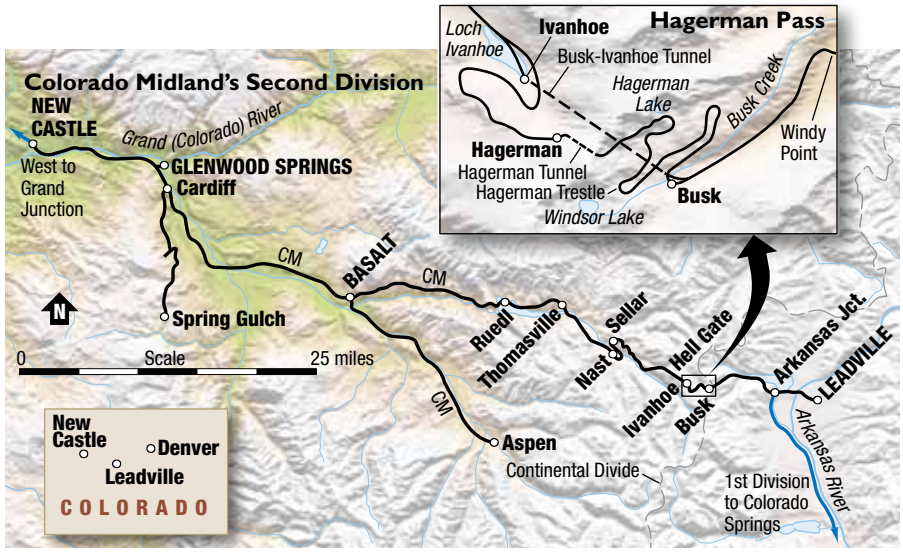
Before I made any final decisions, I had to make sure that replicating part of the Midland in miniature was viable. I had to keep in mind that each element of track design, buildings, locomotives, cars, and other details would all have to come together to produce a believable project.

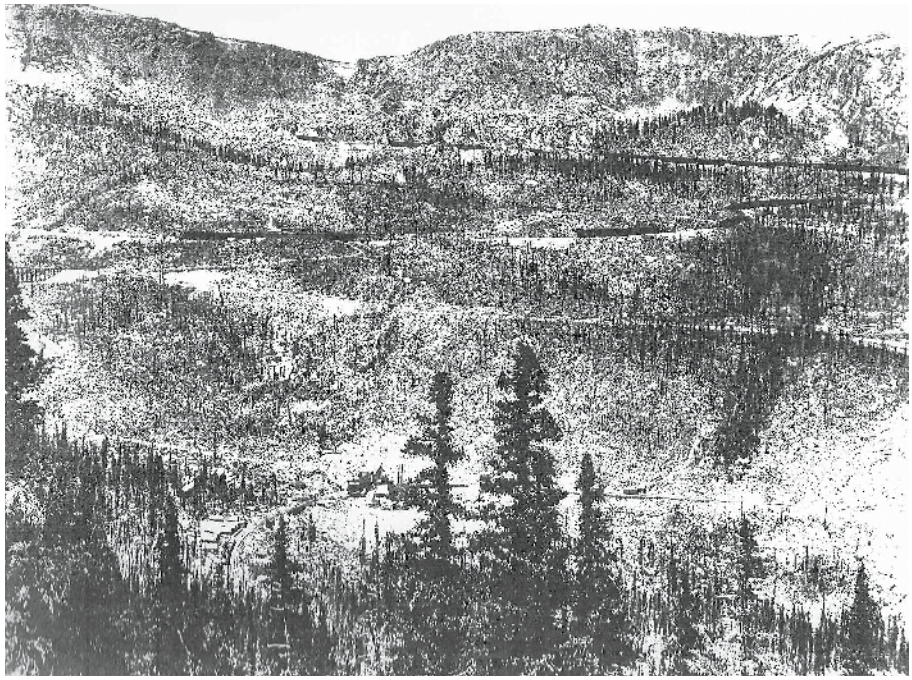
To achieve that goal, I looked into the availability of commercial kits or parts and assessed my ability to build or kitbash the rest. It was encouraging to find that a lot more is available than I initially thought.

One of my last projects on the South Park was scratchbuilding a model of the railroad's first engine, *Fairplay*, a Mogul (2-6-0) built in the 1870s. This project resolved the question of whether I could master the art of building a model steam locomotive from scratch. Its success opened the door to modeling any railroad in any time period I desired.

Making a good choice

I had to decide which segment(s) of the Colorado Midland could be scaled down to fit into the space presently occupied by my On3 South Park. One of the most important artistic aspects involved in designing a model railroad is its "presentation." I wanted those entering the layout to get the feeling of walking into a miniaturized version of the Rockies and Colorado Midland country in the late 19th century. This meant a mountainous layout with most of the space dedicated to scenery that truly towered above the trains.





This William Jackson photo captures the Colorado Midland's climb to the crest of the continent, and it shows the determination of 19th-century railroads to get where they wanted to go. The steep grades, sharp curves, snowsheds, and altitude all played a role in the demise of this spectacular route. The tunneling work at Busk is visible at the lower-left center. David P. Morgan Library collection

As important as the geographical aspects of a new layout would be, the inclusion of key operational features was of equal importance.

Heft wins the day

I've done modeling in N, HO, HOn3, and On3, but not in standard O gauge or Proto:48. The fine-scale option also raised the issue of how tight a curve I could use.

While thinking about building the engines from scratch, I unpacked one of my father's old HO Baltimore & Ohio 2-8-0 Consolidations, and placed it on my workbench. As it sat there day after day for several months, I thought about the issues involved in building locomotives, and pondered whether I wanted to return to something that small. As small as the B&O engine was, any similar 19th-century Midland engines would be significantly smaller.

One of the reasons I modeled in O scale was the heft of the equipment. I loved watching and hearing the cars pass over grade crossings and through turnouts. That answered my question: I wanted mass in the locomotives that couldn't be achieved in HO.

I felt comfortable I could still achieve the beauty of the area and replicate mountain railroading with only modest adjustments to accommodate an O scale layout and still retain a high degree of historical accuracy.

This photo of the tunnels bordering Granite Canyon documents the rugged terrain facing the builders of this pioneer Colorado standard-gauge railroad as well as the appeal of modeling these landmarks. Author's collection

Learning points

- Approach a new railroad project methodically like any other major endeavor: Design it piece by piece until you're comfortable with the concept as a whole.
- Compromises will be required, but avoid major conflicts or shortcomings that make you uncomfortable.
- Don't dismantle your old layout until you have finished sufficient railroad equipment and buildings to take you well on the way to completing your new layout in fairly short order. This is especially true if one has to allocate time and reources to build most of the equipment.
- Historical research into railroading is rewarding and crucial in order to build a prototypical representation of any actual railroad – or even a prototypically based freelanced model railroad.

The yard at Basalt is sized for interesting operation but small enough to avoid overwhelming the layout. It's also a helper station. The main line runs off to the left while the Aspen branch curves to the right. David P. Morgan Library collection

One of the advantages I had in choosing the Colorado Midland in 1:48 was the fact that its trains were relatively short. Building O scale 34-foot standard-gauge rolling stock would be a significant step up from my 26-foot On3 DSP&P models. The small Midland locomotives, with a tractive effort of approximately 27,000 pounds, limited the train size. But I was also concerned how the wider 5-ft. (1¼") gauge traditionally used for O gauge equipment might look on such small engines. I therefore decided early on that if I chose to model in O scale, I would follow Proto:48 standards with an accurate 4'-8½" gauge.

Progress report

Since I began the Colorado Midland endeavor in December 2009, I've completed all my projects within the time envisioned – I don't watch TV during construction. The track plan was the first item on the list, but I always kept in mind the possible need for refinements, which have occurred. After constructing one Ten-Wheeler (4-6-0), I built a number of pieces of test track so I could confirm that the fine-scale engine would run well on a 48" radius curve.

Once this test was successfully completed, I proceeded to mass produce more locomotives in groups of three each. My building program included another trio of Ten-Wheelers, a set of three Midland Schenectady-built Consolidations (2-8-0s), and three of the road's five larger 1897 Baldwin Consolidations. With prompting from some friends, I decided during the summer of 2010 to include one of the railroad's 0-6-0 switchers, which brought my fleet to 11 locomotives.

My other projects have included constructing cars and buildings. Since working in O standard gauge was new to me, I built my initial passenger and freight cars from LaBelle kits. To shorten the building phase and move quickly to an operational stage, I also constructed all the railroad's buildings using a Plexiglas core, which eliminated mockups or having no buildings for a long time. Because of the simplicity of the process, I had 30-odd buildings done in three weeks.

The semi-completed buildings also allowed me to arrange the models on the floor of the layout room for a full

1:1 mockup. As shown in the photo on page 72, I used surplus HO flextrack to help me visualize the track arrangements. This final step allowed me to place the buildings to achieve a correct historical perspective while checking the clearances between the structures and locomotives.

During the initial planning of my layout, I allowed two hidden tracks at the neck of the Thomasville/Sellar peninsula to cross to the opposite aisles. This caused an engineer running out of Basalt to temporarily lose his train in the other aisle on the way to Thomasville. When I looked at page 66 in MRP editor Tony Koester's book *The Model Railroader's Guide to Mountain Railroading* (Kalmbach Books, 2011) I realized my mistake. By adjusting my track plan, I kept each main line in its own aisle so engineers could easily follow their trains. This cut the number of curves and lengthened the run.

Everything is now in place, and I've gained sufficient confidence that my proposed Midland project will provide rewards equal to that of my Denver, South Park & Pacific RR. While I'll deeply miss my South Park, I can now open a new chapter and continue to satisfy my modeling aspirations.

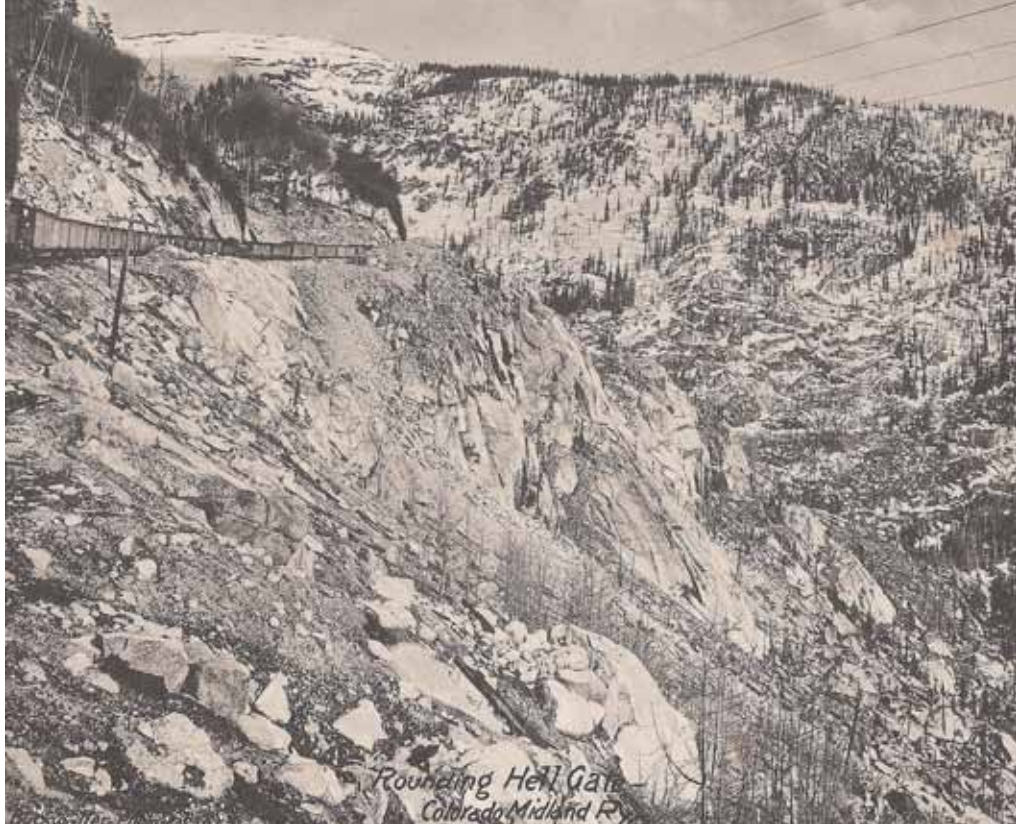
Final observations

All these design and planning steps have proven to be a lot of fun and critical to designing a new layout. History, geography, operations, and so on offer us an almost limitless number of disciplines to explore in our hobby.

While my focus on the Colorado Midland is outside of today's mainstream modeling activities, anyone making a change in their modeling objectives will face the same questions and have to confront similar issues. My advice: Don't let a hard decision stop you short of your goal.

Be assured that the process I went through was as rewarding and as much fun as finishing a new kit. It wasn't the least bit tedious or torturous. As with any problem solving, I approached it by breaking each task down into parts and worked at solving each aspect separately while retaining a vision of the end product. When I got to the point where something just wasn't coming together, I took a few steps back and then tried to resolve it from another perspective.

After I had "climbed the mountain" on my On3 South Park layout, change afforded me a new field of opportunities. If you're a bit apprehensive about change, ask around to get some help and ideas. Model railroading is somewhat of a fraternity, and you'll find plenty of others willing to share ideas and help you explore new vistas. **MRP**



Three locomotives work hard to haul a turn-of-the-century freight train past Hell Gate up to Ivanhoe. This scene is on Andrew's must-have list, but its vastness will require compression without losing its overall impact. Author's collection

The Midland ran all-day "Wildflower Excursions" for $1 to promote the natural wonders of the Rockies, the Front Range, and South Park areas. This service allows Andrew to run up to three sections of these trains. Author's collection

Andrew Dodge has worked as an engine mechanic, homebuilder, teacher, education specialist at the U.S. Holocaust Museum, and as a historian at the U.S. House of Representatives. He lives in central Maryland with his wife, Judith, and enjoys time with his grandchildren. Besides model railroading and running 1½"-scale live steam, Andrew teaches bagpipe music at Fork Union Military Academy, his alma mater.