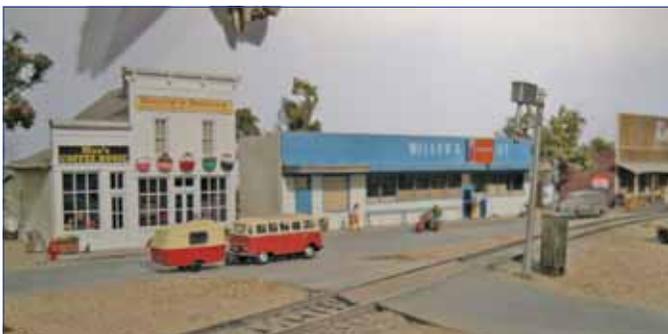


LAYOUT DESIGN



JOURNAL 66

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Office Switching & Scenery
Bridge "Type Selection"
Gorre & Daphetid Challenge
4 Spare-Room-Sized Switchers
More Ideas from SLC Tours



The Layout Design Special Interest Group, Incorporated (LDSIG) is an independent, IRS 501(c)(3) tax-exempt group affiliated with the National Model Railroad Association (NMRA).

The LDSIG's goal is to act as a forum for the members' exchange of information and ideas, and to develop improved ways for hobbyists to learn the art and science of model railroad layout design.

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LAYOUT DESIGN Journal

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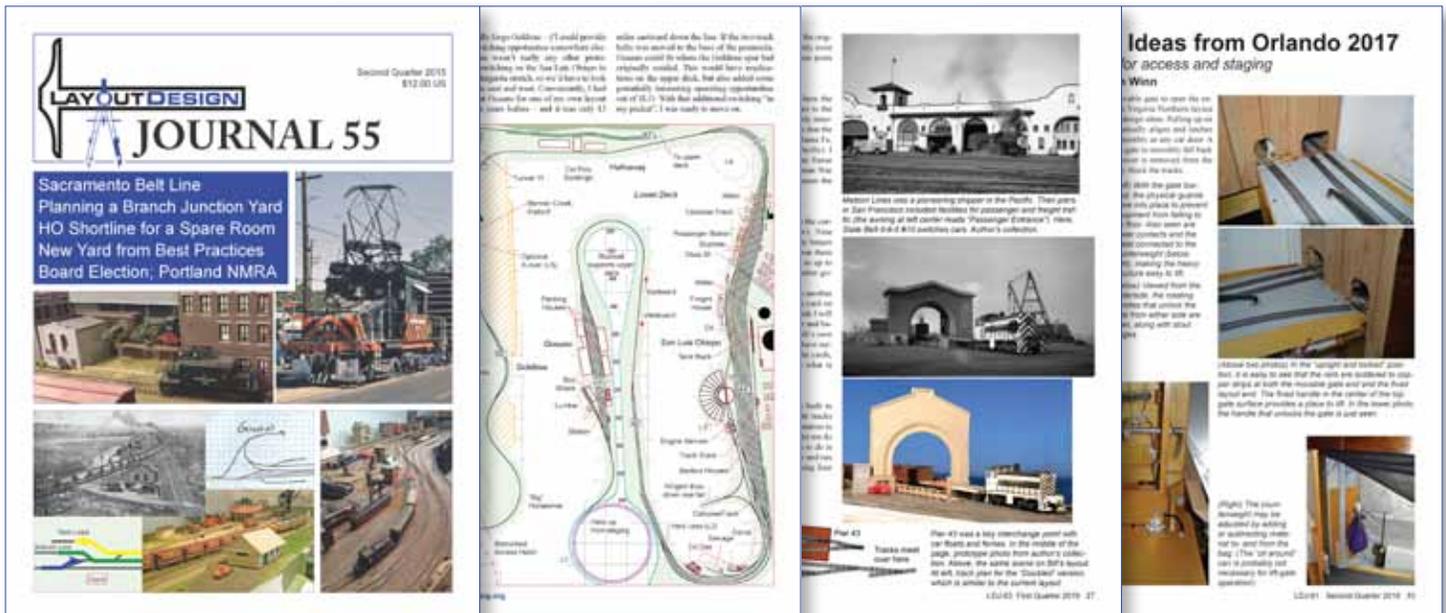
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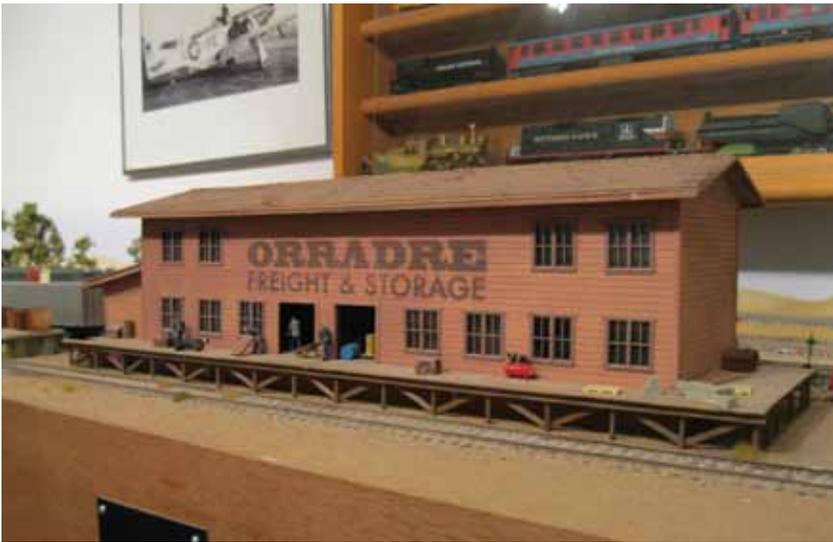
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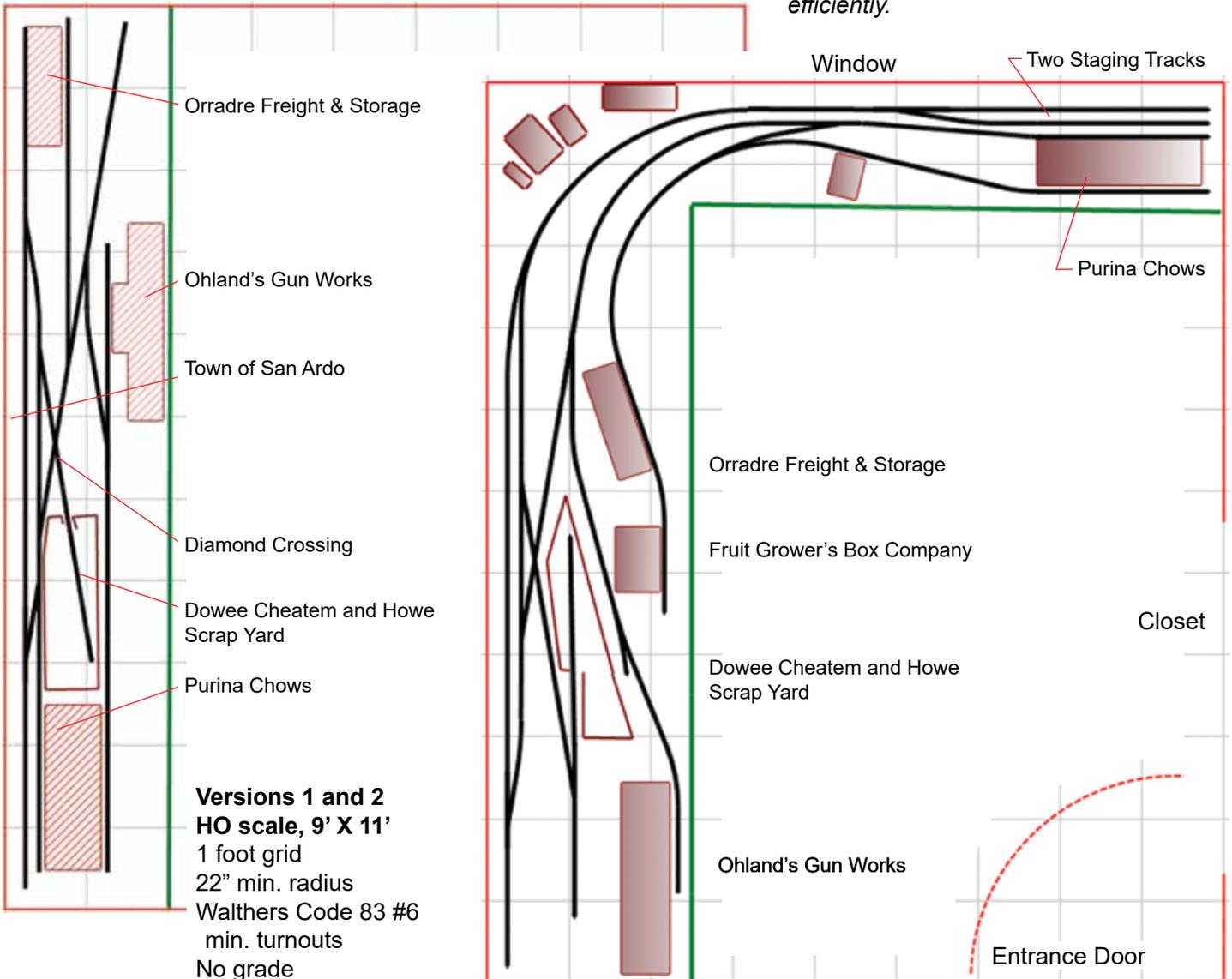
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Smaller non-rail-served scratchbuilds and kits fill out the layout, adding character and visual interest. (The green light is a reflection.)

Freelanced Orradre Freight and Storage is one of the three large scratchbuilt structures around which the layout was designed.

The layout began simply enough as a single shelf on the long wall (below left). It soon expanded around the corner (below right). The diamond crossing allows spurs in each direction to be switched efficiently.



Bridge “Type Selection” Gone Bad

... and the “No Good Duckunder” plan

by Mike McGinley

Being a Railroad Civil Engineer by day made for a lot of fun applying engineering design criteria to my Southwestern Pacific (SWP) layout design. (The layout was open for LDSIG and general tours for the 2015 Portland NMRA convention and was covered

in an article in the December 2014 issue of the *NMRA Magazine*.) Linking the layout design to my “day job” worked out very well for the most part; the glaring exception was what Structural Engineers call “Type Selection.”



The top grayscale image shows the Redondo Junction area in 1993. Note the at-grade crossings and junctions. The 2013 color image shows the long curved overhead (note the shadow). As Mike explains, a variety of different types of span were used in this structure. Two images US Geological Survey via Google Earth.

Bridge selection on the prototype

Type Selection is the structural engineer’s filter for choosing the most practical bridge for any needed span. It is a balance of construction costs, maintenance costs, and constructability issues (including environmental impacts). At the most elementary level, we might summarize how this works out:

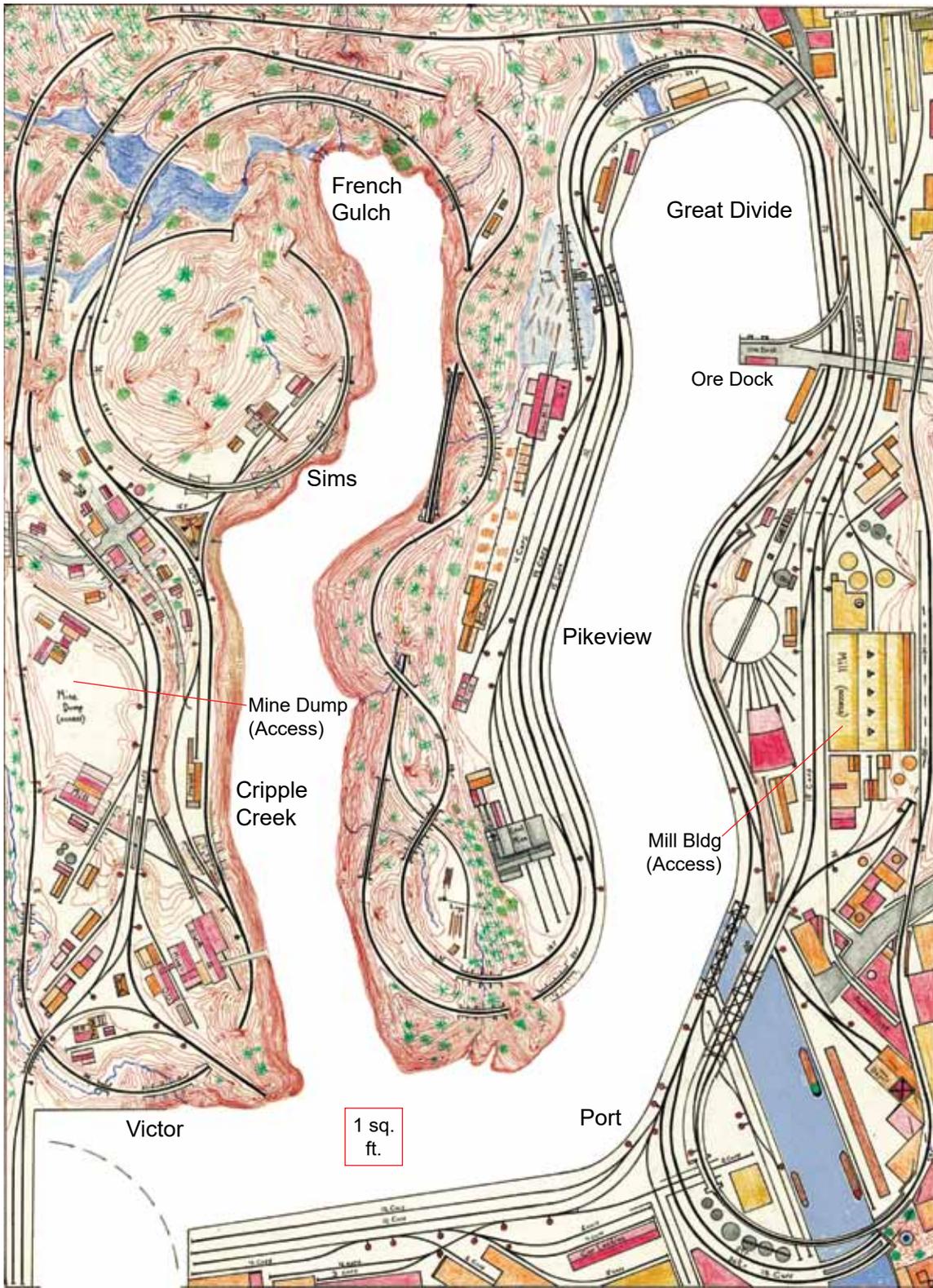
- Deck girders or trusses are better than through girders or trusses due to clearance, cost, and risk of damage in derailments
- Only use a “through” bridge when clearance under the track requires it
- Balance the height of the piers with the length of the span to minimize overall costs
- Box or plate girders are better than trusses except
- Trusses are needed for spans over about 150 feet
- (Modern) precast pre-stressed box girders are preferred for spans not exceeding about 60 feet

Standardized designs are used for shorter spans to economize on design and procurement and to make maintenance and repair quick and efficient; this is true for timber, concrete, and steel bridges

A variety of solutions

Nobody in the profession just decides that a certain bridge would look good after seeing a kit for one in a catalog. Some “landmark” bridges do have style considerations: think of the Hell Gate in New York and perhaps the Latah Creek in Spokane, WA; but almost always pure utility governs railroad bridge design.

An illustration of how type selection has recently been applied is the Redondo Jct. “Flyover” near Los Angeles Aerial views at left, onboard view page 11). Nearest we see a deck truss steel bridge spanning the Los Ange-



Cripple Creek Short Line
HO scale, 16' X 22' overall
 Rendering 1:32 scale
 Mainline min. 24" R
 Victor Branch 18" R
 Max. grade: 4.2%

Rick's Cripple Creek Short Line track plan maintains some of the overall flow of the ultimate G&D plan, but simplifies the routing with one fewer pass around the layout. Aisles are narrow and assume stoutly built scenery to withstand accidental contact by operators. Rick did not include the car ferry Anabel due to a lack of space in Port, but that's probably just as well, given his Colorado theme.

Four spare-room-sized switchers

Industrial switching and interchange in N and HO

by **Olaf P. Melhouse**

Olaf Melhouse is a prolific designer and LDJ author who enjoys crafting track plans for a variety of prototypes and themes in the Midwest. This article pulls together four of his track plan ideas in HO and N scales, ranging

from a surprisingly hilly Class 1 to shortline switching – and from the 1950s to the 2000s. Each provides plenty of operating interest in a spare-room-sized space. – *BH*

Kansas City Southern over Rich Mountain in N

The Kansas City Southern (KCS) is one of the lesser-known of the seven remaining Class 1 railroads in the US. While much KCS territory is fairly flat, the 29 miles of 1.5% grade over Rich Mountain in the Ouachita Mountains is amazing – and true mountain railroading. Coal trains and heavy freights re-

quire two-engine helpers out of Heavener and De Queen to make the grade. The mountain-sides are covered with trees and this is sparsely populated lumber country.

The Heavener, Oklahoma to De Queen, Arkansas segment modeled in this plan is a portion of the KCS mainline that runs between Kansas City, Missouri and Shreveport, Louisiana (see map page 25). This north-south mainline was built between 1890 and 1897 and is now a busy railroad artery. Trains hauling grain, coal, merchandise, intermodal, oil, containers, lumber, paper, autos and chemicals traverse this line daily between Kansas City and the gulf ports.

A plan to move ‘em over the grade

The 2000s-era track plan is an around-the-walls design with a peninsula to allow for the climb over Rich Mountain. The railroad is flat other than the 1.5 % grade from Potter to Page. This is a Centralized Traffic Control (CTC)-controlled single-track railroad with passing



(Top left) After meeting a southbound loaded coal train, a northbound manifest re-enters the main at the north end of Rich Mountain to begin its decent towards Heavener. The lead SD70MAC sports Transportaci3n Ferroviaria Mexicana (TFM) livery – a wholly owned Mexican subsidiary of the KCS now known as Kansas City Southern de M3xico. All KCS photos by Dean Ferris, used with permission.

(Bottom left) SD-40 #682 offers a very different image, with its vintage white livery appearing much the worse for wear. The crew of the M-SHKC (Shreveport-Kansas City) is switching the north end of De Queen Yard.

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Nearest large city / Airport: _____ Distance: _____

Present/past occupation: _____

Special interest or skills, such as scratch building structures, yard design, cars, operations, scenery, etc?

Yes No Special interest or skill: _____

Would you be willing to be a presenter or clinician at a national, regional or local meet? Yes No

Do you model a specific prototype? Yes No Prototype(s) modeled: _____

What specific areas or locale of railroading do you model (location) ? _____

Era modeled: _____ Scale(s): _____

Other interests (Main line, branch, yards, division, multi-scales, etc.) _____

Status of layout: _____

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