SAN RAMON VALLEY BRANCH LINE SECTIONAL MODEL RAILROAD LAYOUT
Based on the
Free-mo N Scale (Free-moN) Modular Railroading

Standards and Recommendations

Revision 14 August 29, 2021

REVISION HISTORY

Rev 14 August 29, 2021: Modified section 13 - Control Bus

Rev 13, May 29-30, 2021: removed revisions from body (but kept in Revision 12); corrected mainline roadbed to 1/162" cork; specified module & leg nomenclature

Rev 12, May 28, 2021: Section 12 track feeders and Section 5 leg nomenclature

Rev 11, March 14, 2021 SteveLane:

1. Add date to revision number at top
2. Clarified Framework as definition
3. Corrected spelling of Luan.
4. Improved description of track placement at endplates
5. Clarified soldering of feeder wires
6. Clarified placement of RJ12 fascia plates
7. Clarified backdrop placement
8. Clarified ground cover

Rev 10, March 13, 2021 Dave Connery:

4. Endplates - removed the 3/4" as redundant
7. Added the use of 1/8" Lauan as the material
9. Added simulated wood ties
12. Added need to solder feeder wire to each piece of rail
14. Eliminated reference to 1/4" below rail and comment about avoiding structures in the way of installing end of module rail joiners - we have decided not to use them.
I also removed the large space between 11. and 12.
Rev 9, March 12, 2021, Pete Birdsong, Tabletop 1.5"foam under ⅛" luan. Luan fascia. Leg adjustment +/- ½". Tabletop height = 49.625". Removed handlaid track. No roadbed.NCE re-specified.
Rev 8, February 20. 2021, Pete Birdsong, Tabletops ½"plywood, 18" x 48"
Rev 7, February 19. 2021 Pete Birdsong, as discussed in Zoom meeting: Use all Peco code 55 track; Track height - TBD; No standoffs/Crowd Control mechanism; Minimum radius - pending further discussion; track ends - flush; other minor editing
Rev 6, February 15, 2021, Pete Birdsong. backed out revision 5 per phone with Wayne
Rev 5, February 14, 2021, Wayne Floyd, Made changes to Legs and Bracing changes in Red Italic.
Rev 4, February 13, 2021, Pete Birdsong, additional changes in red italic, and formatting changes
Rev 3, February 13, 2021, Pete Birdsong, additional changes in red

Rev 2., February 13, 2021, Dave Connewry, changes in green italic
Rev 1, February 13, 2021, Pete Birdsong; additions in red italics, deletions in strikethrough

1. **Overview**

The SRVB will strive to replicate as much as practical ~~of~~ its prototype in an N-scale operational layout, as close as practical to scale size.

2. Definitions

A. MODULE:

Any component (or group of "sections") of bench work that is meant to *represent a discrete scene, such as Danville or Walnut Creek.* The ends of a module comply with the mechanical standards defined in the Framework description, below.

B. SECTION:

A component of a module, complete with bench work, track, scenery, etc. Except where otherwise noted, standards for module end interfaces do not apply to inter-section interfaces, as these are considered to be internal to the module.

C. ENDPLATE:

Endplates are the standardized end surfaces of a module, usually two, that join to another module.

D. Framework

Framework refers to a module's structural frame including end plates, legs, braces, decking, etc. Throughout this document common sense construction techniques should apply. Materials and joints should be flat, square and true.

3. Objectives

The *SRVB* ~~Free-mo~~ standard has the following objectives in mind:

- To promote and require **hi-fidelity prototypical** scale model railroading.
- To ensure reliable track and electrical operation.
- To encourage **visual continuity** between modules.
- To encourage a **loose** association among individuals free from club memberships, dues and titles.
- To keep the standard specifications to a **minimum** without compromising the previous objectives.

These are the goals that the standards presented here are attempting to achieve as they apply to N scale. Each standard set forth below must satisfy at least one of these goals.

4. Endplates

Endplates shall be constructed of *1x4 pine*. Module to module end plates shall be secured with C-clamps or spring clamps or 4" welding clamps (preferred.) If needed, end plates may be reinforced with plywood glued and screwed to the inner face for extra strength and warp resistance.

An 18 inch width is recommended for ease of transportation and continuity with other modules. Any deviation from this recommended width would result in cosmetic misalignment of the fascia with other modules. Other widths must be designed to interface with the standard sections without modifications to the later.

5. Legs & Bracing

Each module shall have legs that support the module free-standing. Each leg must be vertically adjustable plus and minus *1/2* inch to compensate for uneven floors. The bottoms of the legs shall have rubber tips or equivalent floor protection. Nominal and minimum height of rail head from the floor to be 49.625" plus the Peco track height. ~~determined.~~ ~~50 inches~~. No grades will be needed.

Each module and leg set shall be marked as follows on the corners: XXn, where XX= module abbreviation, n = module number and X = leg identifier. Example: DA1A, DA1B, DA1C, DA1D, DA2A, DA2B...DA4D, using AL for Alamo, CO for Concord, DA for Danville, OS for Osage, SR for San Ramon and WC for Walnut Creek

6. Surface

Sub roadbed surface shall be 1.5" foam under ⅛" luan braced sturdy enough to prevent sagging over the length of the module. It will be mounted to the top of the frames, flush with the frame edges, 18" x 48"

7. Fascia

Each side of a module shall have a ⅛" thick luan fascia that fully covers the side. The top edge of the fascia shall be contoured to match the scenic topography of the module. The fascia shall be 1/8" Luan plywood and painted a flat black color.

8. Skirting

Both sides of a module shall have a black skirt. Each end of the skirt shall extend past the module end plate to overlap with adjacent module skirting. The bottom edge of the skirt shall be even with the bottom of the leg vertical member to prevent dragging on the floor. Skirting will be attached with black Velcro.

9. Track

- Main line track shall be Peco code-55 nickel-silver flex with simulated wooden ties with prototypical tie dimensions and tie spacing. Minimum radius for the main line shall be 22 inches with at least 6 inches of straight track between reverse curves. Turnouts shall be Peco Unifrog Medium. Main line roadbed is 1/16" cork. At the endplates the main line track shall be centered on the width of the outside face of the endplate *(e.g. at 9")*, perpendicular to the end, straight and level for at least 4 inches from the outside face of the endplate. For sections not 18" wide, the rail ends must align with the standard 18" sections Rail and track shall be cut flush with the outside face of the endplate. Modules will connect at the end-plates by clamping securely so that the rail-heads align without the use of rail joiners.Short (20" square)

or greater curved sections may be employed where needed for stability of the connected modules or for setup in public venues, shows, conventions, etc. In these sections, the minimum radius may be reduced to fit the section.

- **10. Wiring & Electrical**

NMRA compatible NCE digital command control (DCC) with radio control and a cab bus shall be used for layout control.

11. Turnouts Turnout frog, points and point rails shall be powered in a manner that does not rely solely on the contact between the points and the stock rails.

12. Main Line Track Bus

Track Bus wire shall be *16* gauge or heavier spanning the length of the module between the endplates. The wire designated as the East (Right) shall be black, and the other (West) wire white. Track feeder wires shall be *22* gauge or heavier, and match the color of the bus wire to which they feed. The feeder wires will attach to terminal blocks, which will connect to the bus wire and be soldered to the bus wire, and maintain the feeder/bus wire color and feeder wire gauge. Each section of rail, including turnouts, will have a feed wire soldered to the rail.The Track Bus wires shall terminate near the center of the end-plate(s), extending long enough to attach to the adjoining module, with a pair of Cinch-Jones 2 pole 30~~ amp~~ connectors The wide blade will connect to the black wire and the narrow blade to the white wire.

There will be no accessory bus. Accessories will be powered by DC current confined to the MODULE, or as approved by exception by AC.

Applications that require DCC signal may utilize power directly from the RJ12 access panels. (See LocoNet Bus section below.)

13. Control Bus

Each module will have a LocoNet or Control Cab Bus. This will be a 6 wire cable (generally with White, Black, Red, Green, Yellow and Blue colored conductors) terminated at each module end in an RJ-12 male connector and enough slack to extend 6" from the end. This bus will be connected in a serial fashion to RJ-12 receptacles located on the West side of each North Section and the East side of each South Section, allowing operators to plug in at any module. A double female coupler will be used to connect this bus between modules.

14. Scenery

A 6” high 1/8” smooth Masonite, melamine, or similar backdrop is optional, and is to be applied with clamps or slide into channel strips on each SECTION. It may be fitted to any side of the section for photographic or display purposes, but shall not interfere with train operations.

Main line shall be ballasted with a fine light gray material and some form of scenery shall be applied, hiding the bench work. Scenery for the first 6 inches at the end plates shall have a flat profile below the top of the main line rail.

Landscaping along the module ends must be designed to flow smoothly into adjacent modules avoid features such as roads, lakes, and so forth from running against the module ends. Use a generic grass and earth material - similar to that found along the *prototype*

SRVB. Where possible, this scenery should be applied when the modules are together, for a smooth scenery flow

15. Equipment

Rolling stock wheels, trucks and weight shall meet or exceed NMRA Standards and Recommended Practices, and be appropriate to the era (~1920s)