

Track Design Standards for the APN Layout

All track on the APN Layout shall conform with the specifications listed in the following table.

<i>Dimensions are in inches unless noted</i>	minimum radius	minimum easement length	easement displacement	minimum turnout number	minimum tangent track centers	minimum curved track centers	S-curve minimum straight away	maximum grade - easements required	minimum distance rail to layout edge	min vertical clearance from top of rail head
Location										
Mainline, Passing Sidings, Passenger Station	33	16*	0.5	8	2	2.5	12	2.0%	4	3.5
Towns and Yards	30	n/a	n/a	6	2	2.5	12	2.0%	4	3.5
Industrial Tracks	**	n/a	n/a	4	2	**	8	2.0%	4	3.5

* The club has templates that can be used to lay this out

** As determined by rail cars to be allowed in the industry

Additional Track Standards:

- Track Type: Atlas Nickel Silver Track
 - All visible track Code 83
 - For hidden track, Code 100 is permissible.
- Track Type on Bridges and Trestles
 - Curved: Micro Engineering Code 83 Bridge Flex Track
 - Straight: same as for Curved, or Walthers Code 83 NS Bridge Track
- Turnout Type: Walthers DCC Friendly turnouts
- Crossover Type: Walthers DCC Friendly

All trackwork will conform to the NMRA HO Scale Mark IV Standards Gauge.

Road crossing, ballast, uncoupling magnets on any other object installed between or within a scale foot outside the rails shall not protrude above the top of the railhead.

Clearances around the track shall conform to the Clearance Diagrams for Modern Era published in *NMRA RP-7.1 Tangent Track Centers and Clearance Diagrams* (available free on the NMRA website). Outside Clearances for curved track shall also comply with the appropriate values listed in *NMRA RP-7.3 Curved Track Obstacle Clearances*.

Layout standards

1. Roadbed construction will be Homasote glued on nominal $\frac{3}{4}$ " plywood, with cork roadbed on top. In yards the use of the cork layer is optional. All screws use to fasten plywood will be square-head type and be driven up into the plywood from under the layout, to facilitate future removal or adjustment as needed.
2. The preferred method of laying track is to use Micro Engineering rail spikes driven on alternate sides at every 7th tie, through holes pre-drilled in the ties outside of the rails after the plastic spike is cut off. The club has a jig that can be used to aid in this construction. Track nails can only be used if they are temporary – they shall be removed once the track section is ballasted. To facilitate this, they shall not be fully driven to contact the ties, they should be driven just far enough to clear the top of the rail heads.
3. All track rail joiners shall be either Micro Engineering or Walthers Nickle Silver Code 83. Plastic rail joiners are not allowed on visible track on the layout. Where insulation is needed between track sections it shall be installed by an authorized member of the Electrical Committee.
4. Before ballasting track, the rails will be painted with matte flat rail brown.
5. The type and color of track ballast shall be approved by the Chairman of the Scenery Committee. Ballast will not be installed without consulting with the Scenery and Track Committee Chairmen for guidance on preventing the finished ballasting from interfering with the reliable operation of turnouts.
6. The nominal height for the layout upon which track is to be laid is 48 inches.
7. Locations with switching should be no higher than 52 inches. No track shall be higher than the elevation at Green Mountain Falls, which is 59 inches.
8. All turnouts along the Mainline and Sidings shall be equipped with and actuated by Tortoise switch machines.
9. Within yards and towns, turnouts that are obstructed by buildings, structures, scenery, or turnouts that could be obstructed behind rail cars parked in normal spotting locations shall also be equipped with Tortoise machines.
10. It is encouraged that turnouts in all other locations be equipped with Tortoise machines. Where Tortoises are not installed, the Electrical Chairman shall be consulted for options to power the turnouts frogs.
11. Minimum length for Passing Sidings is 15 feet.
12. Minimum aisle widths shall be 48 inches.
13. Maximum Peninsula width shall be 60 inches, which provides that no track will be beyond a 30-inch reach.
14. There shall be no duck-unders or lift bridges in regular aisle access areas. Pop-ups/hatches can be employed where needed for "rescue" access.
15. Superelevation is optional. It should only be considered on Mainline and Passing Sidings (but never in helixes). If implemented, the outside end of the track ties should not be raised by more than $\frac{1}{32}$ inch, or about .030 inches. The change in rise leading to the superelevation must be gradual, spread out over the entire distance of the easement leading into the curve.