

## NWV Module Standards

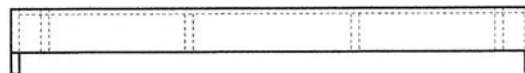
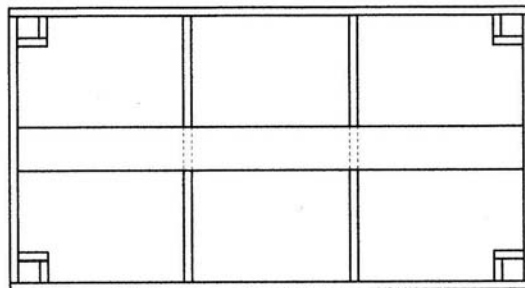
**Overview:** The NWV Module standards are loosely based on the Free-Mo Double Track Standards. Notable differences are:

1. NWV uses a 48 inch fixed module length, Free-Mo is variable length
2. Main line switches are # 6 or larger, Free-Mo requires # 8's.
3. Each main line is in a separate DCC power district, Free-Mo has both mains tied to a common power district.
4. The DCC system utilized is NCE, Free-Mo utilizes Digitrax
5. The main line minimum radius is 30 inches, Free-Mo requires 42 inch minimum radius

**Frame:** Each module frame is constructed from 3/4 inch MDO plywood. The dimensions are 26 " x 48 ". The end plates are 6 " tall while the side plates are 4 " tall. The track sub-roadbed is 1/2 inch CDX plywood. The entire frame top surface may be 1/2 CDX plywood or it can be limited to the surface directly below the track. In the case where the plywood is limited to the surface below the track, the open area may be filled in with 1/2 dense blue foam board. There are 4 - 2 " square leg pockets - one in each corner. The exterior frame surface is painted Behr S-H-450 Parsley Spring Green - Semi-Gloss.



Unpainted module with plywood roadbed and foam surface for scenery.



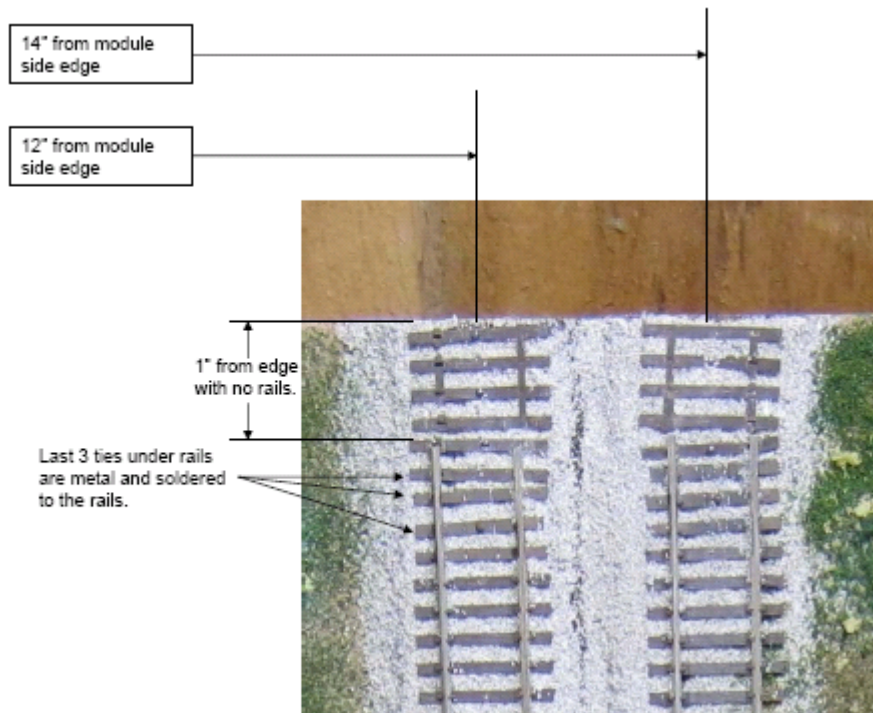
Framing diagram for module pictured above.

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The side frame height may be extended to support below track features such as rivers.

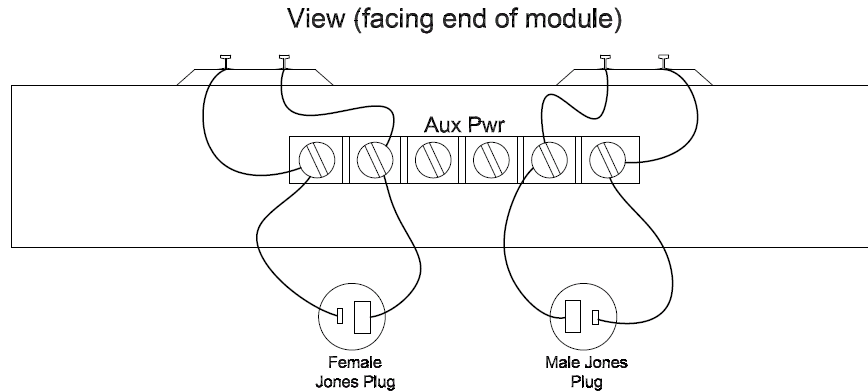


**Track:** The track roadbed is 1/4 inch cork. The two main line track centerlines are set at 12 inches and 14 inches from either one of the module sides. The track is code 83 Atlas flex-track. The turnouts are Peco code 83. Main line switches must be number 6 or larger as long as the main track route passes through the straight (tangent) path of the switch. Crossover switches are number 8. Main line rails are set back from the module ends by 1 inch while the ties are laid up to the module ends. Three printed circuit board ties are soldered to the rails at each end of the modules. Individual 2 inch rails complete the mainline track across module end boundaries. They are connected to the mainline track with rail joiners and are not attached to ties (see diagram below).



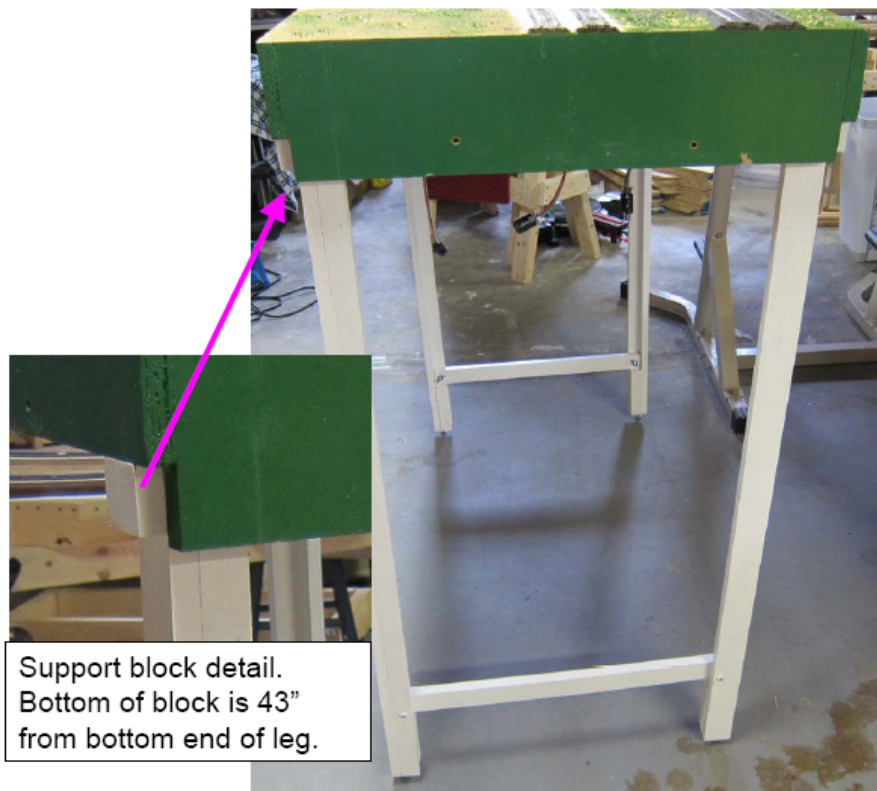
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**Electrical:** A six wire bus is run under each module and secured to the inside of the end plates with terminal blocks. The bus wire is 14 gauge, stranded copper wire. Two wire pairs provide the DCC power to the two track power districts and the third pair is auxiliary power (see diagram below). DCC connection between modules is completed with a male and female Jones Plug attached to the terminal blocks at each module end. The key is to remember that the large blades on the Jones Plugs are connected to the interior rails of the tracks and the female Jones Plug is on the left side when looking at the end of the module. The modules currently do not have a connector for the auxiliary power bus to connect to adjacent modules.

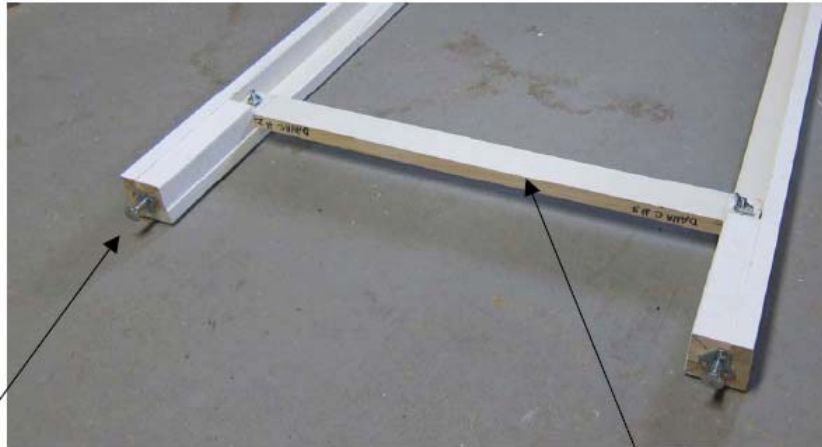


**Legs:** Each module has four legs which are 47 3/4 inch long. They are constructed from 1" x 4" finger jointed primed pine. The pine is ripped into a 2" piece and 1 1/4" piece which are joined to make a "L" shaped leg that is 2 inches on each side. A 1 3/4" x 2" pine support block is placed 43 inches up from the bottom. A 5/16 x 2 1/2 inch carriage bolt is placed in the base and is used for leveling the module. The legs are painted White - Semi-Gloss. See the following drawings for details on the legs:

### Installed legs



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### **Foot adjustment details.**

Note 6" long 1 ¼" x 1 ¼" block on each leg to hold leg adjusters.

Note removable cross brace held with carriage bolts and wing nuts.

**Switch Control:** Track switches must be controllable from either side of the module. Acceptable control methods are: Electrical Control - Tortoise Machines, Remote Mechanical Control - Blue Point Machines, Local Mechanical - Utilize the points bar built into the Peco turnout. Note that it is strongly recommended that electrical routing from switch points to the frog be done with external contacts provided with the switch machines.