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RM 39897

Corner Modifications for Large-Radius Curve Modules

Trial and error are always components in the pursuit of a perfect solution. That has truly been the case in the FasTrack Modular Railroad designs, most recently in the design of a large-radius curve module.

The LCCA/ Lionel FasTrack Modular Railroad (FMRR) Specification Manual v2.0 contains two designs for large-radius corner modules that accommodate O-72 and O-84 large radius curves. Both designs feature two-part corners that come together to build make a 90-degree curve. The full-sized corners are 30 inches deep and align evenly with both the front and the back of a standard straight module, making them excellent choices for those looking to make a scenic diorama that flows into and out of corners. The reversible corners are less than half the weight of the full corners, making them easy for one person to handle.

However, after constructing eight large-radius corner modules and over 25 FMRR straight modules, I am convinced the large-radius curve modules are the most challenging modules to build. As designed, both the full corners and the reversible corners offer similar sets of challenges that cannot easily be overcome. The top three are:

- Plywood cuts need to be made with an accuracy of +/- 1/16 inch
- Both the side frames and the plywood top require precise miters of 22.5 and 11.25 degrees
- The internal concave cuts cannot be made using a table saw and require the above precision using a circular saw, band saw, or router with plunge bit.

I have addressed these challenges by modifying the design of the reversible corners to account for people's varying levels of skills and equipment. Shown in **Photo 1** is a representation of the plywood dimensions required to make the reversible corners as defined by the FMRR Specification Manual. The RED lines indicate the internal concave cuts that I am recommending others ignore. Instead, by cutting along the GREEN line, one can:

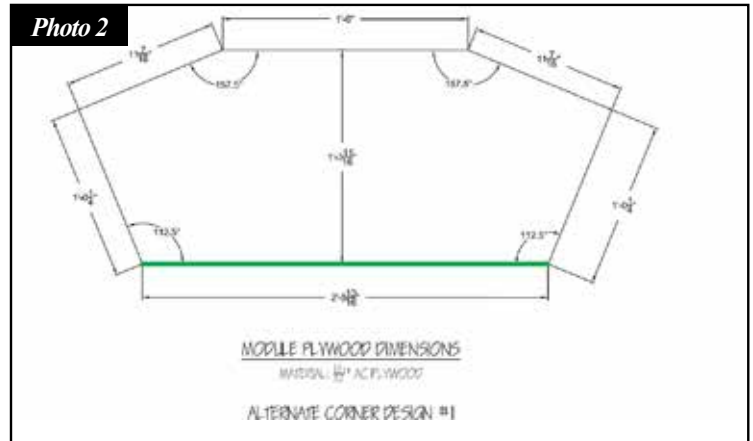
- Cut a reversible corner using only a table saw equipped with a long-face miter fence
- Reduce the time required to build modules
- Reduce the risk of making bad cuts and wasting material

Photo 2 shows the plywood sheet dimensions for the corner adaptation. Final dimensions for the side framing are provided in **Photo 3**.

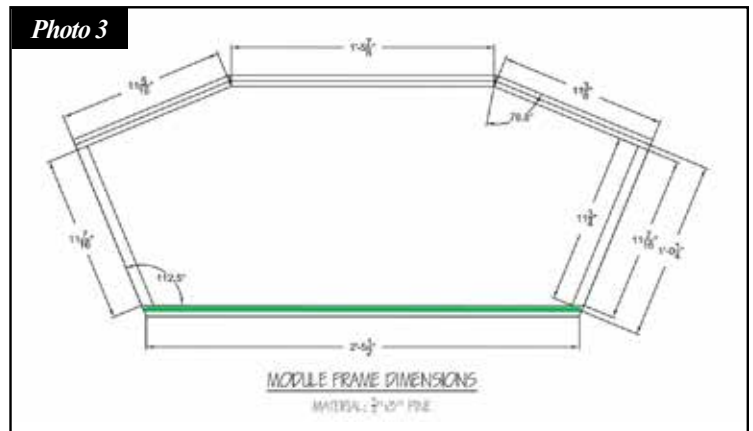
After constructing four of these modified-shaped reversible corners, I determined there was a drawback to the modification that required further engineering: the inability to attach four 90-degree corner brackets per corner module as specified in the FMRR

specification manual. There are several possible ways to overcome this problem:

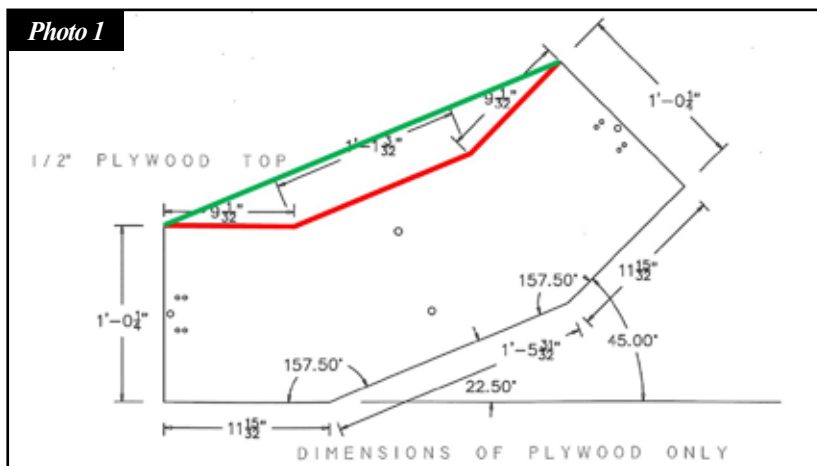
- Use 22.5-degree shims to bring the back corners square again, thus allowing installation of 90-degree corner brackets
- Add a third leg on the back center of the longest side of the reversible module



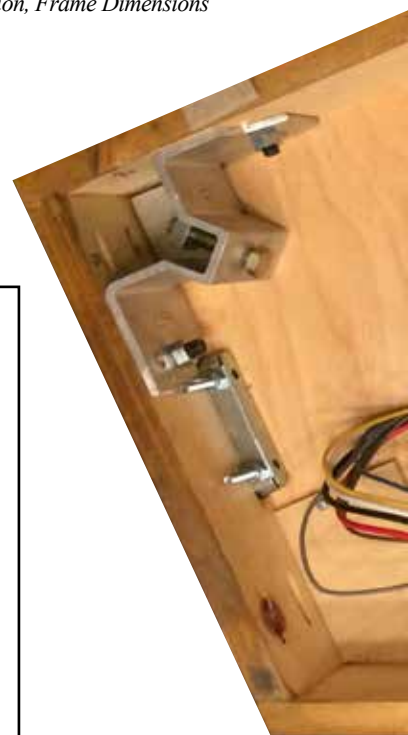
MPRR Club's Reversible Corner Adaption, Plywood Dimensions

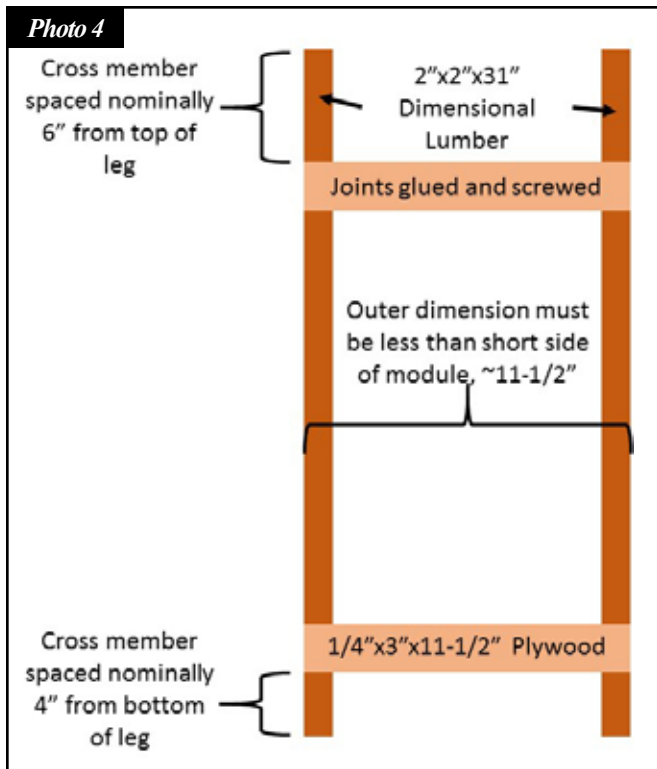


MPRR Club's Reversible Corner Adaption, Frame Dimensions



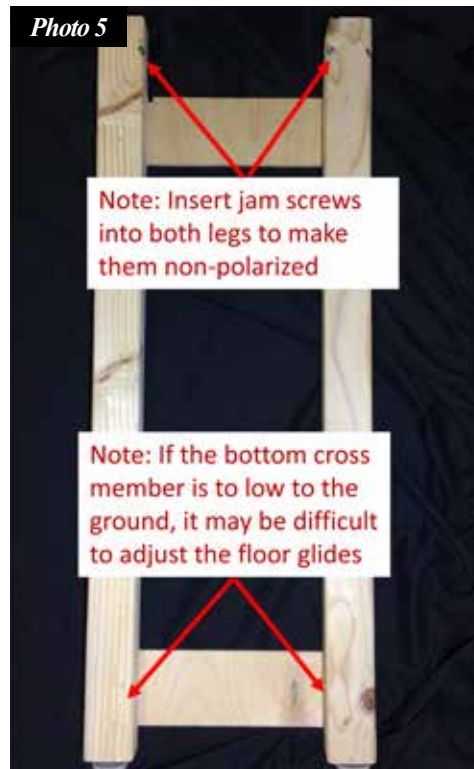
Reversible Corner Module Plywood Dimensions, showing how to avoid the difficult internal cuts.





A set of paired legs designed to work with the MPRR's Reversible Corners

- Bend a corner bracket and ripping a leg to fit the new shape
- Use only two legs
- Create a set of fixed paired-legs held into place using a single corner bracket installed in the 90-degree corners.



A set of MPRR's Reversible Corners set up at the 2017 National Train Show, Orlando, Fla.

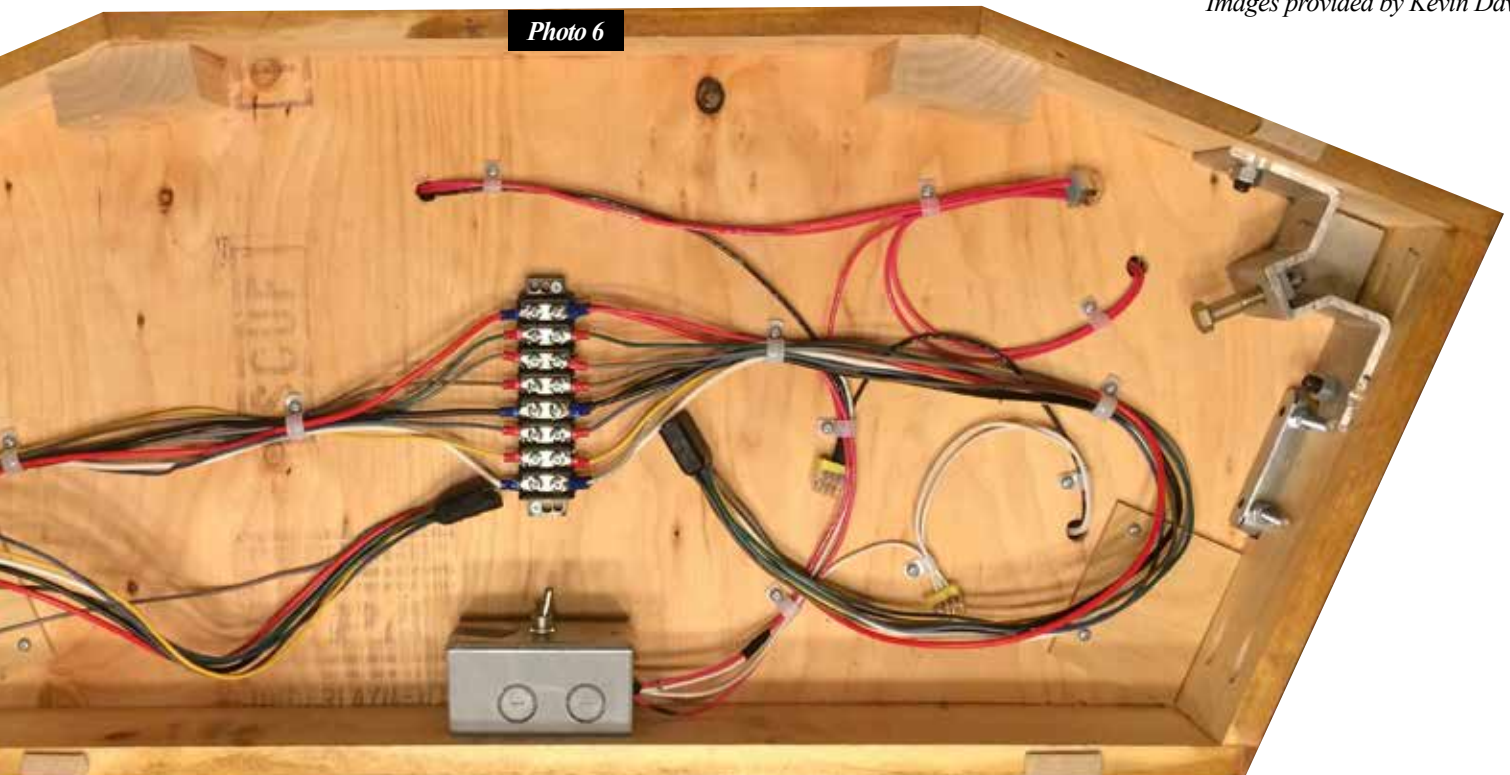
In the end I chose to make the fixed paired-leg option because it was the sturdiest of the options and required the least amount of extra work. Because there are only two bolts to tighten per corner module (See **Photos 4 and 5**), the overall time required

to assemble these corner modules is reduced.

It has now been six months since the Mohegan Pequot Model Railroad Club (MPRR) and I built these modules, and I am beyond pleased with them. (See **Photo 6**) They are more stable than the standard shaped reversible corners as defined in the FMRR Specification Manual because the added material (located between the green and red lines) make the modified corners more balanced. In addition, incorporating the Bjorkman Truly Reversible Corner Module (See *The Lion Roars* April 2017) into the MPRR reversible corner design has created a durable, reversible, and versatile module that is easier to assemble than the base plan and a great project to undertake.

As always if you have any questions about FasTrack Modular Railroading, please email or call O-GAUGE@OUTLOOK.COM or 860-381-0775. I am always happy to talk trains and FasTrack modular railroading. 🚂

Images provided by Kevin Davis



*The underside of a completed MPRR Reversible Corner Module, including the Bjorkman Mod (See *The Lion Roars* April 2017)*