Module Corner

By Ted Larson

In this issue we'll begin presenting corner module information supplied by Bill Krause of the Connecticut S-Gaugers. First, we'll cover their basic corner module design. In future columns we'll present enhancements to this basic design. Bill's information was supplied in meticulous detail, so we'll let Bill do the talking. If this design looks familiar, it's because several other clubs have used it.

Guest Author - Bill Krause

How did we come to select the kind and size unit shown? It wasn't easy. It is a result of studying many diferent forms and sizes of curve units representing a variety of design compromises, and choosing features that best suit our members' long term needs. Even some of the dimensions shown are changed from all existing units in operation within our club. Before any attempt is made to explain the design shown, we think it is best to review a little history in the development of curved track modules.

During those earlier years when our club, along with other clubs, was investigating module construction, Tom Hawley (former chairman of the Module Standards Development committee) sent me the latest modular specifications for "S" modules (October 1984). While most of the information was on straight modules, one drawing showed radii for a 90 degree corner. The inside curve had a radius of 46" with a 47-9/16" outside curve radius. These had been developed with the aid of a CAD system. I later learned that it was Doug Miller who had done this work when he lived in Michigan. Center points were not shown, but we soon computed them, with these curves having different center points to provide increased track spacing through the curve.

Armed with this new information, we designed a corner module for our club's use. Bill Fuhrman of our club built seven of these newly designed corner frames in 1985. These have been proven to be quite satisfactory over the subsequent years of club activities and operation. Three of the 4 that I own, while quite heavy (but sturdy), will fit into the back of my 1985 Celebrity station wagon. This is a moderate size wagon. Moreover, I can include 2 straight units in my car along with the three corners — it's crowded!

During the CJSS show in 1986, someone questioned if the curves were sufficiently spaced apart to allow a "BIG BOY" locomotive to pass on the inside curve with an 85' passenger car travelling on the outer curve. IT DIDN'T!

Being a member of Don DeWitt's Module Standards committee, I immediately began to test curves and spacing with different types of equipment. Using NMRA and John Armstrong data, I soon learned that the 3-1/4" CTC (Curved Track Center) spacing had to be increased to 3-3/8" for our radii, and the outer radius reduced to 47-1/4". By doing so, I found that "BIG BOY" just cleared the inside overhang of the 85' car. The clearance problem occurs at the spot where equipment enters the curved track from tangent. In checking out most big locomotive overhangs, none equaled the "BIG BOY" front overhang of 35-1/2 feet. I also found that none had a bigger rear overhang.

Why do we not make the corner modules larger to avoid the possibility of some possible oversized piece of equipment not clearing properly? First, you should be aware that there is no perfect corner! It becomes a matter of selecting from trade-offs in each design. NMRA will tell you that curves should be no less than 54" in S scale for running unlimited equipment. In developing a corner design with a 54" minimum radius, we came up with a corner that was 64-7/8" square. The inside radius was 54" while the outside one was 57-1/4", much too big to be practical.

With this background and our improved knowledge of club needs, we have opted to essentially stay with our original design, with a few modifications.

Now, how about building the corner frame? The NASG standards approved in July 1987 do not contain any dimensions for corner units. This is left for individual decision, of course, with the exception of track spacing and setback distances which must match the straight modules. Our recommended corner module design is shown in drawing 2. Many variations in actual construction technique are possible, but drawing 1 shows our best recommendations.

Here are important points to remember in building a corner module:

- While it is not easy to build corners, it is extremely important that the two end faces be exactly 90 degrees to each other.
- In building, you can use the diagonal dimensions shown (59-3/8" and 83-7/16") to be sure that everything is square.
- Use a giant square made from 2 very straight pieces of lumber or build a template on plywood to ensure that your modules are built square.
- All track work must be perpendicular to the end faces, with track centerlines exactly 2- 3/4" apart.
- Seal all wood surfaces (paint or polyurethane) to keep out moisture.

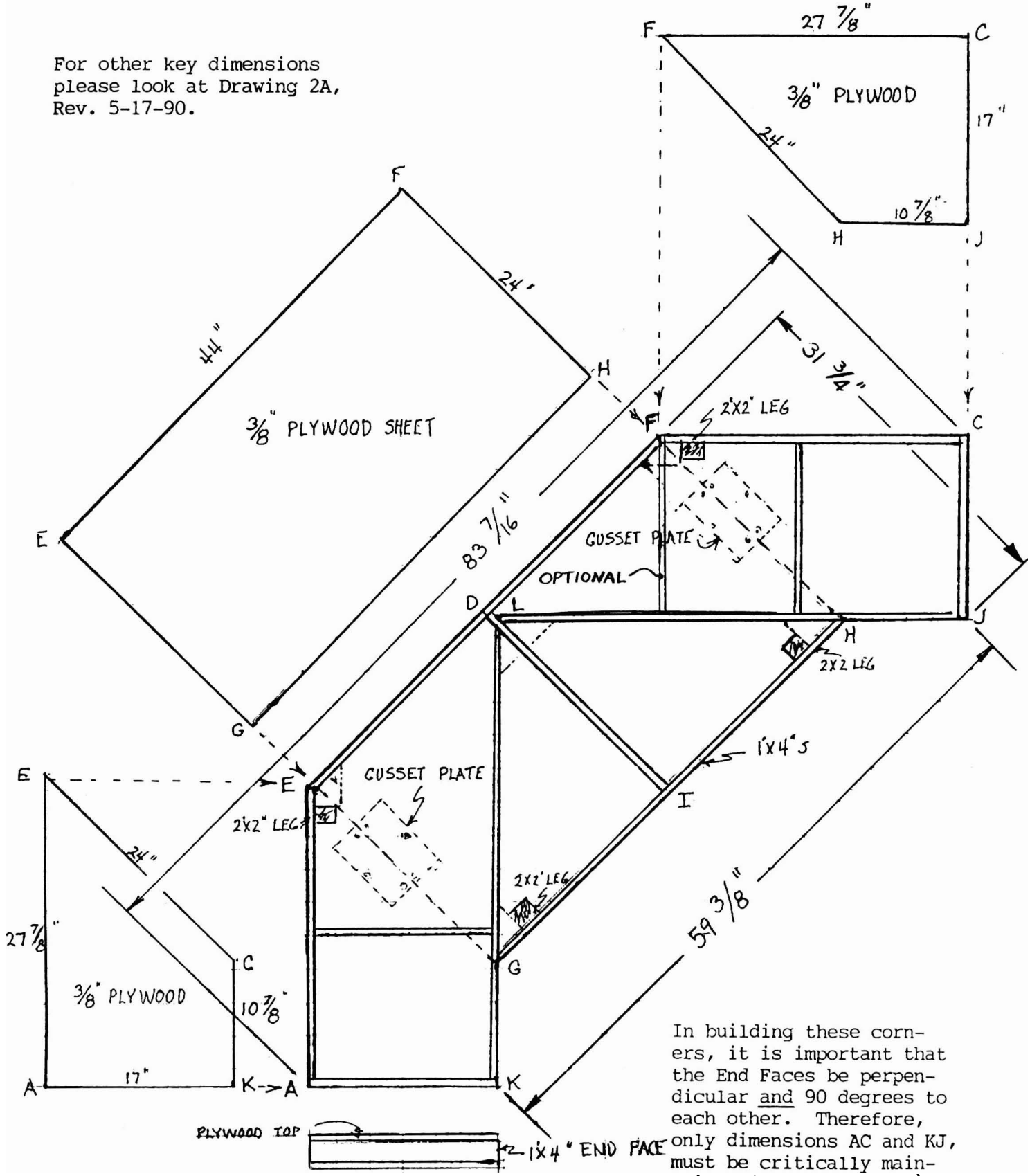
That's about it!

CONN#CTICUT S GAUGERS 90 DEGREE CORNER MODULE FRAME DIMENSIONS & CONSTRUCTION

DRAWING 1, DECEMBER 14, 1995

SCALE: One inch = One Foot

For other key dimensions please look at Drawing 2A, Rev. 5-17-90.

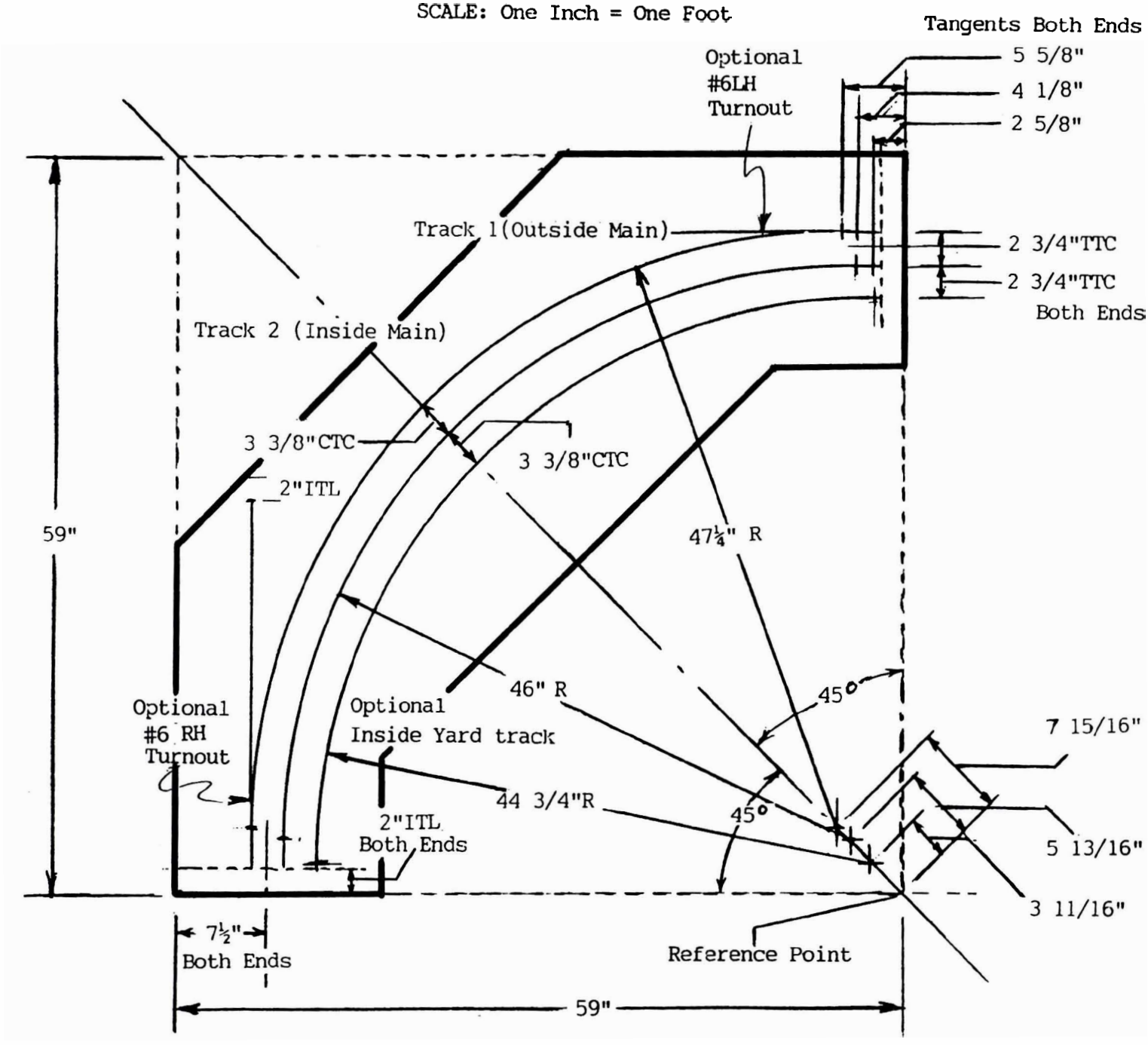


In building these corners, it is important that the End Faces be perpendicular and 90 degrees to each other. Therefore, only dimensions AC and KJ, must be critically maintained (top and bottom).

CONNECTICUT S GAUGERS 90 DEGREE CORNER MODULE TRACK DIMENSIONS

DRÄWING NO. 2

SCALE: One Inch = One Foot



* Optional inside curve(Inside Yard) track will provide our club with additional operating opportunities when joined with other units with three tracks.
* Optional turnouts provide interfacing opportunities with other module systems(see details on club proposal forTriangular Interface Module)
* An optional fourth outside track(Outside Yard track) can be used with present module outline. While not shown the details are: 48½: Radius, with arc center being 10 1/8" from Reference Point along 45deg. line.

WHK - 1-13-85, Rev. 6-9-87, Rev. 5-17-90 Rev. 12-22-95