While these items are geared towards a large layout, they will also be very effective on smaller layouts. If your wire runs are very long, use the
larger indicated wire gauge, e.g., 14 rather than 16.

Locate the TIU's centrally to all points on the layout to which they will be connected;

. Run 14-16 gauge wire from the transformers to each of the TIU inputs;
. Run 14-16 gauge wires directly from the TIU outputs to the center of each of the areas of the layout that each channel supports
. Place a terminal block at each of those places;
. Run 16 gauge wire to each track location directly from the associated terminal block. DO NOT use a second tier of terminal blocks;
. Place an 18 volt bulb across each terminal block's inputs (one bulb per terminal block). Alternately, lighted Lionel #260 bumpers work fine for me, one per TIU channel;
. All wire should be either paired (like speaker wire) or, even better, twisted pair, to reduce signal loss on the longer runs. The OGR wire is the best 16 gauge wire I've encountered for this purpose;
. Solder all connections to the tracks. If you have the time and patience (frankly, I did not) crimp spade connectors to the end of every wire that gets screwed into a terminal block, unless you use terminal blocks that place the wire in a hole and then screw down on top of it. Regardless, the intention is to get a very tight connection.
. Isolate all sections of track that get a DCS signal from all other sections of track that get a DCS signal. Basically, each becomes a block. Do this by ensuring that the center rails of each block are isolated from adjacent blocks. It's NOT necessary to isolate the outside rails from block to block.