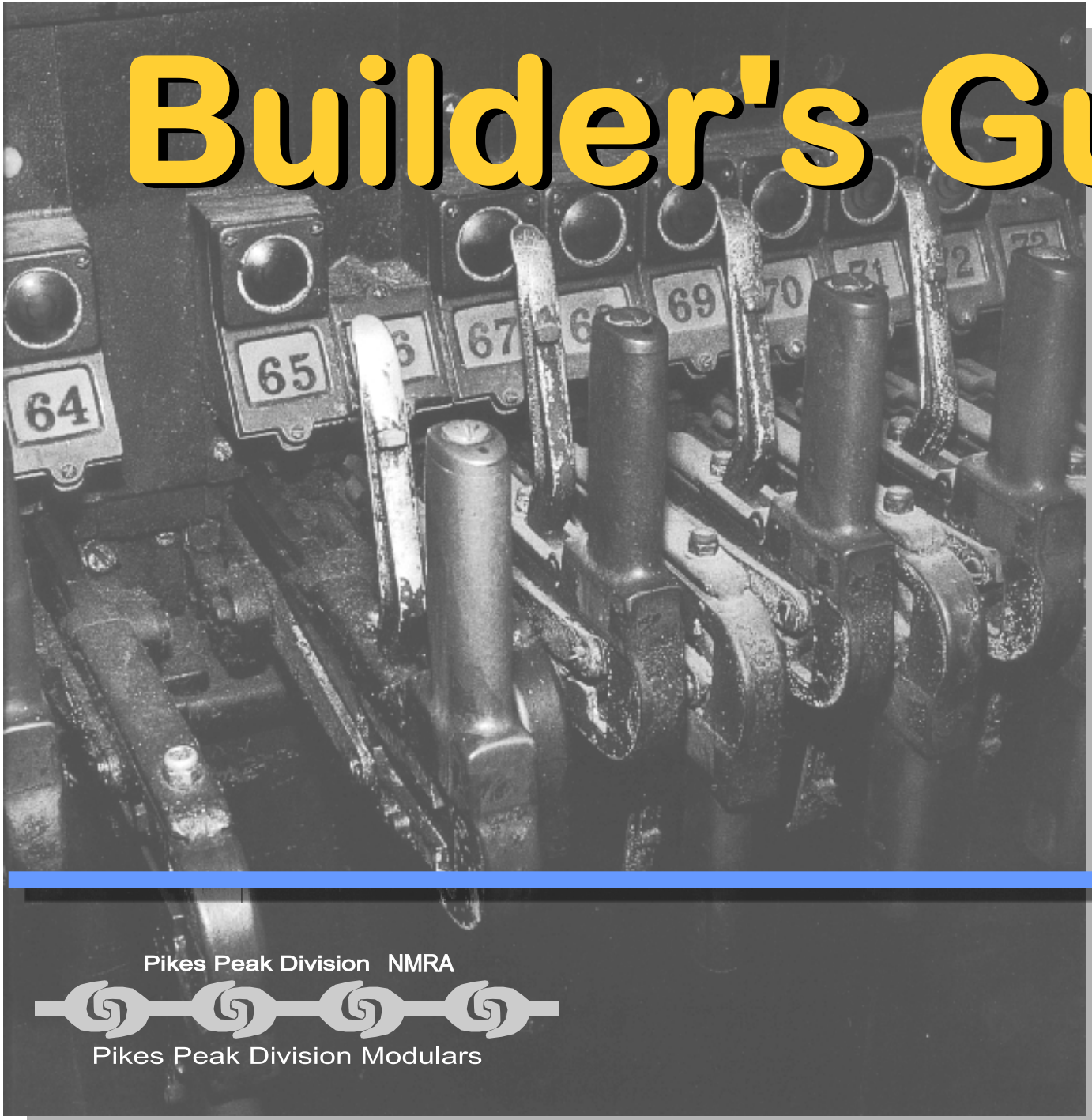
Builder's Guide



Pikes Peak Division NMRA

Pikes Peak Division Modulars

Module Standard Specifications

Module Standard Dimensions

Module Wiring Standard

Typical Layout Designs


PIKES PEAK DIVISION

Module Standards & Requirements

Straight Modules 2'X4', 2'X8', 2'X6' must be a pair (total length must be multiple of 4') All modules must have 3 mainlines. Module widths of 30" or 36" are possible after clearance from module chairman.

Corner Modules - Outside and inside corners must be designed to fit within the 4' grid. Minimum radius for the inside track on an outside corner is 35.5". There must be at least 2.5" separation between tracks at the apex of the corner. A minimum of four outside corners will be held by the PPD to insure setup availability. (check with the current module chairman about the need for additional corner modules.)

Module Height - The top of the rail at the module ends should be a nominal 40" above the floor. The module height must be adjustable plus or minus 1" from this dimension. Use long carriage bolts or threaded feet with T-nuts or threaded inserts in the bottom of the legs. Hardware should be ¼" or larger.

Mainline Tracks - HO standard gauge track using code 100 nickel silver. (Flex track suggested.) Cork roadbed or equivalent must extend from end to end of each module set. Each module set must include three 9" sectional tracks to connect to the adjacent module. Put your name on them. The tracks must be parallel with 2" center spacing at each end of the module set. Routing may vary within the module. Internal module set interfaces are at the discretion of the builder who is responsible for assembly at a setup.

Mainline Grades - Mainlines must enter and exit module sets at 0 elevation. Elevation changes are discouraged, but may be accepted after discussion with module chairman.

Mainline Turnouts - #6 turnouts are desired for all mainlines, however #4 will be accepted as necessary. (#6 turnouts accommodate larger locomotives and long passenger cars)

Mainline Ballast The old Woodland Scenics Gray B-82 or current light gray color in medium or fine texture. Other tracks, siding or yards at builder's discretion.

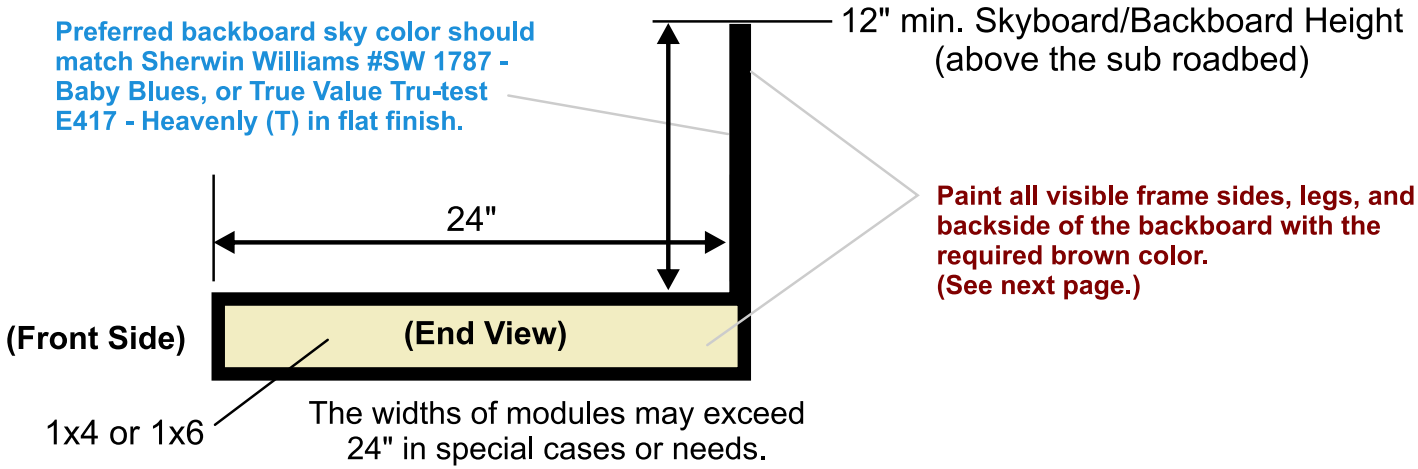
Track Overhead Clearance - Allow a minimum of 3.5" clearance over the track for tall freight cars, double-stacks or auto racks.

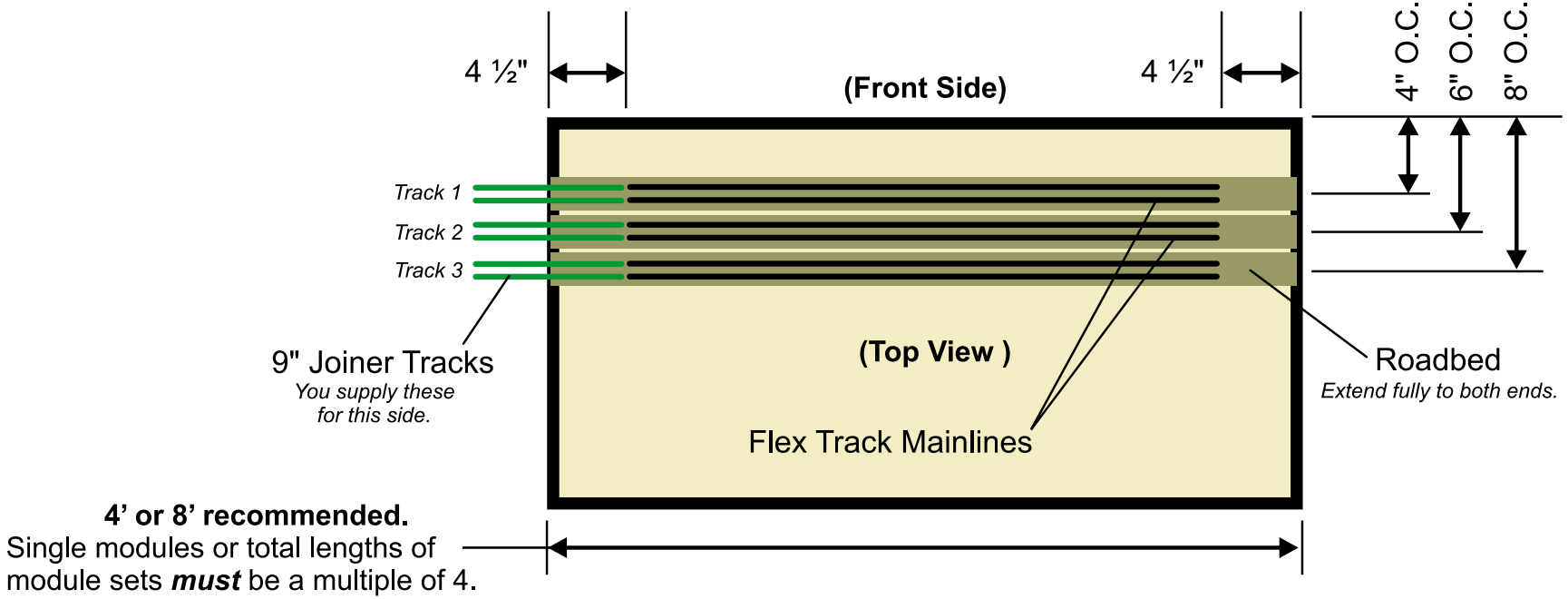
Inter-module Bus Cables should be 12 gauge stranded wire between the Cinch 6-pin connectors. Track feeder wires should be a minimum of 22 gauge solid wire and soldered to each rail. (Larger gauge feeders up to 16 gauge encouraged) Feeder wires should connect to the bus wires via screw terminals to facilitate troubleshooting and revision. Feeder wires must be located on each side of a turnout frog to insure track power. Insure frogs are isolated or power routing (use insulated rail joiners as necessary.). DO NOT depend on rail joiners or turnout points to provide power to any section of track. (See following diagrams.)

"C" Clamps - Each module set must include at least one 4" C- clamp to secure the module to the adjacent module. Two clamps are desired. Put your name on them.

Module Ends - Module ends must be finished. No white plaster or bare wood may show. Scenery may not extend beyond the end of the module. Not all terrain profiles will match. Mismatched ends should not detract from the general appearance of the setup.

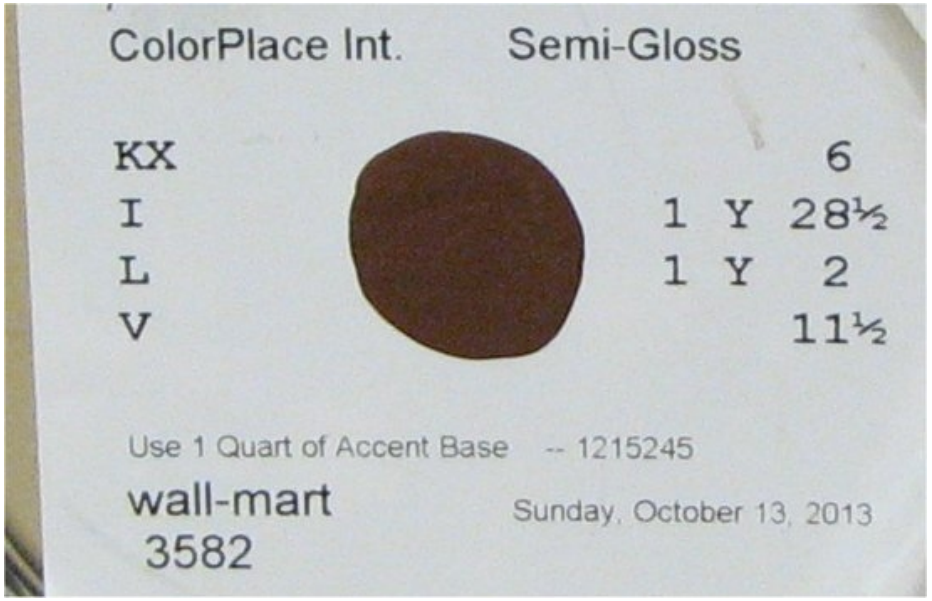
Module Standard Dimensions





Module Standard Paint

Brown for legs, ends, fascia, and backsides.



Walmart

Connector Wiring Standard

Using 12 gauge stranded wire with the Cinch connectors is a bit tricky. Here is the method I have found most successful in assembling them.

1. Cut the wires to length (about 32" for a 4 foot module) and strip one end about ¼".

2. Apply flux and tin each strip.

3. Disassemble each connector. Hold the connector firmly, lugs up. I find a small vise works best.

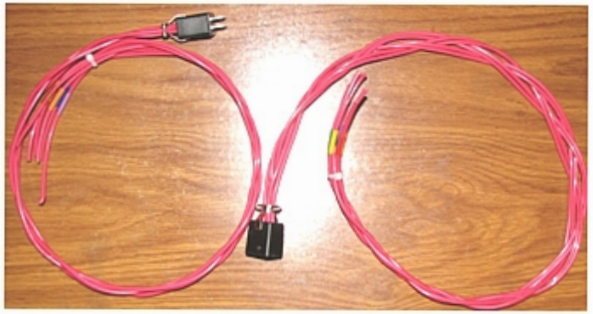
4. Apply flux (non acid) and tin each lug.

5. Take each wire and hold the stripped end beside a lug and heat the joint until solder melts. Hold in place until cool. Repeat until connector is populated.

6. Slip a piece of heat shrink insulation about ½" long over each wire and lug. Shrink.

7. Reassemble the connector back shell and strain relief. I find it is good to enlarge the hole in the top of the back shell before assembly.

You should place a small tag on each wire with the rail number. I like to braid each wire pair, but it is not necessary. I like to color code each wire with electrician's tape. I use the code of red, orange, yellow, green, blue, violet starting at rail one (front of module) and going to rail six (back of module). The system in use on the Pikes Peak Division has rail one on the number 6 lug of the connector and rail two on the number 5 lug, rail three on the number 4 lug and rail four on the number 3 lug, rail five on the number 2 lug and rail six on the number 1 lug. There are small numbers molded into the connectors. You must look carefully to find them. Also notice that there is a wider separation between one pair of pins than the others. This keeps you from plugging them together 'backward'

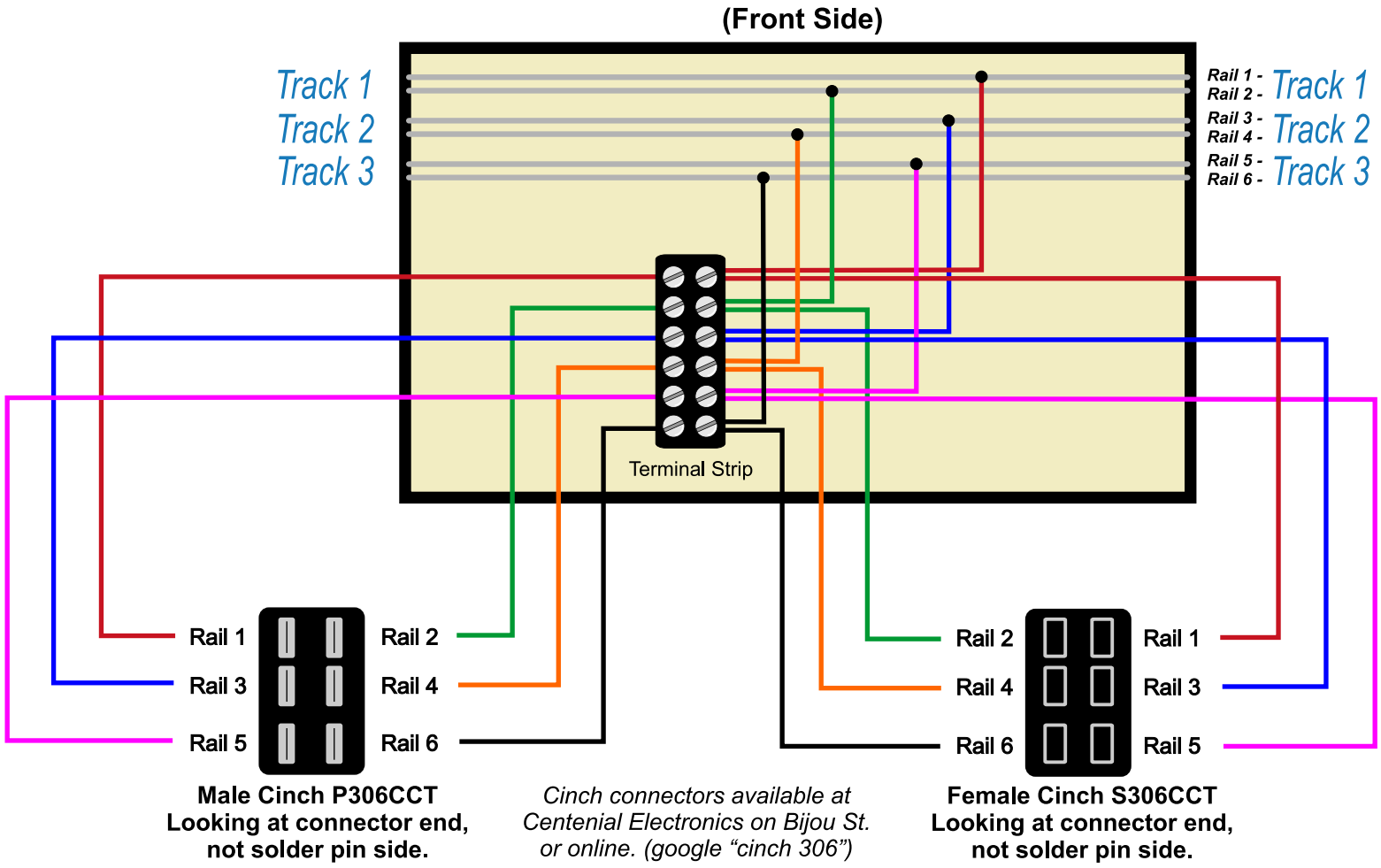


Module Wiring Standard

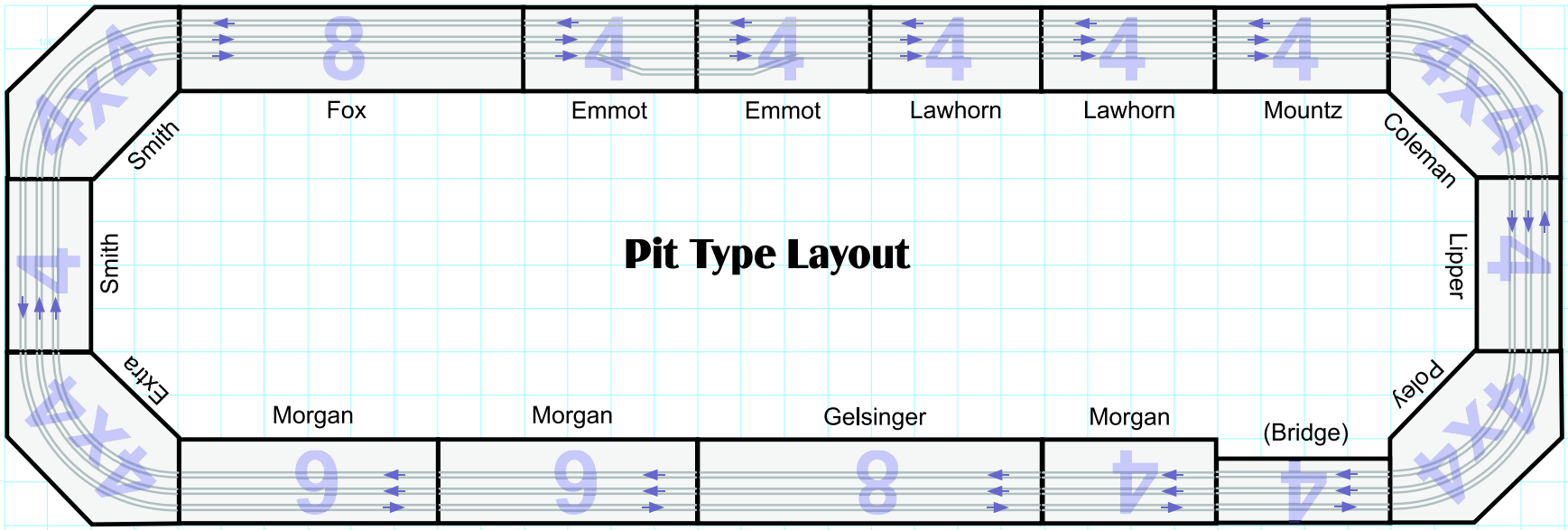
Tracks 1, 2, and 3 shall each be separate and whole blocks and insulated from each other at cross-overs with insulated track joiners. Track drop-feeders should be at least 16 gauge wire soldered to the rails.

Intermodule Connectors - Use Cinch S306CCT and P306CCT or equivalent for connectors between the modules using at least 12 gauge stranded wire. The connector ends should be able to reach at least 6 inches beyond the ends of the module. (This insures you and your neighbor's connectors will reach each other.)

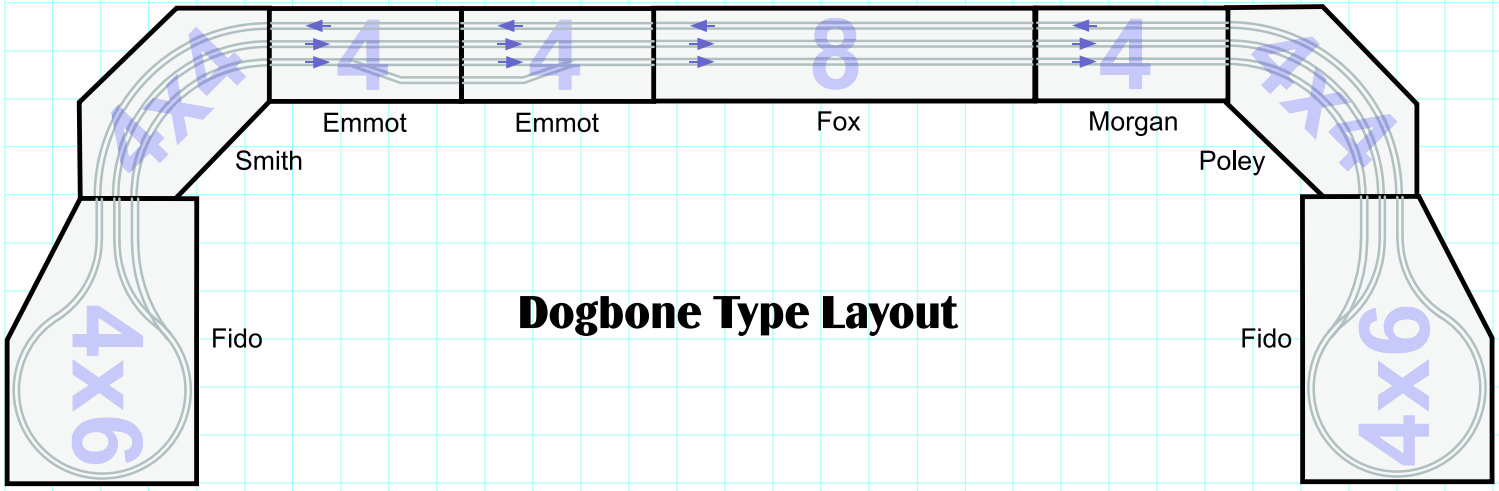
Terminal Strips -Use (highly recommended) *terminal strips* between the Cinch plugs of your module. This allows easy trouble shooting and connection corrections with only a screwdriver instead of cutting wires.



Typical Layout Designs



Pit Type Layout



Dogbone Type Layout