



O GAUGE MODULAR RAILROAD CLUB

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REV 12.1

INTRODUCTION

The North Penn 'O' Gaugers is a modular model railroad club created for those who enjoy building and running 'O' gauge model trains while having an interest in preserving some of the rich railroading history from the Eastern Pennsylvania area. The club's model railroad is based roughly on a 40 - 50 year timeline between the 1930's to the late 1970's featuring primarily, but not limited too, equipment from the Reading and Pennsylvania railroads.

The club meets several times a year at various locations to setup, run and display its modular layout. A modular layout is a layout that can be disassembled and reassembled. The various modules are owned, created and maintained by each of the club members. Members are responsible to bring their module(s) to the display locations, help set up and then are able to run their own trains on the layout.

The modular layout is designed to run using the Lionel TMCC Legacy Command system.

The club is sponsored by Henning's Trains, a model railroad shop located in Lansdale, PA. With the help of Henning's, club members are able to enjoy several cost savings on various equipment used throughout the building of their modular sections.



MODULAR STANDARDS

GENERAL

Each module should meet the specifications as a minimum in order to provide the necessary interchangeability to allow the modular concept to work. Modules constructed per these instructions will allow mechanical and electrical interconnection so they can be arranged into various configurations permitting the operation of locomotives on either of the two mainline tracks or on the various optional branch line/siding tracks.

GENERAL DIMENSIONS

Straight Modular. The height (thickness) of the frame and deck will be about 4". A single basic module shall be 30" wide on both ends and 48" long. See Figure A. A set of modules are allowed but must meet the dimension of 30" in width at each end of the set. The use of multiple modules in a set allows for greater flexibility of track routing. Intermediate modules can be of any length and width, (within reason), so long as the overall length of the set is exactly a multiple of 4 (four) feet.

Corner Modular, a corner module shall fit inside a four foot square, 48" long by 48" wide. See Figure B.

FRAMEWORK

Frames to be constructed of 1x4 lumber. The boards should be straight, solid and free of excessive knots and should be sanded smooth. The exposed edges of the framing material should be rounded (sanded or edged with a router) in order to minimize splintering and facilitate comfort during the handling of the module. The frame should be glued and screwed together for strength and it must be square and flat! Yellow carpenter's glue is preferred to white glue.

PAINTING

All visible side surfaces, including the ends of the module, will be painted a satin or semi-gloss black. The deck surface should be painted an earth tone brown before applying road bed or any scenery to protect it from water base diluted scenery adhesives.

MODULE LEGS

Each straight module shall have four legs, corner module five, that are removable. Legs must have 3" long adjustment bolts (a carriage bolt) to allow for a total of 2" of vertical movement. (see Figure C) The adjusting bolt and corresponding T-nut size may be either 5/16th or 3/8th" diameter. The bolt should be completely threaded over its full length. The exposed portion of the adjusting bolts are to be extended so that the top of rail of the two main lines shall be exactly 40 (forty) inches above the surface of the floor. With the deck and rail heights as described above, the leg length is 38". This length should be adjusted by the difference between 3/8" and the actual thickness of the deck material if other than the preferred type. Locations for the legs are shown in Figures A& B for both straight and corner modules. The legs will fit into pockets in each location, as shown. Experience indicates legs that slide easily in and out of the pockets are preferred to a snug fit since dimensional changes in wood caused by high humidity could cause the leg to become stuck in the pocket. Recessing a T-nut on the inside center of the leg pocket will enable a bolt to be used to retain the leg in the pocket while the module is being moved. A #4 screw eye may also be used.

CLAMPS

Two sturdy C-clamps, of at least 2 inch opening size, will be used to secure the modules together during setups. Two clamps shall be provided with each module by owner.

MAINLINE AND BRANCHLINE TRACKS

MAINLINE TRACKS

The two mainline tracks shall be Atlas 'O' 21st Century Track System with traditional plastic simulated wood ties. The mainline tracks are to be secured (glued, screwed or nailed) onto standard 'O' gauge cork roadbed. The roadbed should be glued to the surface of the module in lieu of nailing to help ensure the roadbed remains flat (all-purpose white glue or caulking adhesives are suggested). The roadbed should be painted grey, similar to the shade of grey used for the ballast. Curves are permissible and shall be a minimum of O-72 (36" radius). Corner modules will use O-81 (40.50" radius) for track 1 and O-72 (36.00" radius) for track 2.

Track Spacing The double track mainline will have a spacing exactly 4 1/2" on center. Track 1 centerline exactly 4" from module front edge. Within a module or multiple module set, the track centerline may be different and may have curvature as long as the track centerlines at each end of the module are set exactly as standard. The mainline track/rail at the end of each module shall be straight, parallel and flush with the front edge of the module, 90 degrees from the module end (see Figure A & B) and be screwed down through the last 2 track ties as shown in figure D. Track tie lock should be intact to

help with final track alignment. Rail joiners are not required between modules but extra attention shall be given for the close track location tolerance.

MAINLINE TURNOUTS

Turnouts on the mainline shall be a minimum of O-72 turnouts recommended from Atlas or Ross Custom Switches. All turnouts may have manual or electrical switch throws. Turnouts between the mainline tracks shall have the center rail insulated to keep each of the mainlines electrically isolated.

MAINLINE BALLAST

The ballast used on the mainlines shall be Woodland Scenics Gray Blend Coarse Ballast # B1395.

BRANCHLINES

Branchlines shall be Atlas 'O' track. Cork roadbed need not be used but transitions are necessary to change from the elevation of the mainline tracks to the branchlines. Turnouts shall be a minimum of O-54 turnouts but a minimum of O-72 is preferred. Any ballast may be used for branchlines. Any branchline/siding turnout from the mainline tracks shall have the center rail insulated to keep each of the mainline tracks electrically isolated.

ROUTING CONVENTION

Right hand running shall be the routing convention for locomotives on the mainline. In looking down the track in the direction of travel, the engine will operate on the right track. The two mainlines are designated as "North to South" and "South to North". The mainline track (track 1) on the outside is S to N(northbound) and the track on the mainline inside (track 2) is N to S (southbound).

WIRING AND CONNECTIONS

GENERAL

Each module will provide mainline power busses and connectors in order to provide said power on a continuous basis throughout the display. The interconnected layout is designed to be powered from a single location. (see figure E)

POWER SUPPLY

The power for the club layout comes from the Lionel ZW-L transformer. This advanced transformer provides the power needed for operating the club layout with a full 720 watts of power, all within a single unit. This modular layout is designed to run primarily as command control but this transformer allows the capability of running conventional locomotives with the Legacy remote without the use of additional TPC's and such.



POWER BUS CONNECTORS

Each module should have an electrical bus running its length consisting of six (6) wires of 12 gauge stranded wire. 16 gauge stranded wire shall be used for the drops from the track to the bus.

The electrical bus for each module will be connected to the adjoining module using 'Anderson Power Pole' 30 amp connectors

Connector wiring assignments:

- 1 = Mainline Track 1 Power, Red, 'A'
- 2 = Mainline Track 2 Power, Red, 'D'
- 3 = Branchline Track Power, Red, 'B'
- 4 = Accessory Power, Red, 'C'
- 5 = Ground "U" (common for all tracks), Black, 'U'
- 6 = Earth Ground, Green



All bus wires shall have their wiring assignment numbers labeled a minimum of three location within each module.

TRACK POWER

Each main line on the module should be connected to the bus around the middle of the module.

Track power shall not be used to power accessories, such as electric switch machines, lights, or other powered devices.

ACCESSORY POWER

Accessory power is to be used for switch machines, lighting and signals only. Any other accessory (such as motorized accessories) should be powered by a separate power supply provided by the individual module owner.

SCENERY

GENERAL

The overall design, motif and scenic details are optional to each module builder. Each module can be designed as a diorama within itself, or it can be planned to merge with other modules in the layout at the discretion of the module builders.

GROUND COVER

All grass, ground cover, and foliage will be in appropriate shades with no bright toy-like colors in appearance. Autumn foliage is permissible. Trees, tall shrubbery and other such ground cover shall maintain proper clearances so as not to interfere with any train operation. Any module surface not covered with scenery materials should be painted a muted earth tone brown.

SKYBOARDS

Each module will have a removable skyboard that extends 12" above the full width of the module surface. Care should be exercised to keep gaps between adjacent skyboards to a minimum. Each skyboard will be 1/8" Masonite with an overall width of about 16", and will be painted with a sky blue paint. Use Sherman Williams #SW1787 Baby Blue or #BM 33-4 Universe Blue on the viewers and a satin or semi-gloss black on the back. The rear edge scenery will be blended into this neutral sky background as appropriate. If you use a carrying handle on the back of the module, you will need to notch the skyboard accordingly. The skyboard will be attached to the back of the module with strong clamps, bolts & washers, or other appropriate means to secure it firmly in place.

FASCIA BOARDS

A masonite fascia board may be provided on the front of each module. The fascia will be the same height as the top of the deck for the first three inches from each end of the module. The area in-between these points can be of any height (within reason) required to effectively blend into the overall landscape of the module. The fascia board should be securely fastened to the module using flat head screws which will be covered by the skirting. The viewer's side of this fascia should be painted a semi-gloss or satin black.

SKIRTING

Skirting is attached to the fronts of the modules at public displays for "dressiness". It is held on with VELCRO, thus each module must have a strip (1/2" wide is OK) applied to the front along the top edge. The hook side must be attached to the module so that the top edge of the Velcro meets the bottom of the module deck. The skirting is provided by and is the responsibility of the club.

ADDITIONAL ITEMS

Prebuilt Module Framing

Straight modular framework sections that have already been built per club standards are available, ask about pricing. They do not include paint, track or scenery. This is a great option to help get you started. This first step, the basic construction stage, is often the obstacle that prevents many from getting started.

Club Discounts

Being a member of the North Penn O Gaugers does have some cost saving privileges from our sponsor Henning's Trains in Lansdale. Members do receive a discount on various items purchased through their store. To receive such discounts simply show your club membership card at checkout.

Discounts include,
15% off all Atlas track products.
10% off all GarGraves track products
10% off all Lionel products (excluding locomotives)
5% off all locomotives.
10% off all scenery products and buildings.
10% off all books & videos.

Discounts for club members only, limited to in-stock items.
Does not include used or consignment items.



Membership Fee

\$24.00 for the first year, \$12.00 for each year there after. Membership fee is used to help cover costs of items such as layout skirting, promotional materials, setup location expenses, power supply, etc.

Contact Information

For information about the club contact Bill Henning
Email: bill@henningstrains.com
Phone: 215-362-2442
Web: www.henningstrains.com/NPOG

Other Club Info.

Liberty Hi-Railers

The Liberty Hi-Railers is an O gauge hi rail modular railroad club. They are a group of model train enthusiasts who simply enjoy having fun while running trains. The club meets at train shows through the year to display their modular layout.

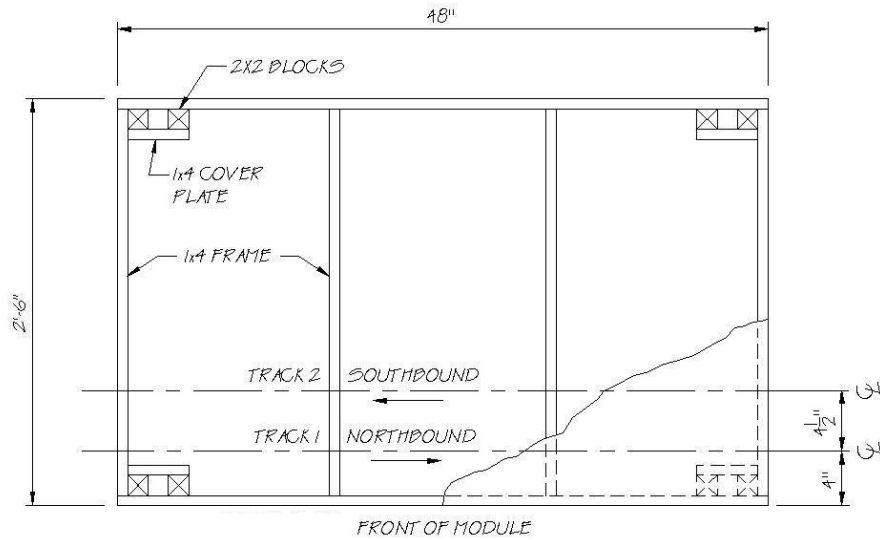
Web: www.liberty-hi-railers.com
 John Devlin, Email: jdevlin42@comcast.net
 Bill Parkinson, Email: bill_parkinson@yahoo.com



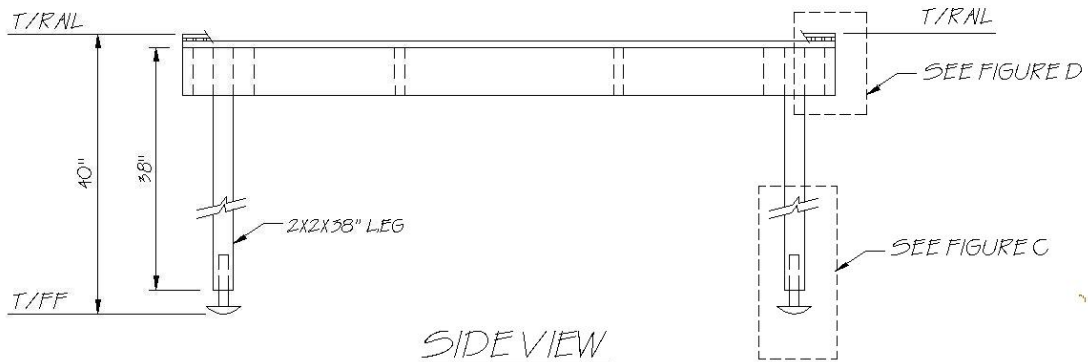
North Penn S Gaugers

The North Penn S Gaugers is a modular club established in 1998 to encourage S gauge model railroaders in the North Penn area. They welcome both S scale modelers and American Flyer operators and collectors to their group.

Alex Larkin, Email: alexj42sflyer@comcast.net

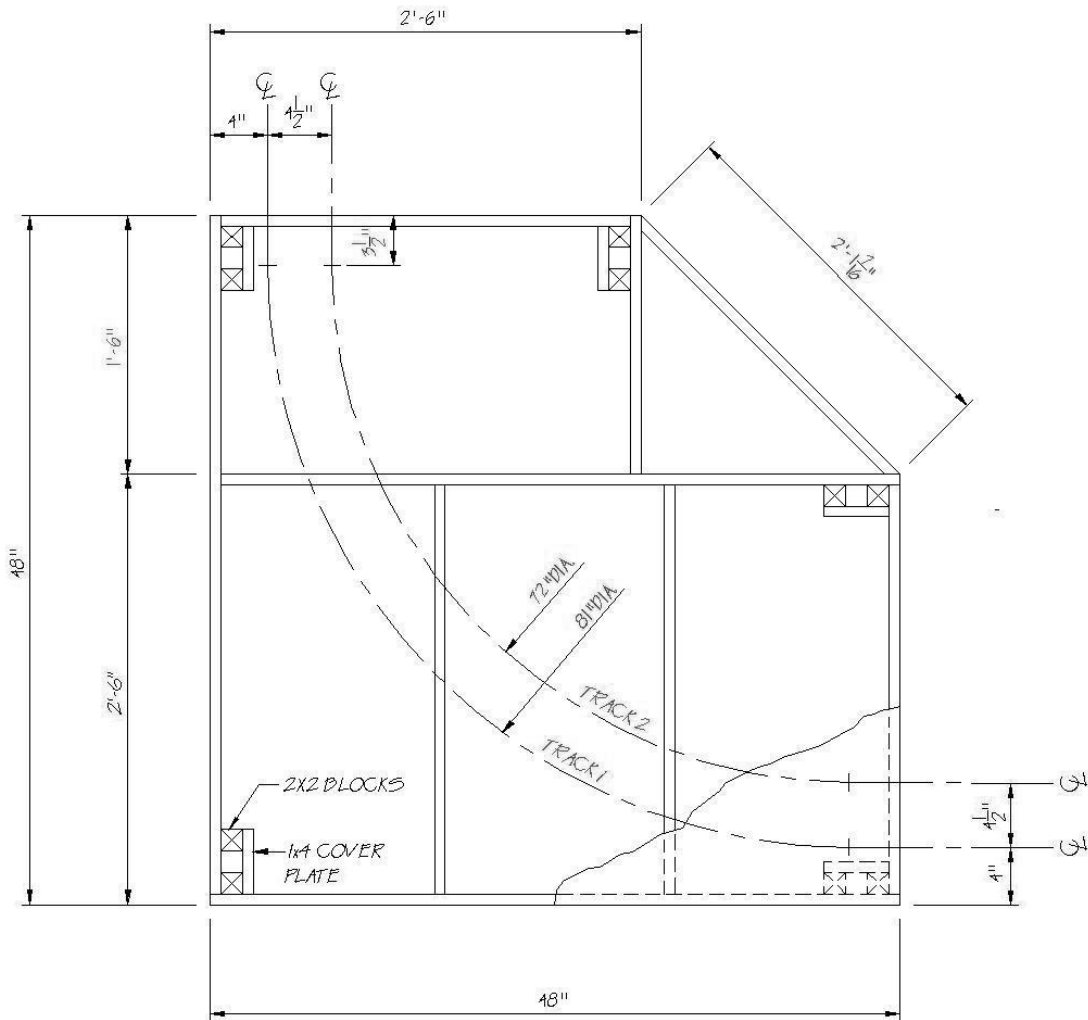


STANDARD STRAIGHT MODULE
TOP VIEW



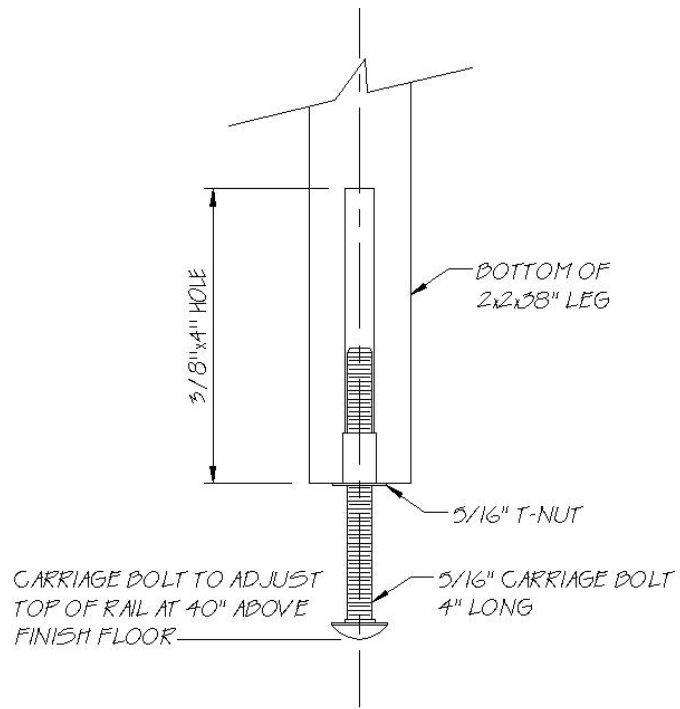
SIDE VIEW

FIGURE A



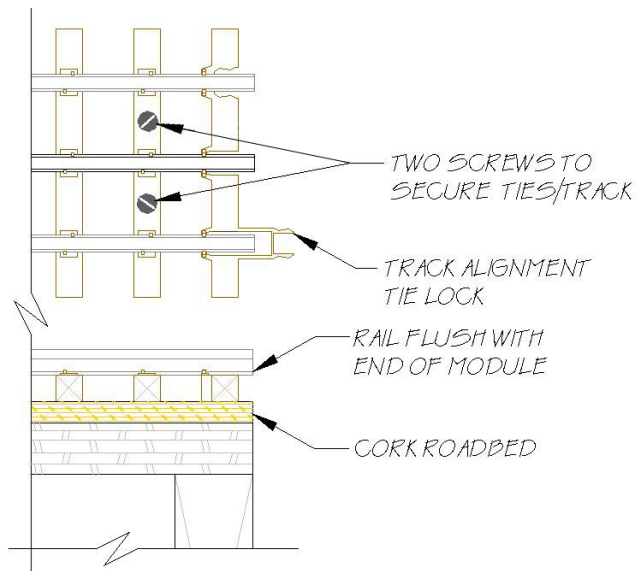
STANDARD CORNER MODULE
TOP VIEW

FIGURE B



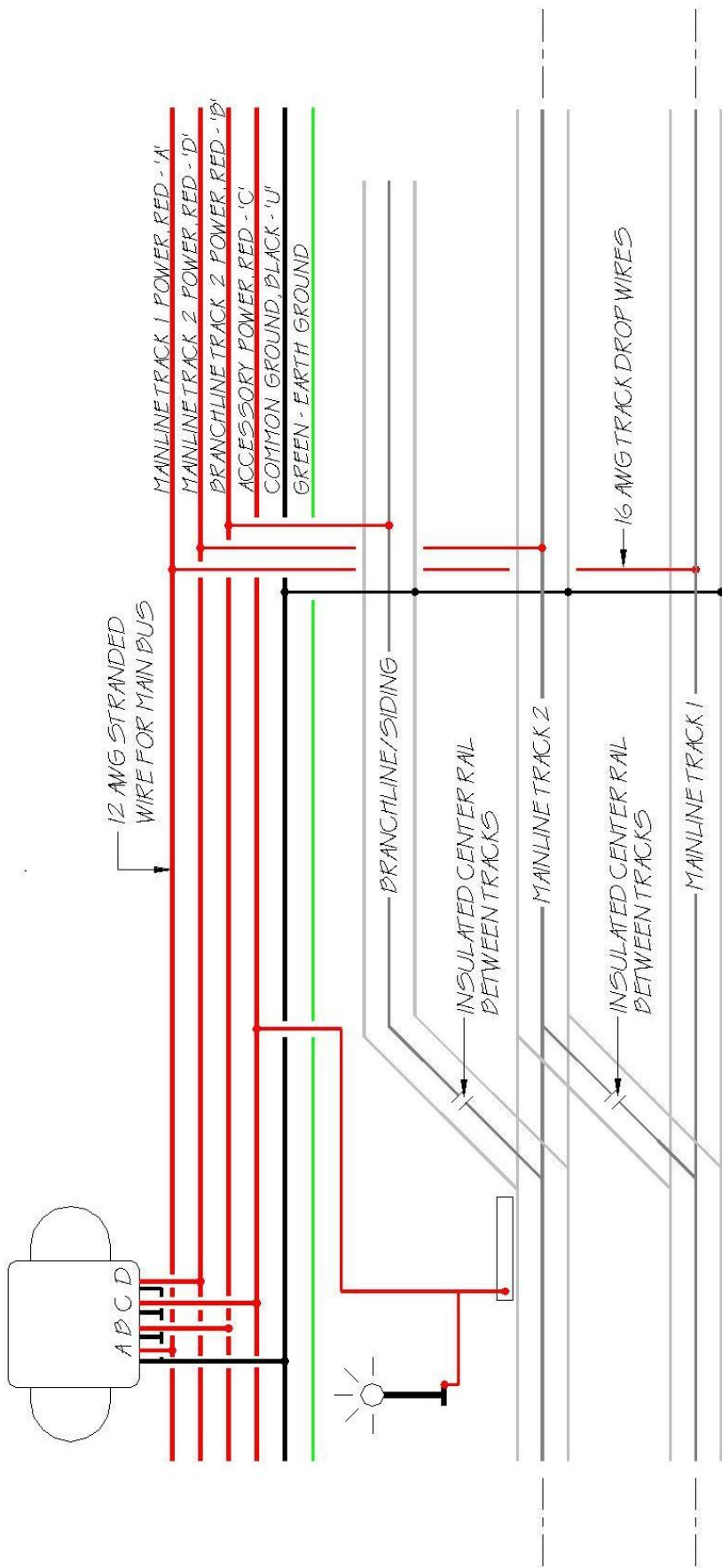
LEG ADJUSTER DETAIL

FIGURE C



TRACK DETAIL

FIGURE D



FRONT OF MODULE

FIGURE E

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