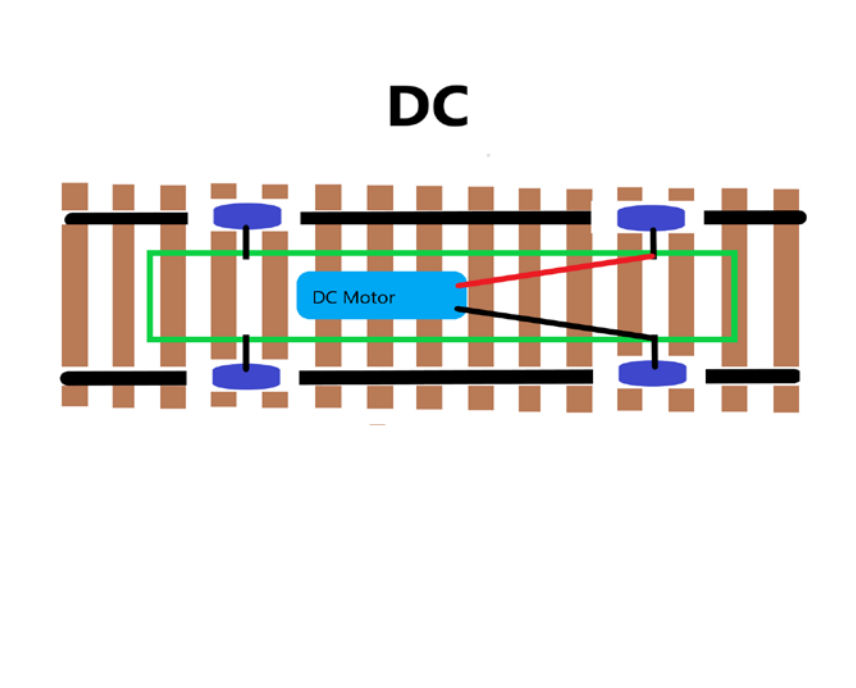
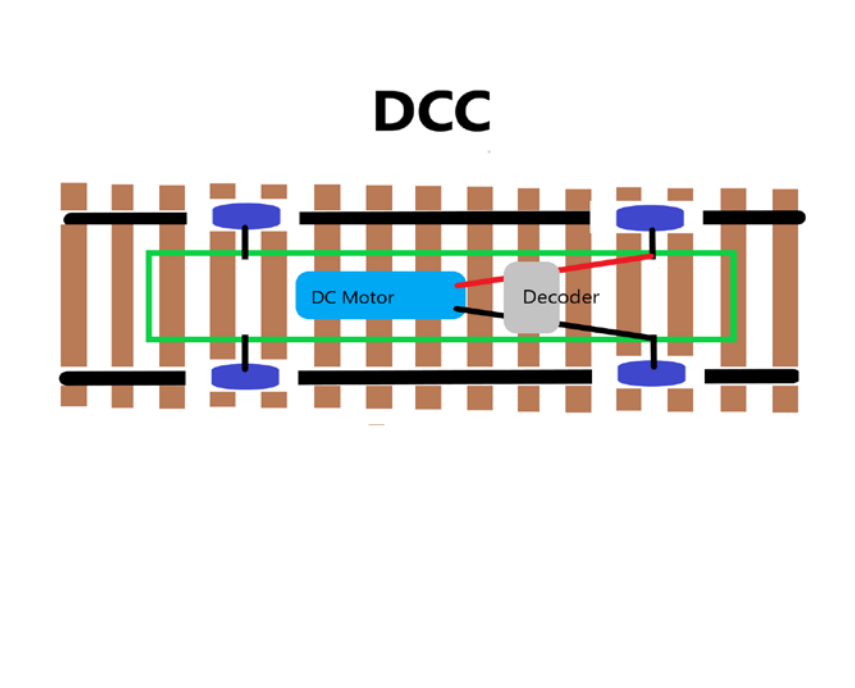
MODEL RAILROAD WIRING

PURPOSE OF WIRING:

- Provide reliable power to operate locomotives on the layout
- Provide power to operate track logistics: switch machines, signals, loconet
- Provide power to accessories: building lights etc.

LOCOMOTIVE BASICS





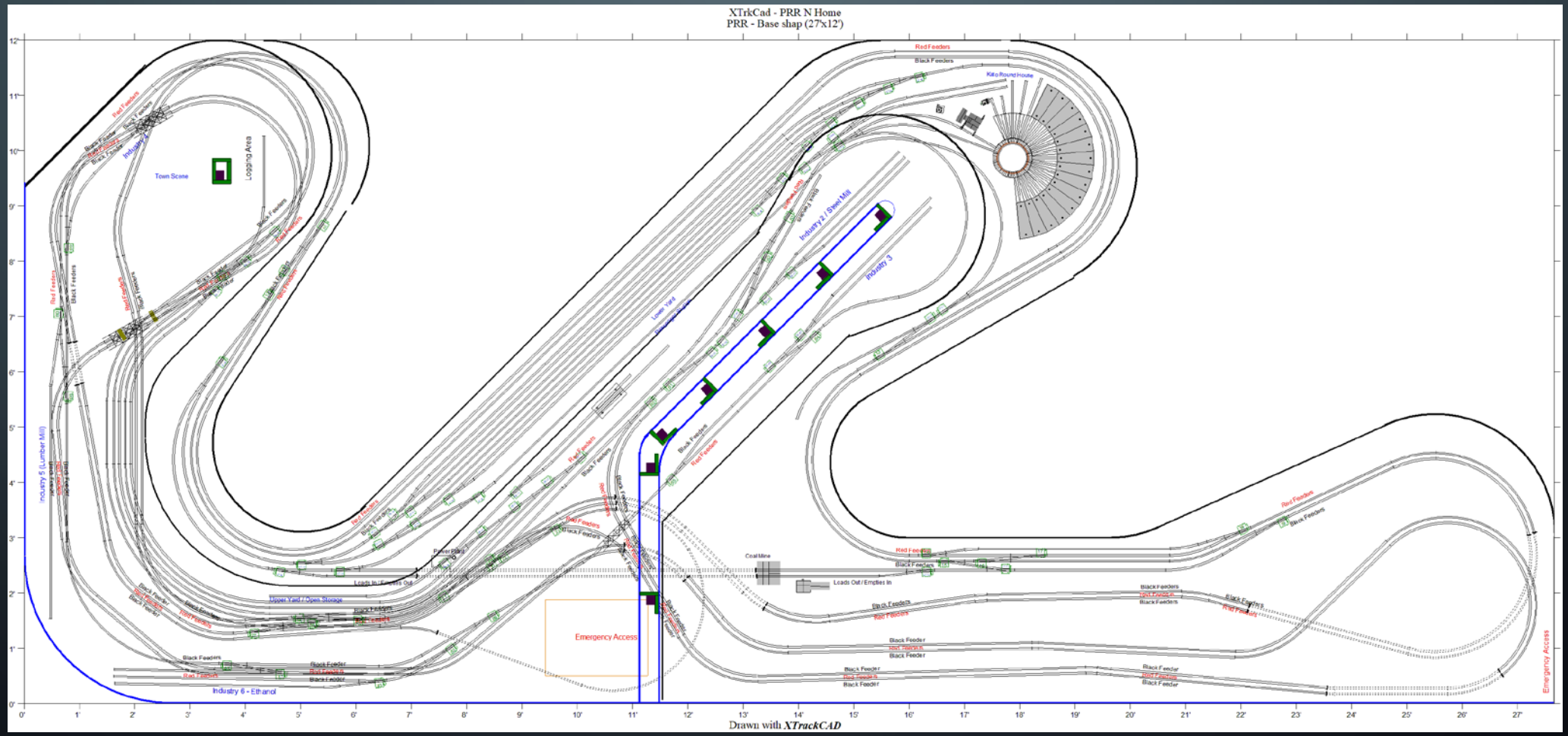
DEVELOP WIRING PLAN

- DC or DCC
- How large is the layout
- Districts
- Power supplies
- Switch machines
- Signaling

WIRING PLAN DEVELOPMENT

- Use actual track plan or schematic to plan districts
- Decide on bus wiring layout
- Identify any reverse loops
- Determine # of switch machines required
- Decide on wire colour and connection standards – Stick to them!

WIRING PLAN DEVELOPMENT

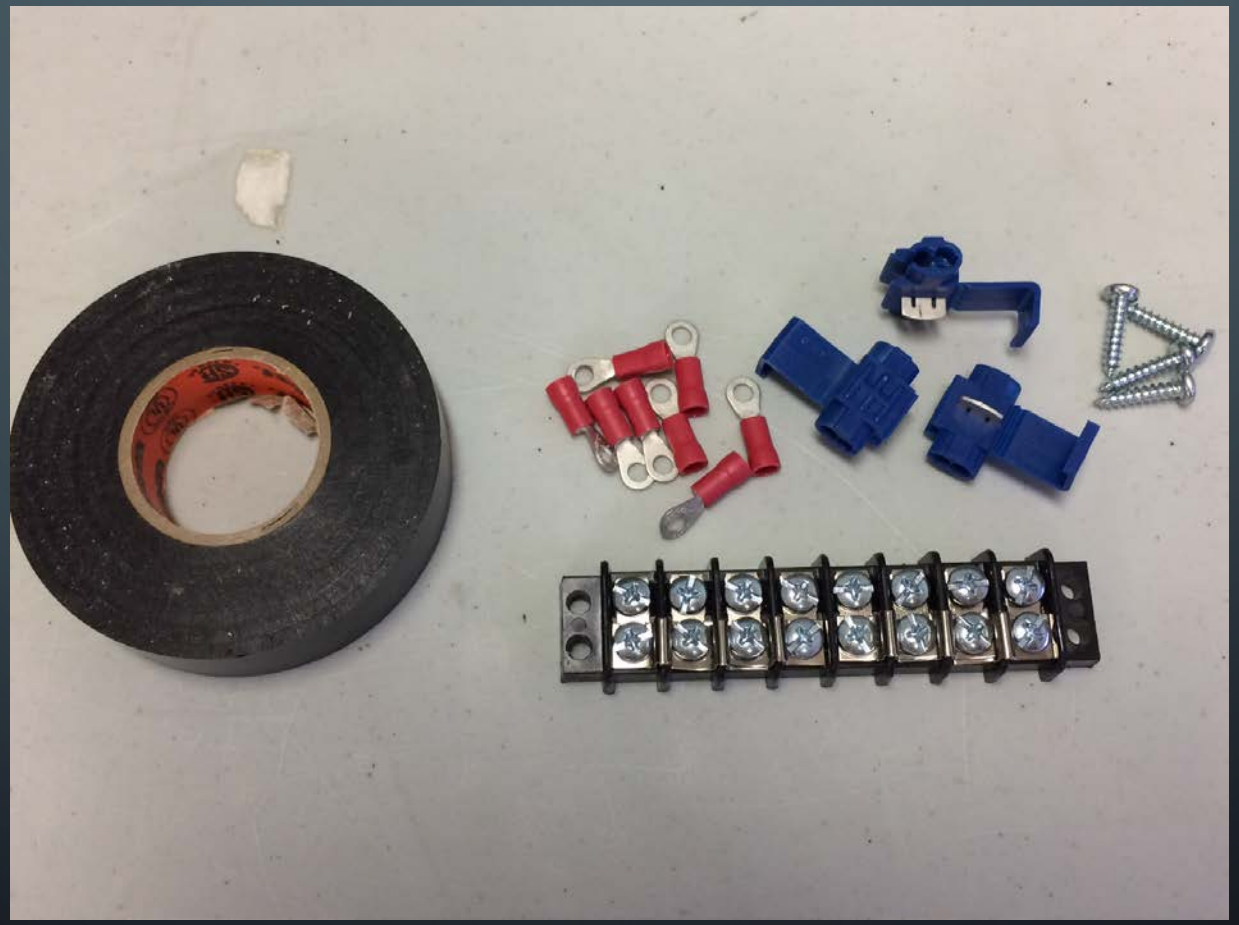


WIRING PLAN DEVELOPMENT

- Lower Main Lines: Red/Black , Blue/Black
- Lower yard : Yellow/Black, Upper Yard Grey/Black
- Upper Main: Orange/Black
- Branch Line: Green/Black
- Switch machines: Purple/Black
- DC accessories: Brown/White

TOOLS

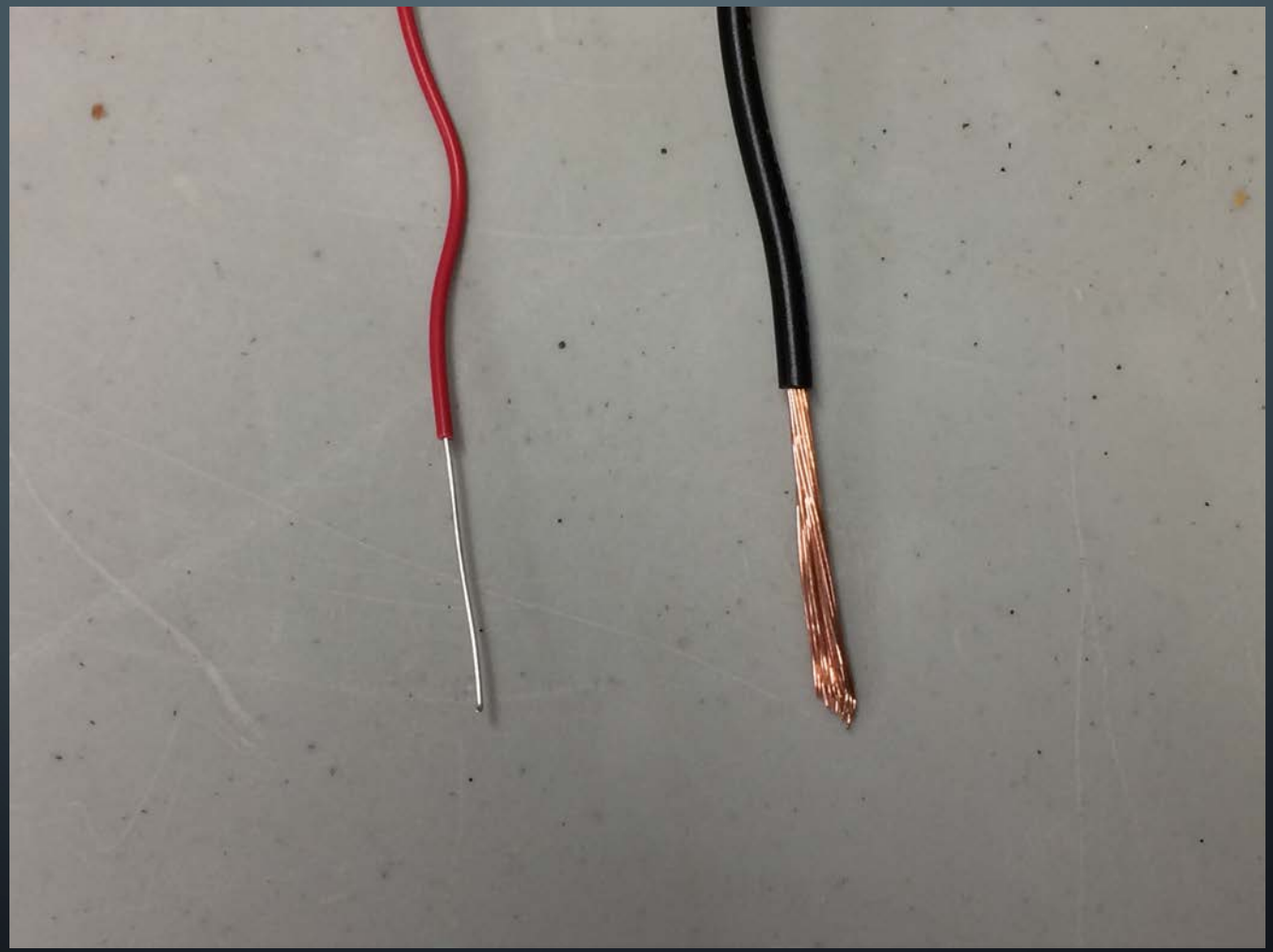
HARDWARE



WIRE SIZES

- AWG sizes: bigger the # , smaller the wire
- Bus wire: #12 or #14 (stranded)
- Feeder wire #18-22 (solid)

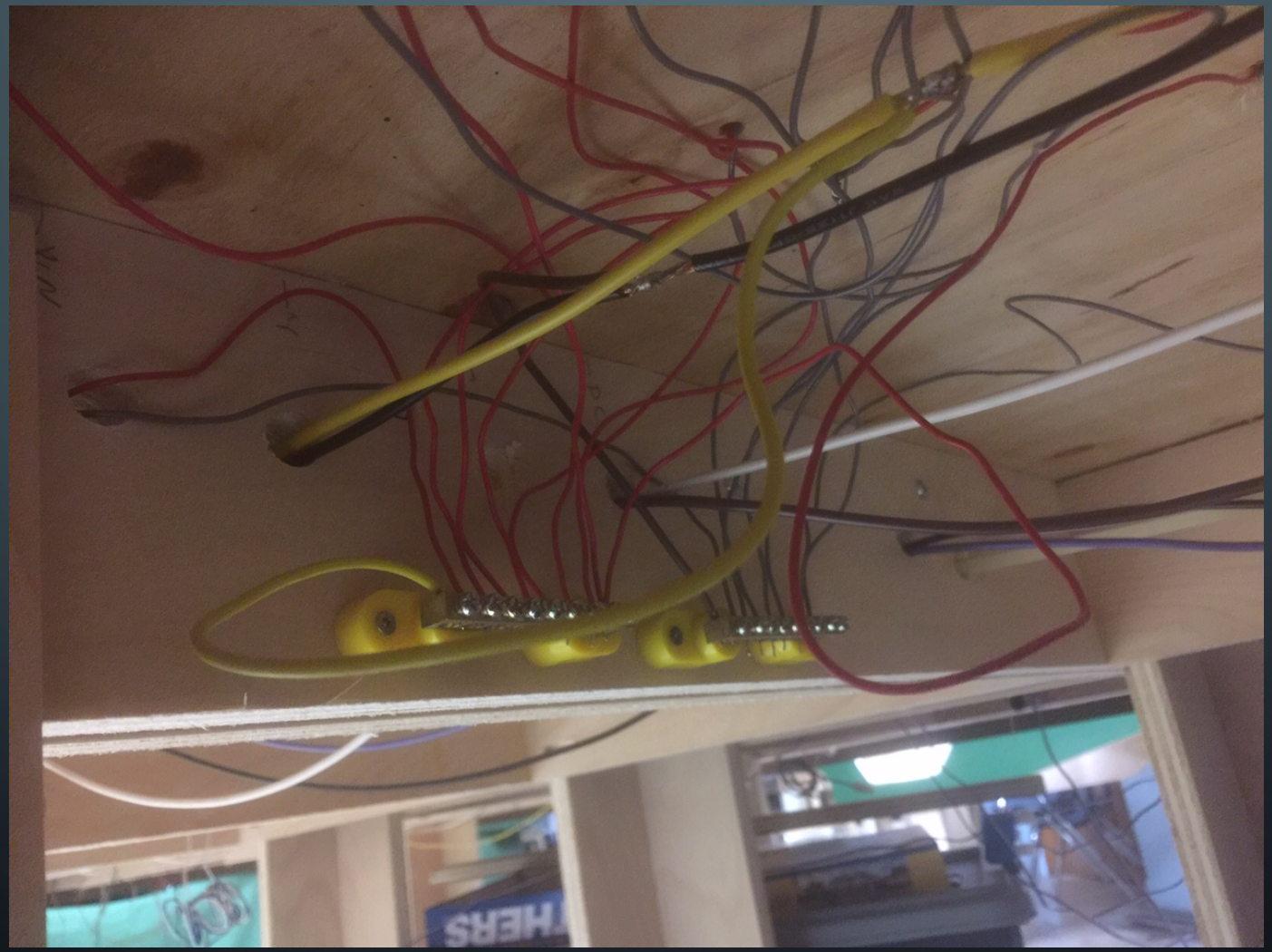
WIRE SIZES



BUS WIRING

- Plan routing to minimize feeder lengths
- Use wire colour scheme decided on in wiring plan
- Easier to run bus wires before top installed on benchwork

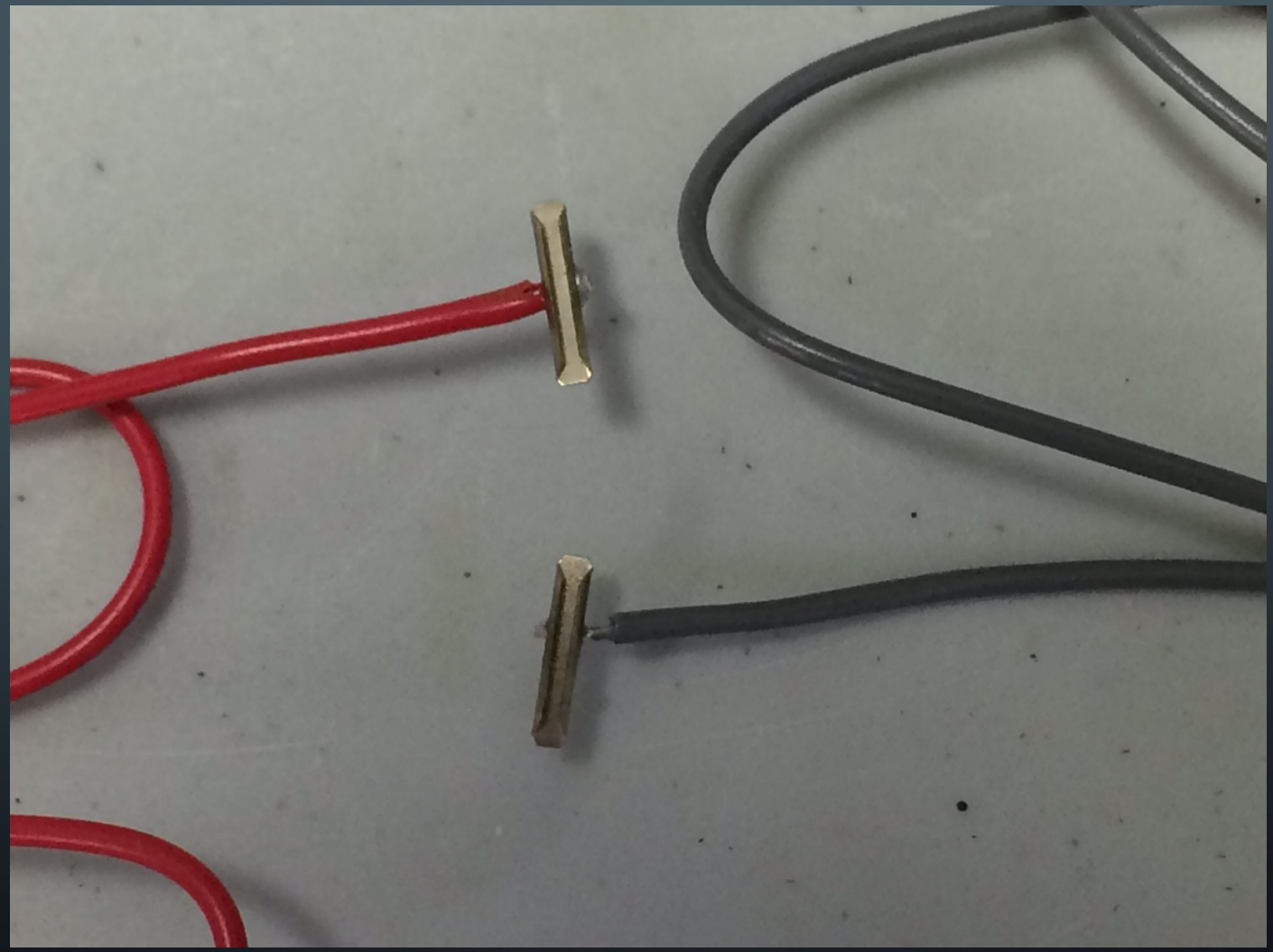
BUS WIRING



FEEDER WIRING

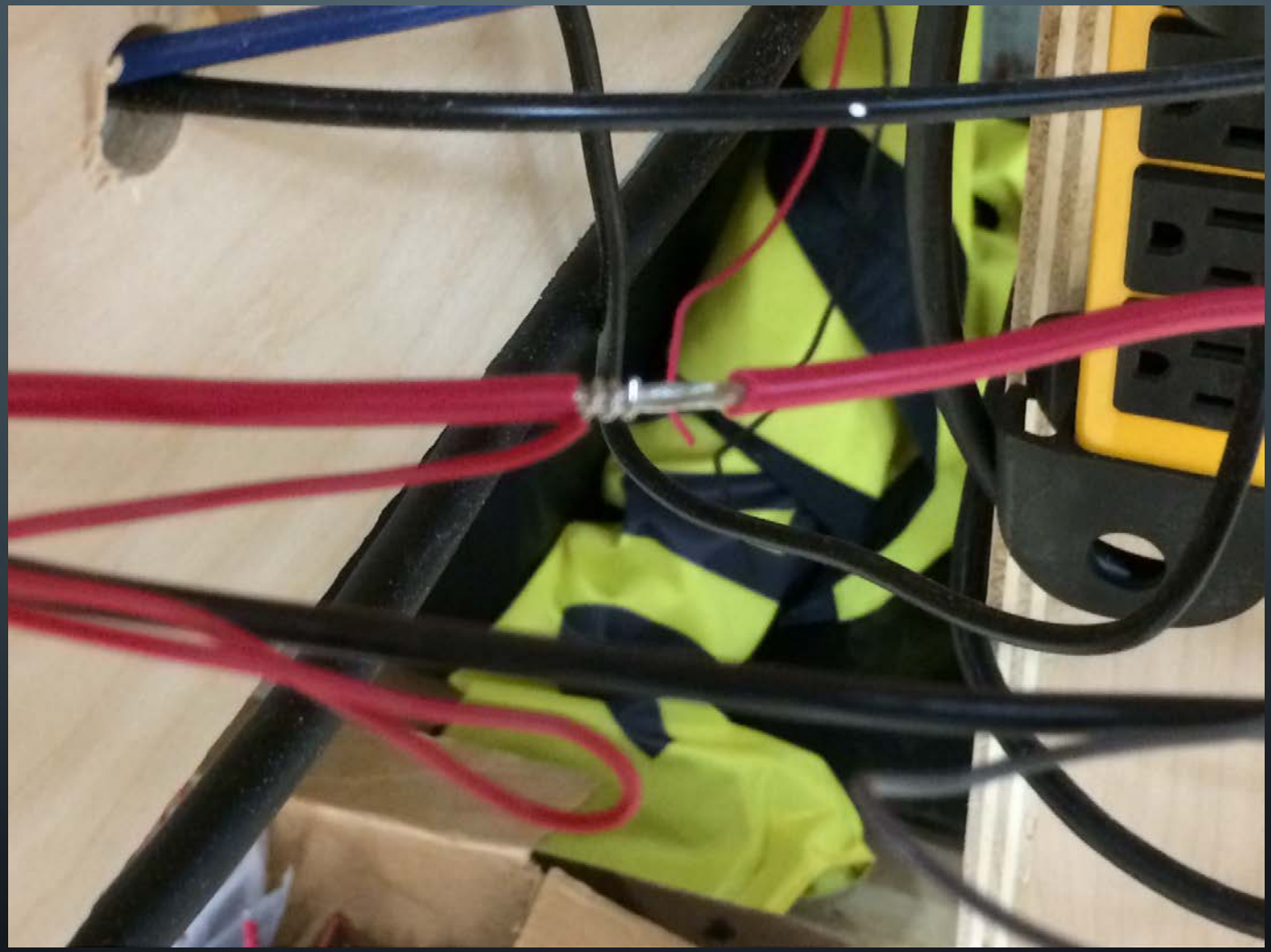
- Use small size solid wire
- Keep to colour standard in plan
- Minimize length of feeder
- Install feeders approx. every 6 ft along track

FEEDER WIRING

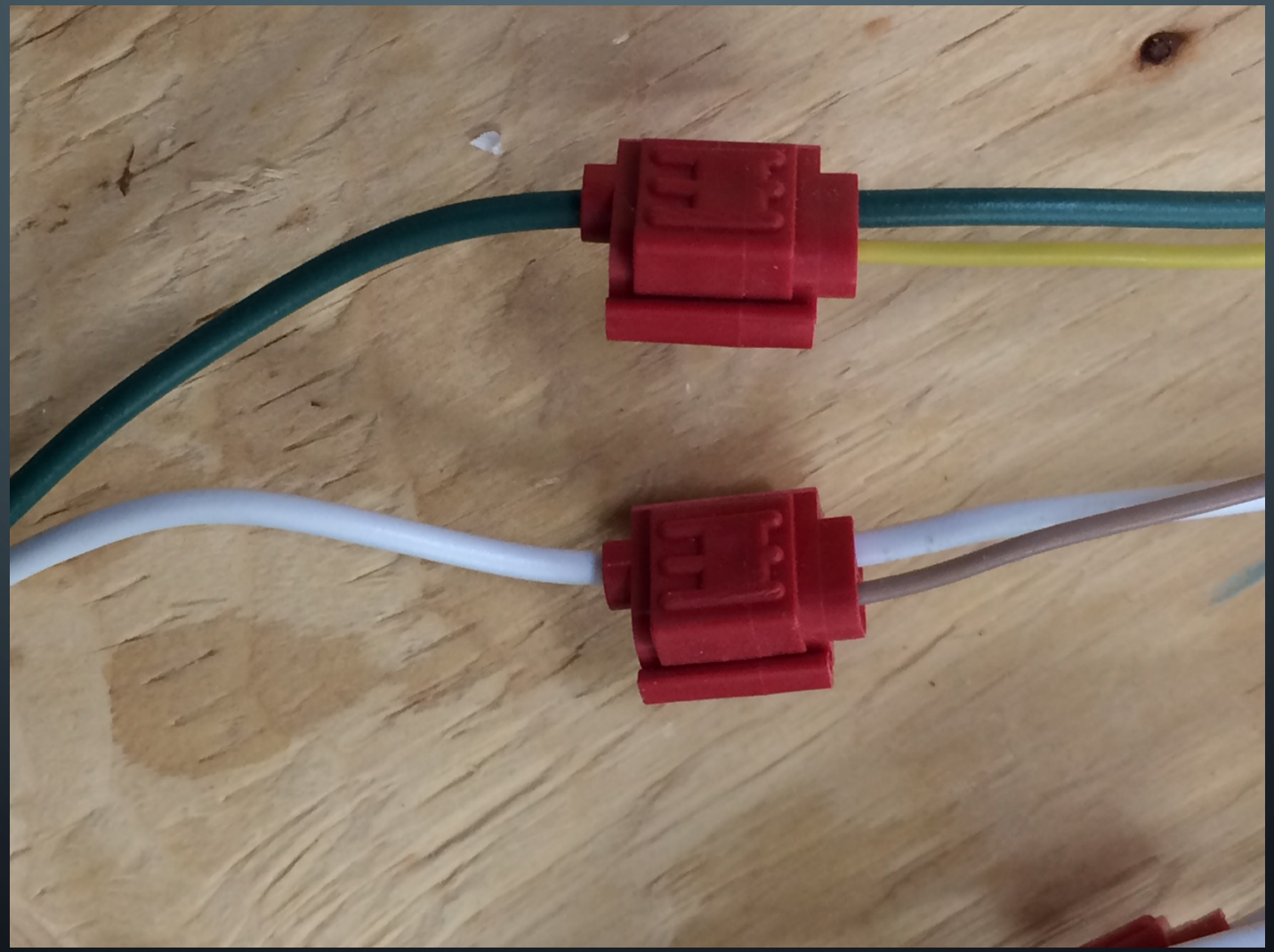


FEEDER WIRING

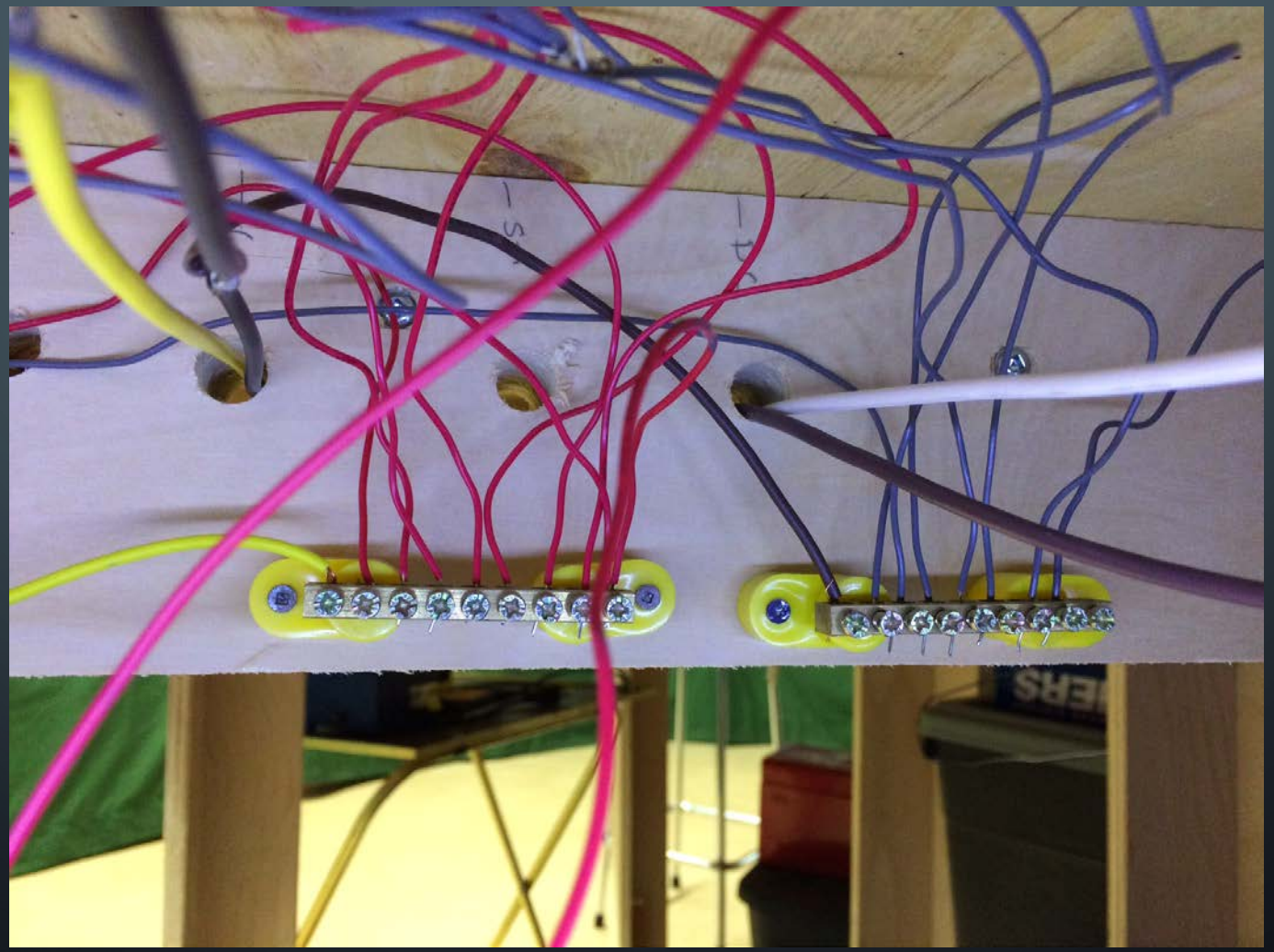
FEEDER WIRING



FEEDER WIRING



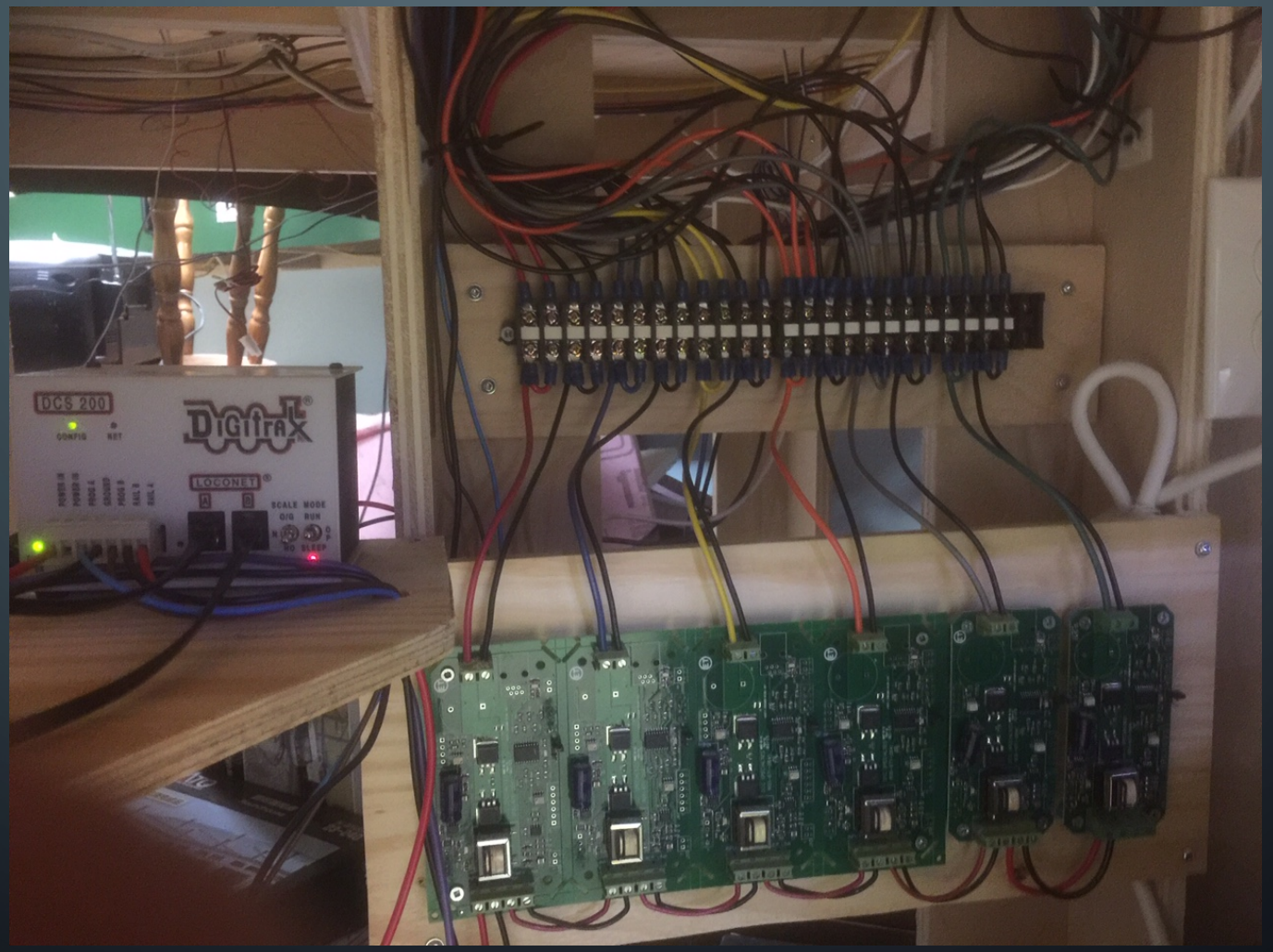
FEEDER WIRING



DISTRICT WIRING

- Prevent short circuits from shutting down whole layout
- Each district must be electrically isolated
- Fed by separate booster or circuit breaker

DISTRICT WIRING



SWITCH WIRING

- Recommend that frog be isolated
- Frog may require separate feed

SWITCH MACHINES

- Run separate bus for switch machines
- Use separate power supply

WIRING PRACTICES

- Take your time
- Wire one section at a time, then test
- Stick to your standards – don't compromise