

TALKIN'

TALKIN'
About the Yellow Bus

NOT this "yellow bus"!!



Professor Choo Choo

T-TRAK 101



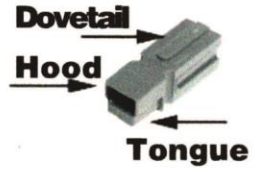
The YELLOW bus can
be the source of
many T-TRAK layout
wiring problems.



NOT this "yellow bus"!!

NTRAK modules. This is fully explained in this copy of the How-to Book.

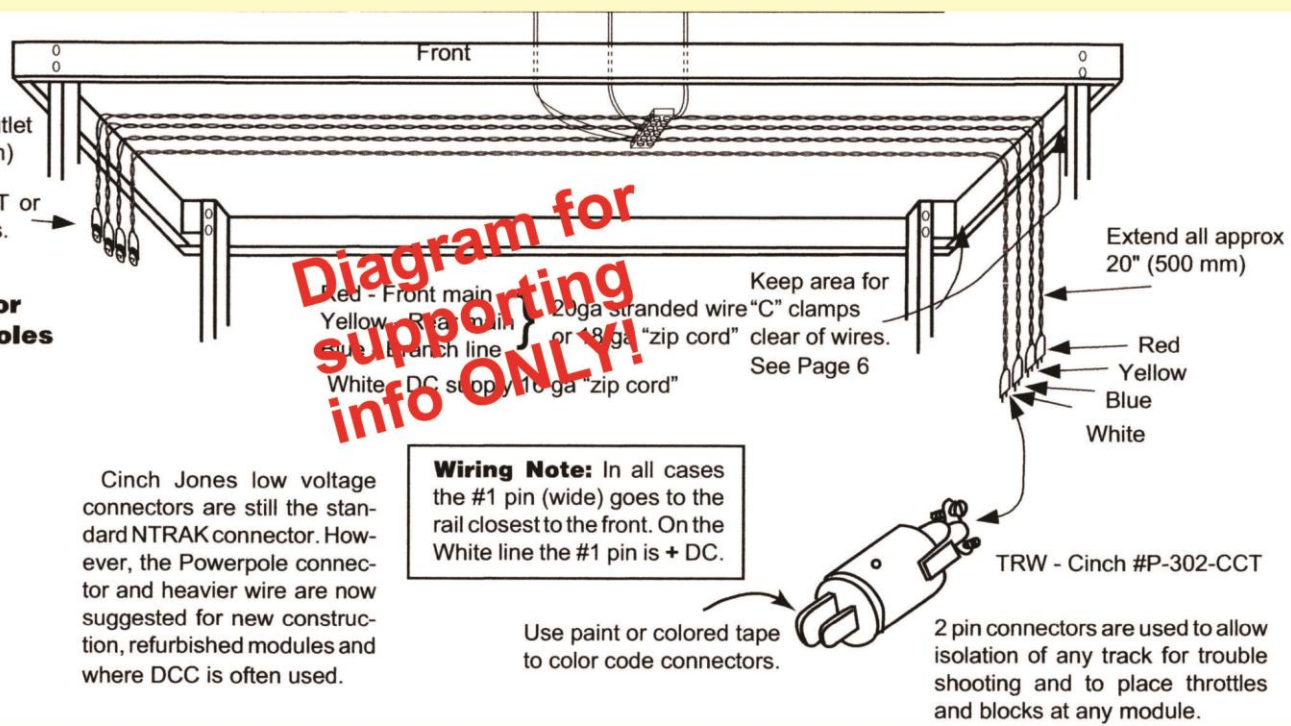
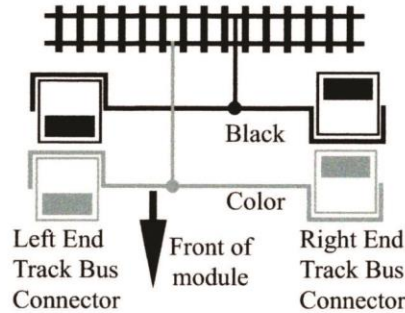
Powerpole Connector



Keep sockets and outlet in center 12" (305mm)

TRW - #S-302-CCT or on short length wires.

See Page 11 for more on Powerpoles



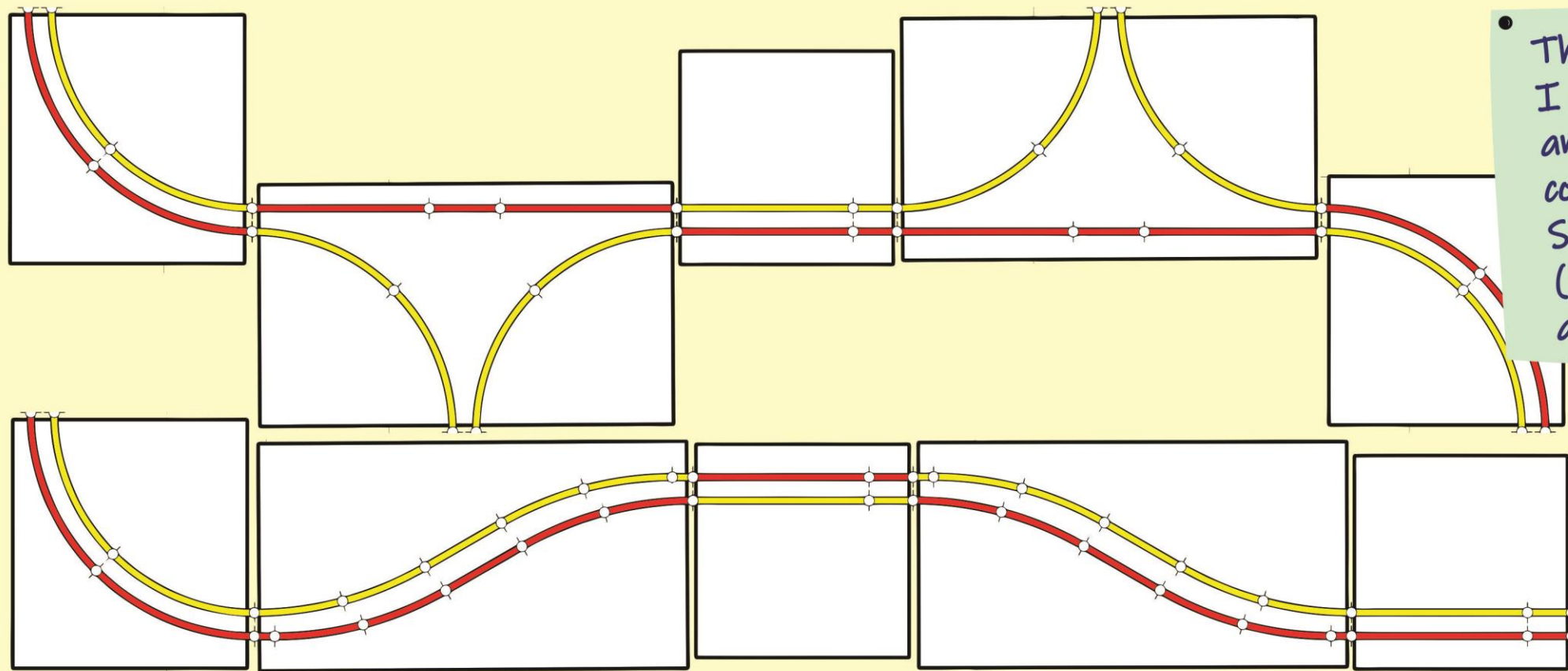
Cinch Jones low voltage connectors are still the standard NTRAK connector. However, the Powerpole connector and heavier wire are now suggested for new construction, refurbished modules and where DCC is often used.

Wiring Note: In all cases the #1 pin (wide) goes to the rail closest to the front. On the White line the #1 pin is + DC.

Use paint or colored tape to color code connectors.

2 pin connectors are used to allow isolation of any track for trouble shooting and to place throttles and blocks at any module.

Other modular formats, such as NTRAK, have modules that include ready installed individual power supply busses for each "MAIN" track (and others depending on format). Not only do the tracks simply plug together by the rail joiners but the bus work simply plugs into the next module also. Due to the design of the bus connectors all NTRAK modules connect left end to right end only. Module reverse positioning is not possible. (Why would you want to? More later) Unfortunately T-TRAK modules only have track feeder connections without power busses. The power busses must be recreated each time a T-TRAK layout is built. That, plus the BWWB wiring standard, leads to much of the confusion experienced when wiring our large (and sometimes not so large!) show layouts. (especially if some module installations are unique!)



This is why I don't wire and color code corners and SJ junctions! (Not needed anyway!)

Due to the BWWB wiring standard and the lack of fixed power bus connections our T-TRAK world is full of options and opportunities. Our modules can be installed into a layout any which way regardless of red/yellow track designations and their colored leads. We just need to know which red leads go to the red bus, or the yellow bus: which yellow leads go to the yellow bus or the red bus. First we must determine which is the red track and which is the yellow track. Our outside corners can be inside corners (the large 480/447 mm corners are a perfect fit either way) and junctions can also be installed two ways, not to mention reversed straights!



For this presentation I will simulate the use of the KATO 3-Way Extension Cords. These bags of about 2 dozen each of red and yellow marked extension cords are part of my train show equipment stash to supply most smaller layouts. Since T-TRAK modules are not supplied with installed busses it would be really nice if modelers would bring their own 3-Way Extension Cords; 2 for each module. At 35 inches long they are short for triple length modules but plenty long enough for singles and doubles. Although not all modules may be connected to the layout bus, the more the better!

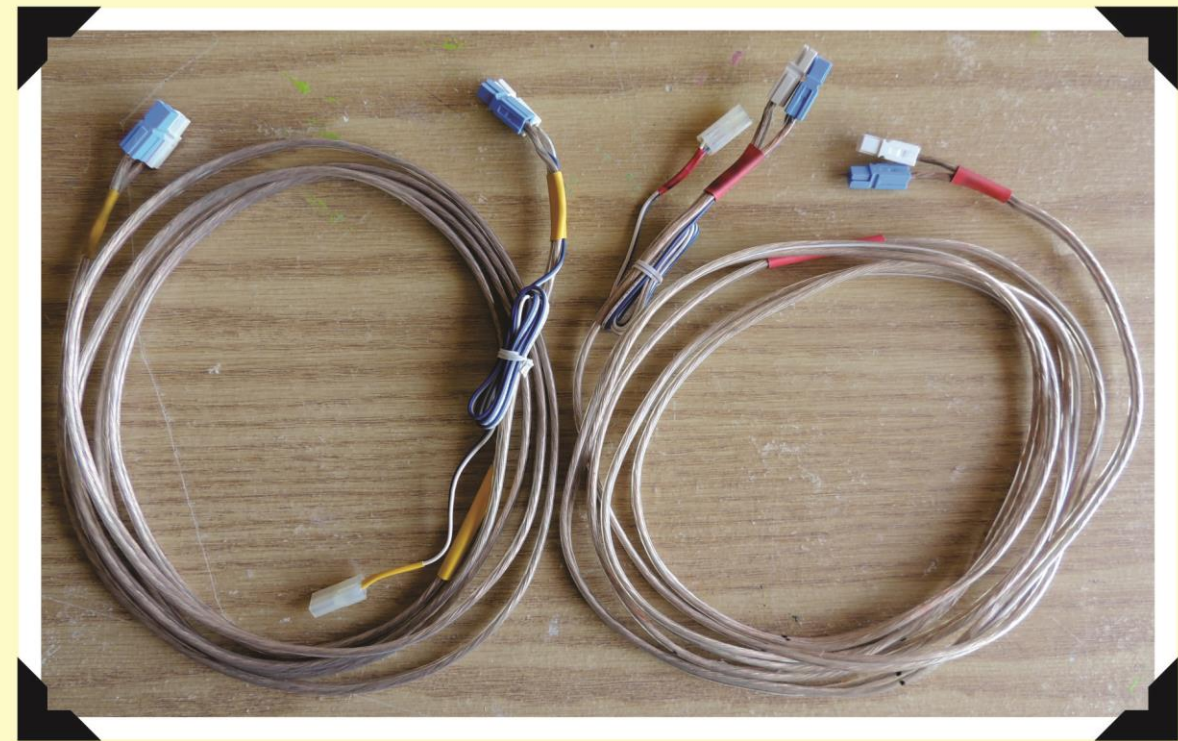
A quote from the N^Rail T-TRAK Standards and Recommended Practices . . .

“Track Bus – The power to the tracks is carried from the control unit to the layout through one or two 12-gauge cables usually in the form of zip cables. The track bus normally lays in the trough created between the backs of the modules placed on either side of the layout table. There should be a Track Bus cable for each track (Red and Yellow) to maintain electrical isolation between the tracks; however, if the layout is all DCC-powered either one or two track buses may be used. Feeder Connectors come off the Track Bus to allow connection to individual modules. Recommended Practice is for bus cables to have various lengths, from 1’, 2’, 4’ up to 10’ maximum in length with 6 –12” feeder cables. There should be at least 1 module connected to the bus every 6’-8’ on the layout(1/side on an 8’ table).”

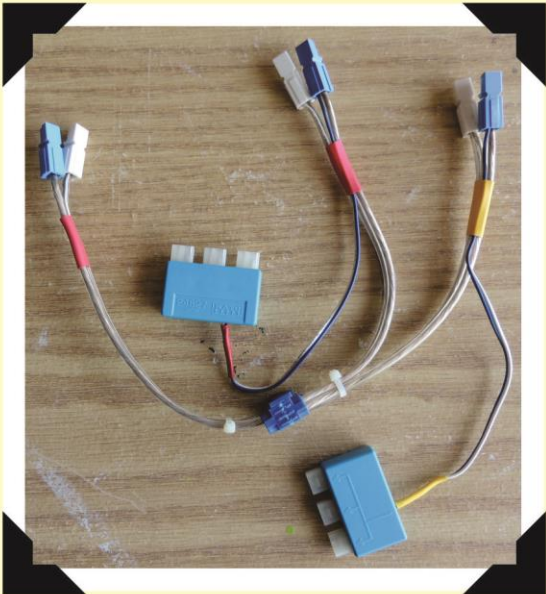
“Note: On smaller layouts (1–2 tables), the Track Bus may consist of Kato electrical components”

Note that the blue and white Powerpole connectors are not attached to each other allowing optional connections

This way there is no left or right end to the cable. The important thing is that the blue connectors connect together and the white connectors connect together **UNLESS** the cable connection is the reversal of Yellow bus supply to create the pseudo BWBW condition!!



Heavy cable bus sections for large layout long bus runs



Heavy cable bus wye for supplying the Yellow bus from the Red bus supply. Can create BWWB or BWBW Yellow bus condition depending on wiring options

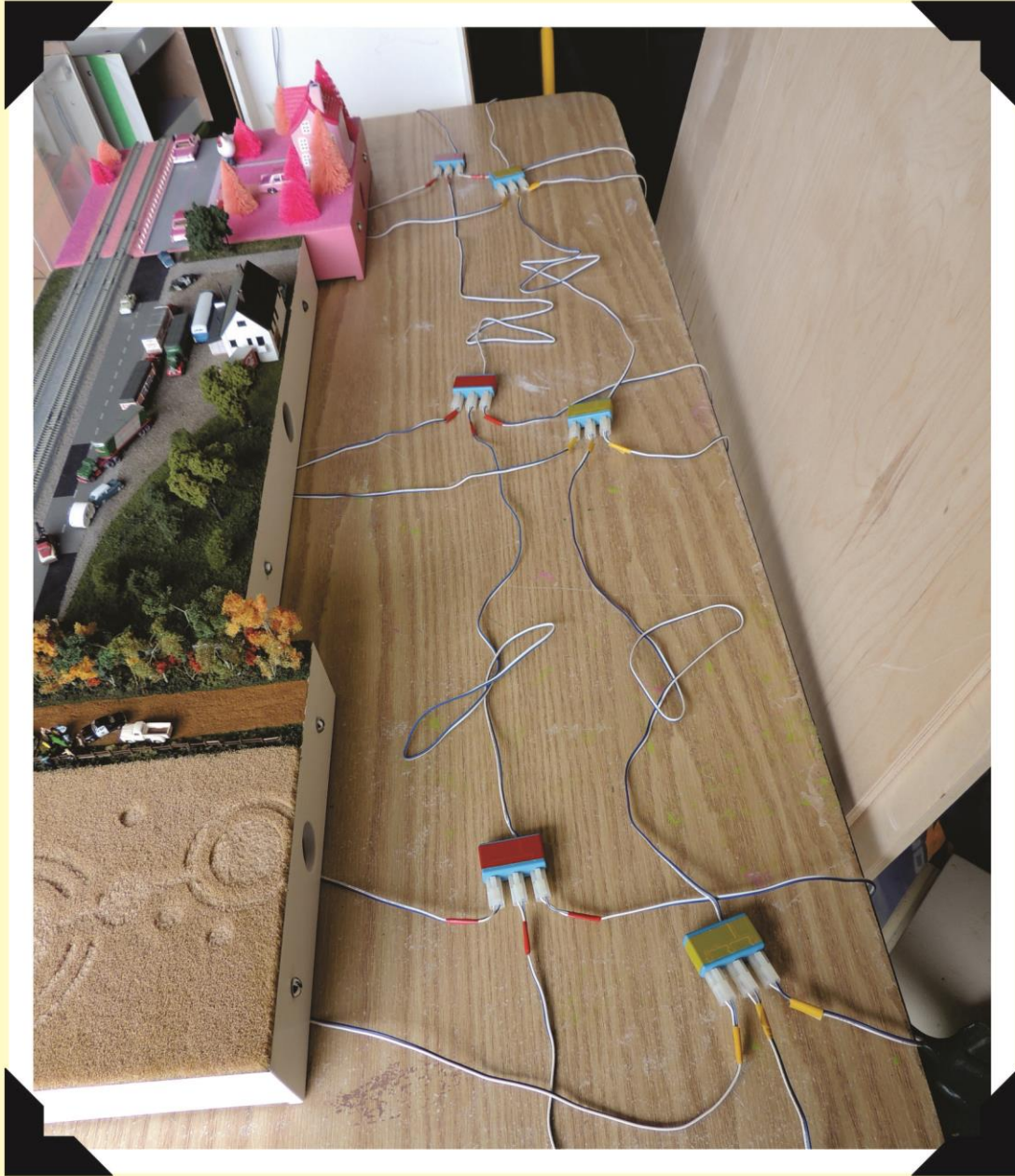


When placing modules on the tables as the layout is being built please pull the module track feeders straight out the back of the module so that it can be clearly seen which module they supply.

Some layouts may require the leads pulled out from the front or the red lead out front and the yellow lead out back!

Consider this photo as one table row of a two table wide installation or only one side of a single table row without the second row of modules for clarity.

(Those 14 inch deep modules when placed back to back on single table rows make wiring difficult!)



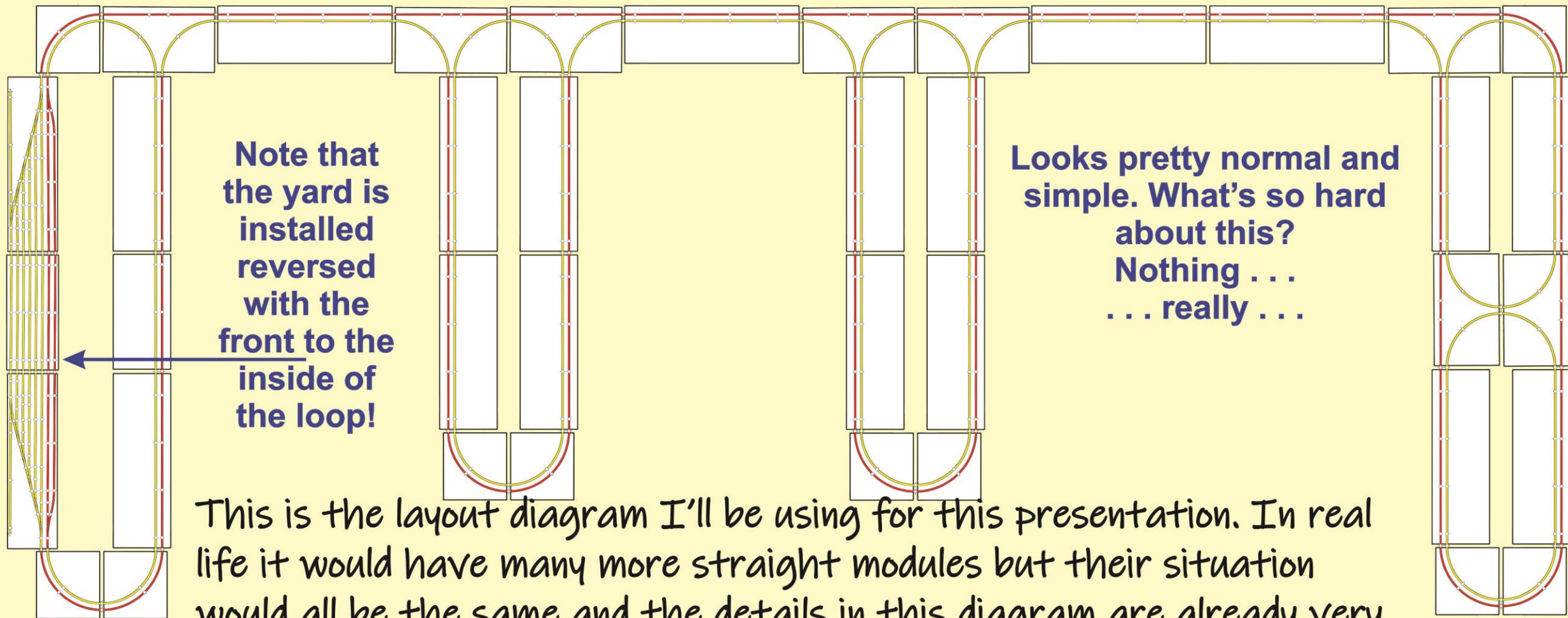
The same "layout" after the busses are created and the modules connected using the KATO 3-Way Extension Cords. This is the style of wiring I will show in the following diagrams.

Here you can see the leads going off the table to the right that indicate the module leads from the other row of modules in a loop.

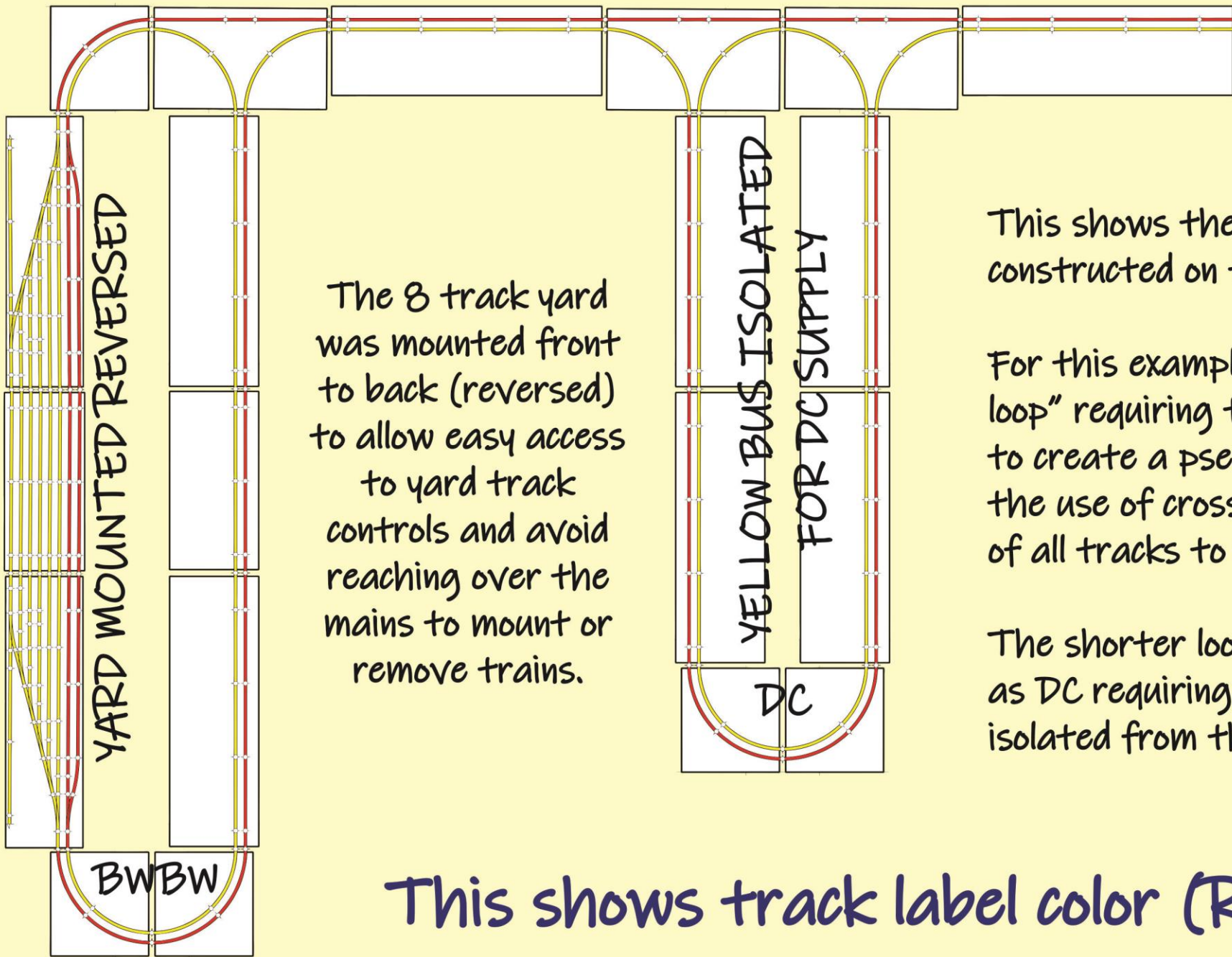
The busses continue off the table at the top and bottom representing the bus continuation.

This is basic wiring using both red AND yellow busses.

For large layouts heavy cable bus sections may be used but some KATO 3-Way Extension Cord wiring may be included.



This is the layout diagram I'll be using for this presentation. In real life it would have many more straight modules but their situation would all be the same and the details in this diagram are already very small. The designated "RED" or "YELLOW" tracks are indicated as per T-TRAK standards. "Normally" I don't designate or wire corners or junctions as to "RED" or "YELLOW" tracks but with the creation of large junctions with the added straight track I suggest the junction curves be considered yellow, the straight red, and corners the outside larger curve red, the inner smaller curve yellow. The added straight on large junctions would be yellow.



the LEFT HALF ...

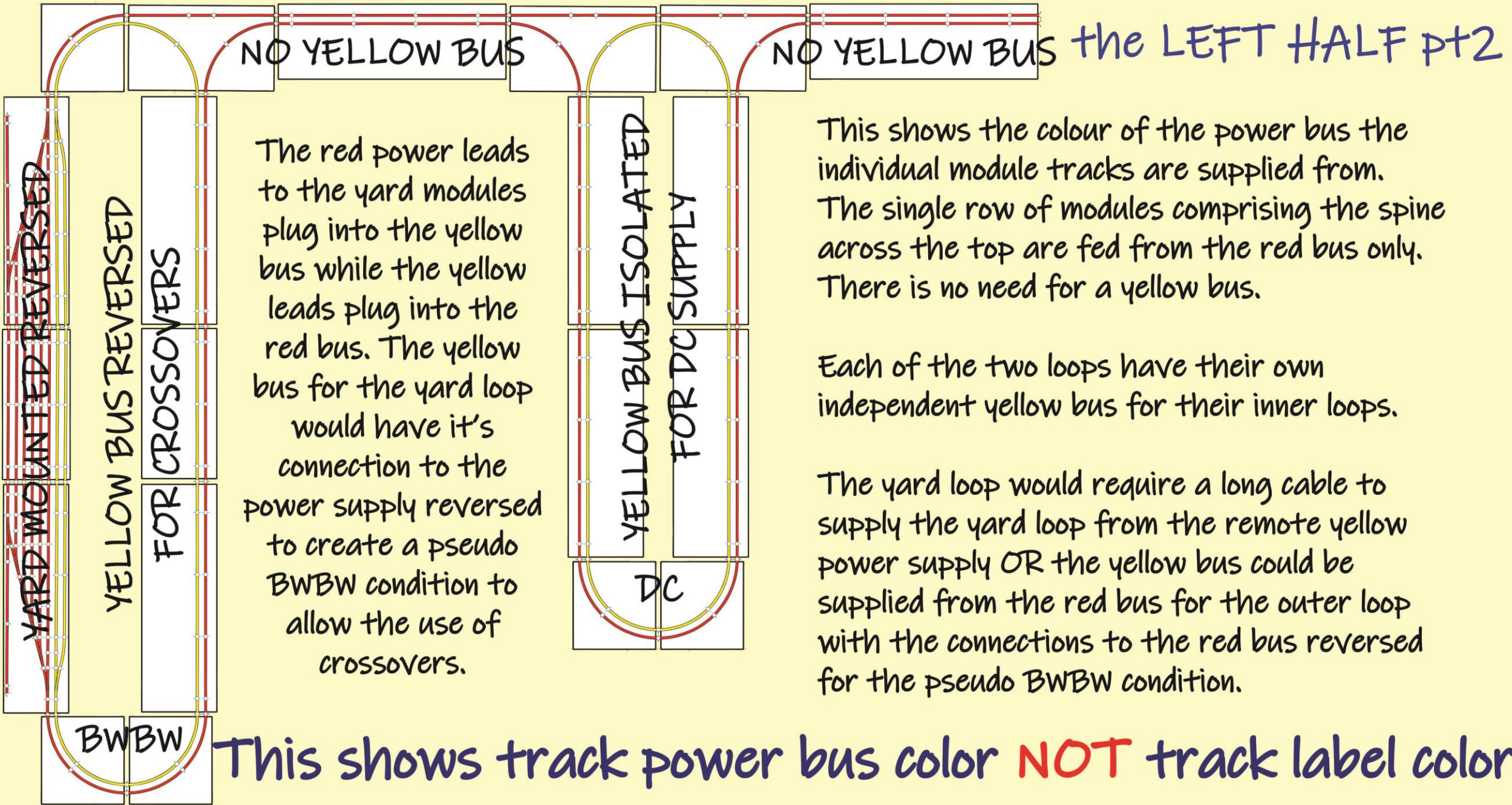
The 8 track yard was mounted front to back (reversed) to allow easy access to yard track controls and avoid reaching over the mains to mount or remove trains.

This shows the red and yellow tracks as constructed on the individual modules.

For this example we will consider the "yard loop" requiring the yellow bus supply reversed to create a pseudo BWBW condition to allow the use of crossovers allowing full access of all tracks to the layout.

The shorter loop will operate the inner loop as DC requiring that yellow bus to be fully isolated from the rest of the layout.

This shows track label color (RED or YELLOW)



The red power leads to the yard modules plug into the yellow bus while the yellow leads plug into the red bus. The yellow bus for the yard loop would have it's connection to the power supply reversed to create a pseudo BWBW condition to allow the use of crossovers.

This shows the colour of the power bus the individual module tracks are supplied from. The single row of modules comprising the spine across the top are fed from the red bus only. There is no need for a yellow bus.

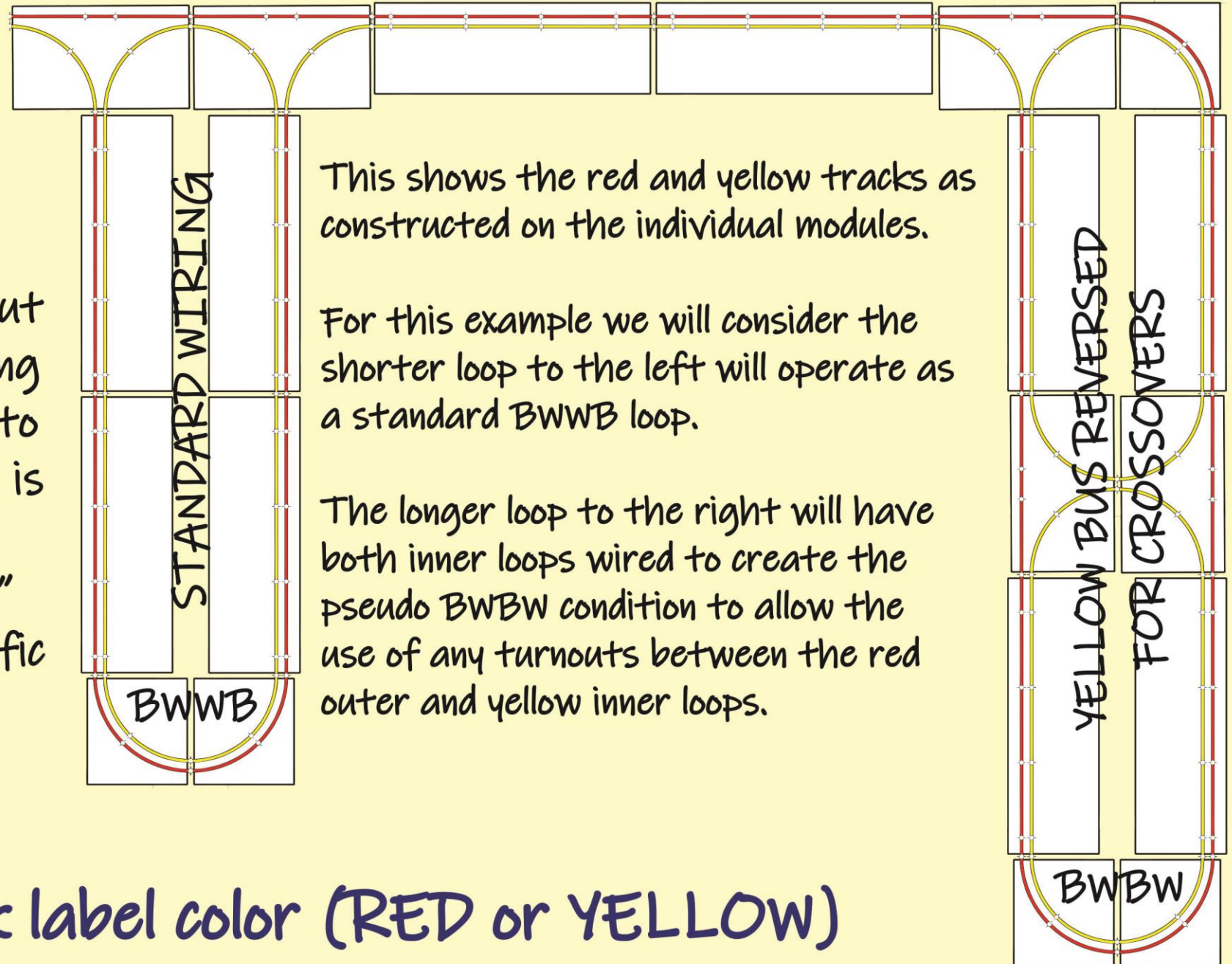
Each of the two loops have their own independent yellow bus for their inner loops.

The yard loop would require a long cable to supply the yard loop from the remote yellow power supply OR the yellow bus could be supplied from the red bus for the outer loop with the connections to the red bus reversed for the pseudo BWBW condition.

This shows track power bus color **NOT** track label color

the RIGHT HALF ...

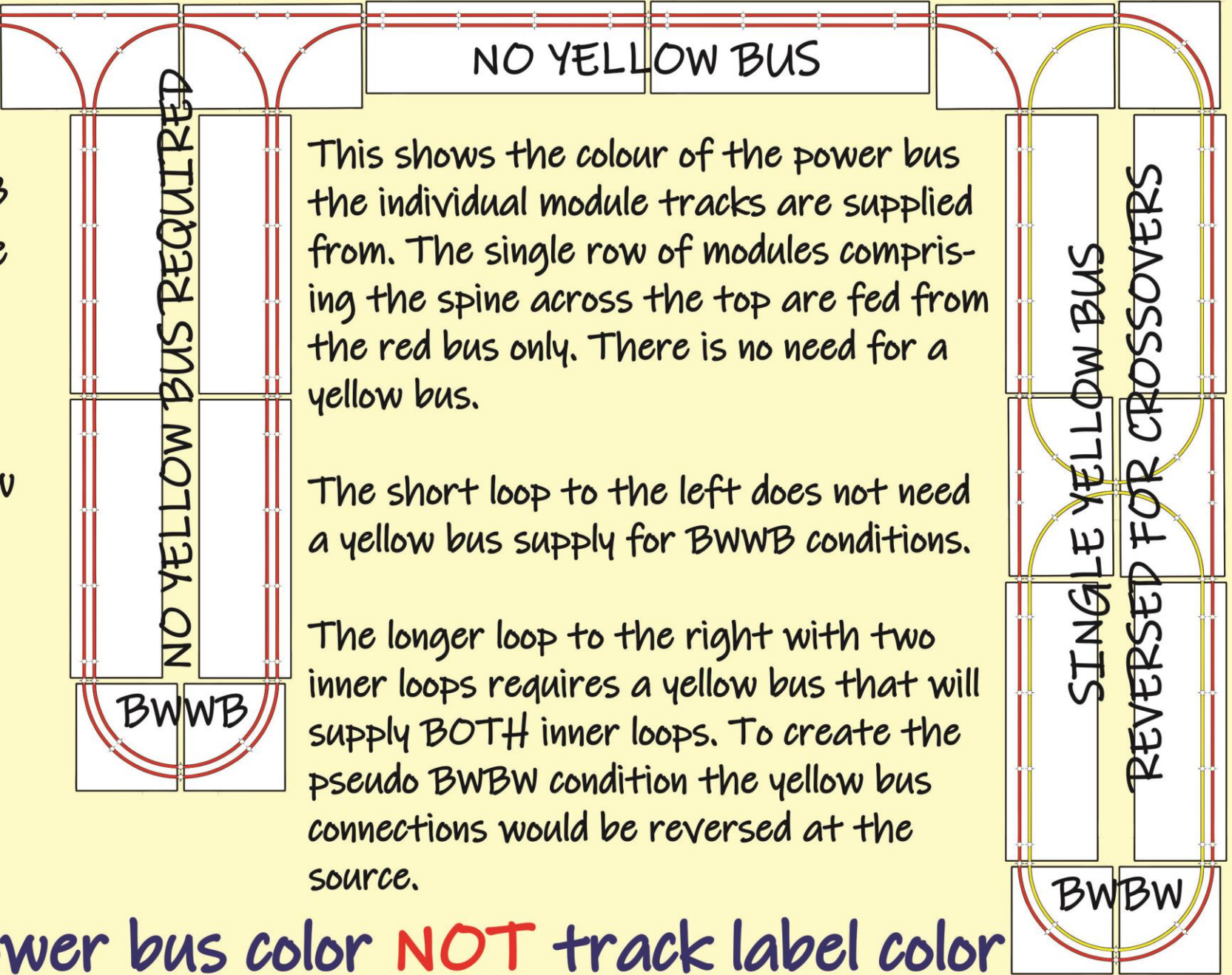
These four scenarios show why it's important to be fully aware of what the layout plan is to ensure correct wiring from the start. Sometimes, to avoid confusion, layout wiring is best left to one person OR separate "Branch Managers" can be assigned to wire specific branches.



This shows track label color (RED or YELLOW)

the RIGHT HALF pt2

Due to the standard BWWB wiring of the short loop the yellow inside tracks and the outer red tracks can be supplied from the red bus. There is no need for a yellow bus for this branch.

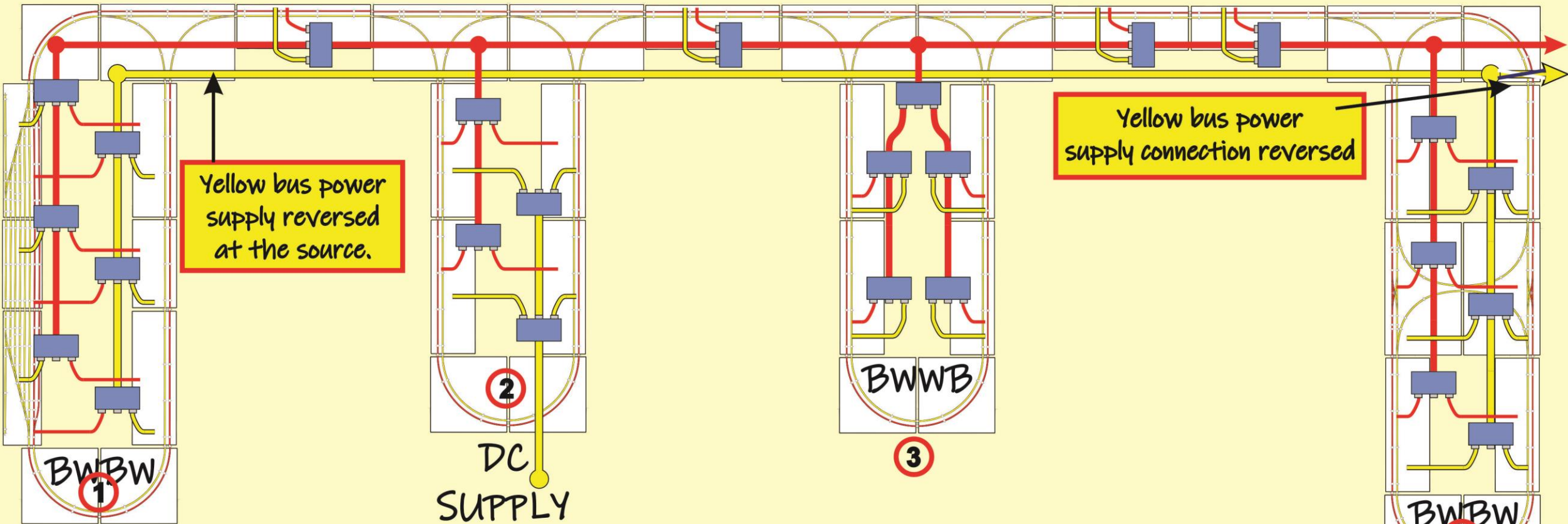


This shows the colour of the power bus the individual module tracks are supplied from. The single row of modules comprising the spine across the top are fed from the red bus only. There is no need for a yellow bus.

The short loop to the left does not need a yellow bus supply for BWWB conditions.

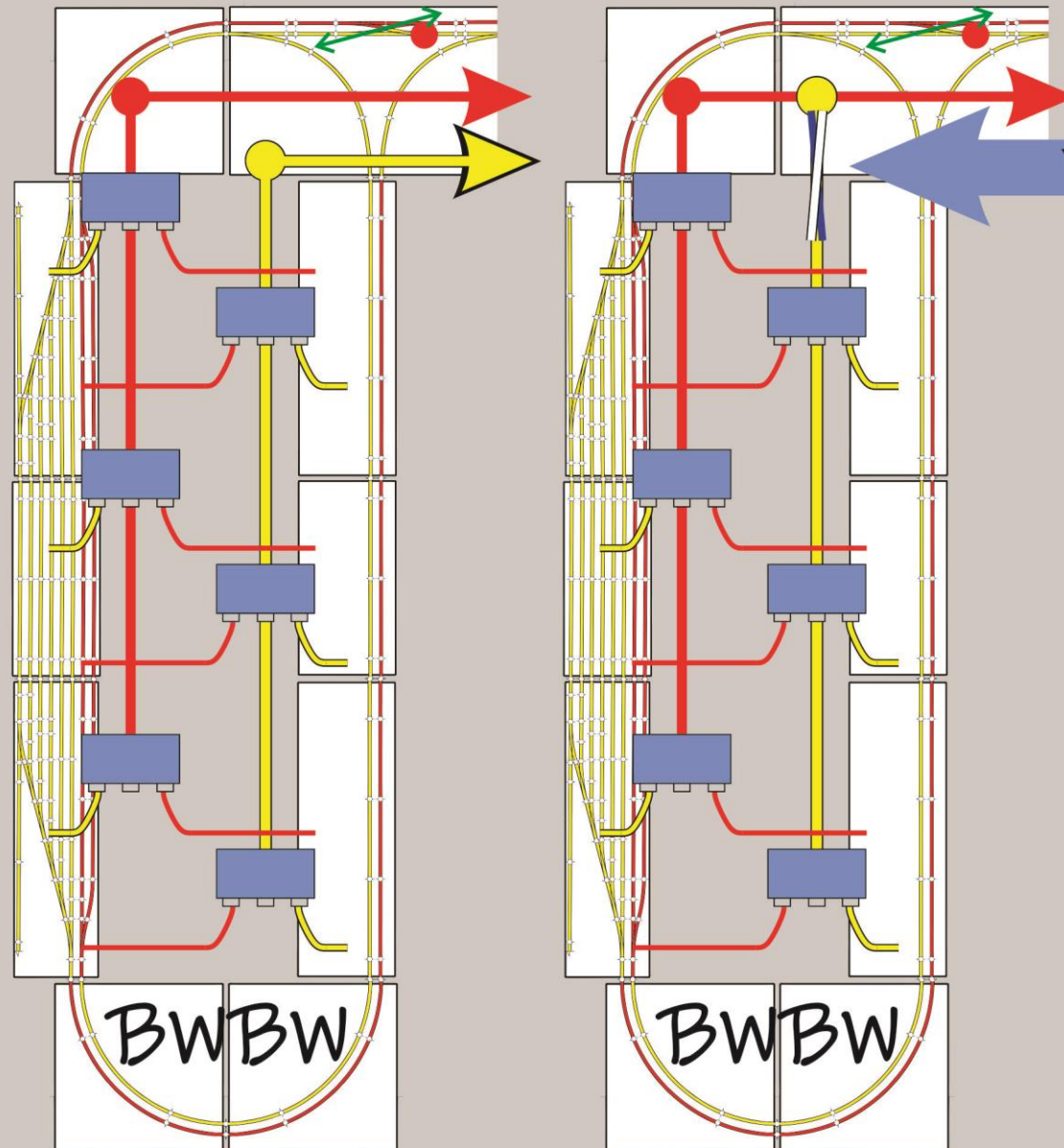
The longer loop to the right with two inner loops requires a yellow bus that will supply BOTH inner loops. To create the pseudo BWBW condition the yellow bus connections would be reversed at the source.

This shows track power bus color **NOT** track label color



- ① Notice the confusion caused by the yard loop having the yard modules reversed! This requires absolute knowledge of where the track feeders are coming from.
- ② The left short loop has it's own inside track yellow bus connected to the remote DC supply. The outside track red bus is connected to the layout red bus. Very straight forward.
- ③ The right short loop is normal BWWB and ALL track feeders are connected to the red bus.
- ④ The double loop on the right uses the red layout bus for all outside tracks and the layout yellow bus for all inside loop/s tracks as BWBW with the yellow bus reversed at the supply.

YARD BRANCH OPTIONS



Yellow to red bus connection reversed

In the example used in this presentation:

Due to the long distance from the yellow bus power source the need for the long yellow bus used solely for this branch could be removed by supplying the branch's yellow bus from the red bus. To establish the BWBW condition required by the branch the connections from the red bus to the yellow bus would be reversed.

THANKS

For Watching

A **ZoomTRAK** presentation by **True North Rail**



School's out ...