

In Roadbed

Crossover Switch Position Indicators



Figure 1: Top Side View of Indicators

Preparing the Site

1. Select location for the lights (diodes). Be sure there is enough room directly below to properly install the plastic plate.
2. Drill the holes (3 into the roadbed) for the diodes to the exact same diameter as the outside diameter of the straw(s).
3. Cut a heavy plastic plate to cover the three holes under the layout, and allow for four (4) screws as below.



4. Screw the plastic plate in place under the layout so that it covers all three (3) of the holes you drilled.
5. Insert the straw into one of the holes (from the top of the layout) until it hits against the plastic plate, and then cut it off at (or just barely below) the level of the roadbed. Repeat for the other two (2) holes.
6. Mark (if necessary) the three straw pieces, and set them aside.

7. Insert an awl (or other long pointed device) down each hole and mark the locations for the three holes in the plastic plate thru which the diode wires will extend. Remove the plastic plate and drill three holes (wide enough for the wires to pass through, but smaller than the straw diameter) in the plastic plate.

(NOTE: you should mount the 5-position terminal strip at this point so that you can make the wires from the diodes only as long as necessary.)

8. Using a 5-position terminal strip, connect a 680 ohm (1/2 watt) resistor between positions 1 and 2 on the same side of the terminal strip.

Preparing the Diodes

9. Solder a *grey* (22 gauge, stranded) wire to the long lead of each of three (3) diodes; and a *white* (22 gauge, stranded) wire to the short lead of the same three diodes. Wires should be long enough to reach from the holes you

- drilled in the layout, to the location where you mounted the 5-position terminal strip.
10. Cut a length of 'shrink wrap' to reach from the base of one of the diodes down to, and overlapping the insulation of the grey wire attached to the longest lead of the diode. Slide it up the grey wire to the base of the diode, and heat it till it shrinks tightly around the wire. Repeat this for the other two diodes.
 11. Snap a black collar onto each diode.
 12. Insert each diode (with its collar) into its respective straw piece (wires first). Be sure that the bottom tabs of the collar are inside the straw piece, and that the straw piece is snug up against the flared part of the collar.
 13. Use plastic glue to glue each diode, collar and straw piece together. LET DRY.

Mounting the Diodes

14. Insert the three diodes into their holes (wires first, from the top of the layout).
15. Have someone gently hold the diodes down to the roadbed while you feed each set of wires thru its respective hole in the plastic plate, and refasten the plate to the bottom of the layout, using all four screws.
16. Check to be sure that the top of each diode does not rise above the level of the top of the track.

Wiring the Diodes

17. Connect the grey wire (from one of the 'end' diodes) to position 2 of the terminal strip. Connect its white wire to position 3.
18. Connect the grey wire from the middle diode to position 3, and its white wire from the middle diode to position 4.

19. Connect the white wire from the other 'end' diode to position 4, and its grey wire to position 5.
20. Install another small terminal strip close by, and connect a black wire from position 1 of the 5-position terminal strip to one position on this terminal strip. Then, connect a white wire from position 5 of the 5-position terminal strip to a different position on this terminal strip.

NOTE: This small terminal strip will be used to connect the decoder, the switch machines, and any other signaling devices.

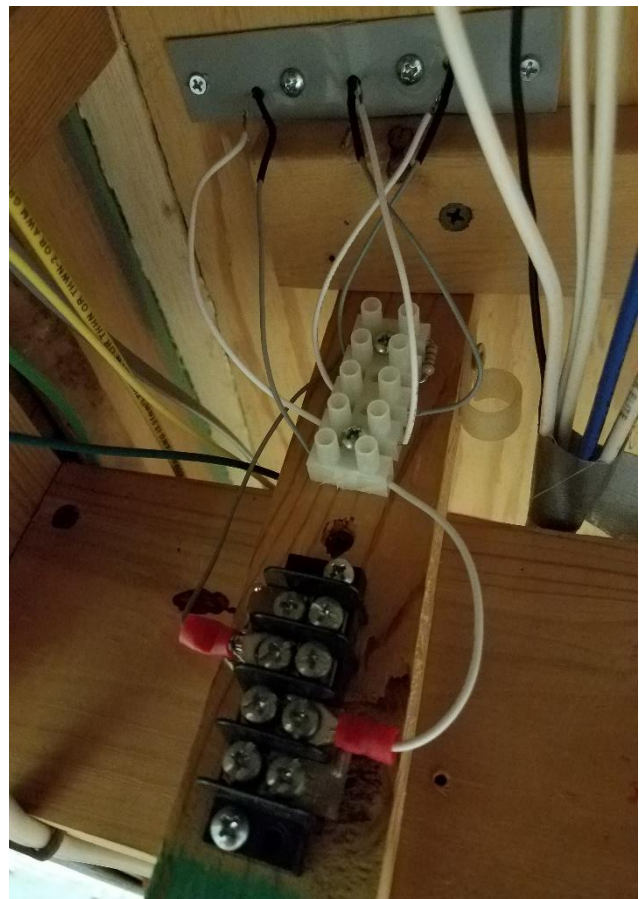


Figure 2: Completed Under Layout Wiring