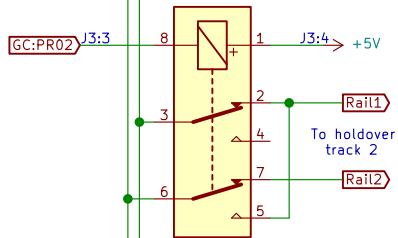
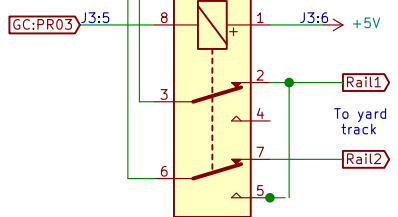


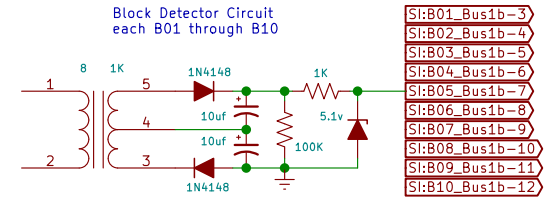
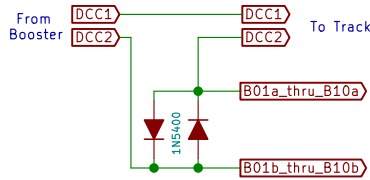
Power Polarity Relay 1



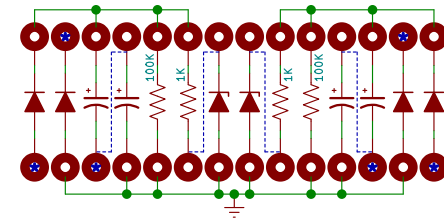
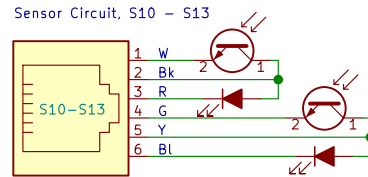
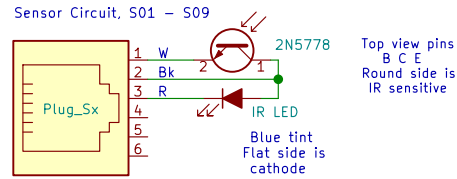
Power Polarity Relay 2



Power Polarity Relay 3



Measured output without zener diode is 2 to 8 volts depending on the number of locomotives being powered in the block. Zener limits level to 5.1 volts to protect MCP23017 inputs.



28 pin DIP header showing position and connection of the discrete components for two block detectors. Dotted line indicate wire connections to simplify drawing. Marked pad indicates transformer connection.

Support and External Circuits	
Sheet: / File: SupportCircuits.sch	
Title: DnB Support Circuits	
Size: USLetter	Date: 2019-04-18
KiCad E.D.A. kicad (5.1.0)-1	Rev: B Id: 1/1