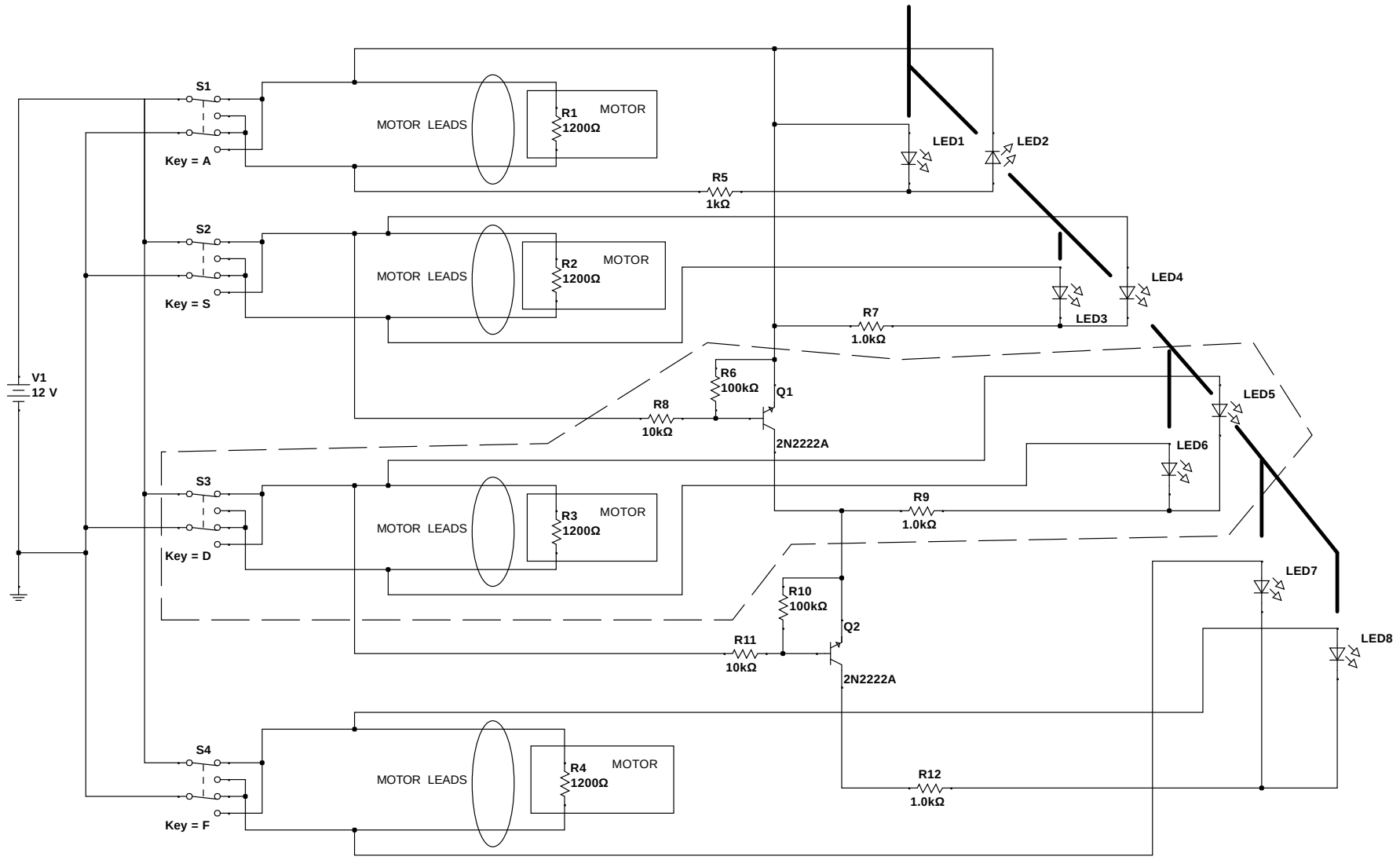

NOTES:
S1 TO S4 ARE SHOWN FOR FUNCTION AND THEIR OUTPUT MAY BE PROVIDED BY OTHER MEANS.
YOU NEED A CONSTANT CURRENT OF THE CORRECT POLARITY FOR THE MOTORS TO OPERATE. THE SWITCHES ARE SHOWN IN THE "NORMAL" POSITION AND THE UPPER CONNECTION ON EACH MOTOR IN THE DIAGRAM IS POSITIVE.
R1 TO R4 REPRESENT THE STALL CURRENT SWITCH MOTORS.
THE KEY IS THE COMMON NEGATIVE FEED FOR LED 3-8 BE PROVIDED BY THE FEED TO THE PRIMARY MOTOR WHEN IT IS IN THE DIVERTING POSITION. MOTOR POLARITIES CAN BE ADJUSTED AS NEEDED FOR CORRECT THROW BAR POSITION.
THE TRANSISTORS COULD BE REPLACED WITH RELAYS.
AS SHOWN, THE MAX CURRENT AT S1 IS ABOUT 52 MA DUE TO FEEDING ALL THE LEDS. REMOVING LED2, 4 & 5 WILL REDUCE THE CURRENT TO ABOUT 22 MA; SATISFACTORY FOR NCE SWITCH IT DRIVES.
THE POWER FOR THIS CIRCUIT MUST BE FROM A COMMON SOURCE.
THE COMPONENTS INSIDE THE DASHED AREA REPRESENT AN INTERMEDIATE STAGE. REMOVE THOSE TO REDUCE THE YARD BY ONE OR ADD DUPLICATES TO INCREASE THE YARD COUNT. YOU MAY HAVE TO REDUCE THE 1K RESISTOR ON THE LED CATHODE DUE TO VOLTAGE DROP IN THE TRANSISTORS.

Title: Yard Ladder LED indicators		
Size: A	Add LED indicators to yard ladder turnout to indicate route	Revision: 0
Date: 1/31/2021	Drawn By: Jim Exler	