

### Parts List as built 12-2019

VFD: LaPond SVD-ES 2.2KW 220V with panel extension cable (also compatible with Huangyang VFDs, but they may not have the panel extension cable available)

Relay 1: Schneider DPST 110V coil, 92S11A22D-120 (Amazon B011OMGT84)

Relay 2 and 3: Space Age Electronics SPDT 110V coil, SSU-PAM-1 (Amazon B0041KNPRBK)

LEDs: Amotor multicolor 12V LED, pkg 2 each of 5 colors (Amazon B075F6KPNW) (I used one each of yellow, red, green, and white)

SW1: 3pole 4 position rotary switch, nonshorting break before make (such as Grayhill 71B30-01-3-04N, 71B30-02-3-04N, 71BS30-01-3-04N, 71MAS30-01D04N, 44M30-02-3-04N) (avoid low-quality products with plastic switch wafers)

SW2: SPDT ON-Off-Momentary ON toggle switch (CES 68-1855) (Ebay) or Honeywell 11TS15-5 (Mouser.com)

Coolant Flow Meter/ Temperature sensor: Yosoo PC 3way flow meter digital thermometer (Amazon B077STFGZB)

12v to 5V Converter: Step Down Buck Converter (Amazon B07GTHK99K) (can eliminate 12v to 5v converter if using flow meter/ digital thermometer that accepts 12v power, such as noted above)

Resistors: 3.3K, 1.5K, both 1/4 watt

Diodes: 1N5804 3AMP diode x2 (only required for 12v pump, can eliminate for 110v or 220v pump)

12V DC Power Supply: 12V 4amp or more switching power supply, such as Amazon B0711Q5B49

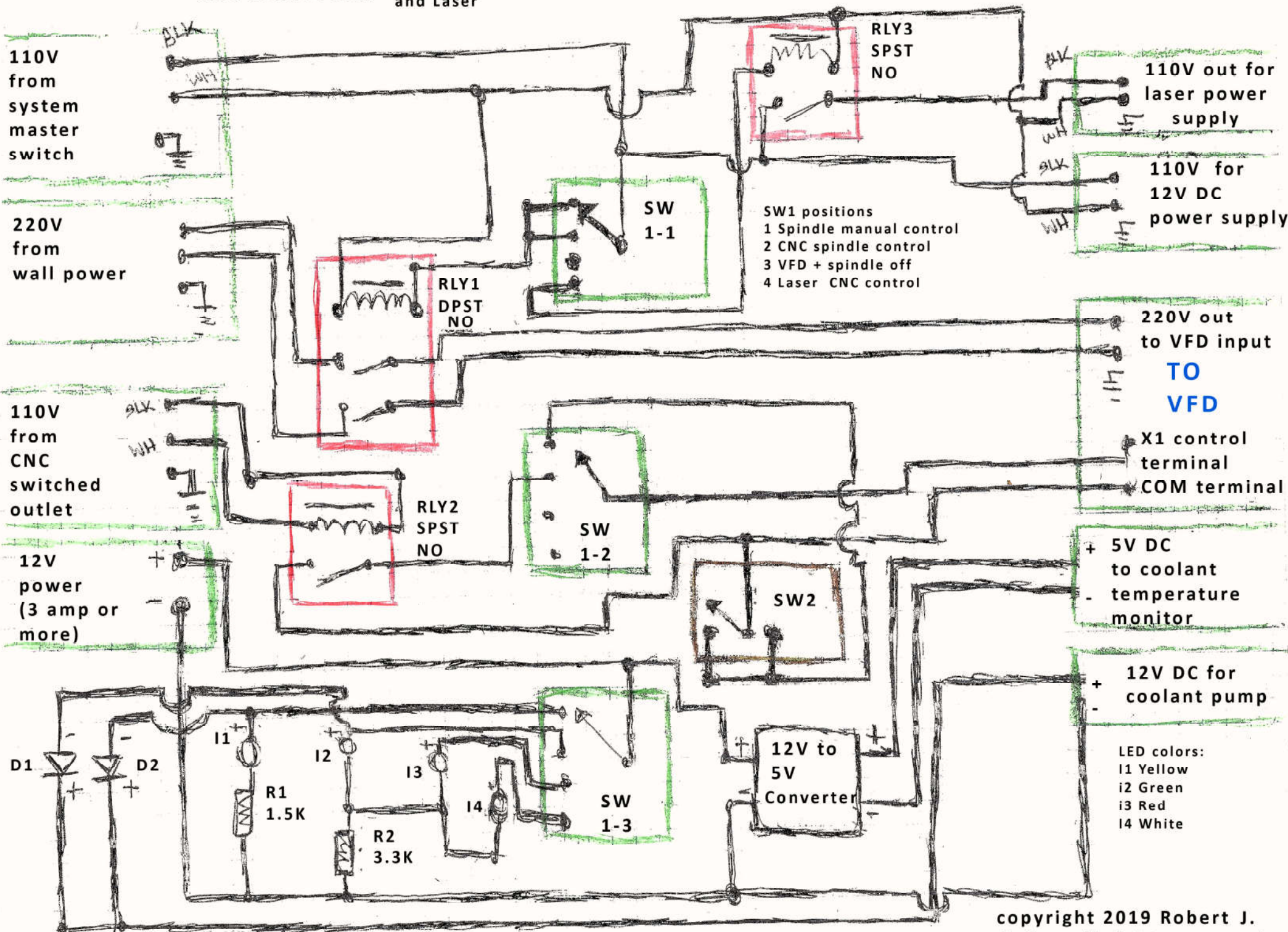
Appropriate wires, connectors, strain reliefs, boxes

revised 1/18/2020

# CNC Control Unit

for VFD, Spindle, Coolant Pump,  
and Laser

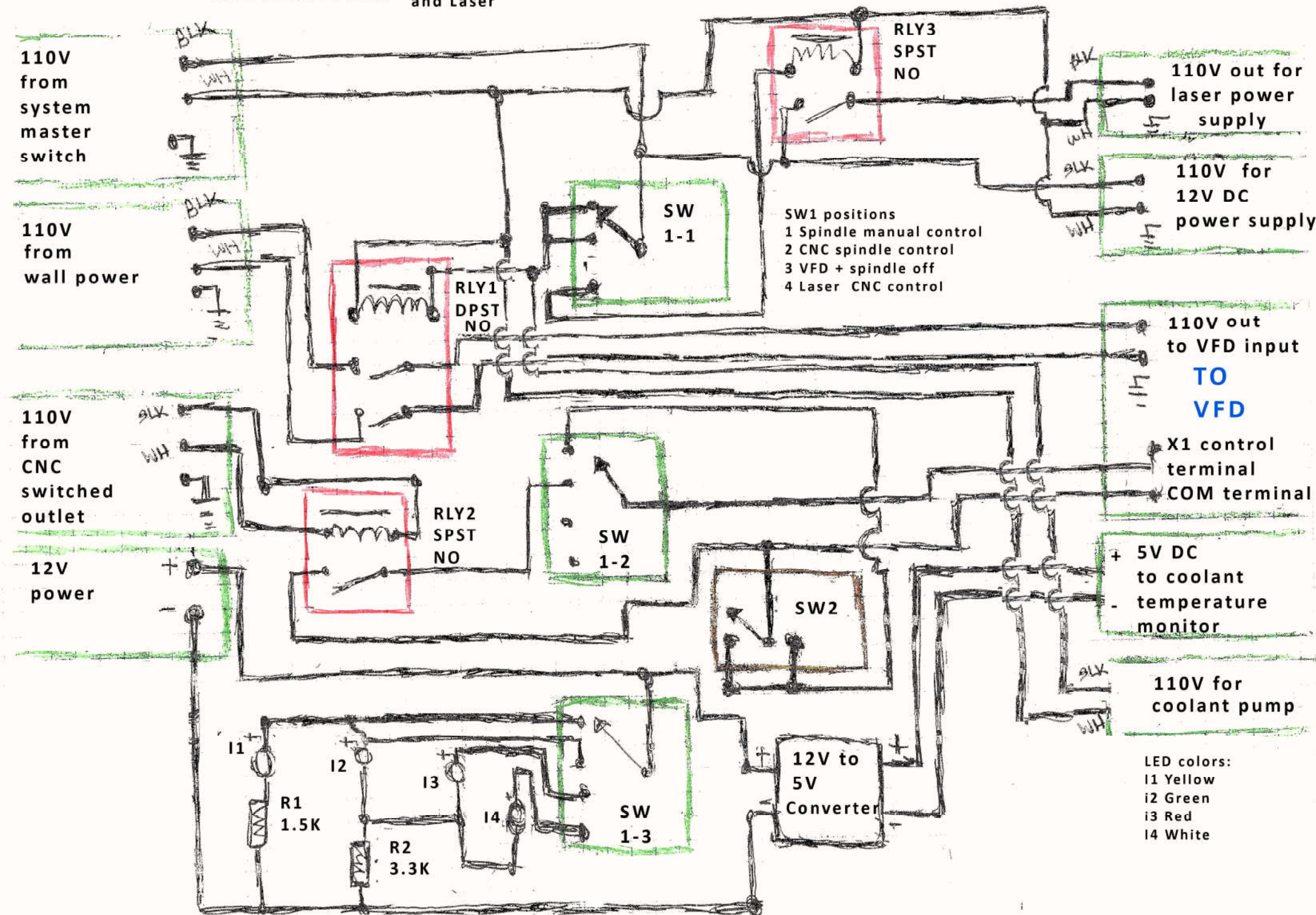
220v VFD and spindle, 12VDC pump





# CNC Control Unit for VFD, Spindle, Coolant Pump, and Laser

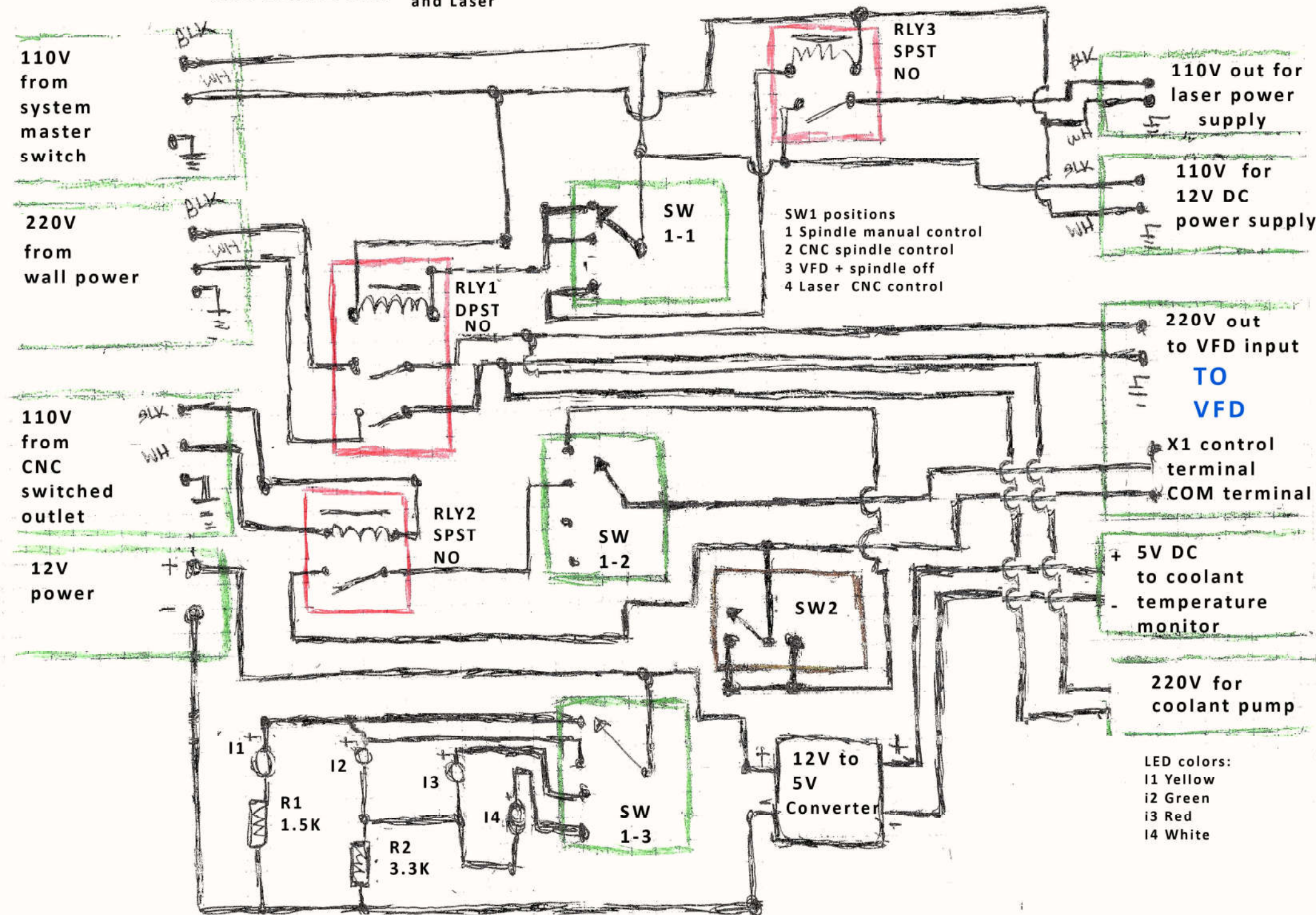
110V pump, 110V VFD and spindle





# CNC Control Unit for VFD, Spindle, Coolant Pump, and Laser

## 220V VFD and spindle and pump





# CNC Control Unit

for VFD, Spindle, Coolant Pump,  
and Laser

220v VFD and spindle, 110v pump

