

## 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)

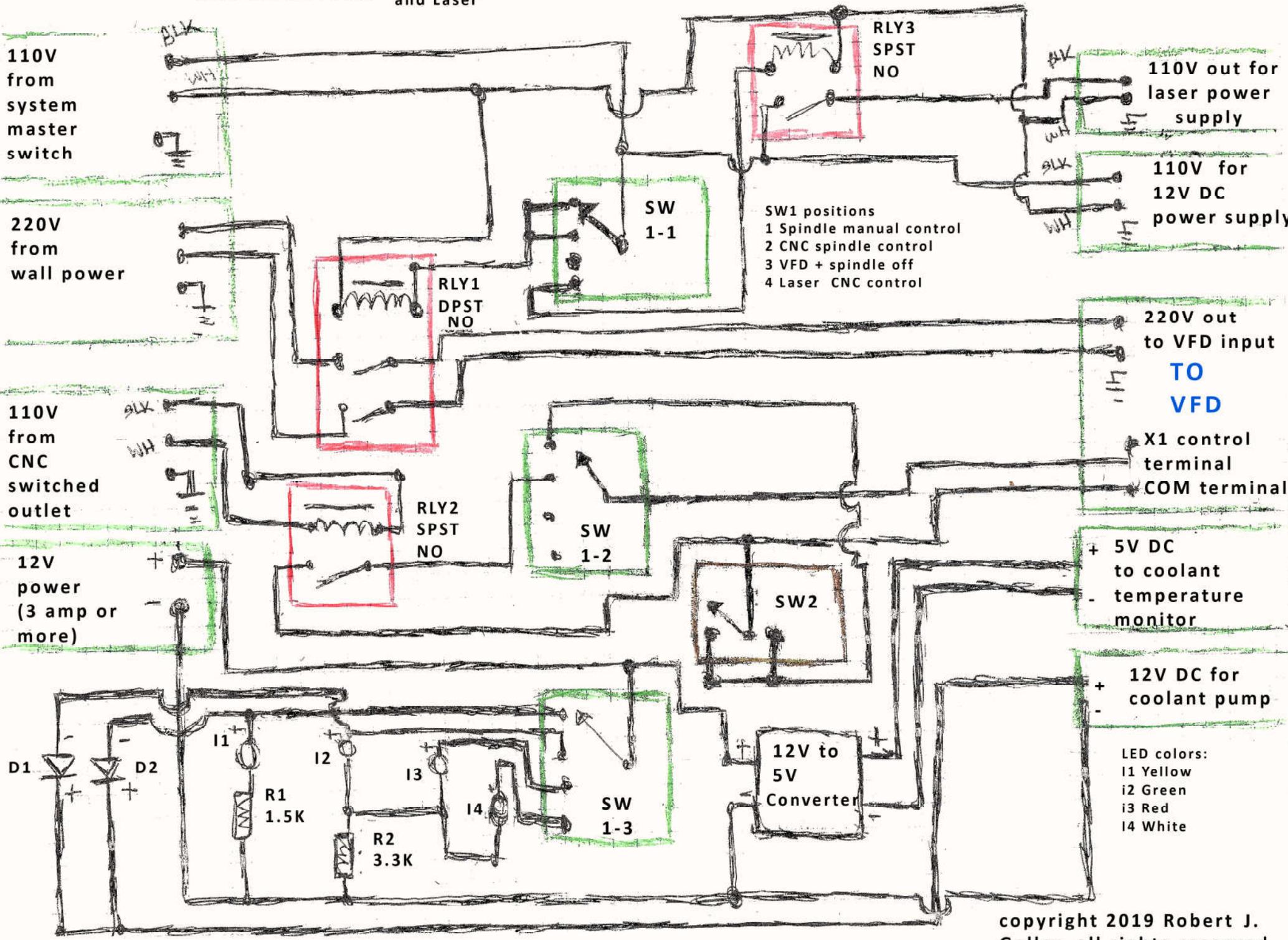
12V DC Power Supply: 12V 4amp or more switching power supply, such as Amazon B0711Q5B49

Appropriate wires, connectors, strain reliefs, boxes

revised 1/18/2020

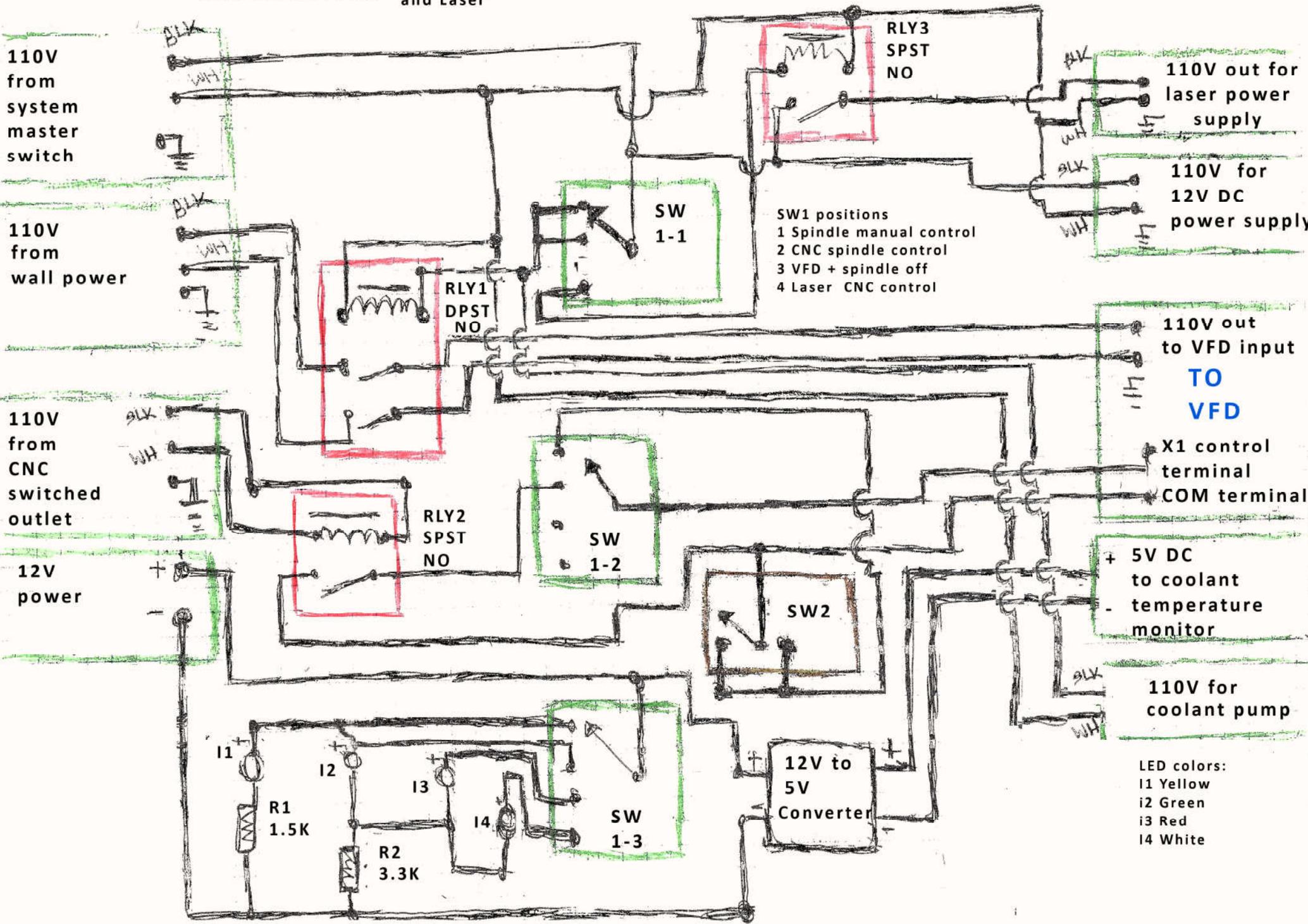
CNC Control Unit for VFD, Spindle, Coolant Pump, and Laser

220v VFD and spindle, 12VDC pump



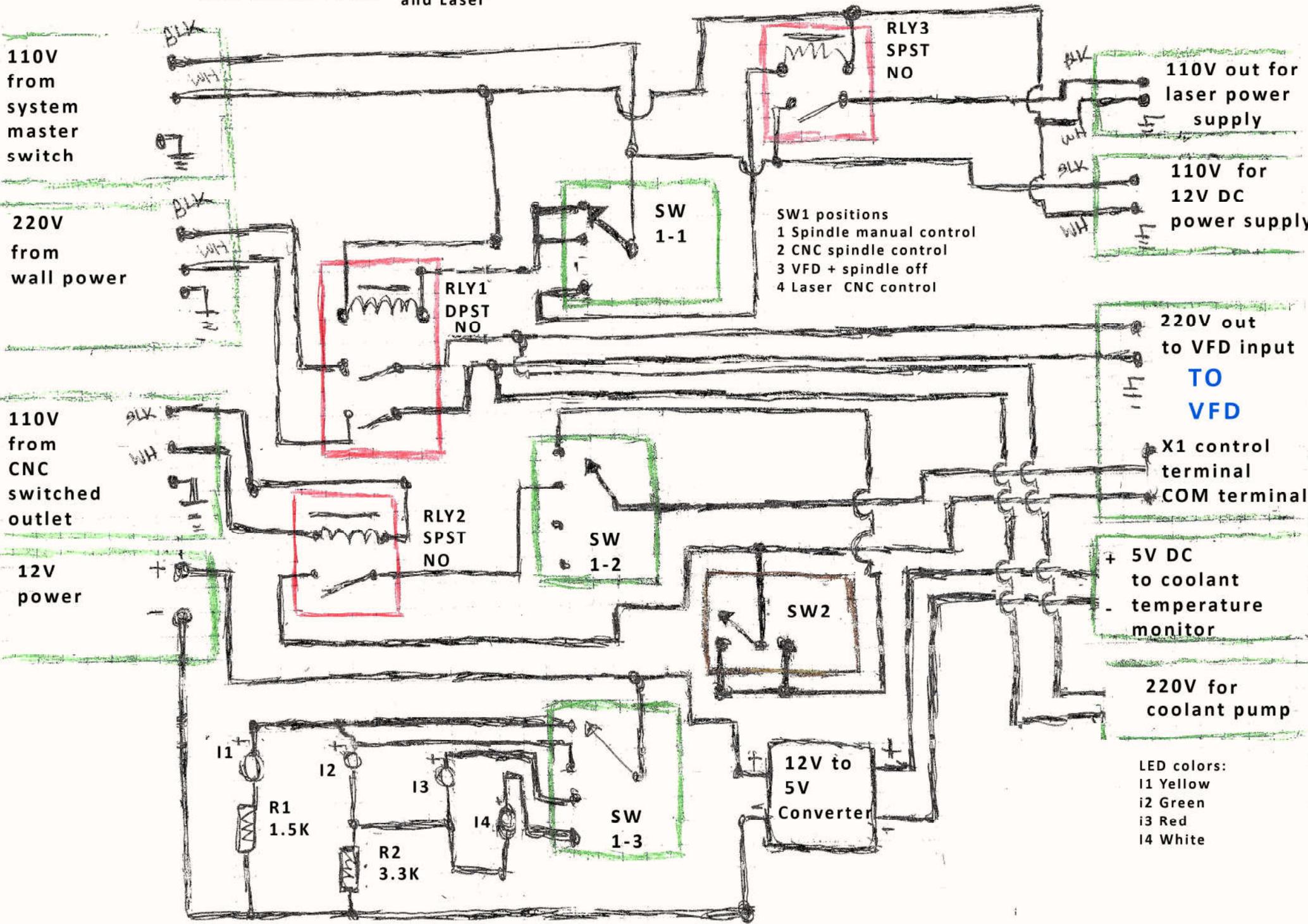
CNC Control Unit for VFD, Spindle, Coolant Pump, and Laser

110V pump, 110V VFD and spindle



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

**220V VFD and spindle and pump**

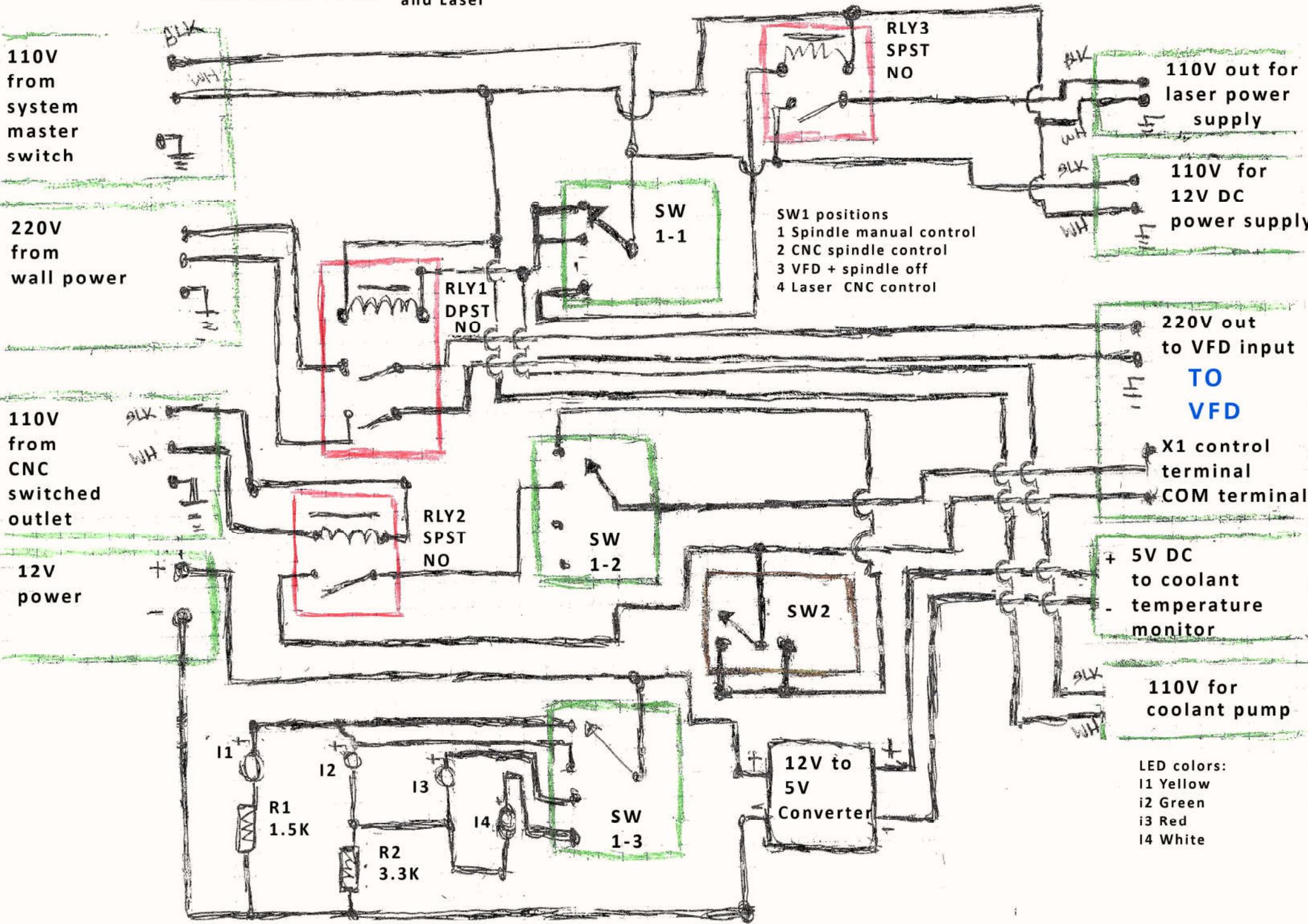


SW1 positions  
 1 Spindle manual control  
 2 CNC spindle control  
 3 VFD + spindle off  
 4 Laser CNC control

LED colors:  
 I1 Yellow  
 I2 Green  
 I3 Red  
 I4 White

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

220v VFD and spindle, 110v pump



SW1 positions  
 1 Spindle manual control  
 2 CNC spindle control  
 3 VFD + spindle off  
 4 Laser CNC control

LED colors:  
 I1 Yellow  
 I2 Green  
 I3 Red  
 I4 White