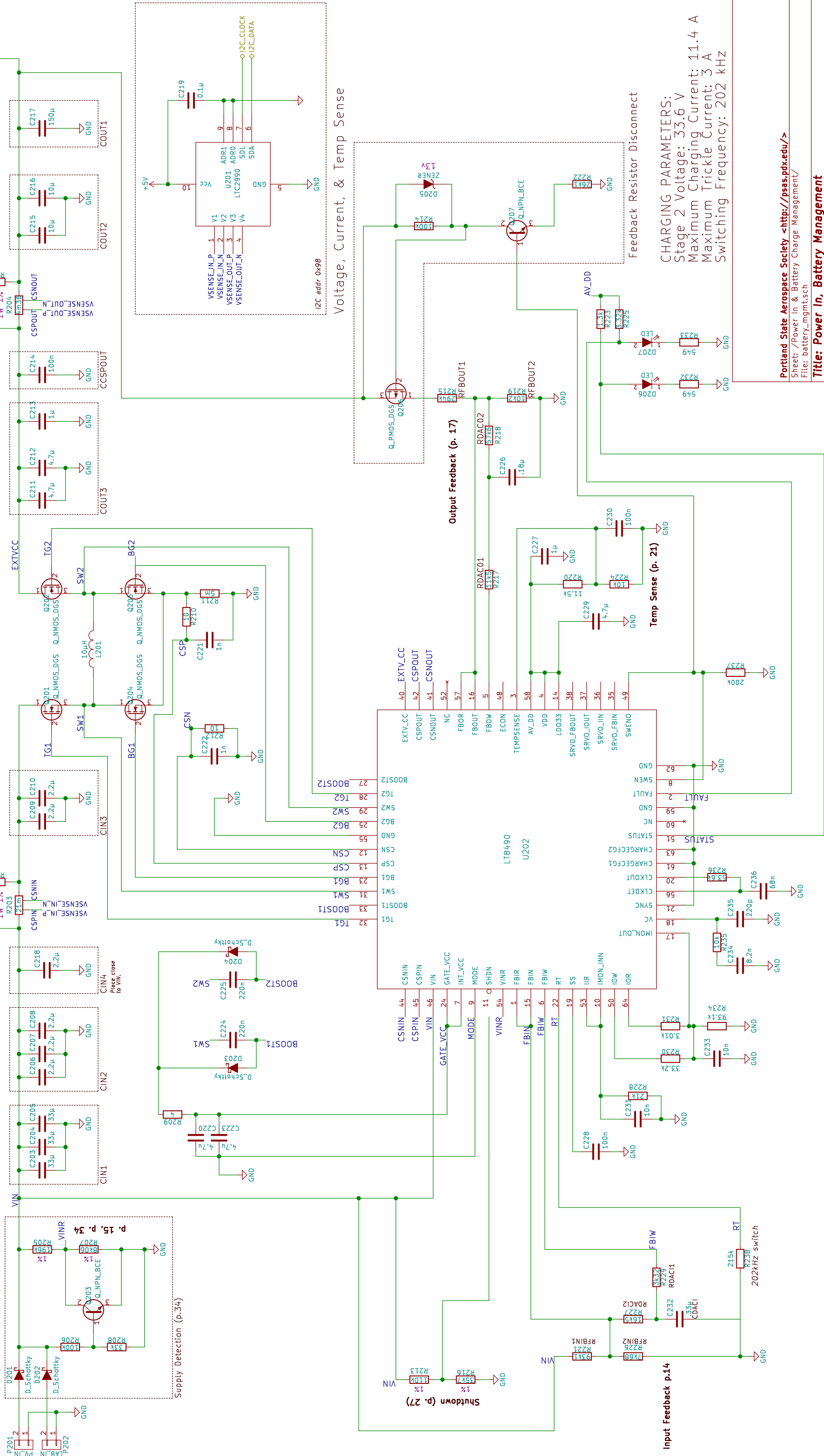


QUESTIONS:

- * Safe to use one current-sense resistor for both the LT8490 and the LTC2991?
- * Maybe. Check datasheets for input impedances. Add zero-ohm resistor btw. 2991 and shunt.
- * What happens w/out a battery connected?

PV_IN:
Open Circuit = 17 V
Short Circuit = 2.4 A

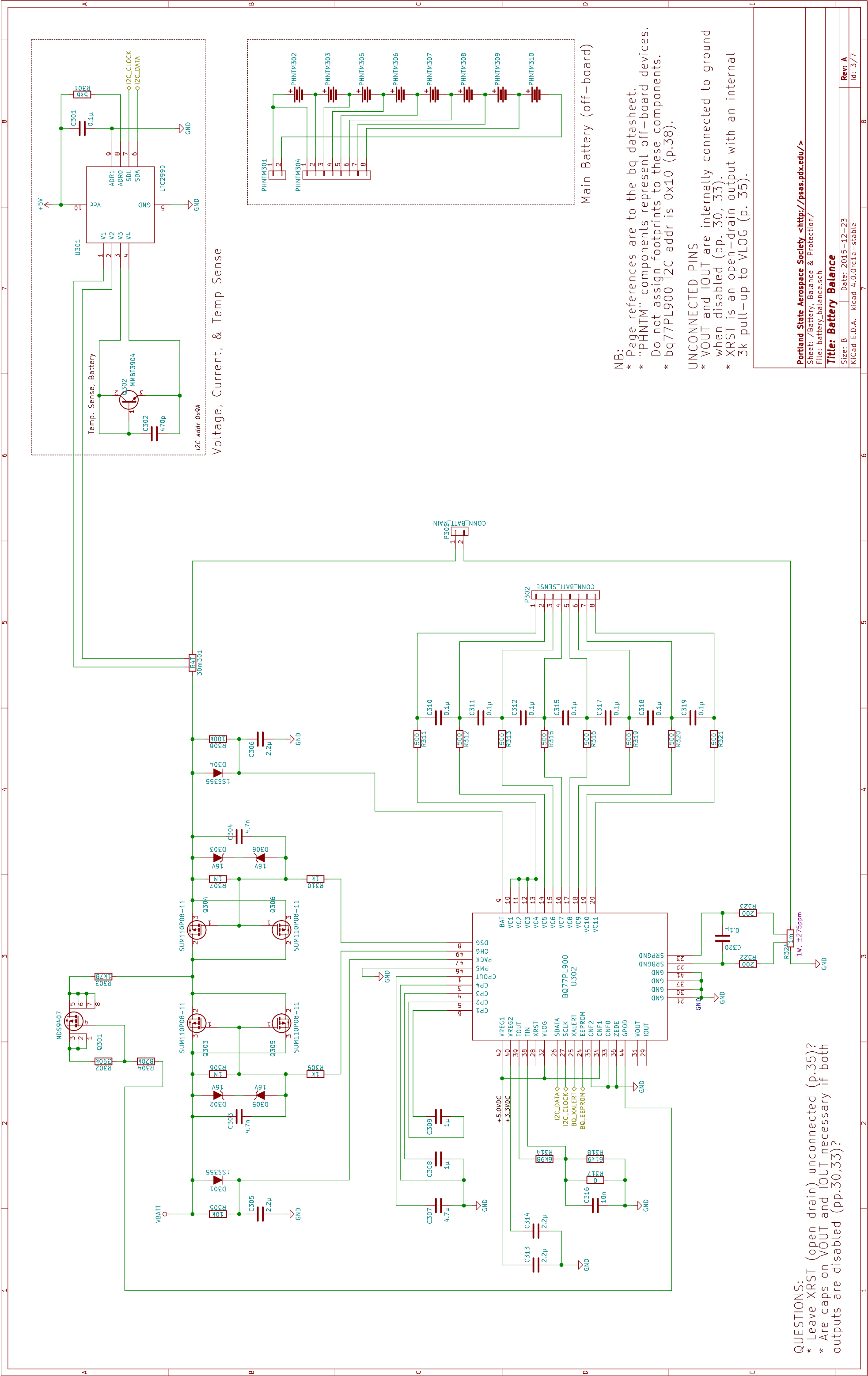


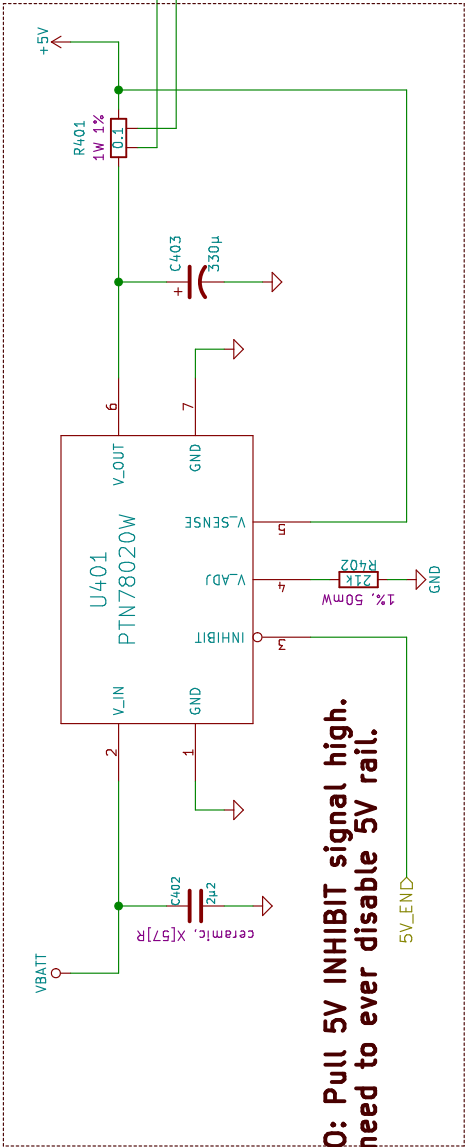
Portland State Aerospace Society <<http://psas.pdx.edu/>>
Sheet: /Power In & Battery Charge Management/
File: battery_mqmt.sch

Title: Power In, Battery Management

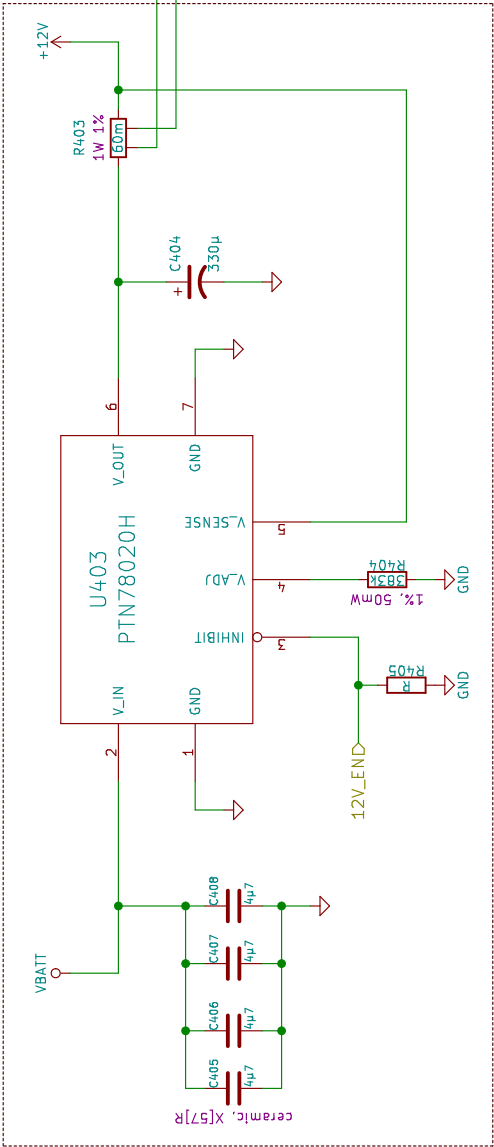
Size: B	Date: 2015-12-16
KiCad E.D.A.	kiCad 4.0.0rc1a-stable

CHARGING PARAMETERS:
 Stage 2 Voltage: 33.6 V
 Maximum Charging Current: 11.4 A
 Maximum Trickle Current: 3 A
 Switching Frequency: 202 kHz

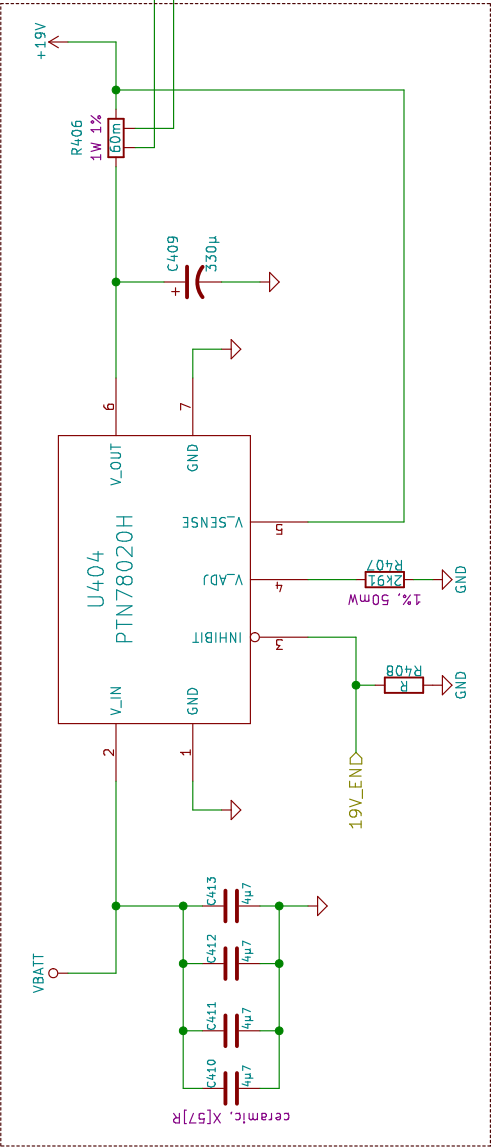




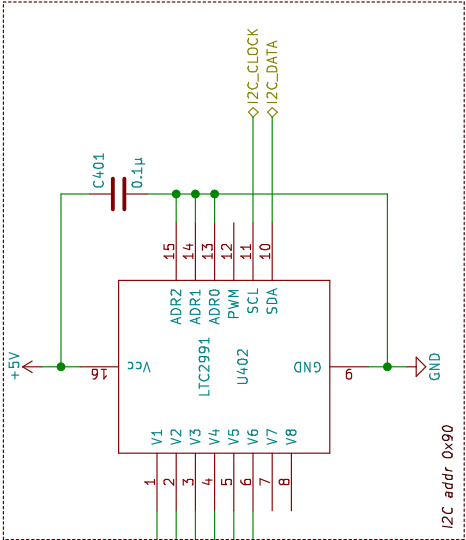
+5V DC Rail



+12V DC Rail



+19V DC Rail



Voltage, Current, & Temp Sense

Current Sense Resistors
full-scale voltage = 0.300 V
R_sense_max = 0.300/I_max
1 A = 300mΩ
3 A = 100mΩ
5 A = 60mΩ
10 A = 30mΩ

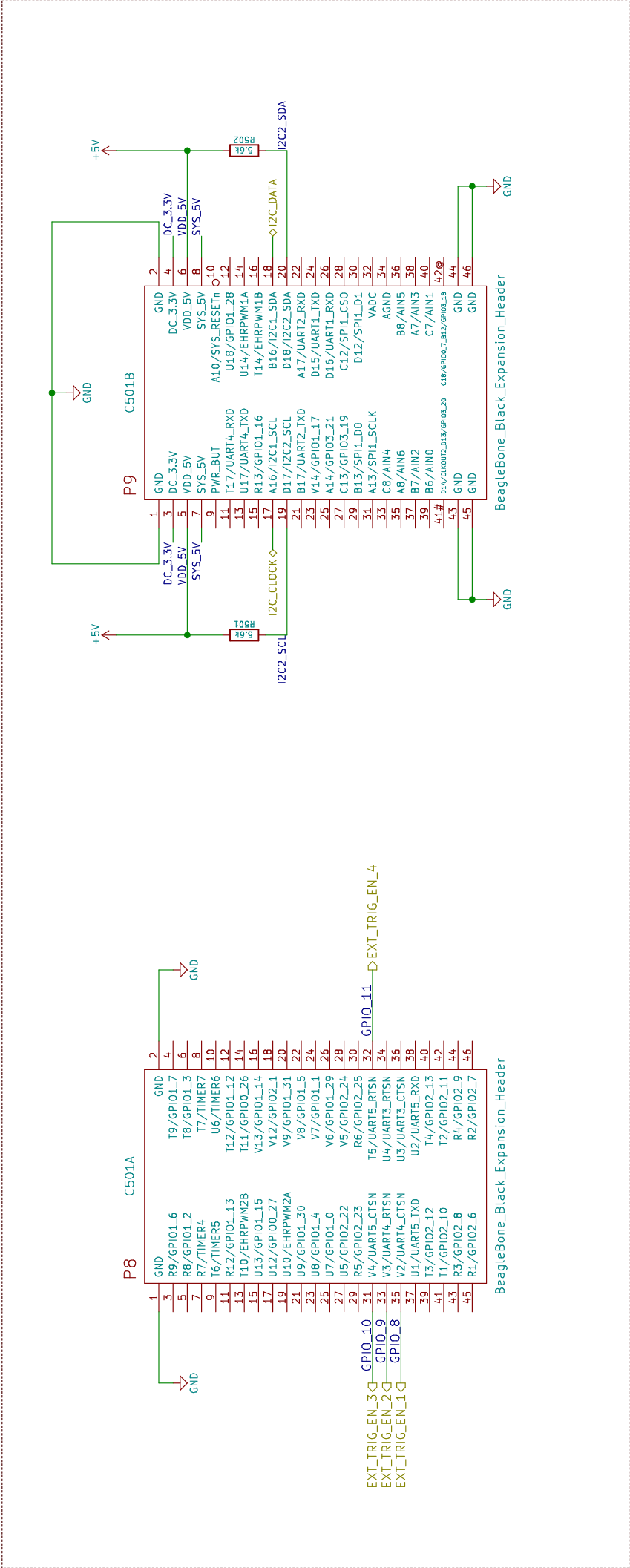
NB:

1. V_sense should connect as close as possible to the largest load on the given power rail.
2. Place Rset resistors as close to package pins as possible.
3. Ceramic (Cin) capacitors should be located within 0.5 in of the input pins.
4. We may need heat sinks on the converters. The datasheet indicates a range of 2W to 5W of power dissipation given our specs.
5. Pay attention to the datasheet's recommendations regarding capacitor selection.

TODO:

- * Capacitor values are minimums. Consider increasing these. Consult datasheet for more info.

Portland State Aerospace Society <http://psas.pdx.edu/>							
Sheet: /DC-DC Converters/							
File: dcdc_converter.sch							
Title: LTC3 DC-DC Converters							
Size: B		Date: 2015-12-23		Rev: A		Id: 4/7	
KiCad E.D.A.		kicad 4.0.0rc1a-stable					



BeagleBone Expansion Headers

TODO: connect these labels to BBB GPIO pins.

ROCKET_READYD

BQ_XALERTD

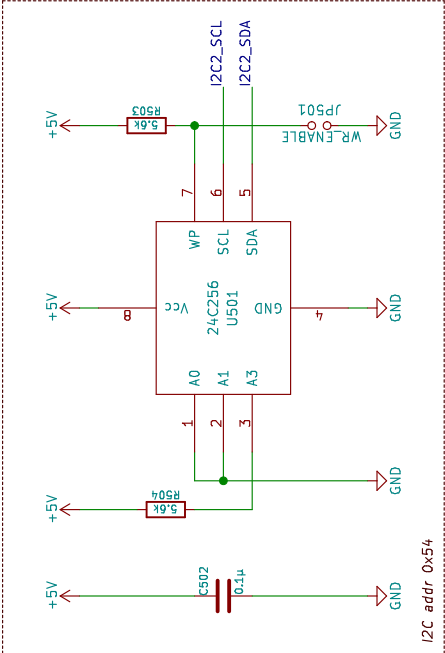
D5V_EN

D42V_EN

D49V_EN

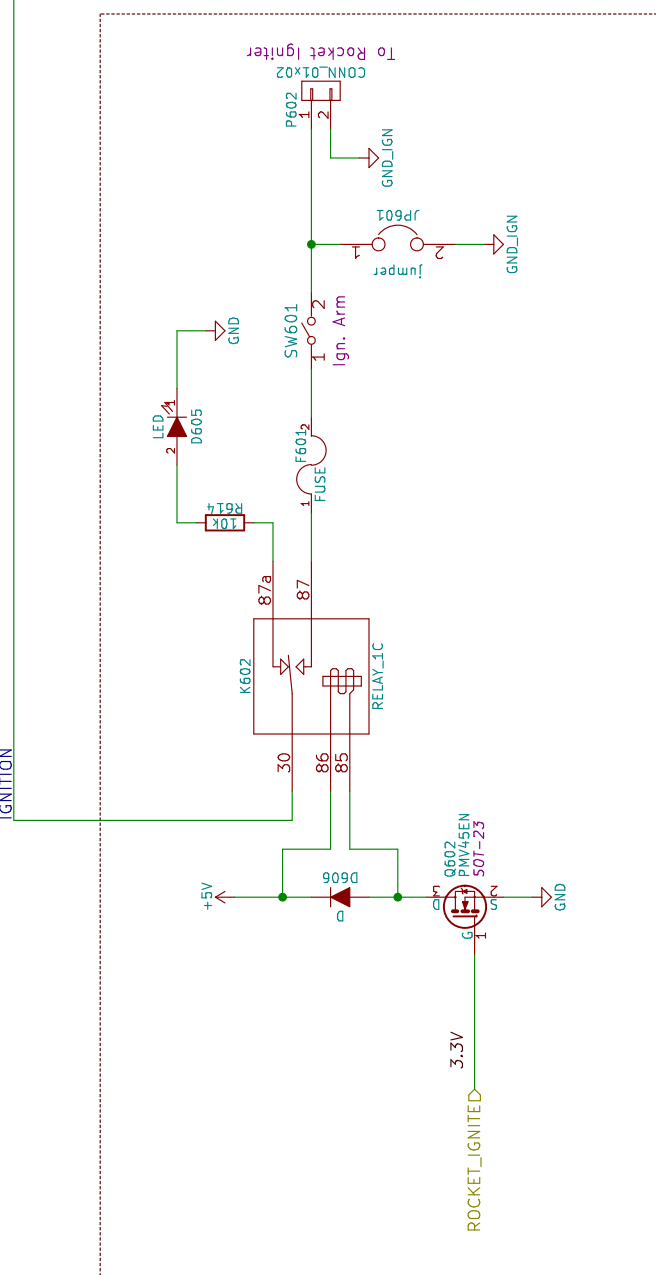
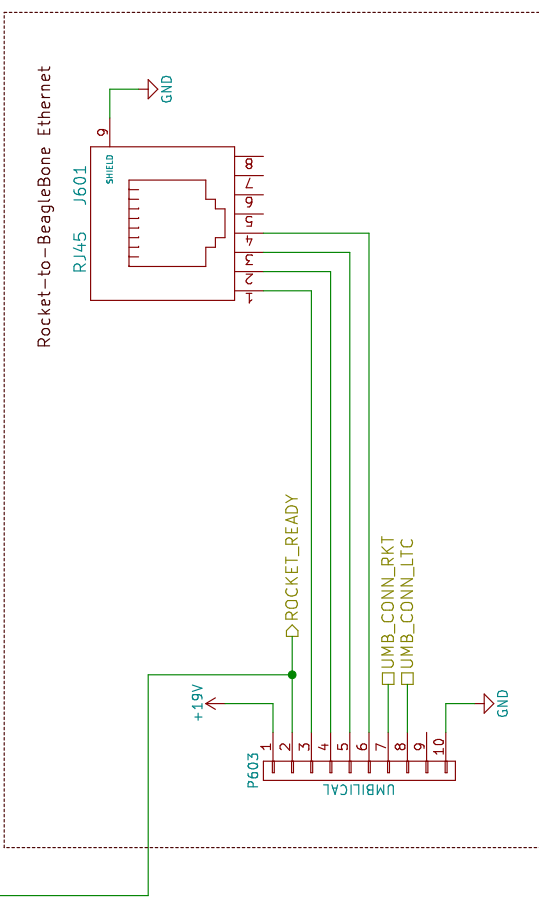
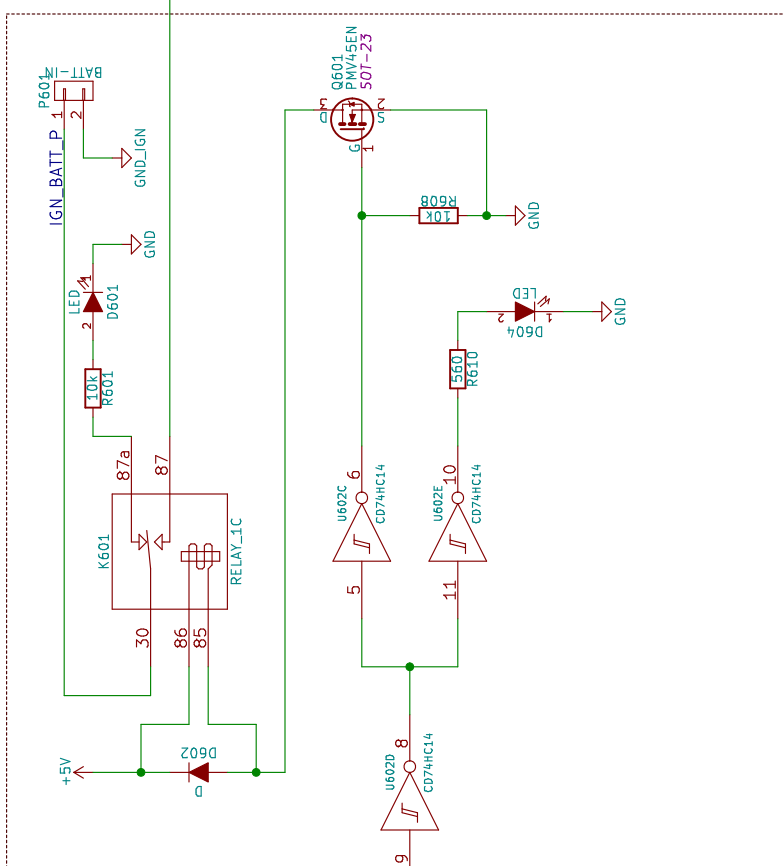
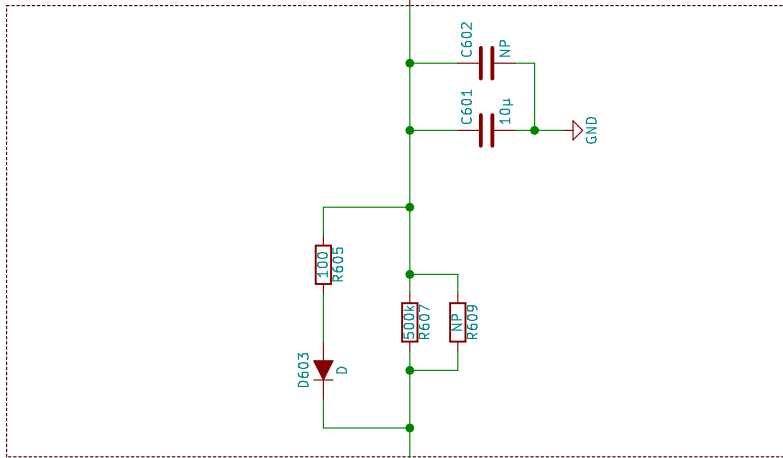
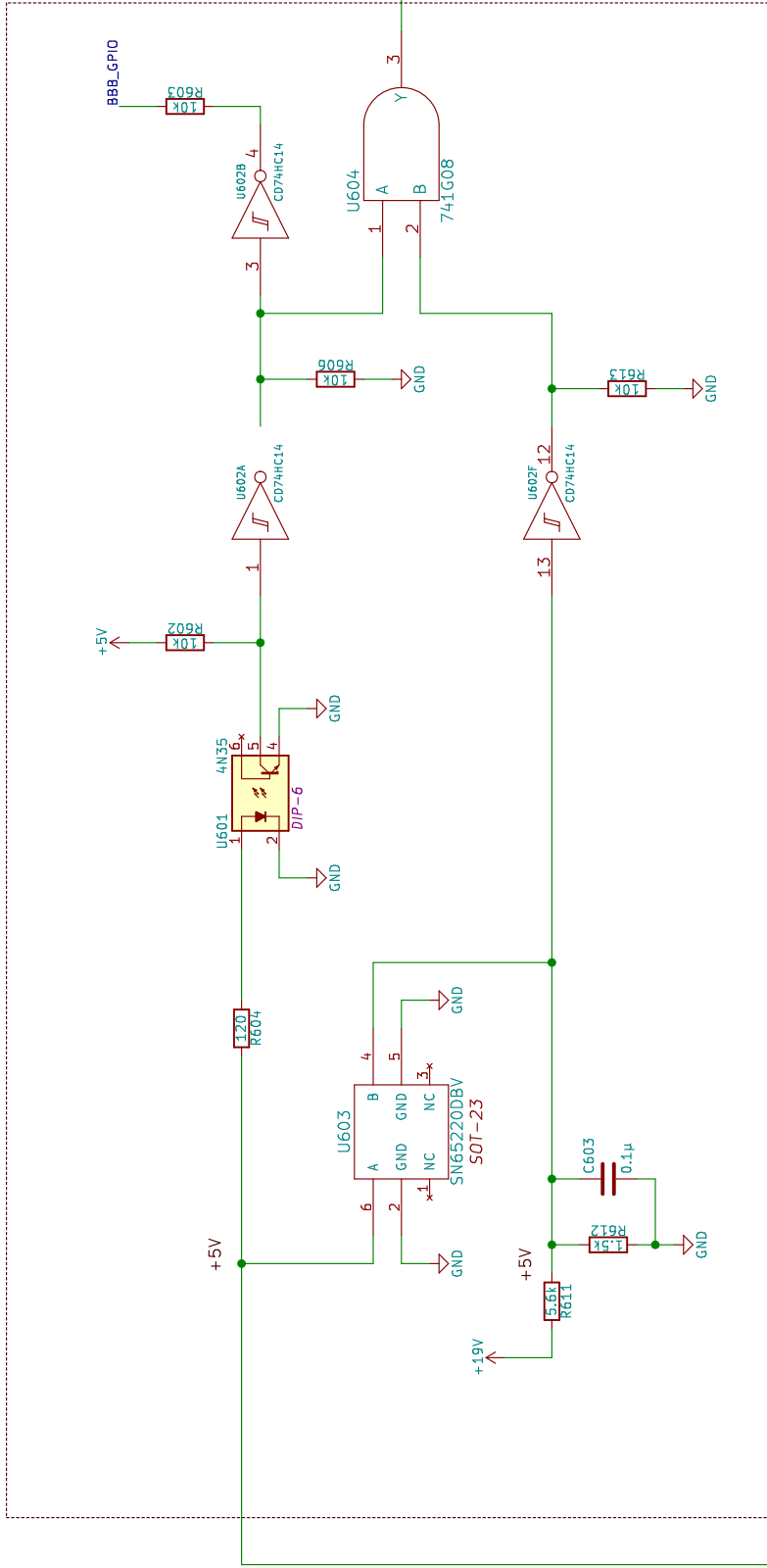
D8Q_EEPROM

DROCKET_IGNITE



TODO:

- * Pick GPIO for rocket-ready signal.
- * Buffer btw rocket-ready signal and BB, ign. board, etc?
- * Umbilical connection state
- * Ignition fuse state

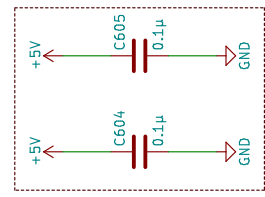
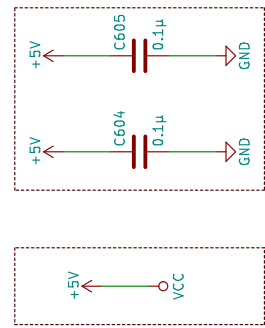


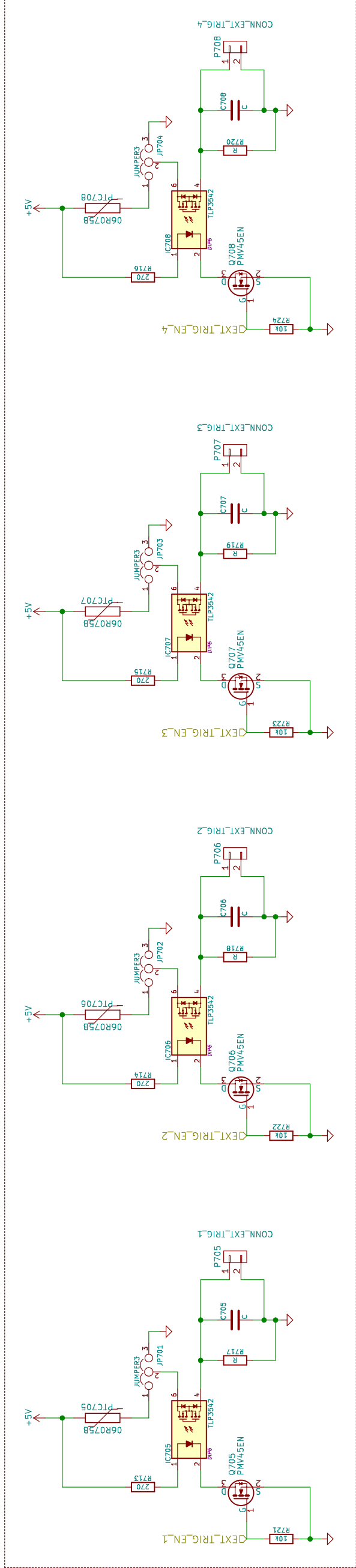
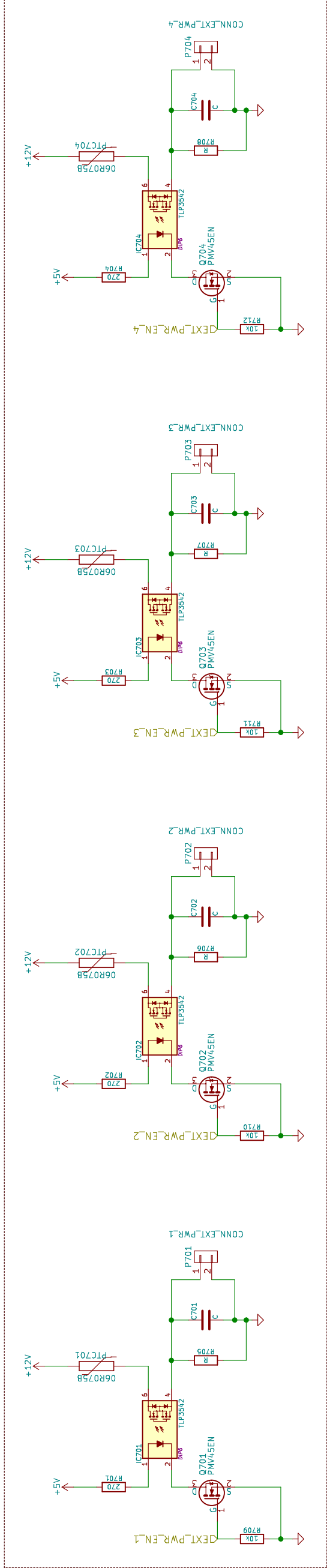
TODO:

- * Select appropriate component values.
- * Finish rocket umbilical connector.
- * Verify Enet jack "adapter" wiring.
- * Add umbilical connect sense lines circuitry.
- * Label various LEDs.

QUESTIONS:

- *Will 5v from schmidt fry BBB GPIO?





TODO:

- * Determine values for bleeder resistor and filter capacitor on each output connector.
- * Pick new PolyFuses, 0.5–1.0A max.