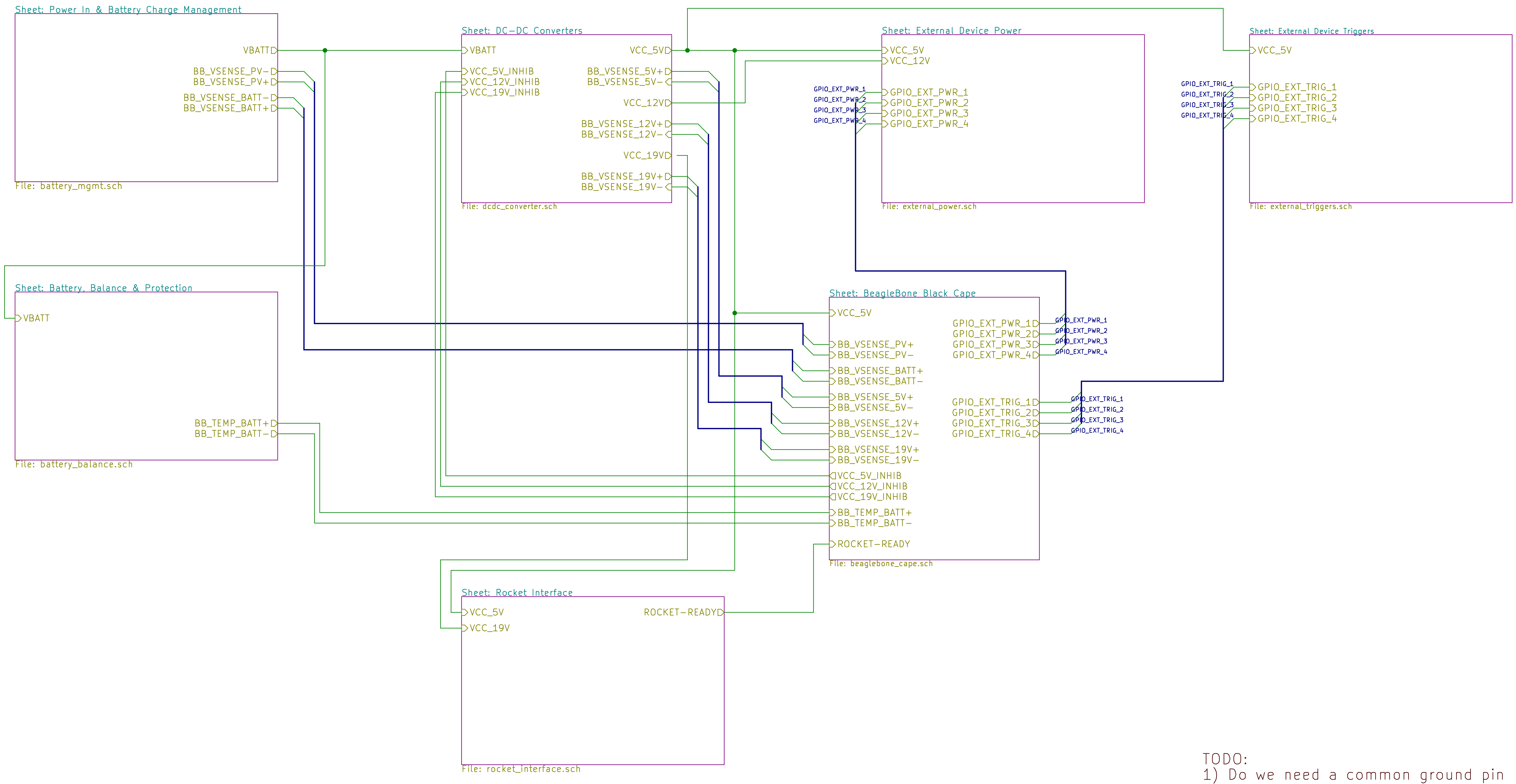


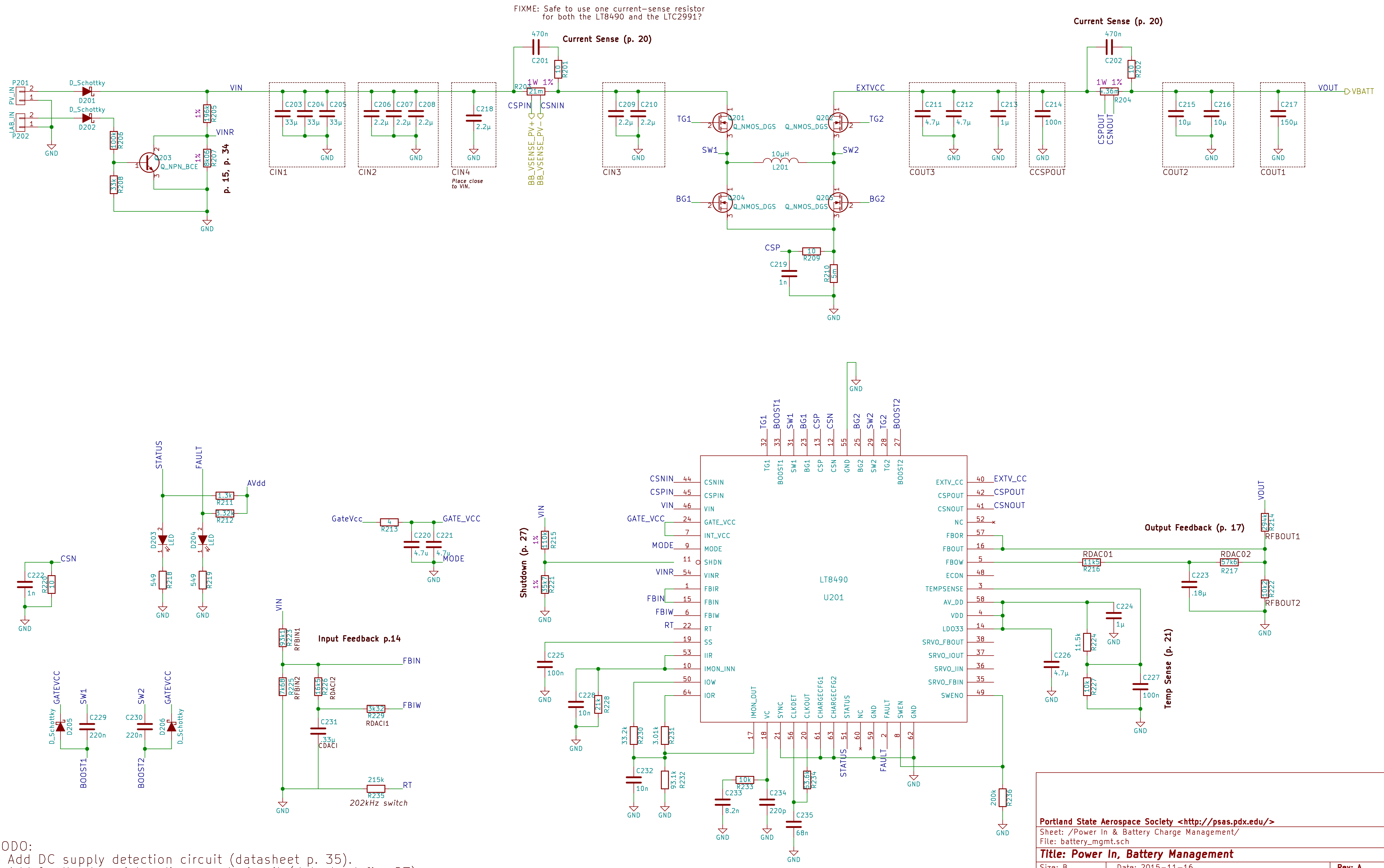
TODO:
1) Do we need a common ground pin
on each sub−sheet?

Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /
File: Launch_Tower_Computer_III.sch

Title: Launch Tower Computer 3 (LTC3)

Size: B
Date: 2015−11−16
Rev: A
KiCad E.D.A. kicad no−vcs−found−product
Id: 1/8

FIXME: Safe to use one current-sense resistor
for both the LT8490 and the LTC2991?

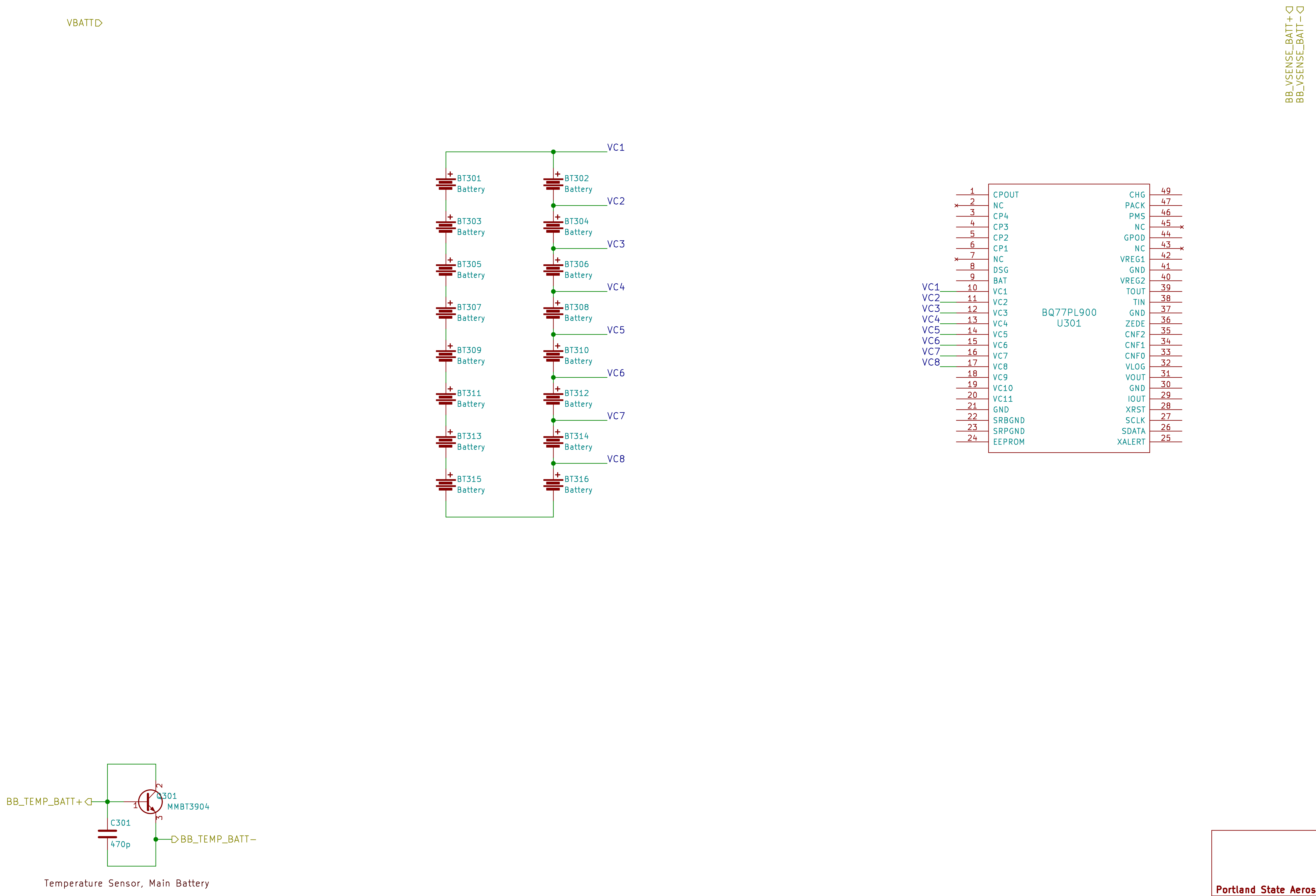


TODO:
* Add DC supply detection circuit (datasheet p. 35).
* Add feedback resistor disconnect circuit (datasheet fig. 27).

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

Title: Power In, Battery Management

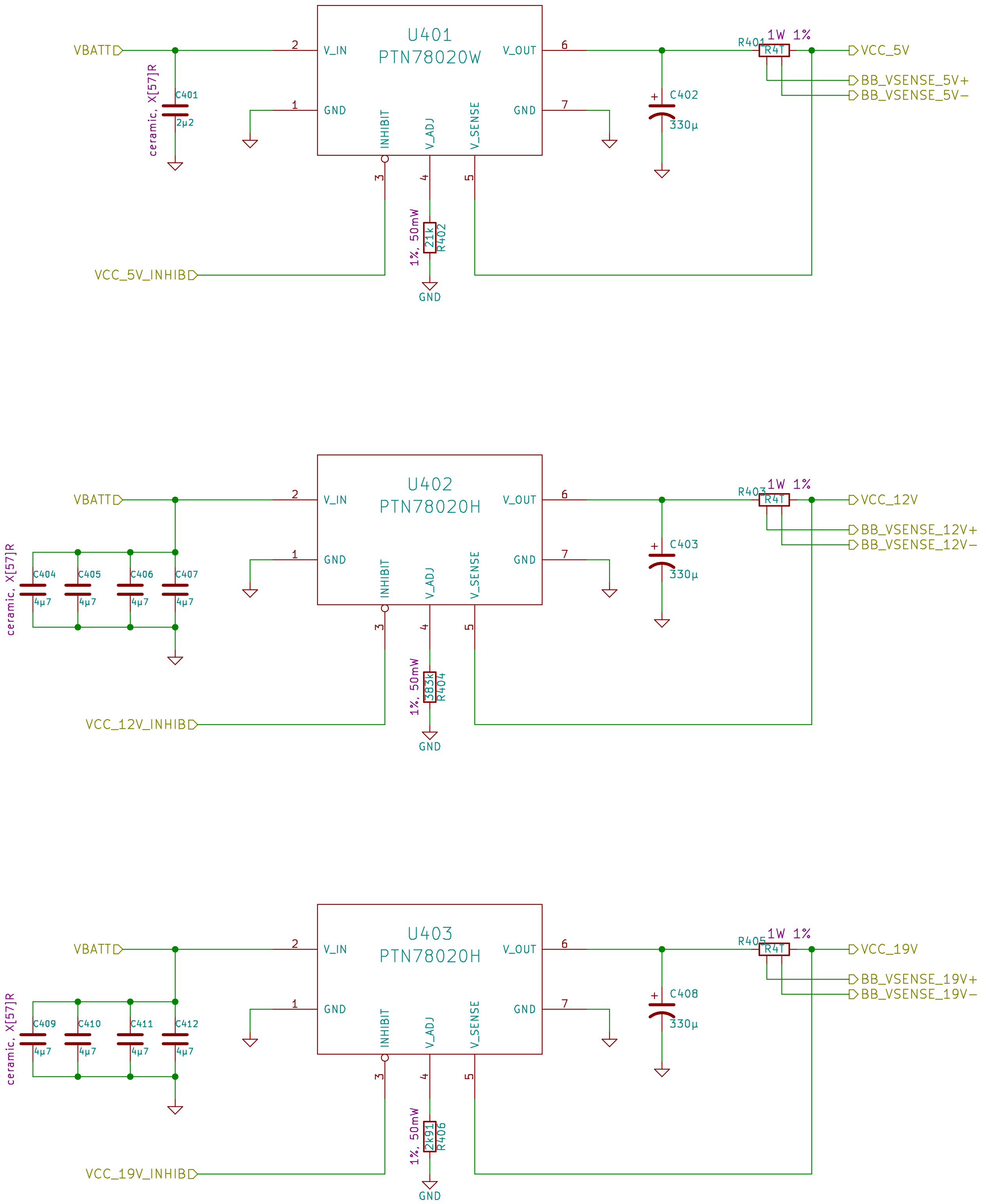
Size: B	Date: 2015-11-16	Rev: A
KiCad E.D.A.	kicad no-vcs-found-product	Id: 2/8



Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /Battery, Balance & Protection/
File: battery_balance.sch

Title: Battery Balance

Size: B Date: 2015-11-16 **Rev: A**
KiCad E.D.A. kicad no-vcs-found-product Id: 3/8



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.

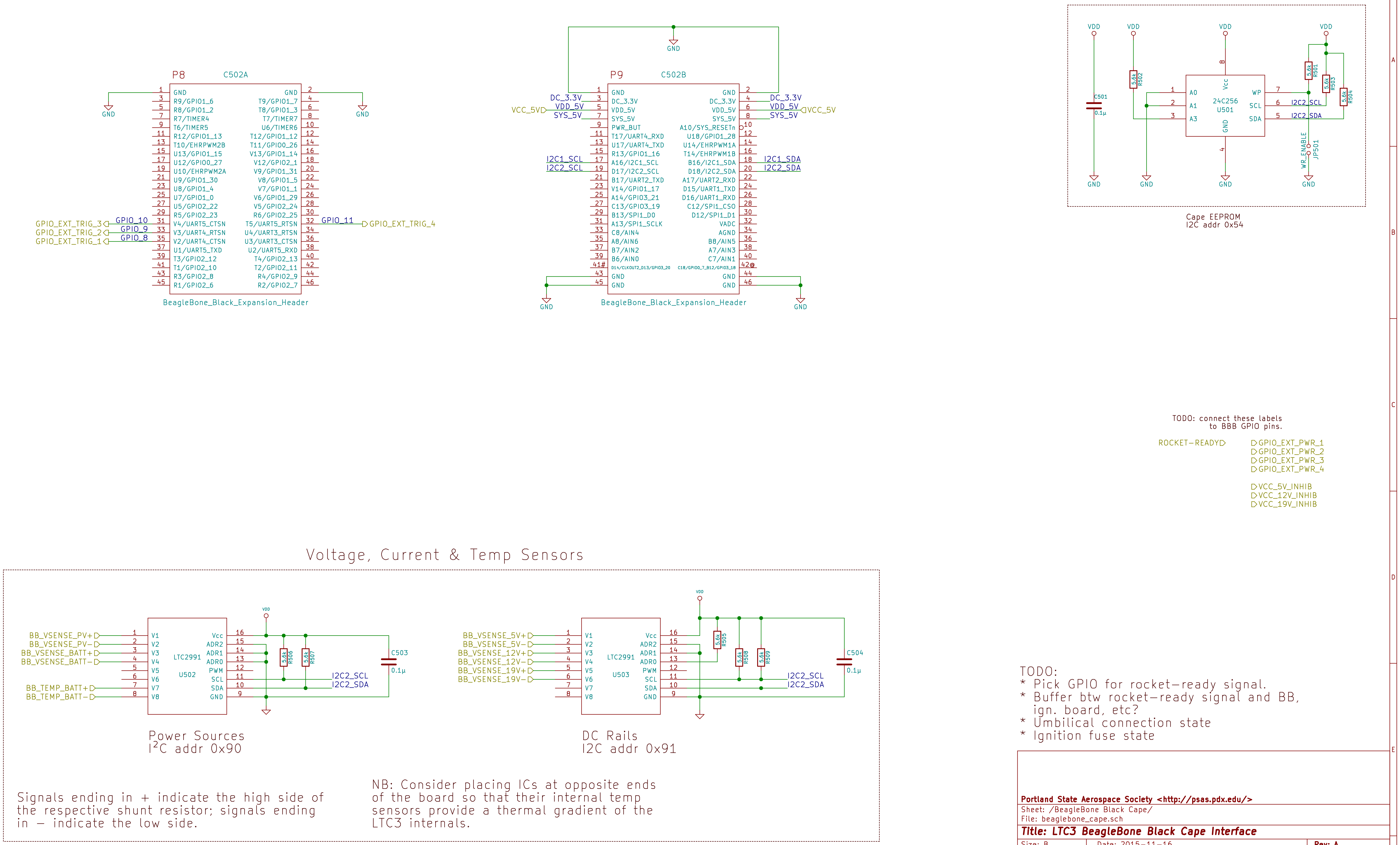
TODO:
* Capacitor values are minimums. Consider increasing these.
Consult datasheet for more info.

R_sense = 1/Imax**2
1 A = 1 ohm
3 A = 0.1 ohm
5 A = 0.04 ohms
10 A = 0.01 ohms

Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /DC-DC Converters/
File: dcdc_converter.sch

Title: LTC3 DC-DC Converters

Size: B	Date: 2015-11-16	**Rev: A**
KiCad E.D.A. kicad no-vcs-found-product		Id: 4/8



Signals ending in + indicate the high side of the respective shunt resistor; signals ending in − indicate the low side.

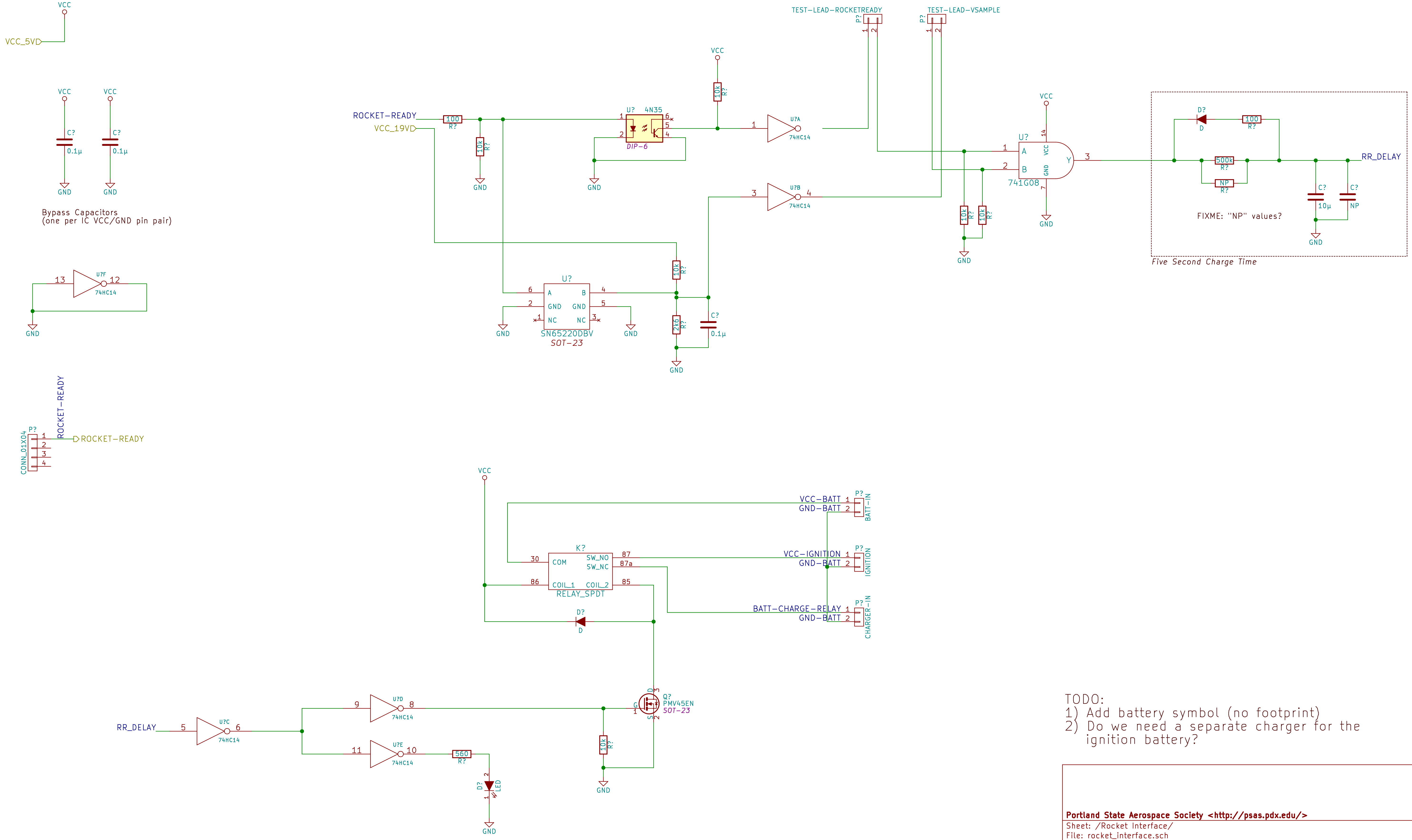
NB: Consider placing ICs at opposite ends of the board so that their internal temp sensors provide a thermal gradient of the LTC3 internals.

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

Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /BeagleBone Black Cape/
File: beaglebone_cape.sch

Title: LTC3 BeagleBone Black Cape Interface

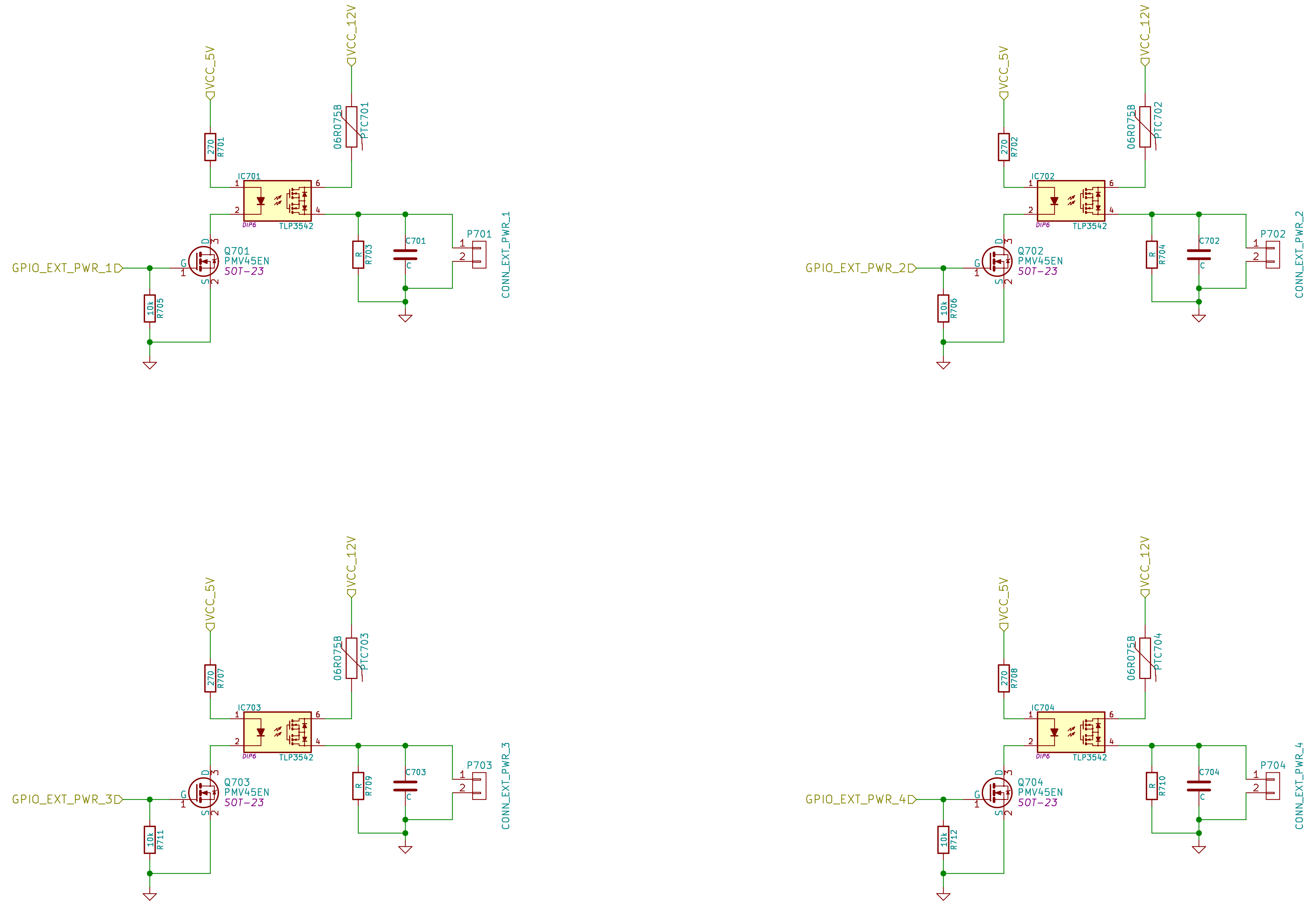
Size: B	Date: 2015-11-16	**Rev: A**
KiCad E.D.A. kicad no-vcs-found-product		Id: 5/8



TODO:
1) Add battery symbol (no footprint)
2) Do we need a separate charger for the
ignition battery?

Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /Rocket Interface/
File: rocket_interface.sch
Title: LTC3 Rocket Interface
Size: B Date: 2015-11-16 **Rev: A**
KiCad E.D.A. kicad no-vcs-found-product Id: 6/8

TODO:
1. Determine values for bleeder resistor
and filter capacitor on each output connector.
2. Pick new PolyFuses, 0.5–1.0A max.

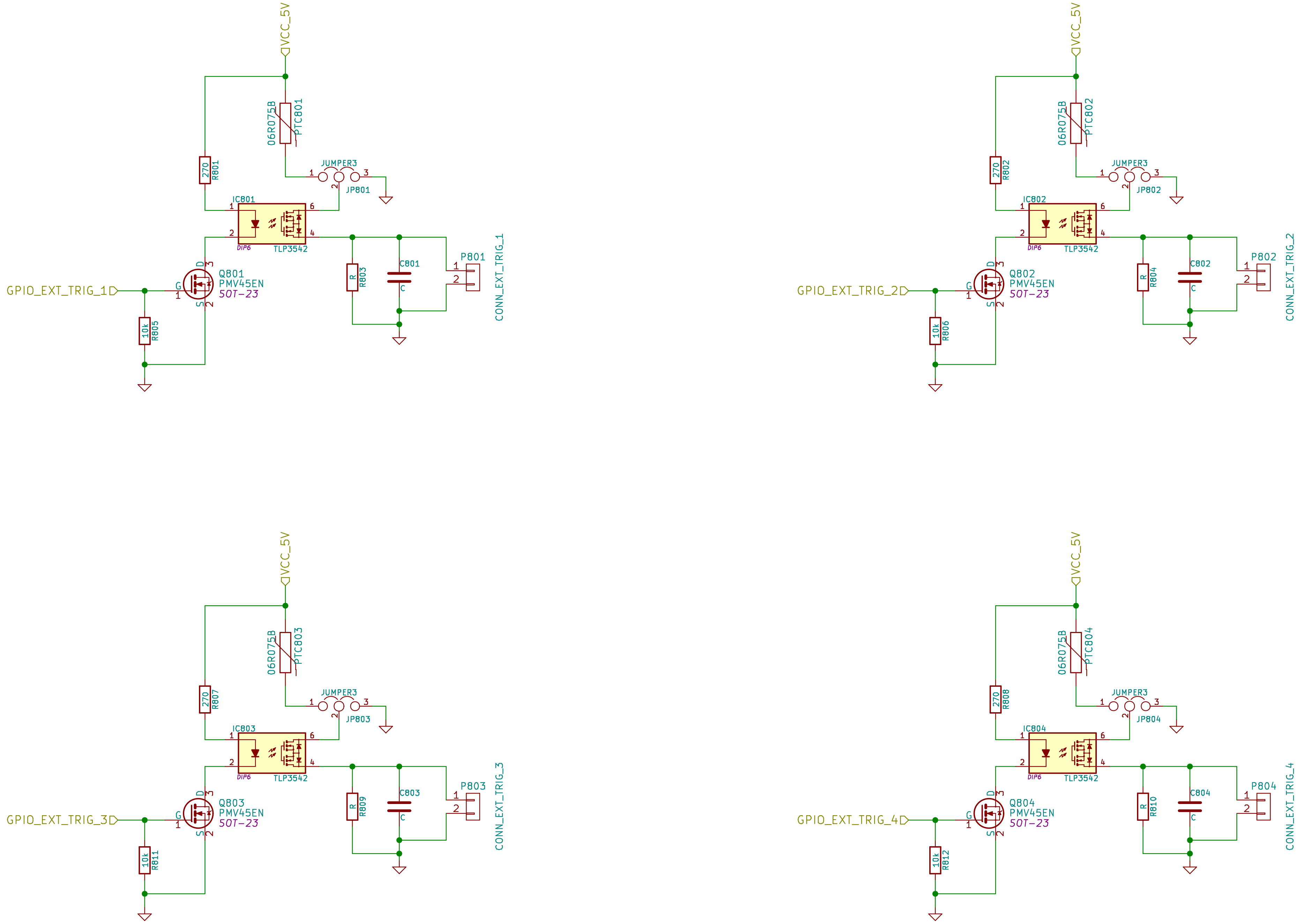


Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /External Device Power/
File: external_power.sch

Title: LTC3 External Device Power

Size: B	Date: 2015-11-16	**Rev: A**
KiCad E.D.A. kicad no-vcs-found-product		Id: 7/8

TODO:
1. Determine values for bleeder resistor
and filter capacitor on each output connector.
2. Pick new PolyFuses, 100−200mA max.



Portland State Aerospace Society <http://psas.pdx.edu/>
Sheet: /External Device Triggers/
File: external_triggers.sch

Title: LTC3 External Device Triggers

Size: B Date: 2015-11-16 **Rev: A**
KiCad E.D.A. kicad no-vcs-found-product Id: 8/8