

1 2 3 4

A


BRAKING IO

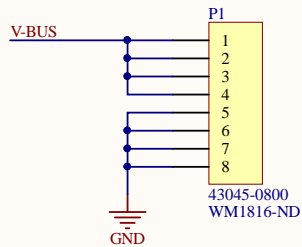
B

POD 5

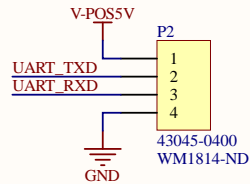
C

REV 1

Title <i>Braking IO PCB</i>		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, WI 53706		
Engineer:		Revision:		
Date: 9/3/2019	Time: 11:34:20 PM	Sheet	of	
File: braking_io.SchDoc				

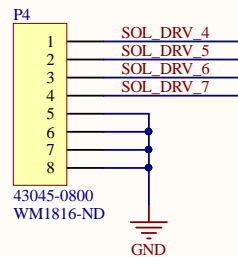
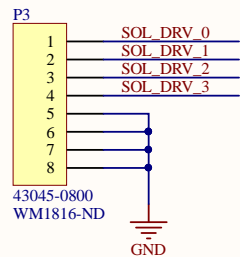


PWR INPUT



UART

DEBUG

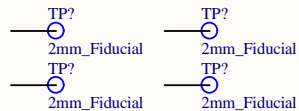
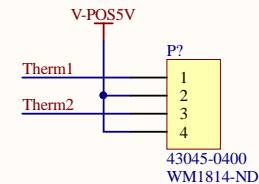


SOLENOIDS

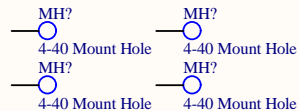
TODO: Consolidate into single 16 pin connector?
Unlikely to use all 8 on a single tray

PRESSURE SENSORS

THERMISTORS



Fiducials
Place on four corners of board



Mount Holes
Avoid routing under screw head

Title Connectors		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, WI 53706	
Engineer:	Revision:	Sheet of	
Date: 9/3/2019	Time: 11:34:21 PM		
File: connectors.SchDoc			

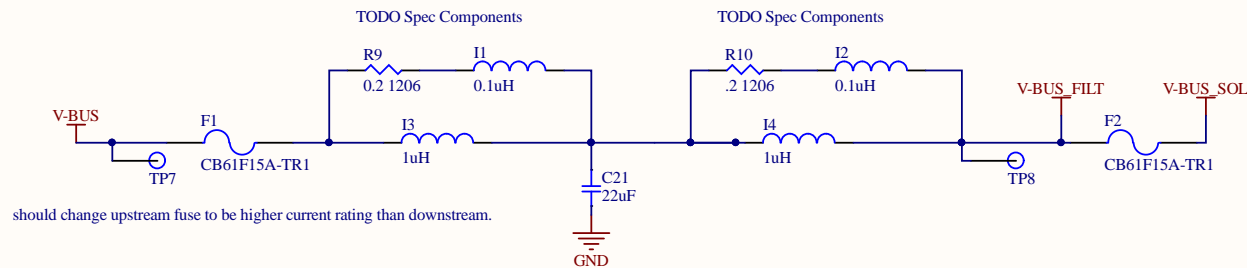
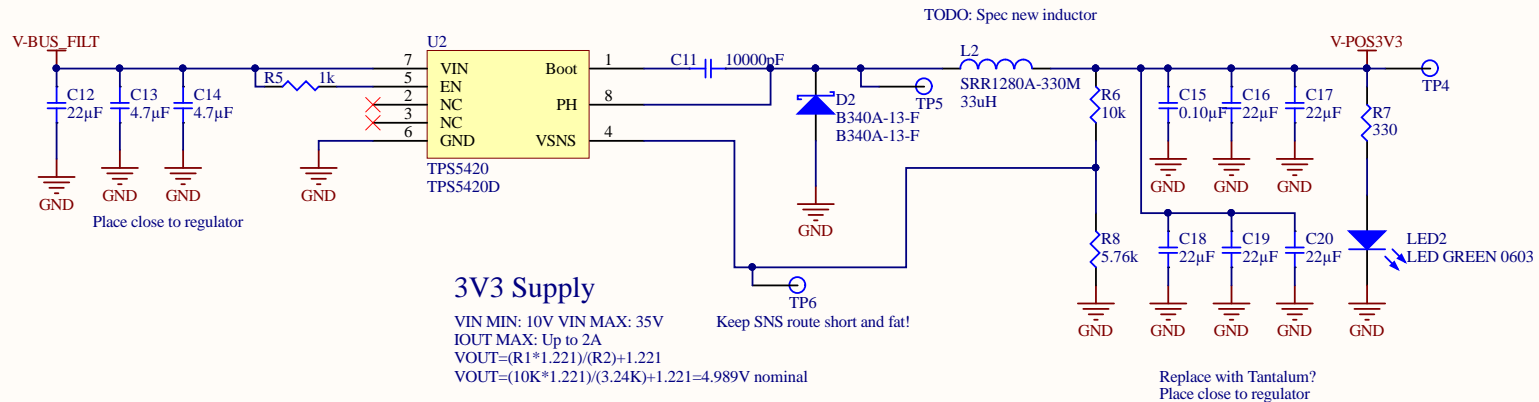
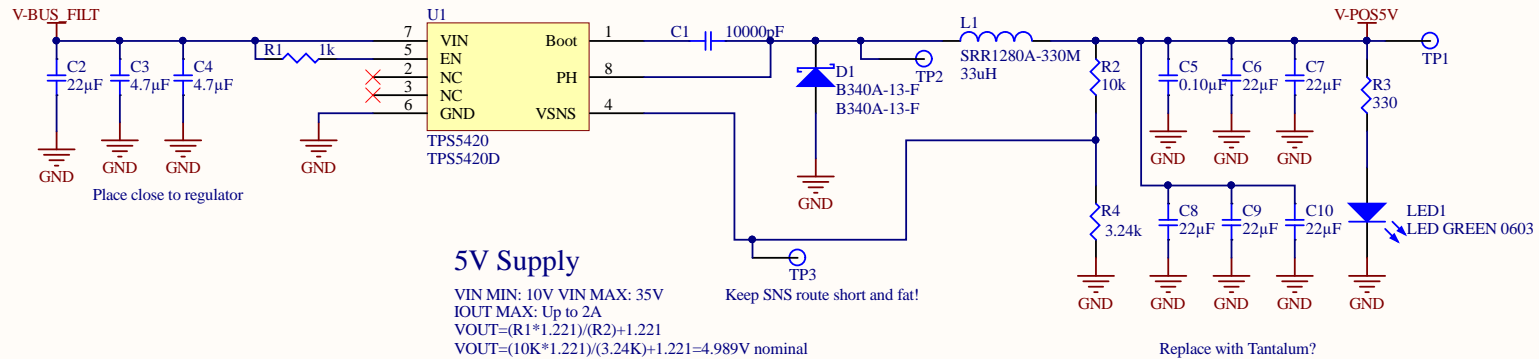


1

2

3

4



Notes:
 Follow layout reference design
 Place bypass caps close to regulator
 Keep hot loops as short as possible
 See Mathcad file for filter design considerations
 Possible to replace ceramic bulk cap with a tantalum.

Title Power		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, WI 53706	
Engineer:	Revision:		
Date: 9/3/2019	Time: 11:34:22 PM	Sheet	of
File: power.SchDoc			

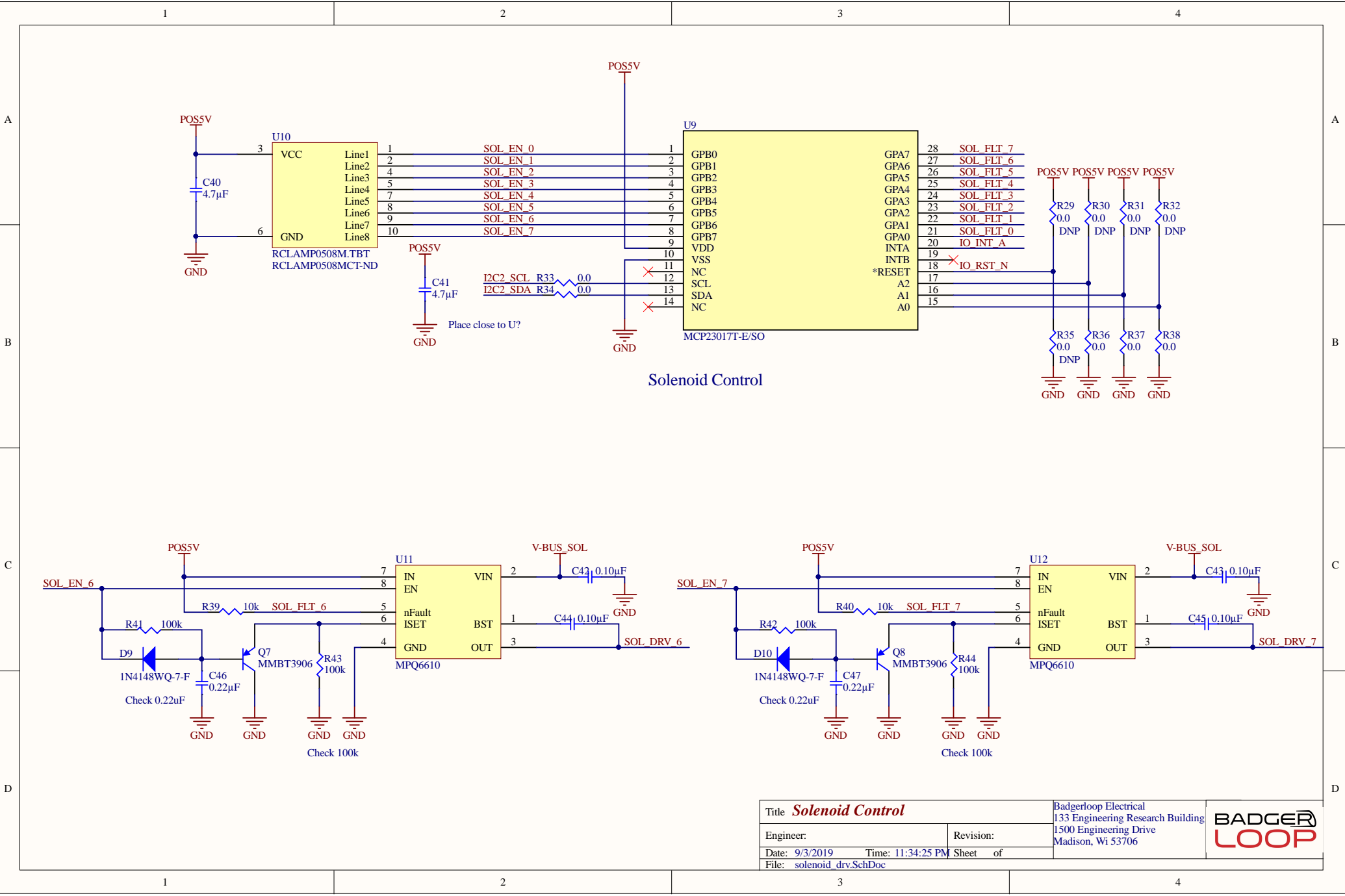
**BADGER
LOOP**

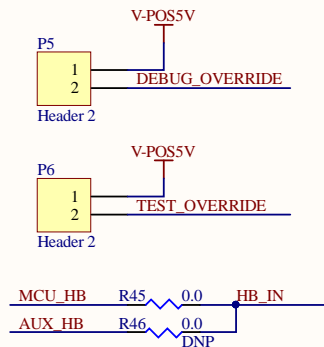
1

2

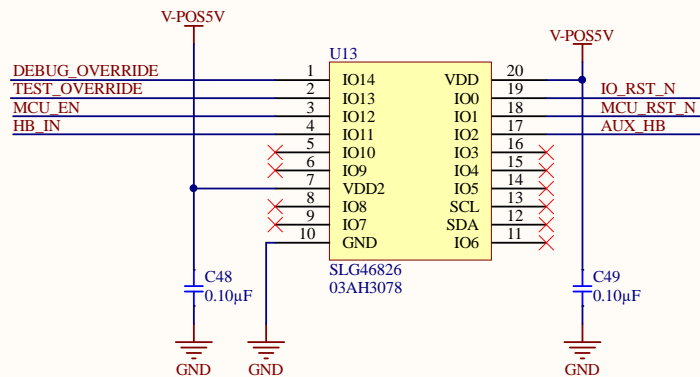
3

4





DEBUG



WATCHDOG AND RESET CONTROLLER

IO pin selection is arbitrary. Can be adjusted internally for better layout
Currently- Inputs on Left, outputs on right

Modes of operation:

Debug: EN signal is always on when SLG has power

Populate Jumper 1

Test: 10Hz signal internal signal is recirculated to mimic heartbeat

Populate Jumper 2


Operation: U? expects 10Hz heartbeat. If no heartbeat for 1s after 20s Power on reset

MCP RST_N will fall and MCU RST_N will pulse for 200ms

Silego Image here:

<https://github.com/badgerloop-software/hardware/blob/master/silego/watchdog.gp6>

Silego Image PDF Outputs:

Title Watchdog		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, WI 53706	
Engineer:	Revision:		
Date: 9/3/2019	Time: 11:34:27 PM		
File: watchdog_SchDoc	Sheet of		