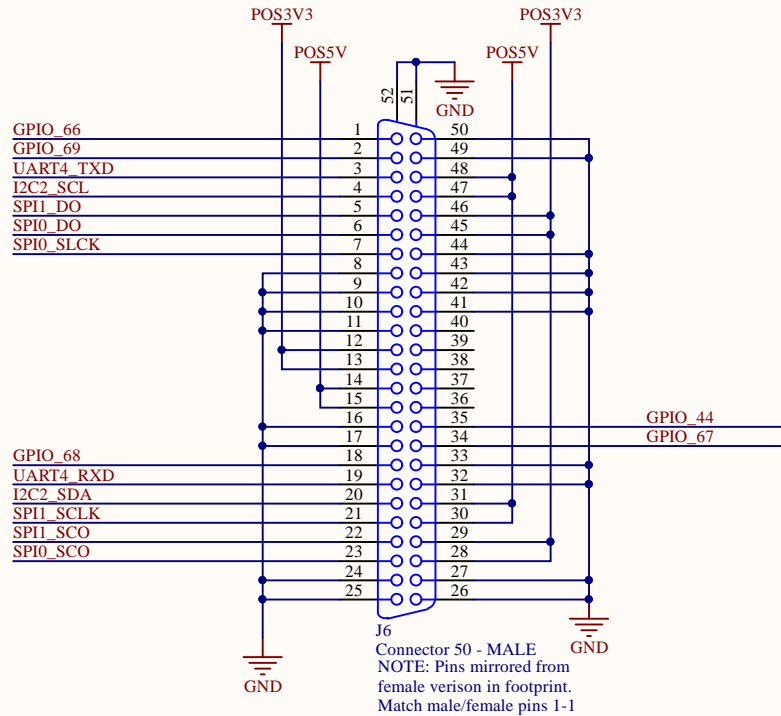
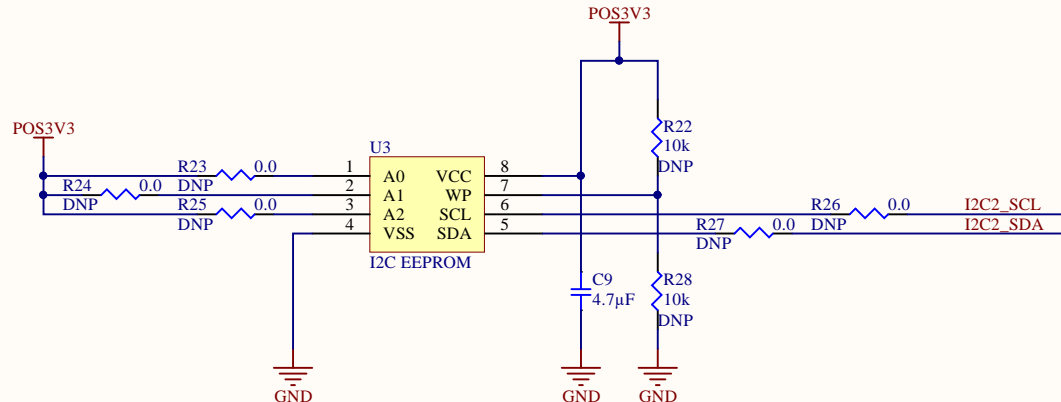


Accelerometers

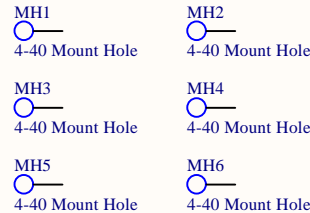
- ▲ Programmable Interrupt Source:
 - DMP InterruptWake On Motion Interrupt
 - PLL RDY Interrupt
 - I2C Master Input
 - Raw Data Ready Interrupt
 - FIFO Overflow Interrupt
 - FIFO Watermark Interrupt



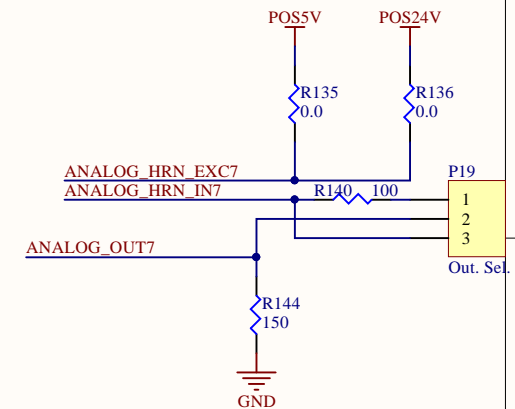
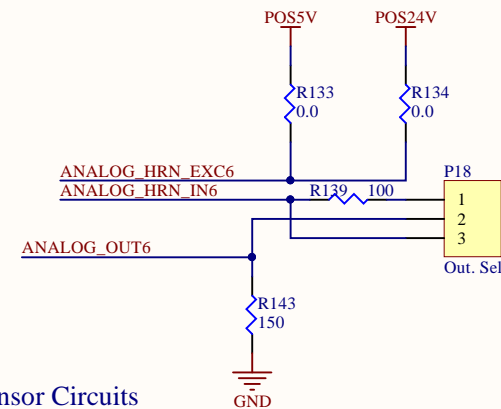
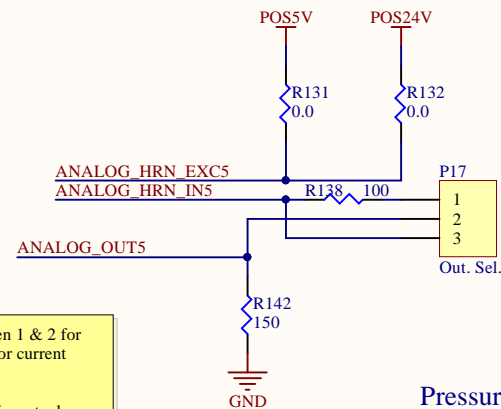
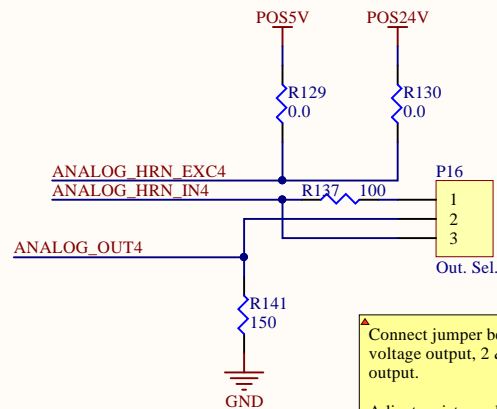
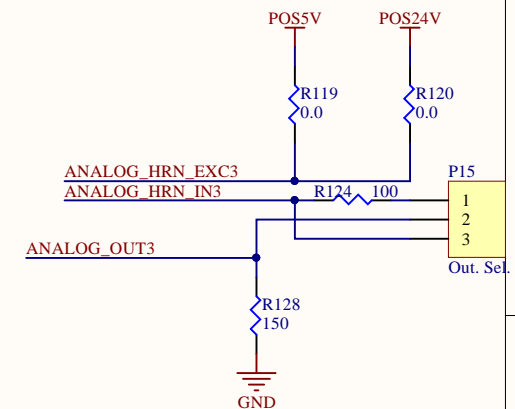
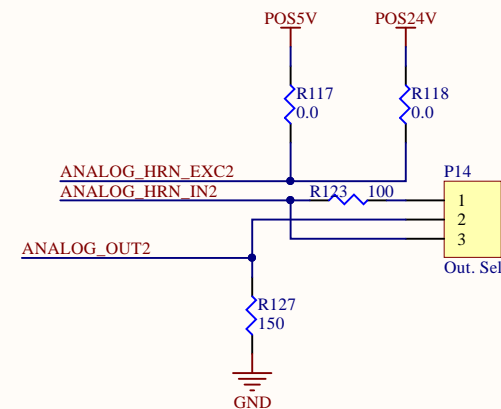
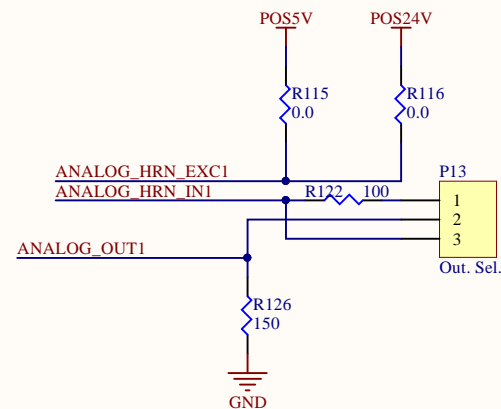
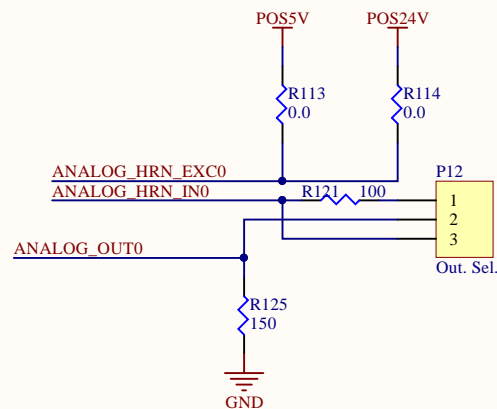
Main Connector



I2C EEPROM

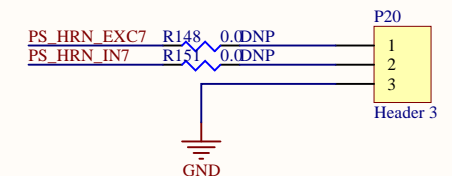
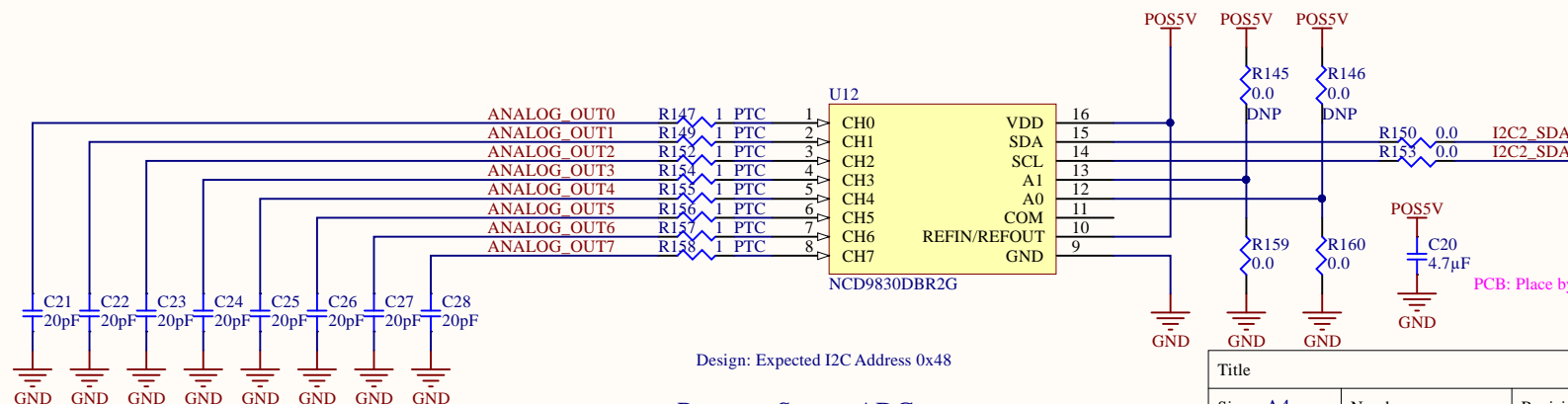


MECHANICAL



- Connect jumper between 1 & 2 for voltage output, 2 & 3 for current output.
- Adjust resistor values for actual sensor output

Pressure Sensor Circuits




PCB: Place bypass cap near ADC

Testing: Connect PS directly to P?

Design: Expected I2C Address 0x48

Pressure Sensor ADC

PCB: Place debouncing caps near ADC

Title			<i>Badgerloop</i> 133 Engineering Research Building Madison, WI 53715	
Size: A4	Number:	Revision:		
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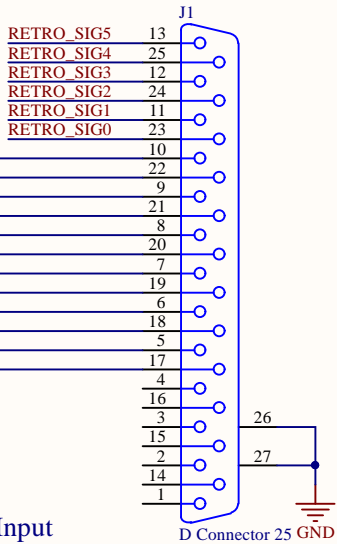
BADGER
LOOP

BROWN: 24V
BLUE: GND
BLACK: SIG

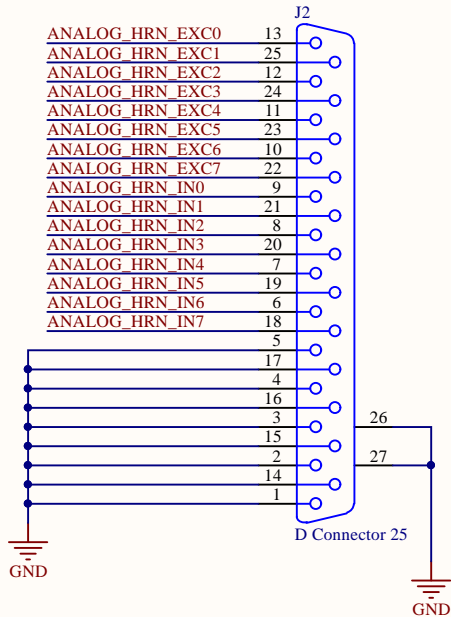
POS24V

GND

Retroreflective Sensor Input



Generic Analog Input



POS24V

POS5V

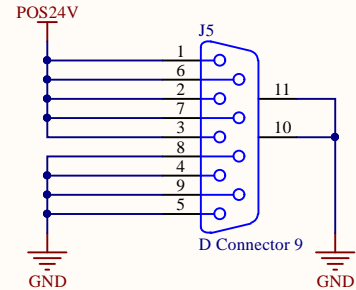
GND

SOL_RTN0
SOL_RTN1
SOL_RTN2
SOL_RTN3
SOL_RTN4
SOL_RTN5
SOL_RTN6
SOL_RTN7

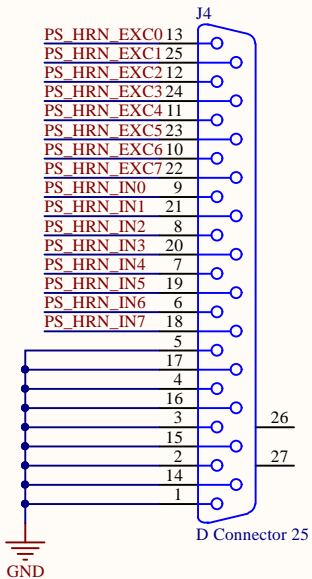
LIM_RTN3
LIM_RTN2
LIM_RTN1
LIM_RTN0

D Connector 25

24V PWR

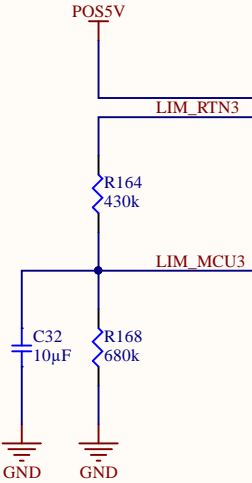
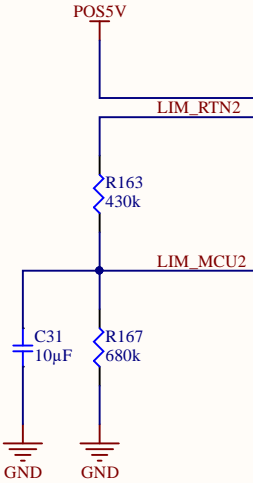
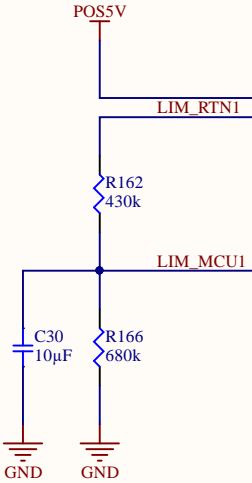
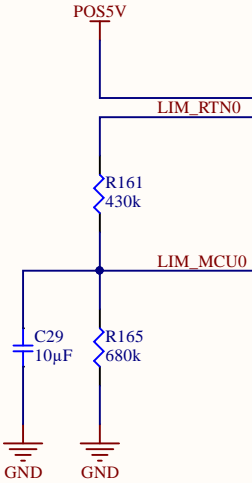


Pressure Sensor Input



$$f_c = \frac{1}{2\pi*(R_1//R_2)*C_1}$$

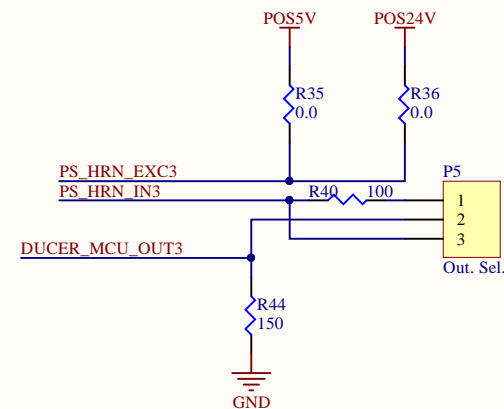
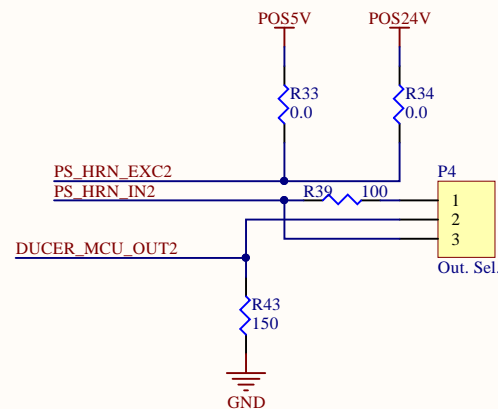
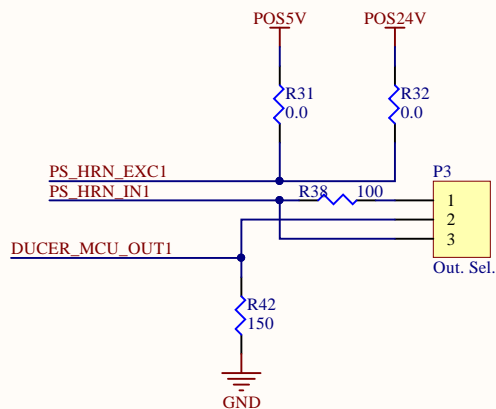
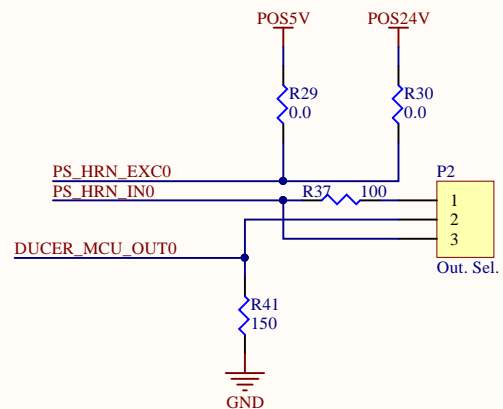
 $f_c = 60.4\text{Hz}$



Limit Switch Inputs

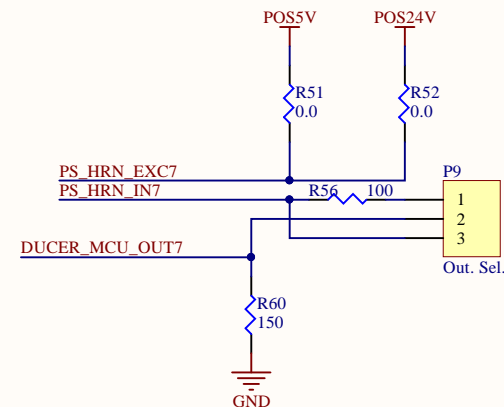
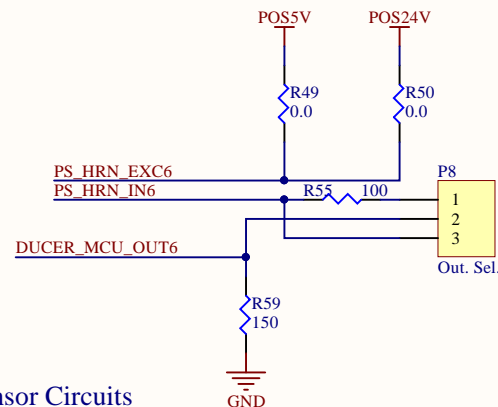
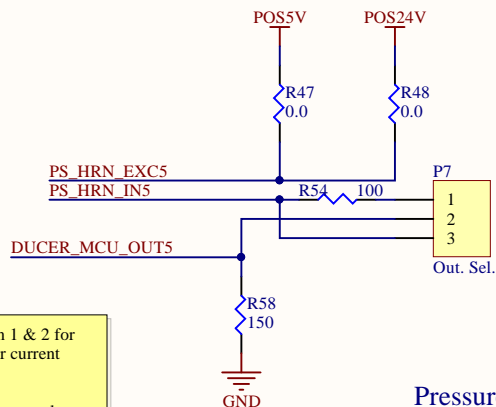
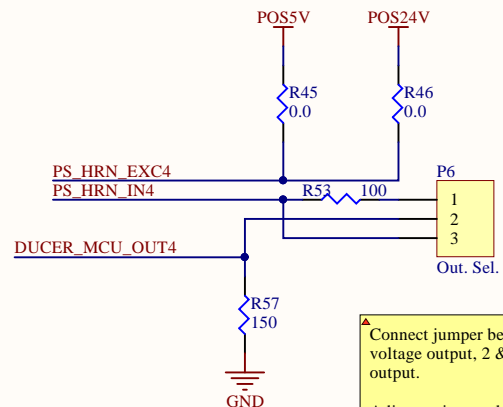
A

A



B

B



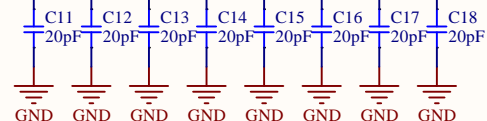
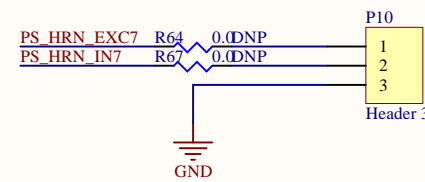
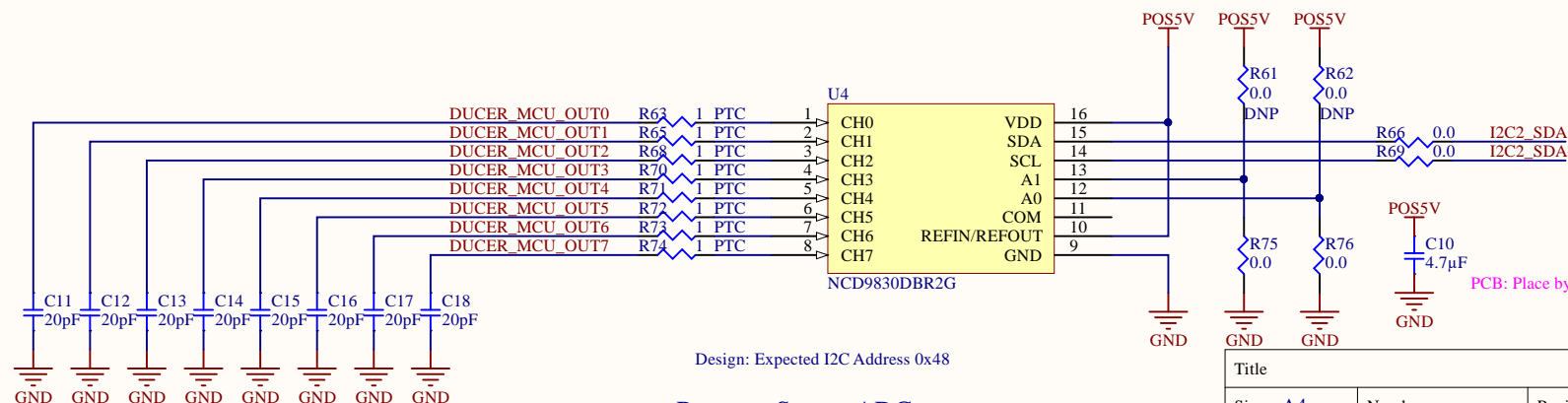
Connect jumper between 1 & 2 for voltage output, 2 & 3 for current output.

Adjust resistor values for actual sensor output

Pressure Sensor Circuits

C

C



Design: Expected I2C Address 0x48

Pressure Sensor ADC

PCB: Place debouncing caps near ADC

PCB: Place bypass cap near ADC

Testing: Connect PS directly to P?

Title		
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File: C:\git\5th\podiv-altium\src\prj\sch\lv_io_pressure.SchDoc		

Badgerloop
133 Engineering Research
Building
Madison, WI 53715

BADGER
LOOP

D

A

A

B

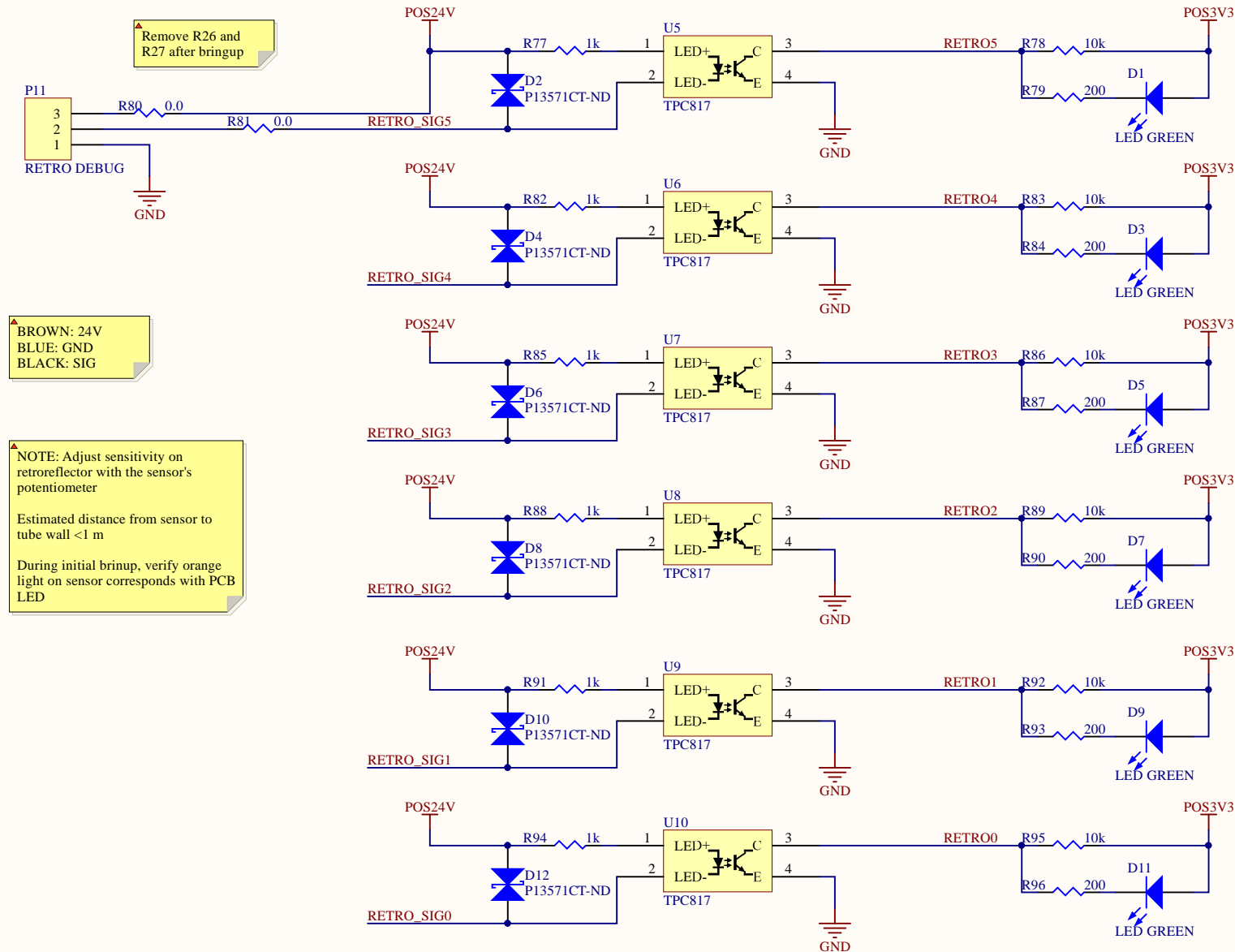
B

C

C

D

D



BROWN: 24V
BLUE: GND
BLACK: SIG

NOTE: Adjust sensitivity on retroreflector with the sensor's potentiometer

Estimated distance from sensor to tube wall <1 m

During initial bringup, verify orange light on sensor corresponds with PCB LED


Tape Strip Monitoring:
RETROS 0-2

Wheel Speed Monitoring:
RETROS 3-5



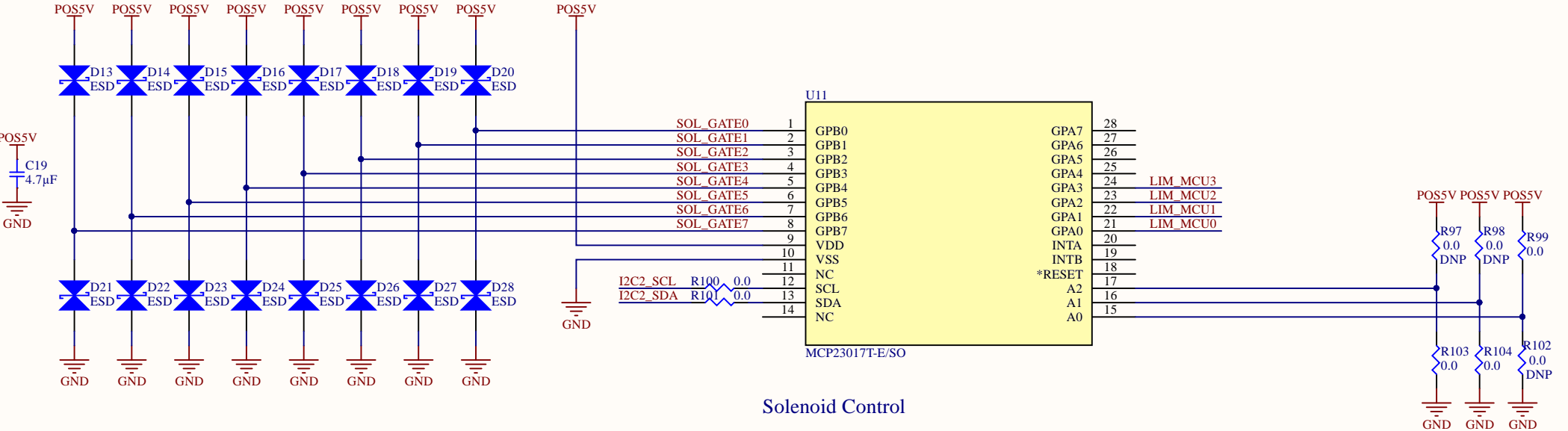
QMIC-0N-0A Photoelectric / Retroreflective Sensor

Retro Circuits

Title			<i>Badgerloop</i> <i>133 Engineering Research</i> <i>Building</i> <i>Madison, WI 53715</i>	
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Date: 1/21/2019	Time: 9:27:31 PM	Sheet of		
File: C:\git\p5th\podiv-altium\src\prj\sch\lv_io_retro.SchDoc				

Solenoid	Transport	Power ON	Pressurize	Propulsion	Braking	Crawl	Vent
SOL_GATE0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SOL_GATE1	OFF	ON	ON	ON	ON	ON	OFF
SOL_GATE2	OFF	OFF	OFF	ON	OFF	ON	OFF
SOL_GATE3	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SOL_GATE4	NC	NC	NC	NC	NC	NC	NC
SOL_GATE5	NC	NC	NC	NC	NC	NC	NC
SOL_GATE6	NC	NC	NC	NC	NC	NC	NC
SOL_GATE7	NC	NC	NC	NC	NC	NC	NC

Solenoid Table



Solenoid Control

