

A

A

B

B

C

C

D

D

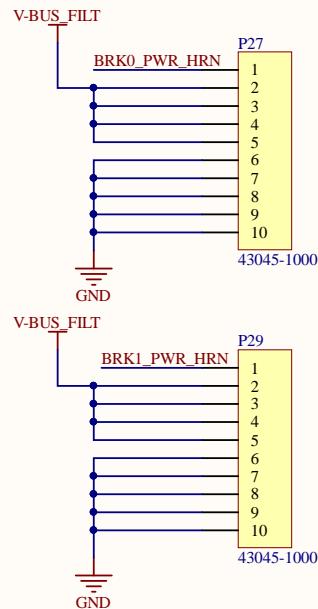
MAIN IO

POD 5

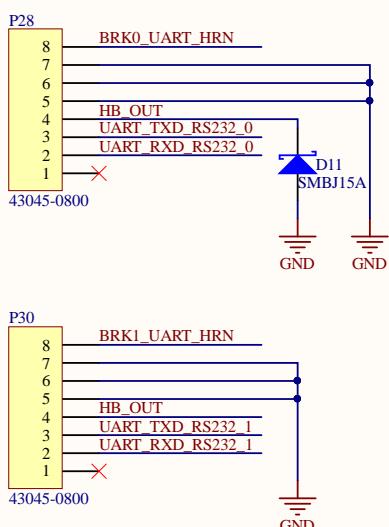
REV 1

Title Main IO		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, Wi 53706	BADGER LOOP
Engineer:	Revision:	Date: 6/28/2020 Time: 11:25:22 AM Sheet 1 of	

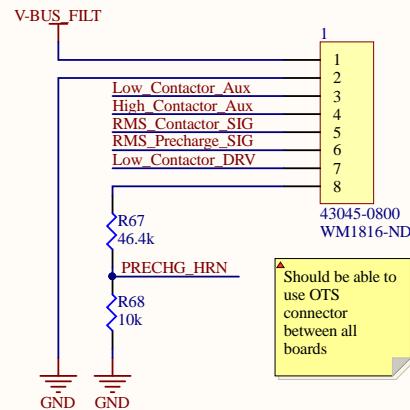
BrakingIO PWR



BrakingIO UART



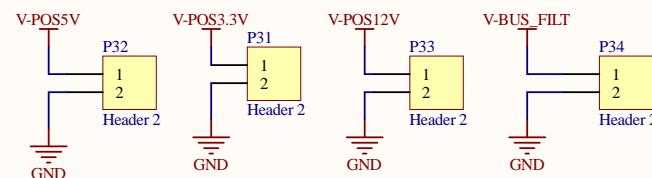
Precharge Board



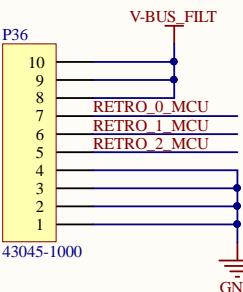
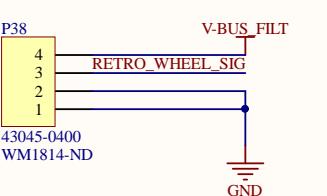
BMS & RMS

See respective schematics

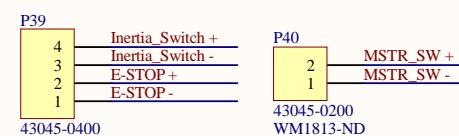
Debug



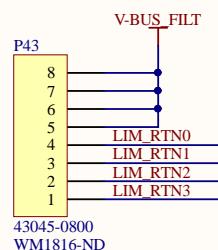
Retro Sensors



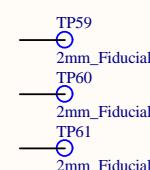
Shutdown Circuit Inputs



Limit Switches

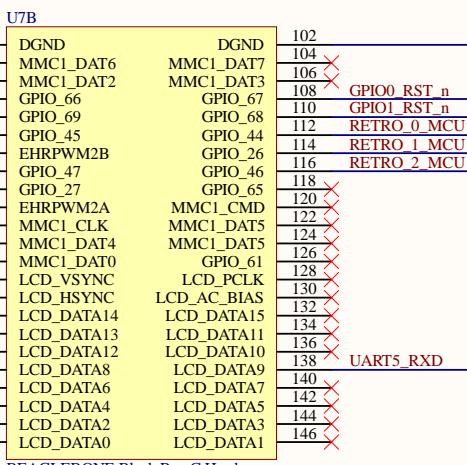
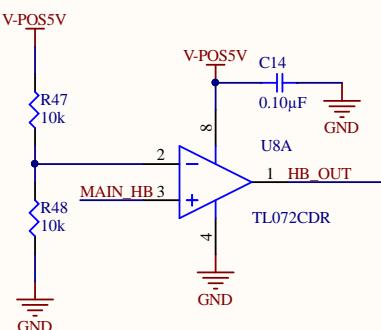
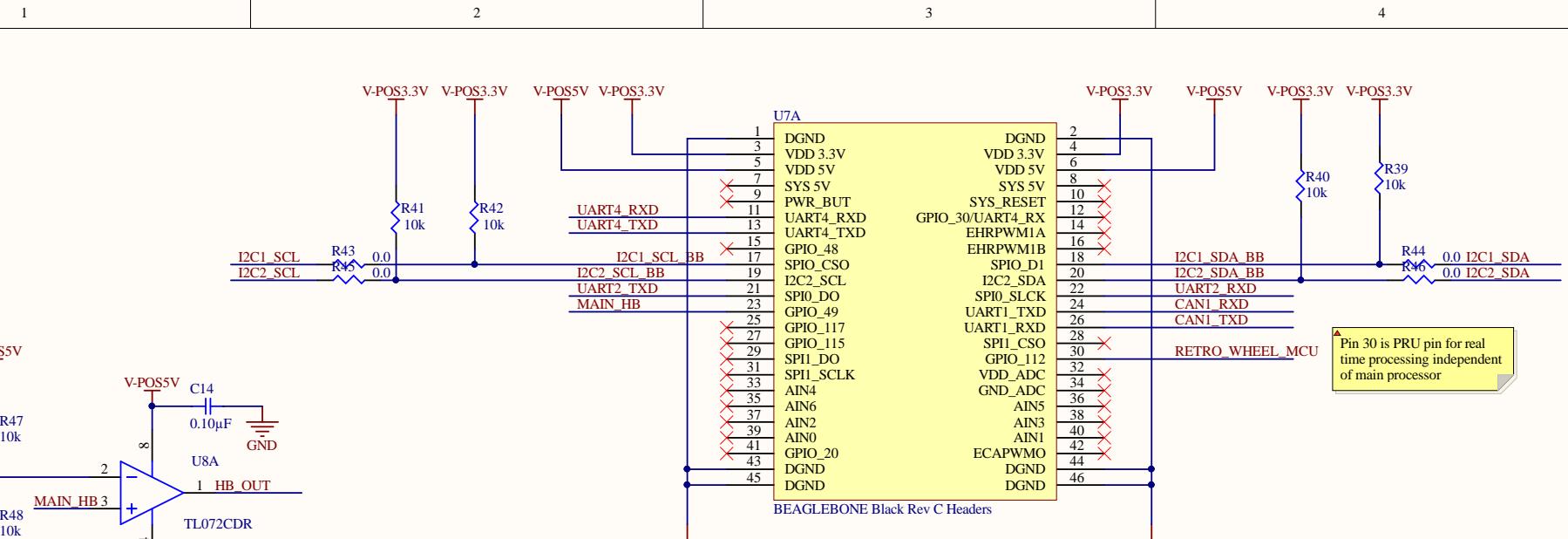


Fiducials

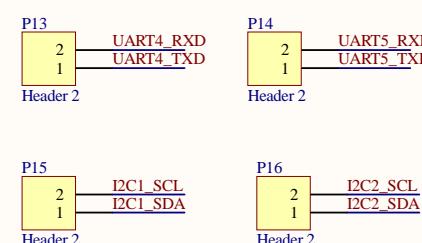


Title Connectors

Engineer:	Revision:	Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, Wi 53706
Date: 6/28/2020	Time: 11:25:22 AM	Sheet 2 of
File: connectors.SchDoc		BADGER LOOP

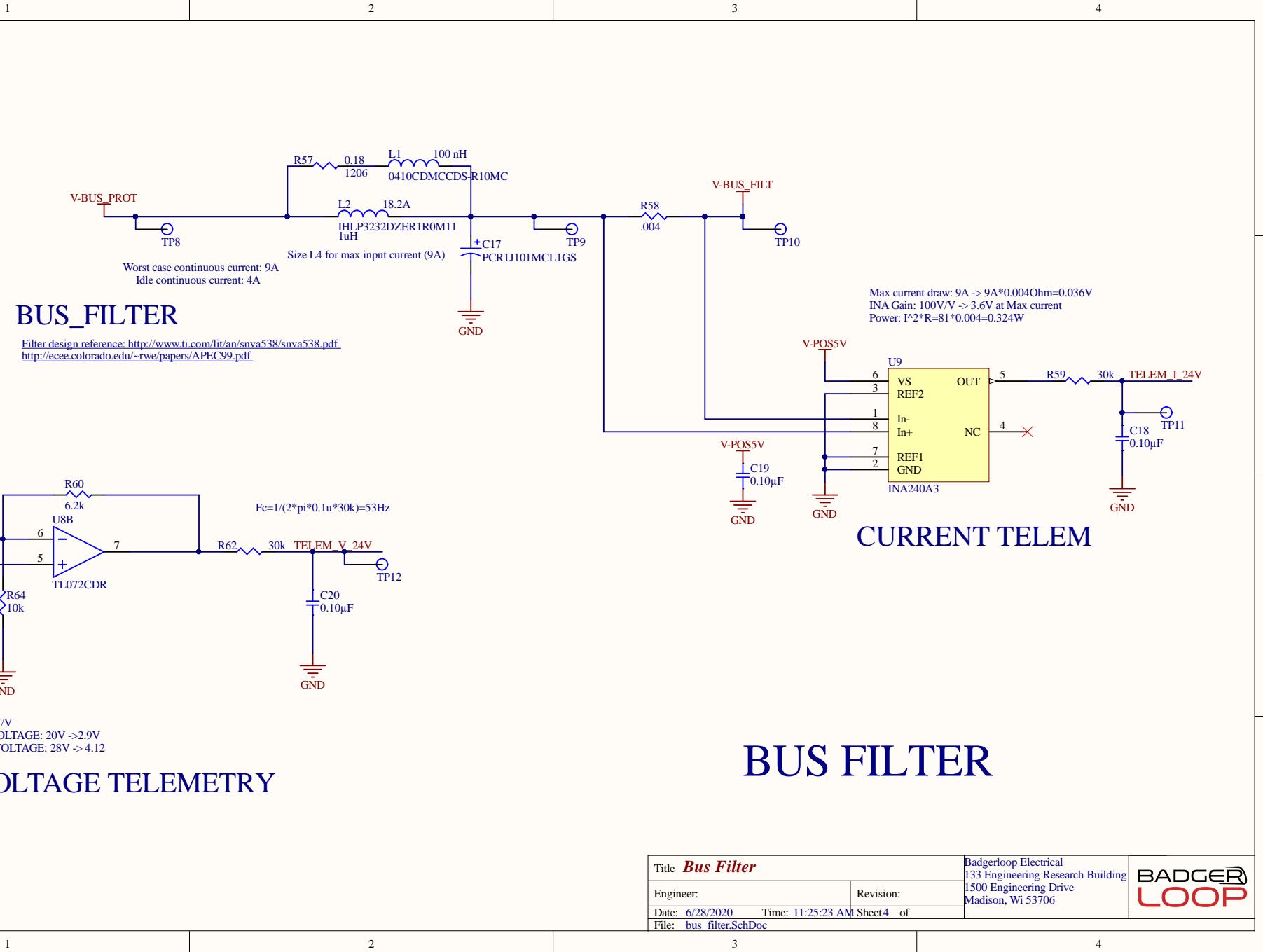


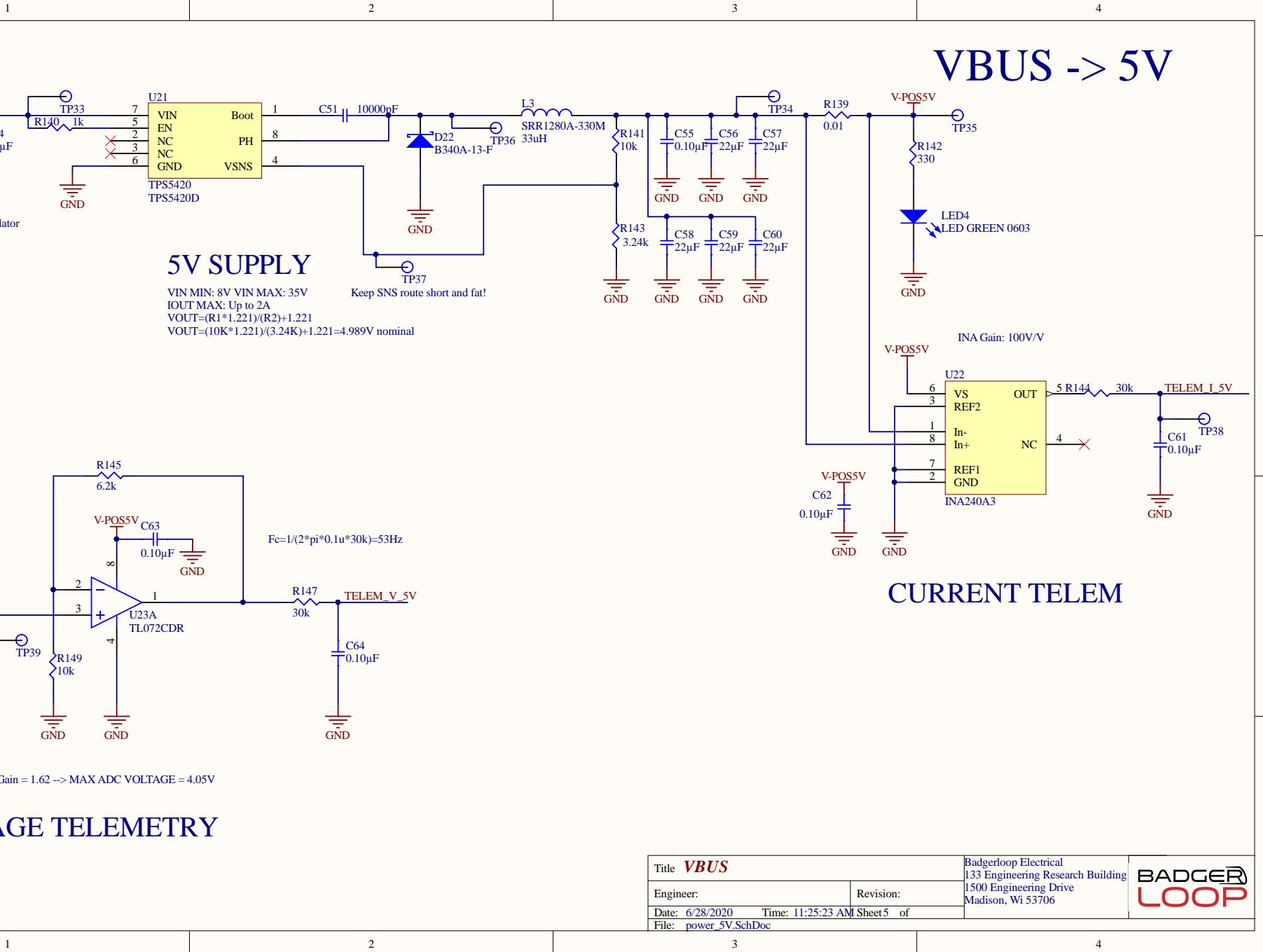
Beaglebone Headers



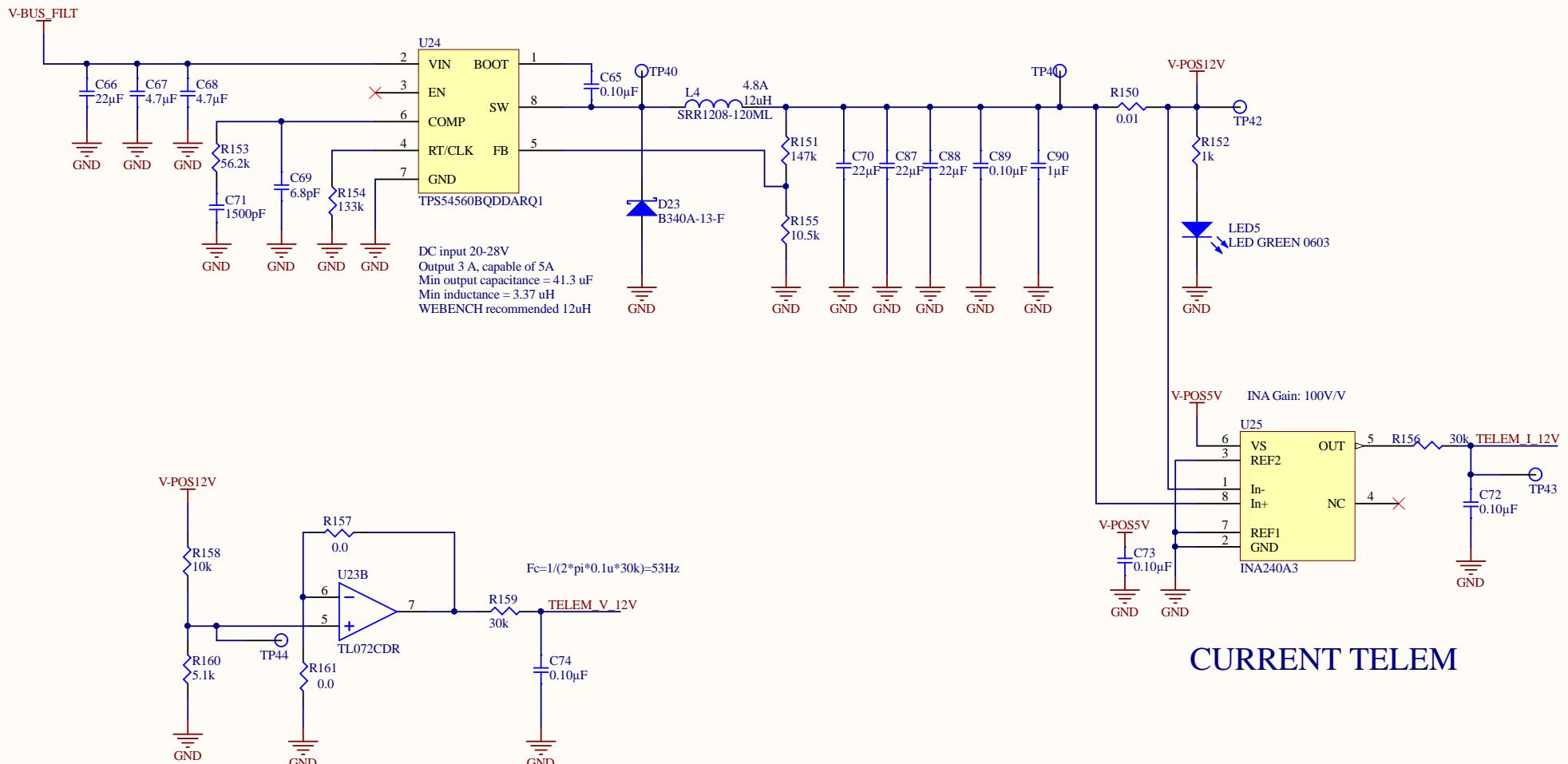
Debug Header

Title Beaglebone		Badgerloop Electrical 133 Engineering Drive 1500 Engineering Drive Madison, Wi 53706
Engineer:	Revision:	
Date: 6/28/2020	Time: 11:25:23 AM	Sheet 3 of
File: beaglebone.SchDoc		BADGER LOOP





VBUS -> 12V



VOLTAGE TELEMETRY

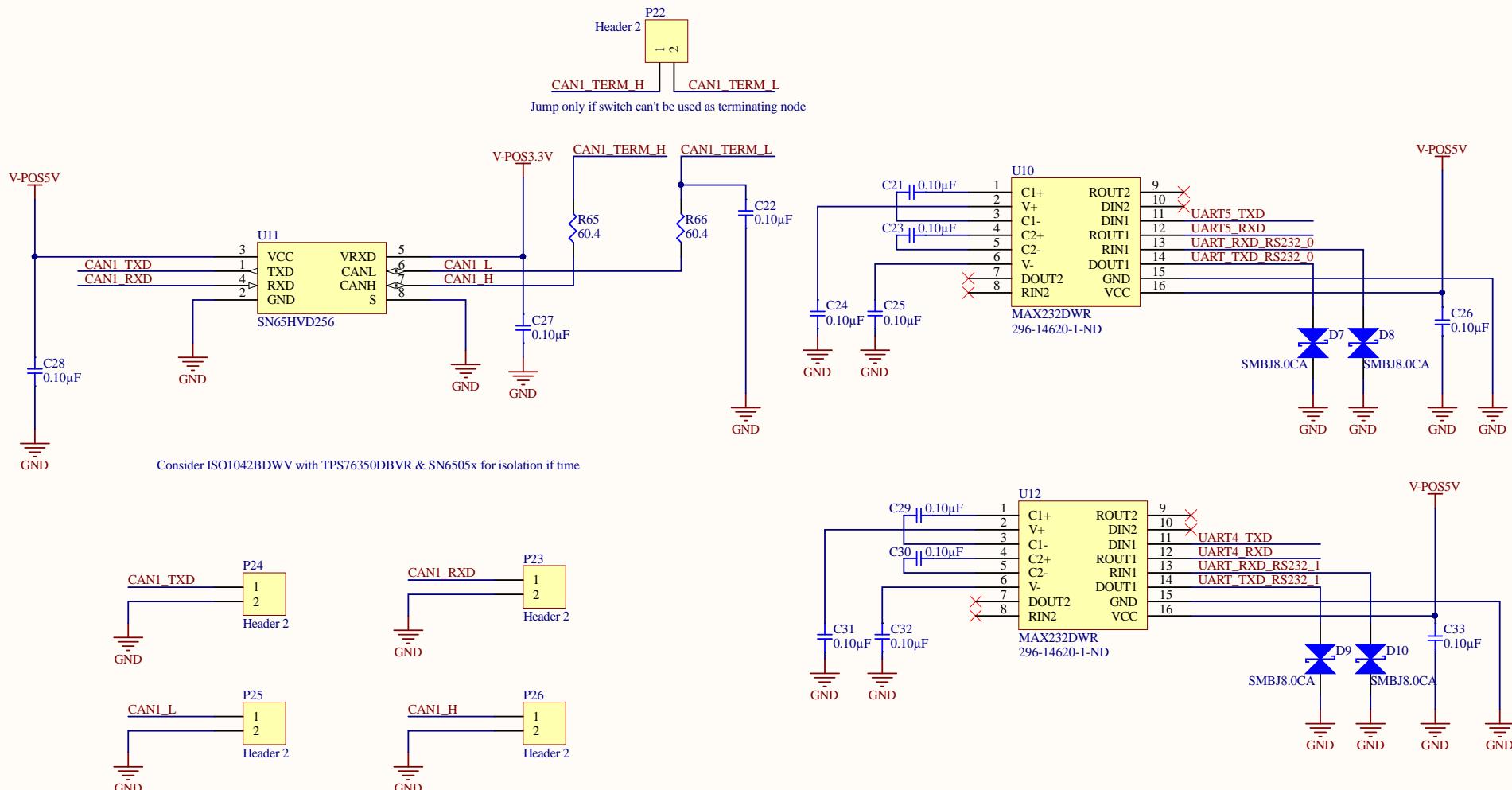
Title 12V PWR		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, Wi 53706
Engineer:	Revision:	
Date: 6/28/2020	Time: 11:25:23 AM	Sheet 6 of
File: power_12V.SchDoc		BADGER LOOP

1

2

3

4

CAN**UART (x2)**Title **CAN and UART Interfaces**

Engineer: _____ Revision: _____

Date: 6/28/2020 Time: 11:25:24 AM Sheet 7 of

File: can_uart.SchDoc

 Badgerloop Electrical
 133 Engineering Research Building
 1500 Engineering Drive
 Madison, Wi 53706

BADGER
LOOP

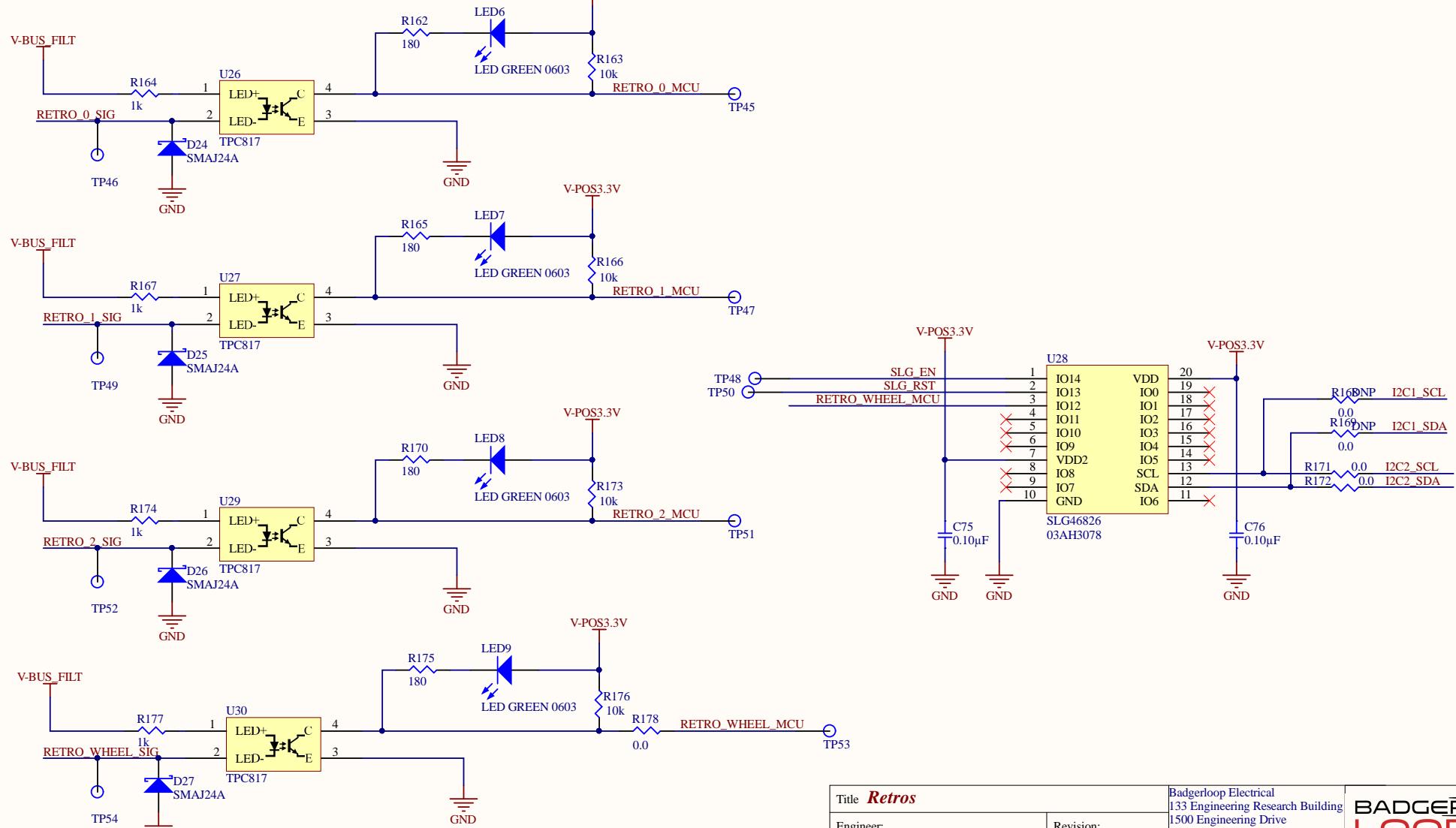
1

2

3

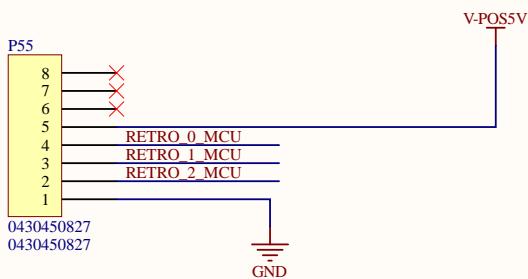
4

Retros & Non-driven Wheel Sensor

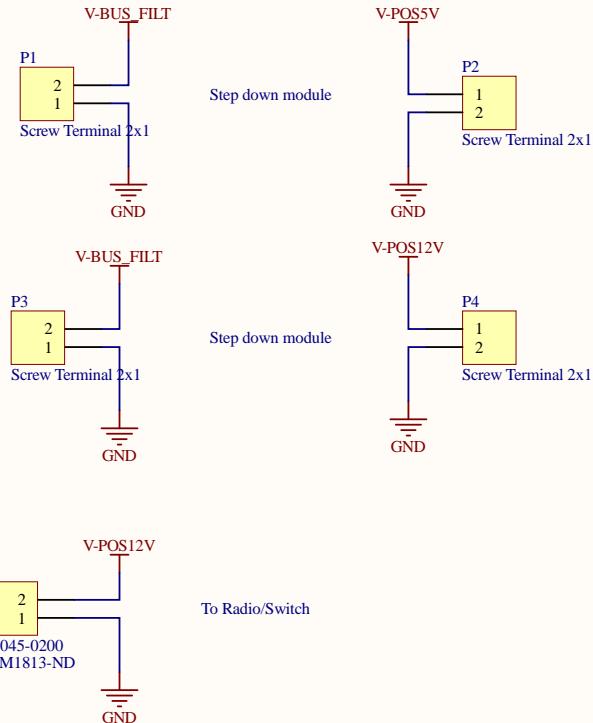


Arduino Interface

Only if SX still requires this



OTS Device Connections



Title *Arduino Shield*

Engineer:

Revision:

Date: 6/28/2020 Time: 11:25:24 AM Sheet 9 of

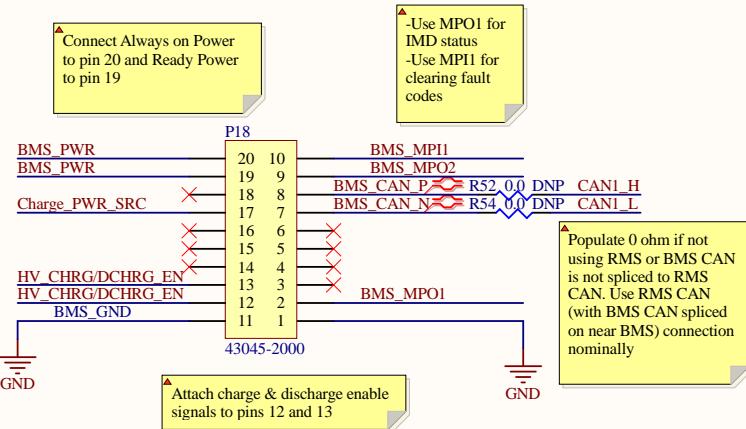
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133 Engineering Research Building
1500 Engineering Drive
Madison, WI 53706

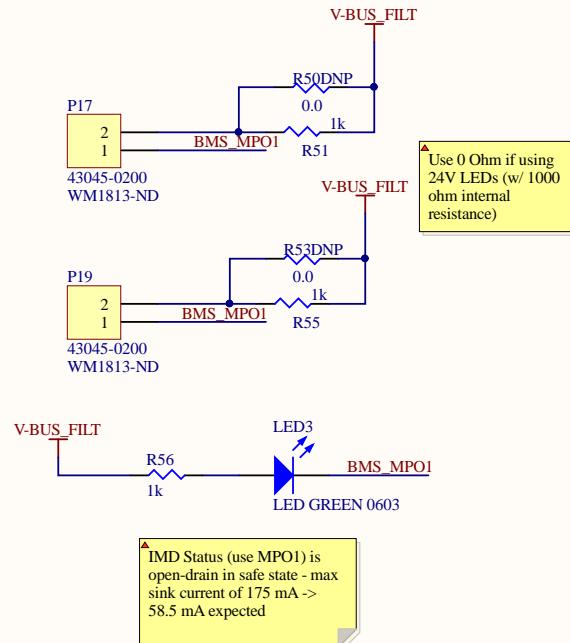


BMS Interface

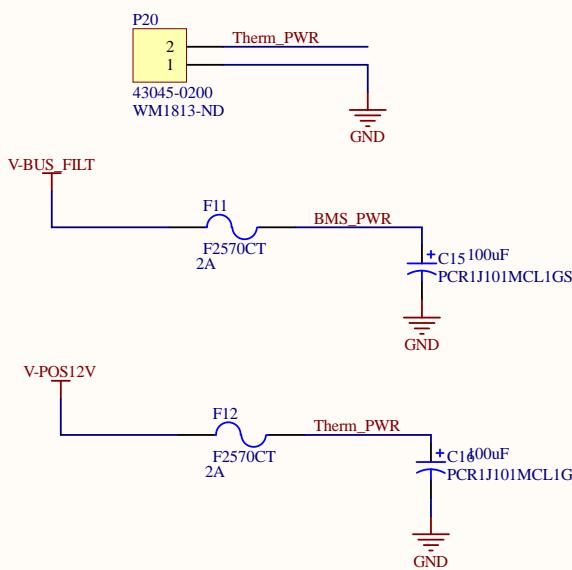
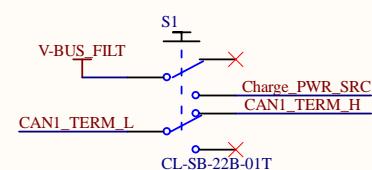
BMS/Term Main Connectors



IMD Light circuit



Charge Enable & Termination Resistors



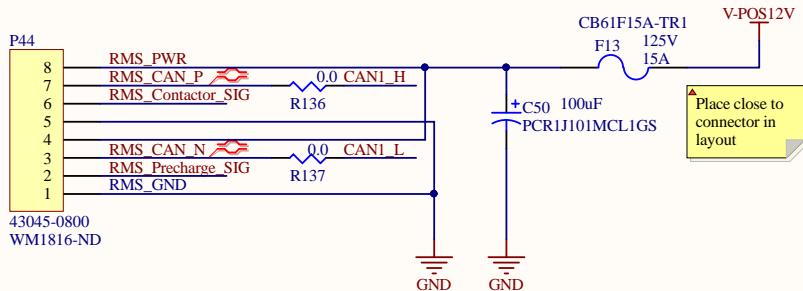
Charger Connector

Title BMS Interface		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, Wi 53706
Engineer: Shelby Riggelman	Revision:A	
Date: 6/28/2020	Time: 11:25:24 AM	Sheet 10 of
File: bms_interface.SchDoc		BADGER LOOP

A

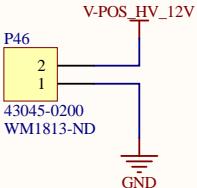
A

Motor Controller Interface



B

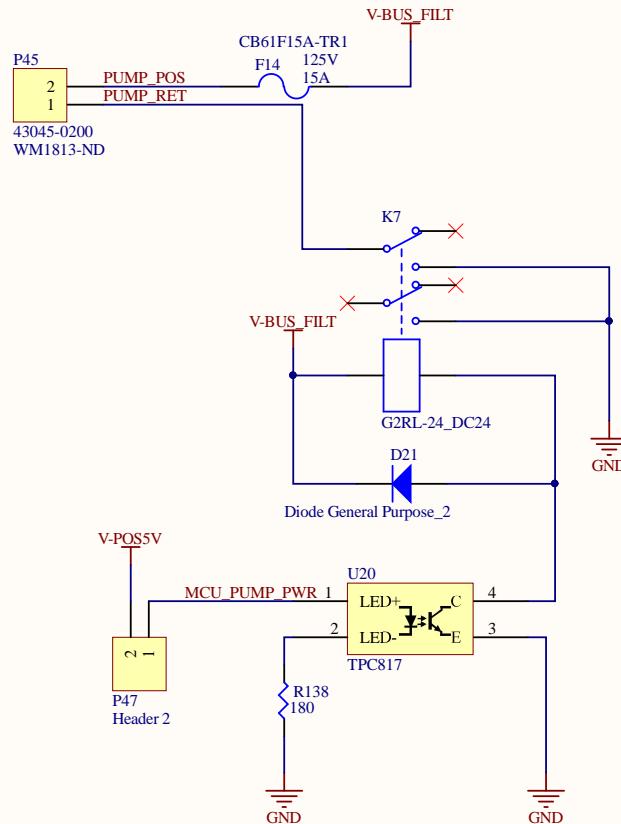
B



C

C

Pump Power



D

D

Title **RMS & Precharge Interface**

Engineer: Shelby Riggleman

Date: 6/28/2020 Time: 11:25:24 AM

File: motor_controller_interface.SchDoc

Badgerloop Electrical
133 Engineering Research Building
1500 Engineering Drive
Madison, Wi 53706

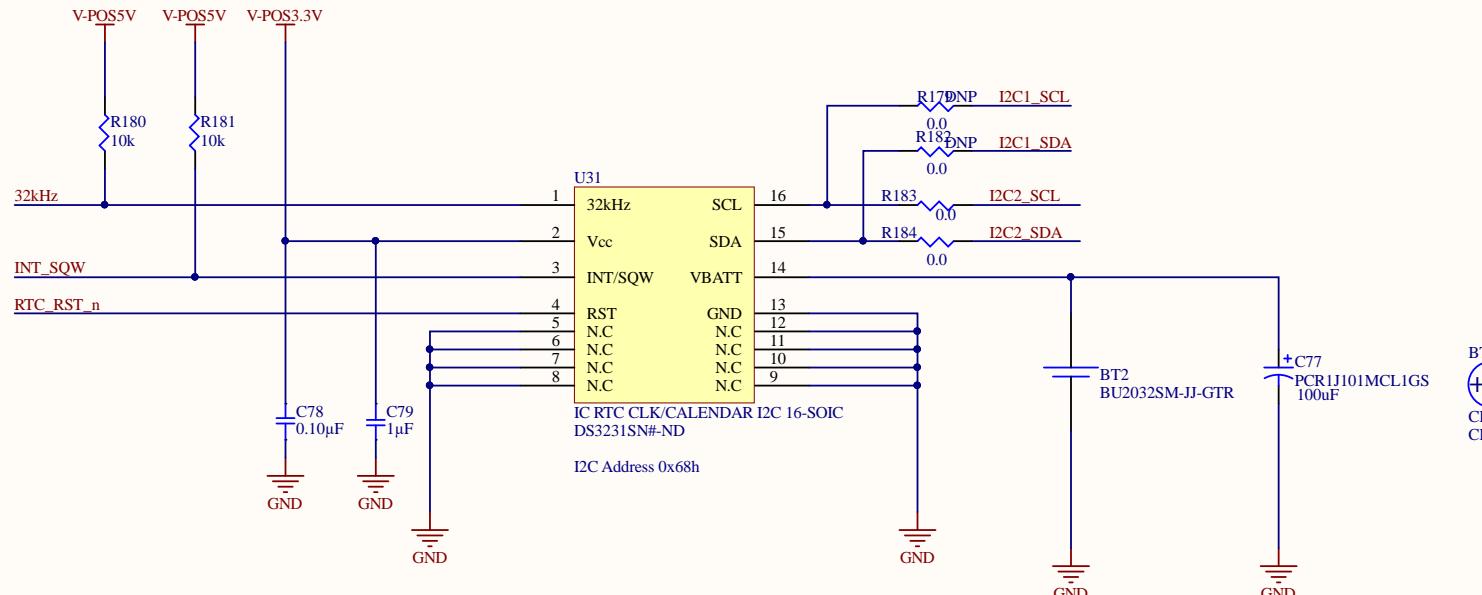


Real Time Clock & Coin Cell

A

A

Function determined by INTCN bit in OEh - SQW if 0, Active low interrupt if 1 and alarm enabled
Default = interrupt, but alarm is disabled



B

B

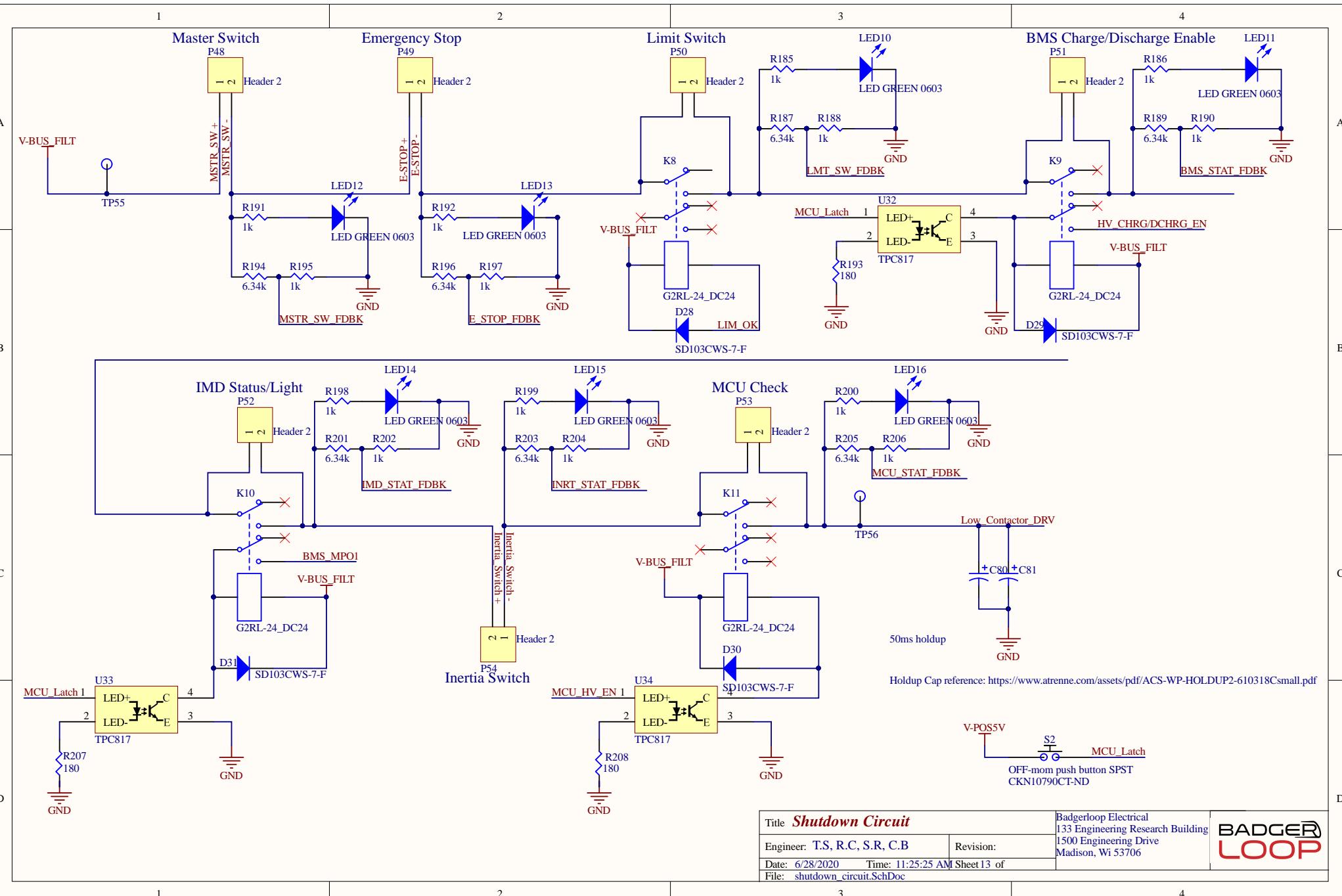
C

C

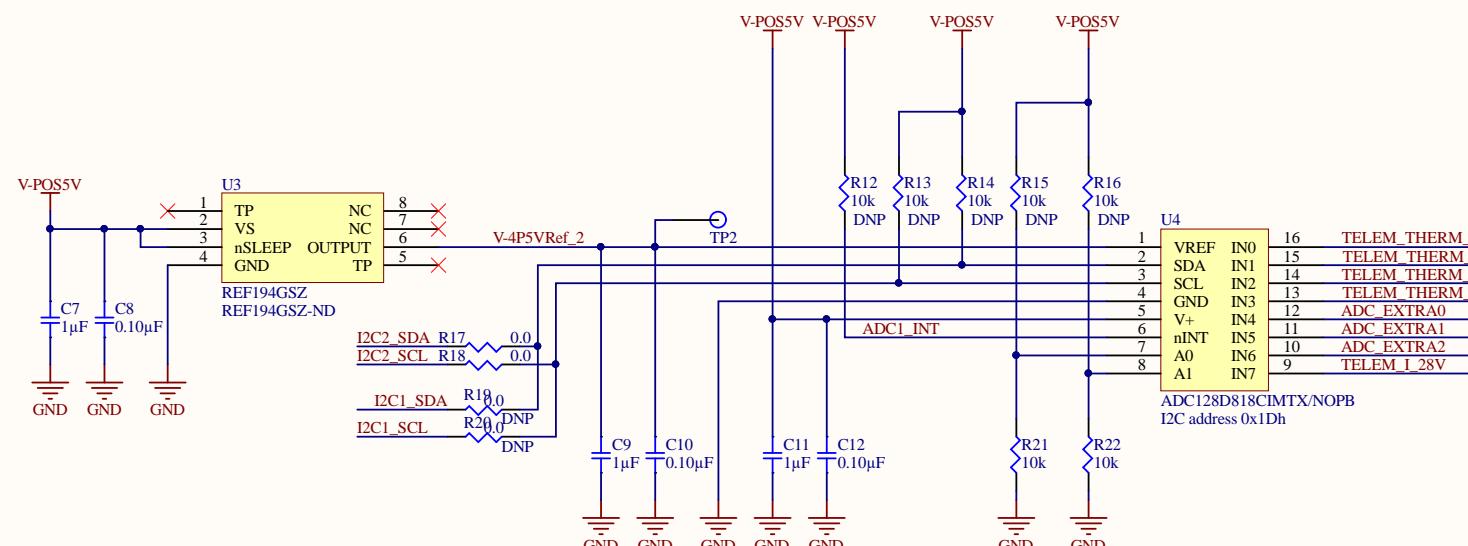
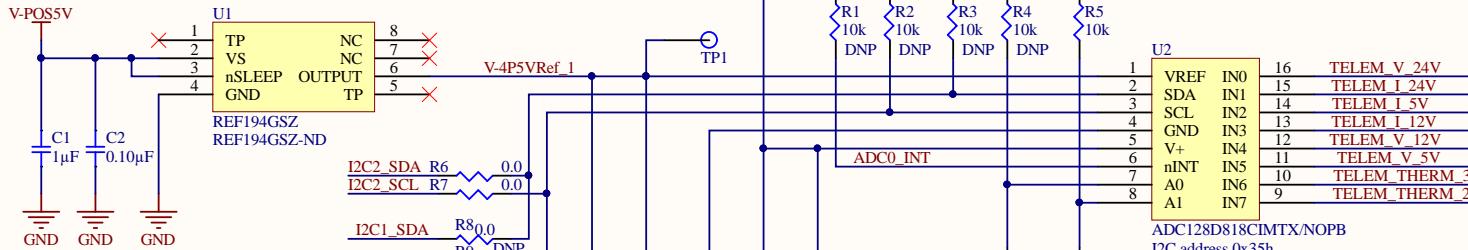
D

D

Title RTC			<i>Badgerloop</i> 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	BADGER LOOP
Date: 6/28/2020	Time: 11:25:25 AM	Sheet 12 of	
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\RTC.SchDoc			

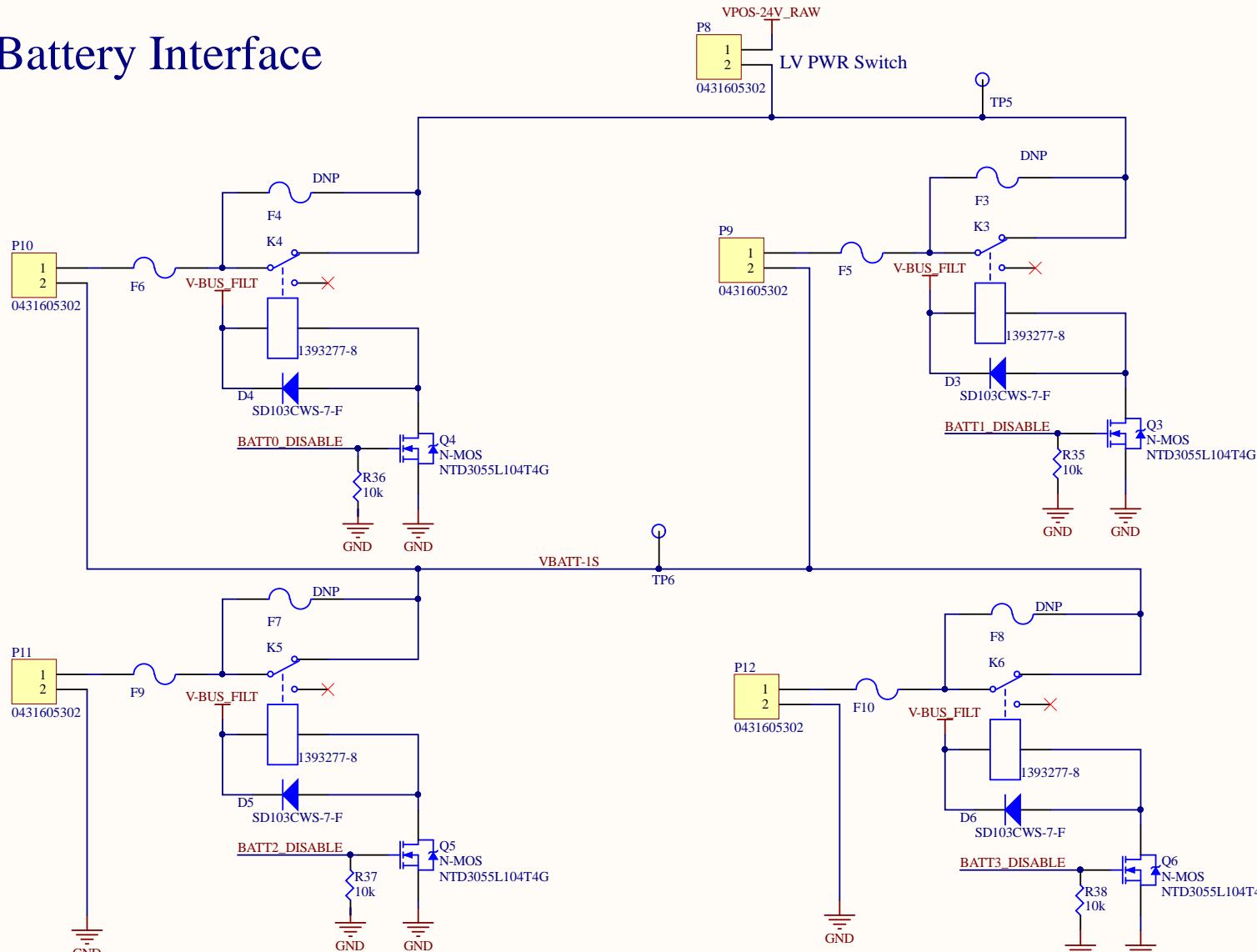


Analog Inputs



Title ADC			<i>Badgerloop 133 Engineering Research Building Madison, WI 53715</i>
Size: A4	Number:	Revision:	
Date: 6/28/2020	Time: 11:25:25 AM	Sheet 14 of	
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\adc.SchDoc			

LV Battery Interface



Title LV Battery Interface			Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	
Date: 6/28/2020	Time: 11:25:25 AM	Sheet 15 of	
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\battery_interface.SchDoc			BADGER LOOP

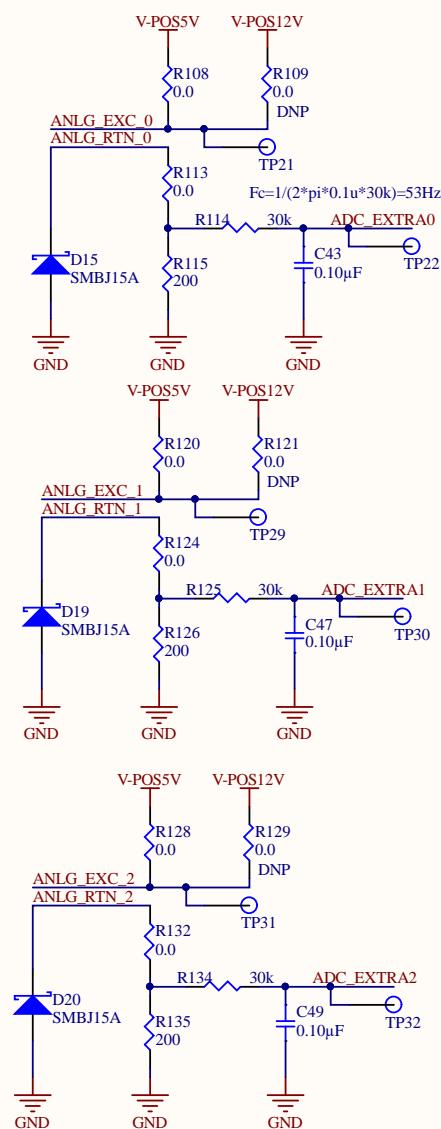
1

2

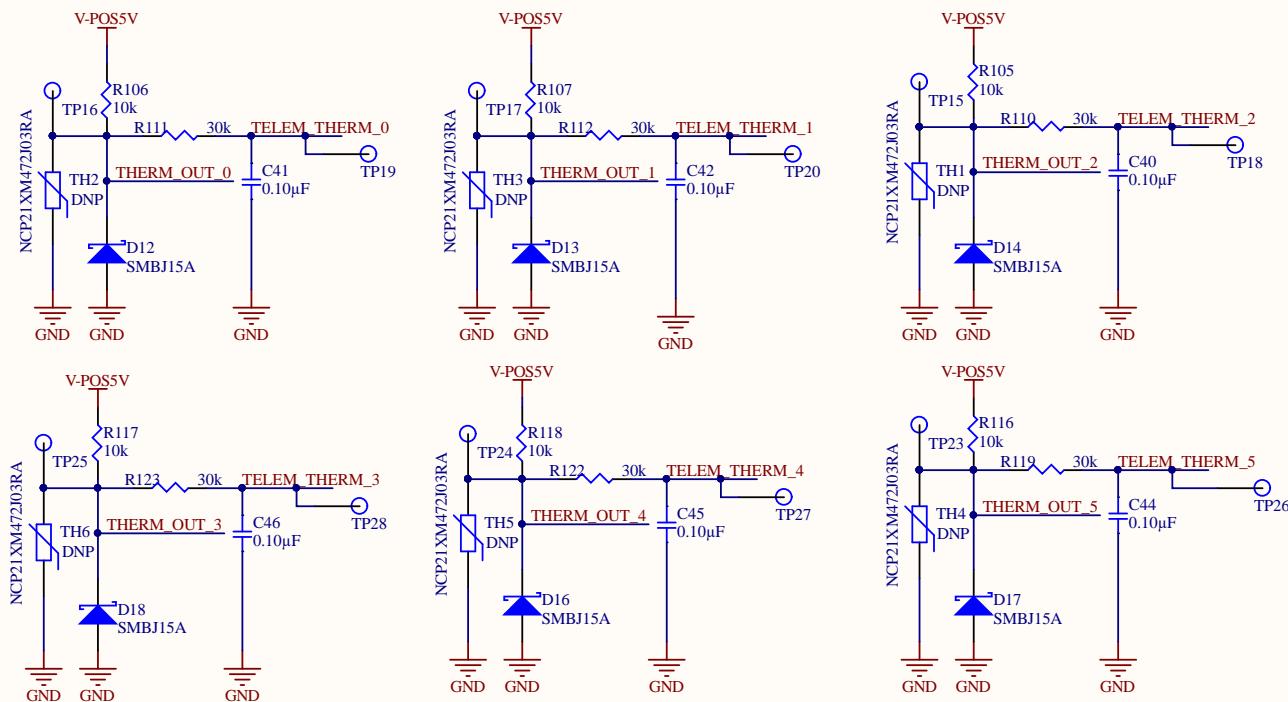
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4

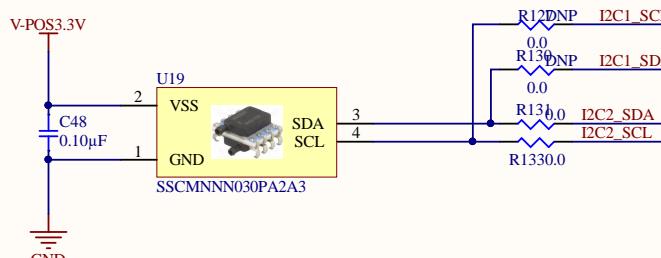
Extra Analog Sensors



Thermistors



Ambient Pressure Sensor



Title: Sensors			Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	
Date: 6/28/2020	Time: 11:25:26 AM	Sheet 16 of	
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\misc_sensors.SchDoc			

1

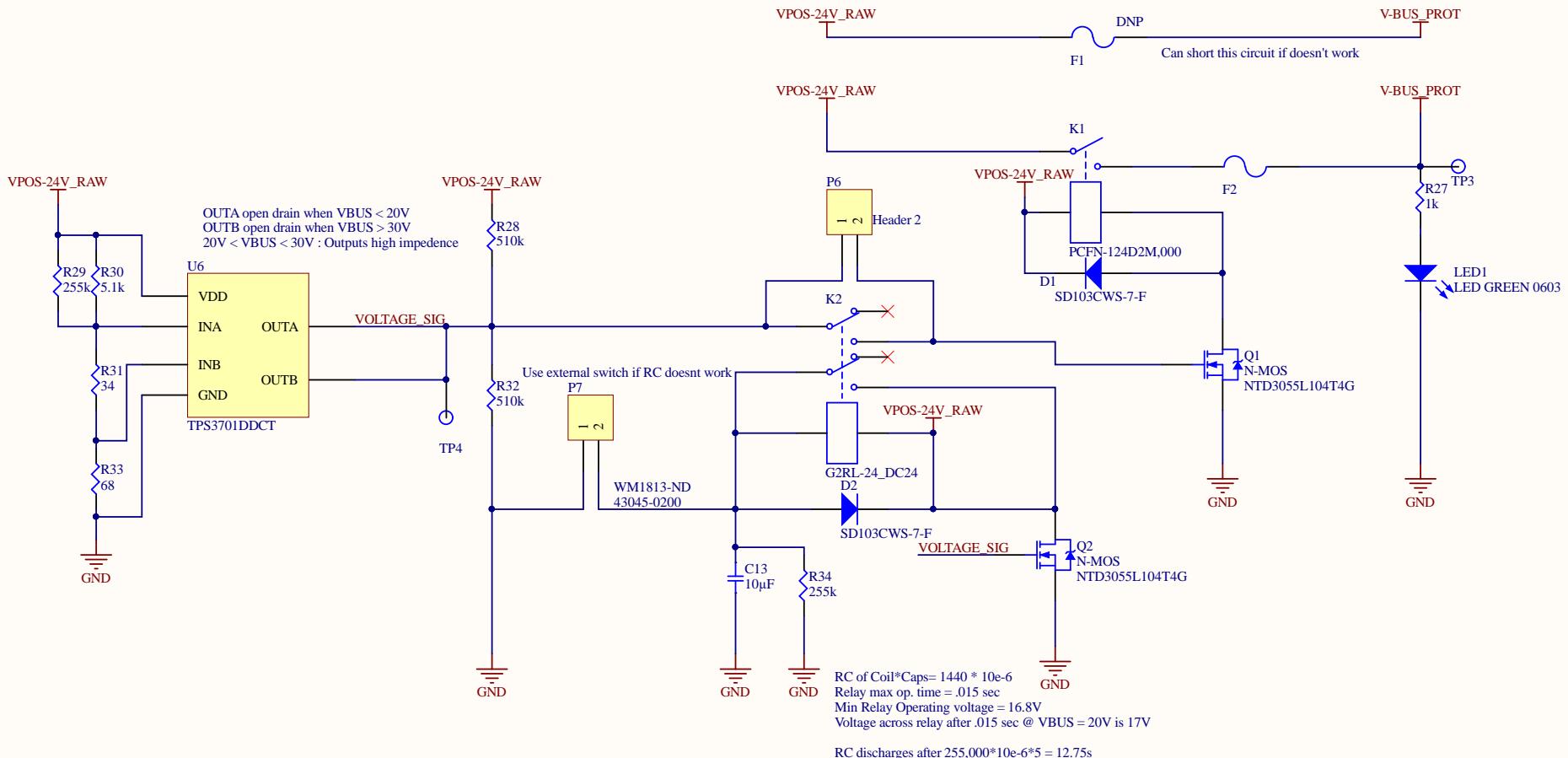
2

3

4

BADGER LOOP

BATTERY PROTECTION



Title Battery Protection			Badgerloop 133 Engineering Research Building Madison, WI 53715	BADGER LOOP
Size: A4	Number:	Revision:		
Date: 6/28/2020	Time: 11:25:26 AM	Sheet 17 of		
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\batt_protection.SchDoc				

1

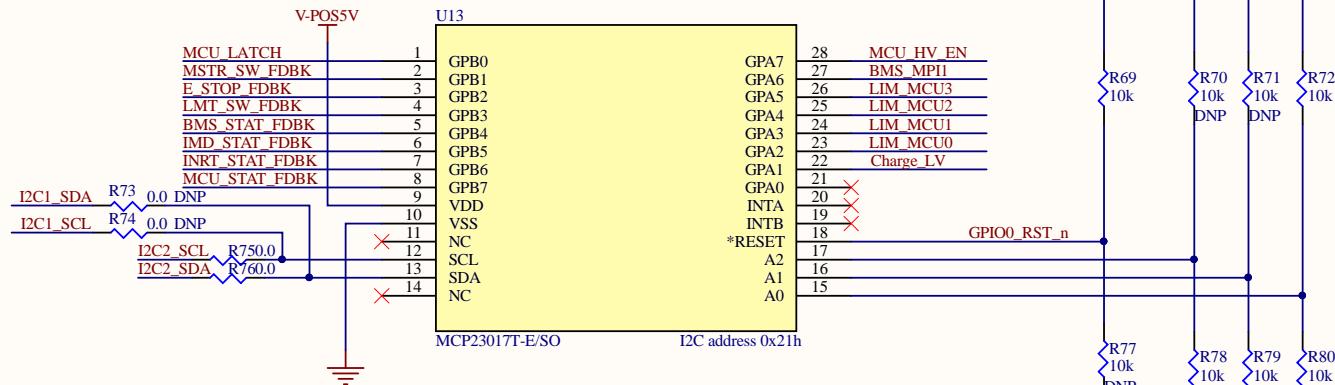
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3

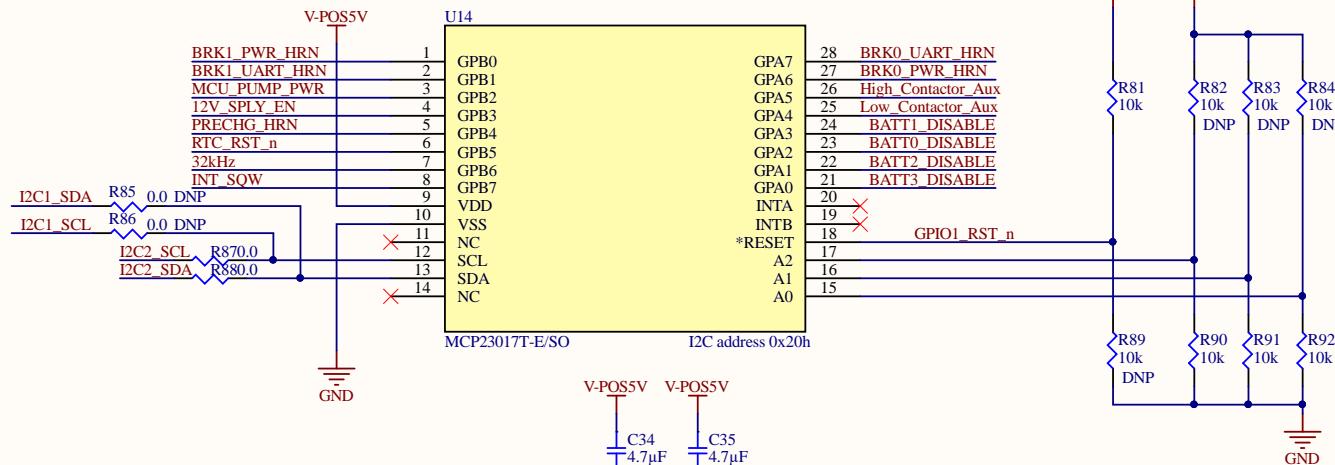
4

GPIO

A

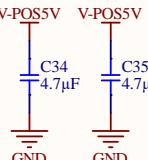


B



C

Place close to U?



Title: GPIO	Badgerloop
Size: A4	Number:
Date: 6/28/2020	Revision:
Time: 11:25:26 AM	Sheet 18 of
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\gpio.SchDoc	BADGER LOOP

1

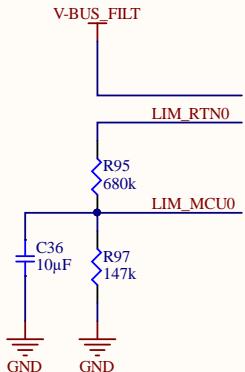
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3

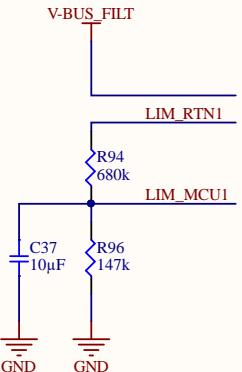
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Limit Switch Feedback

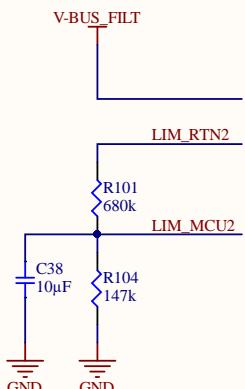
A



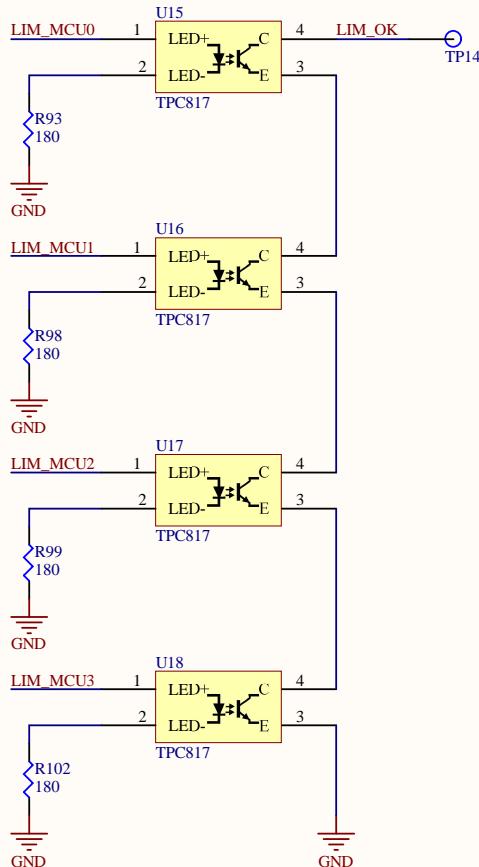
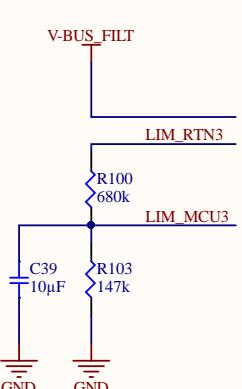
B



C

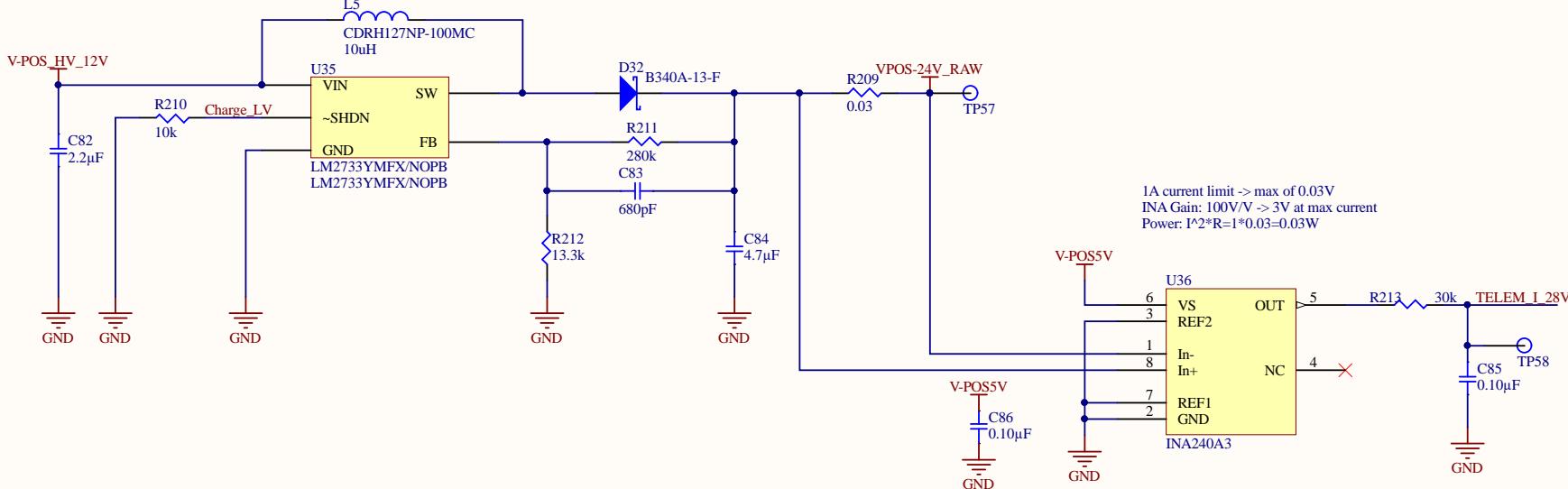


D



Title: Limit Switches	Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:
Date: 6/28/2020	Revision:
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\limit_switches.SchDoc	Time: 11:25:26 AM Sheet 19 of

HV Batt 12V -> 28V



CURRENT TELEM

Title: 28V Boost	Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number: _____
Date: 6/28/2020	Revision: _____
Time: 11:25:27 AM Sheet 20 of _____	
File: C:\Users\Windows PC\Desktop\Badgerloop\git_repos\hardware\main_io\power_28V.SchDoc	

