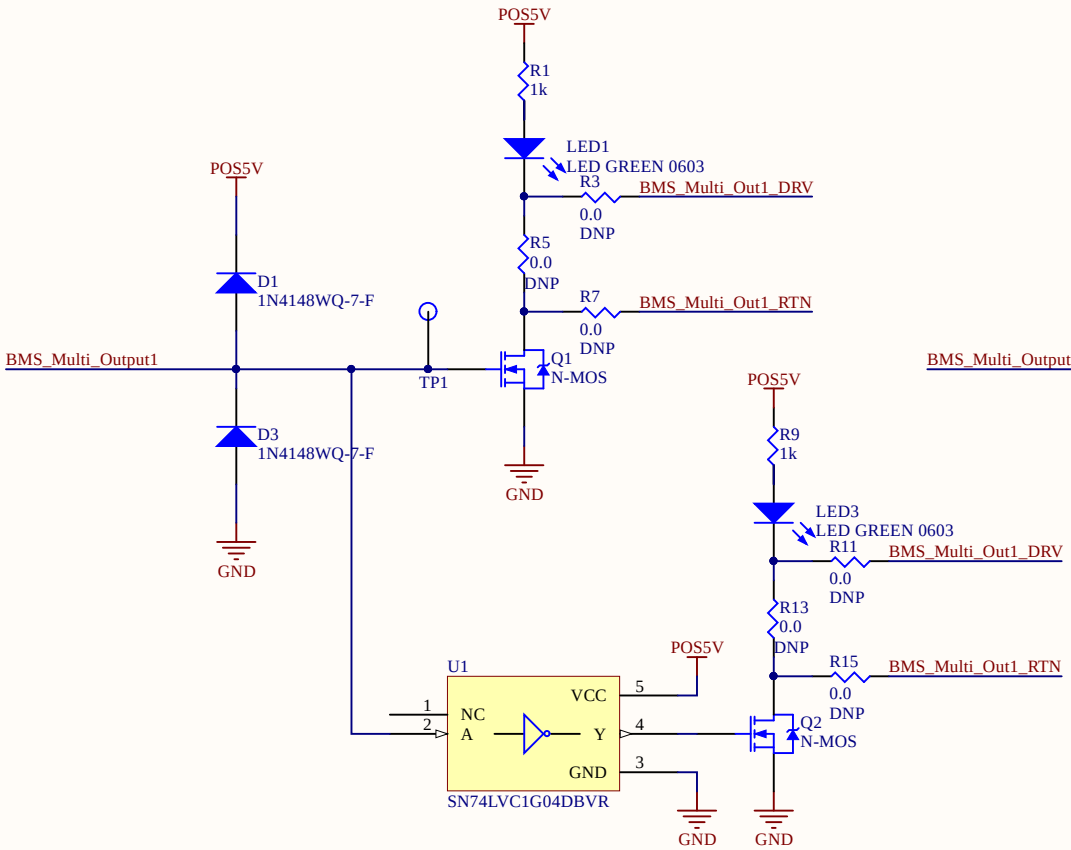
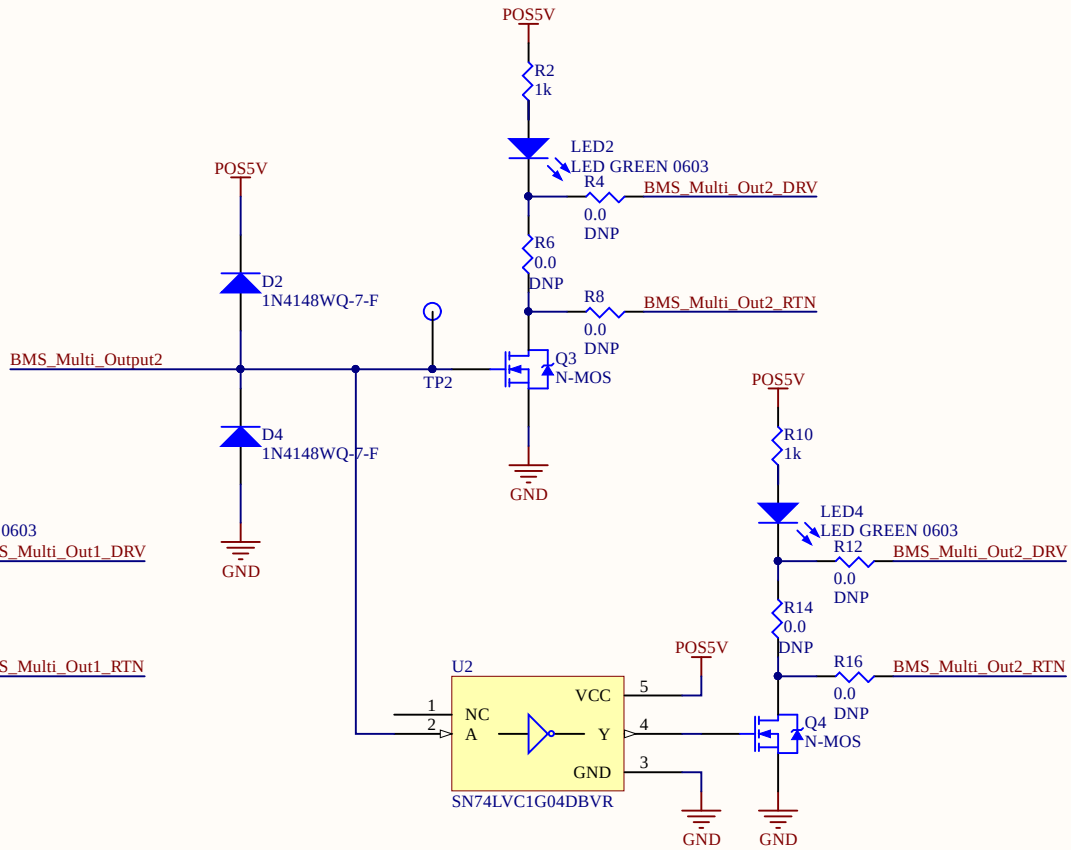
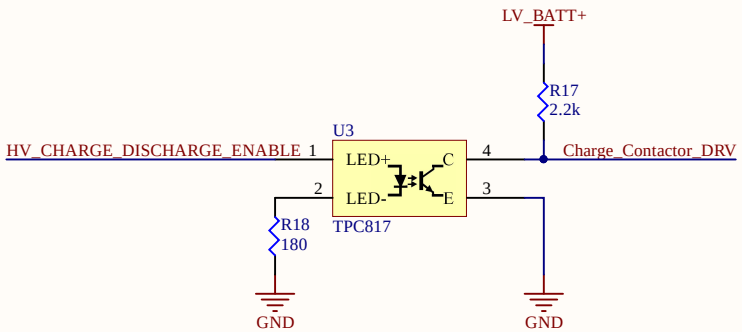


BMS Multipurpose Output 1



BMS Multipurpose Output 2



Charge Contactor

Title			*Badgerloop* *133 Engineering Research Building* *Madison, WI 53715*
Size: A4	Number:	Revision:	
Date: 6/12/2019 Time: 9:02:05 PM	Sheet of		
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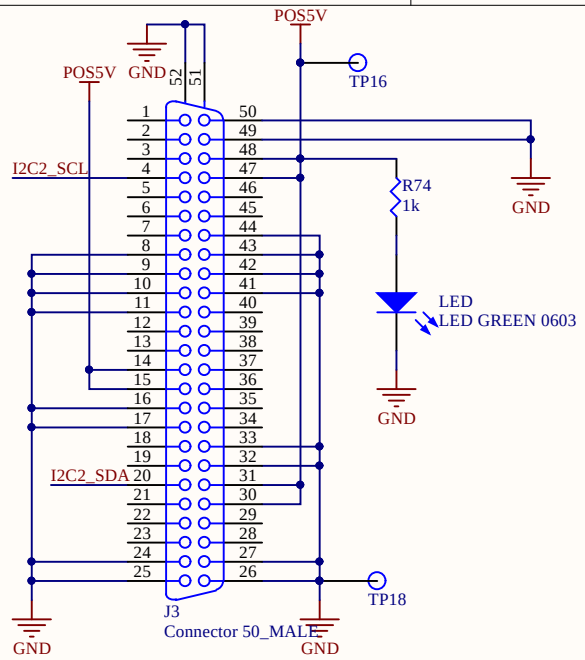
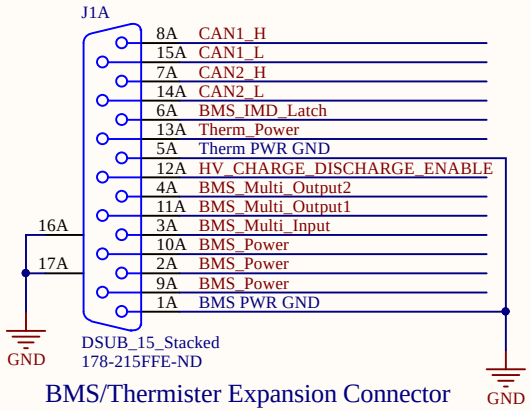
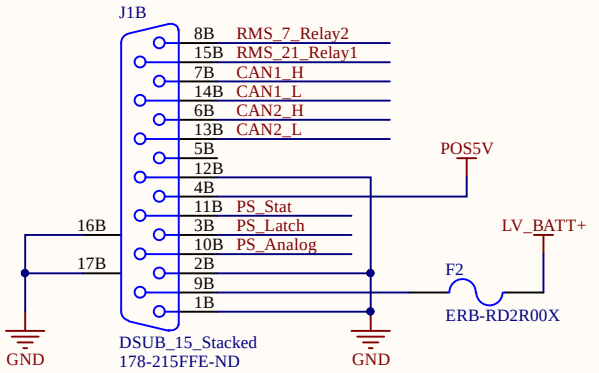


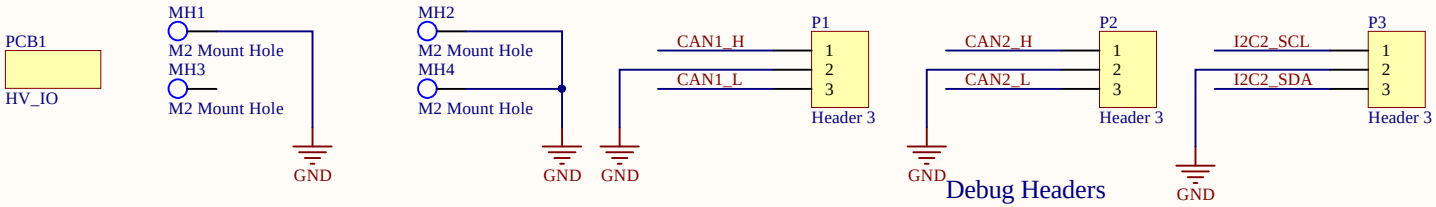
Processor Board Connector



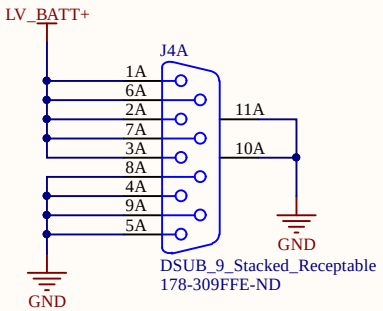
BMS/Thermister Expansion Connector

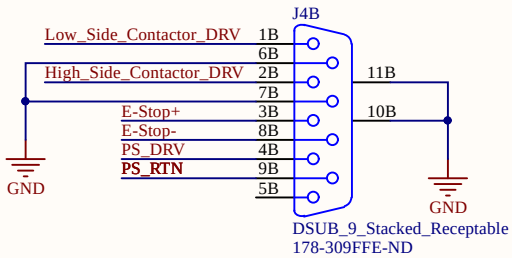


Motor Controller Connector

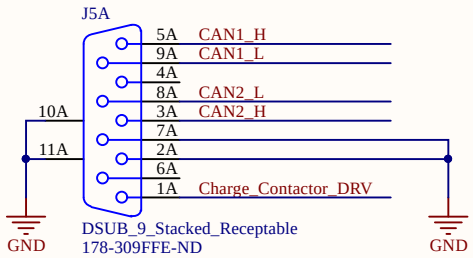


Debug Headers

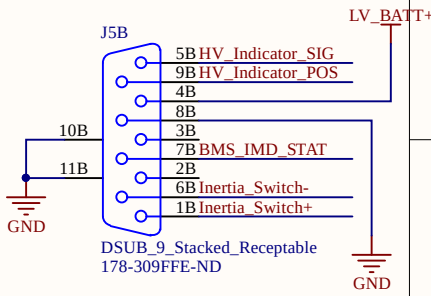




LV Battery Connector



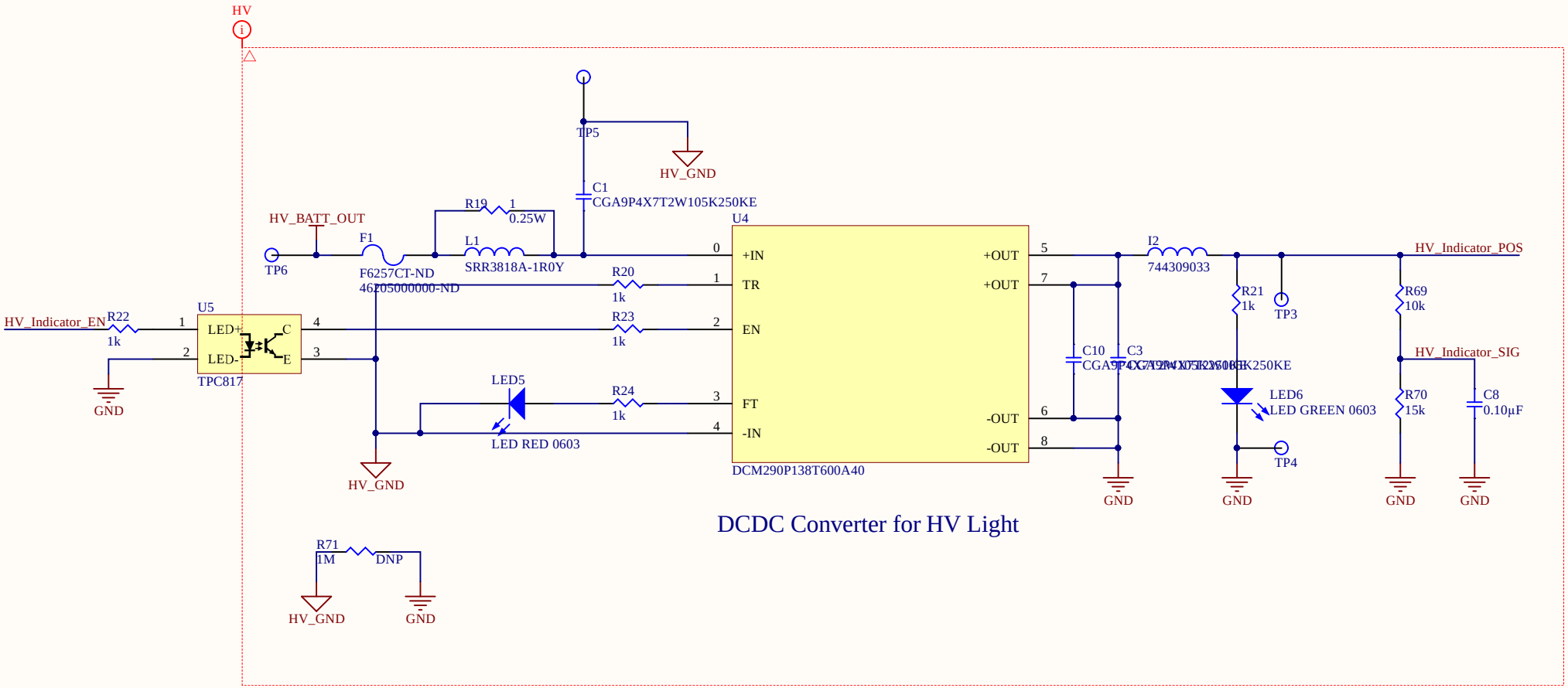
Charge Connector



Indicator Lights

Title			Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	
Date: 6/12/2019	Time: 9:02:06 PM	Sheet of	
File: C:\git\master\podiv-altium\src\prj\sch\hv_io_connector.SchDoc			

HV & IMD Indicator Board



DCDC Converter for HV Light

Title			Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	
Date: 6/12/2019 Time: 9:02:06 PM	Sheet of		
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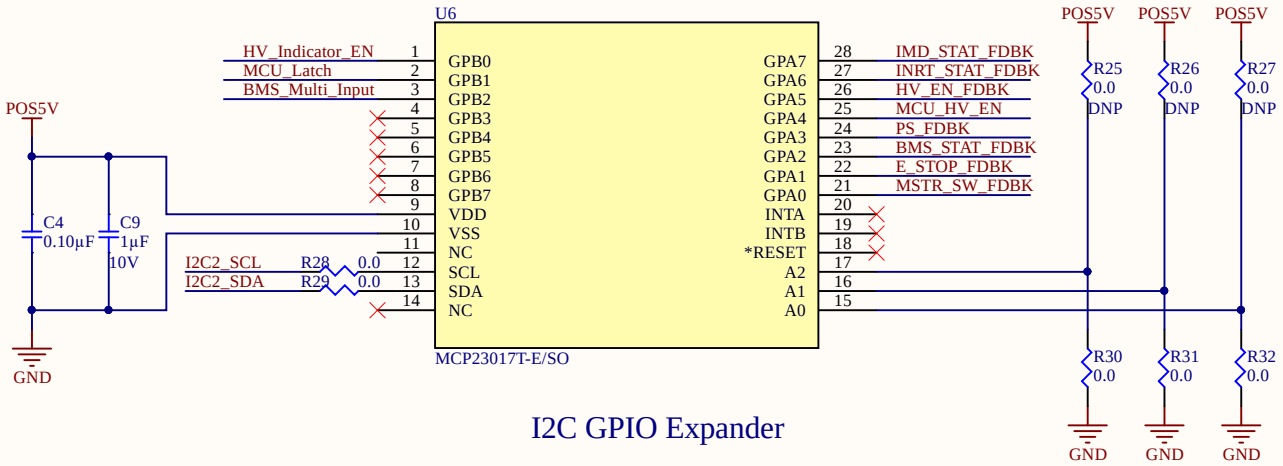
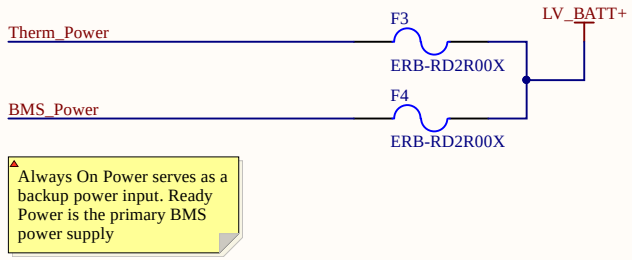
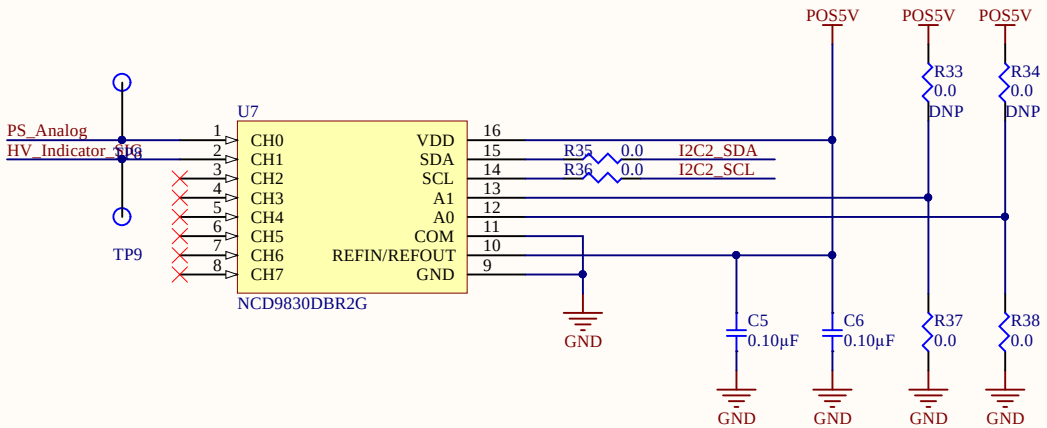
HV Module GPIO and Power



I2C GPIO Expander

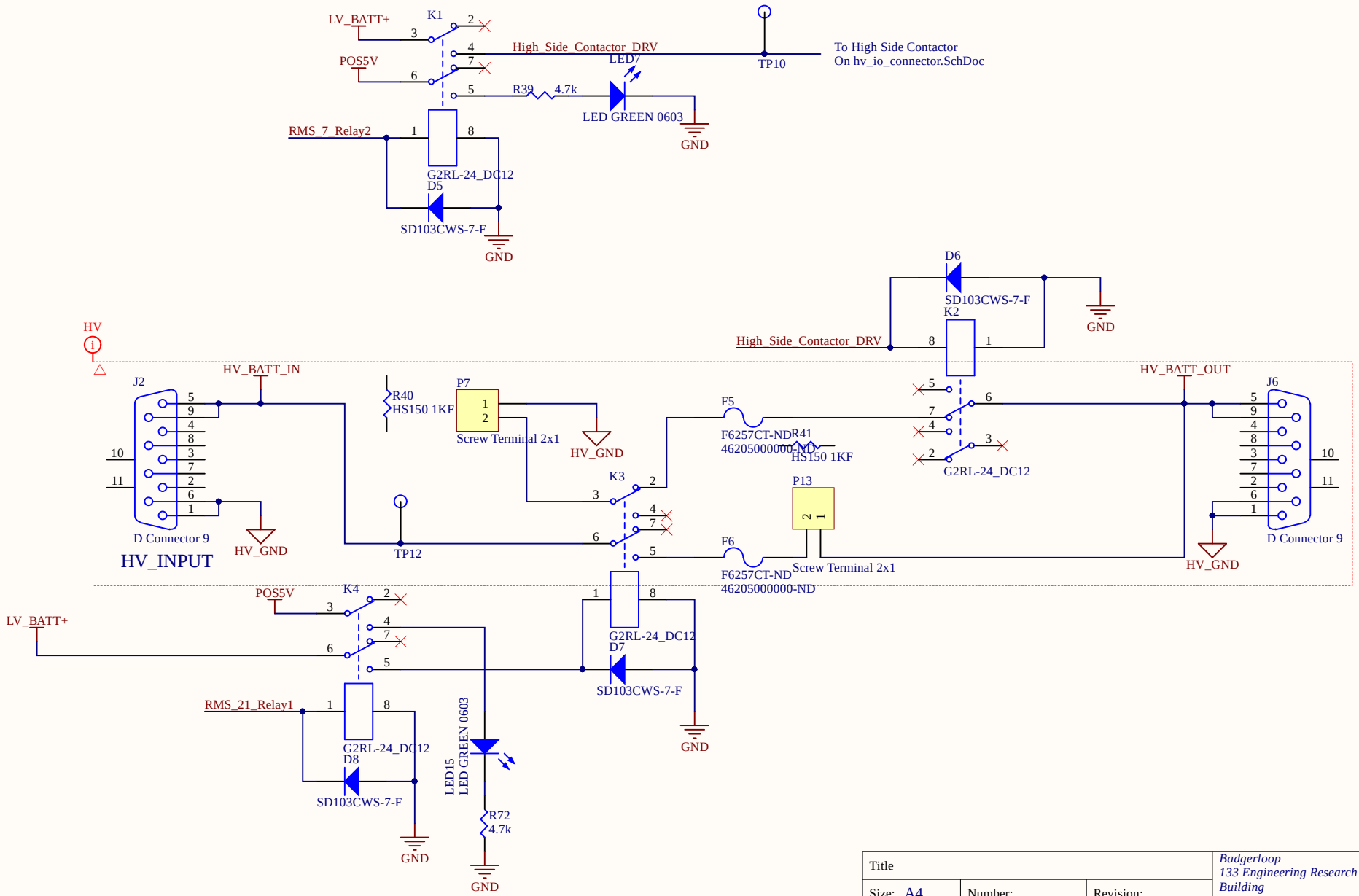


BMS PWR



Analong DAQ

Title			Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	
Date: 6/12/2019	Time: 9:02:06 PM	Sheet of	
File: C:\git\master\podiv-altium\src\prj\sch\hv_io_gpio.SchDoc			



Title			Badgerloop 133 Engineering Research Building Madison, WI 53715
Size: A4	Number:	Revision:	
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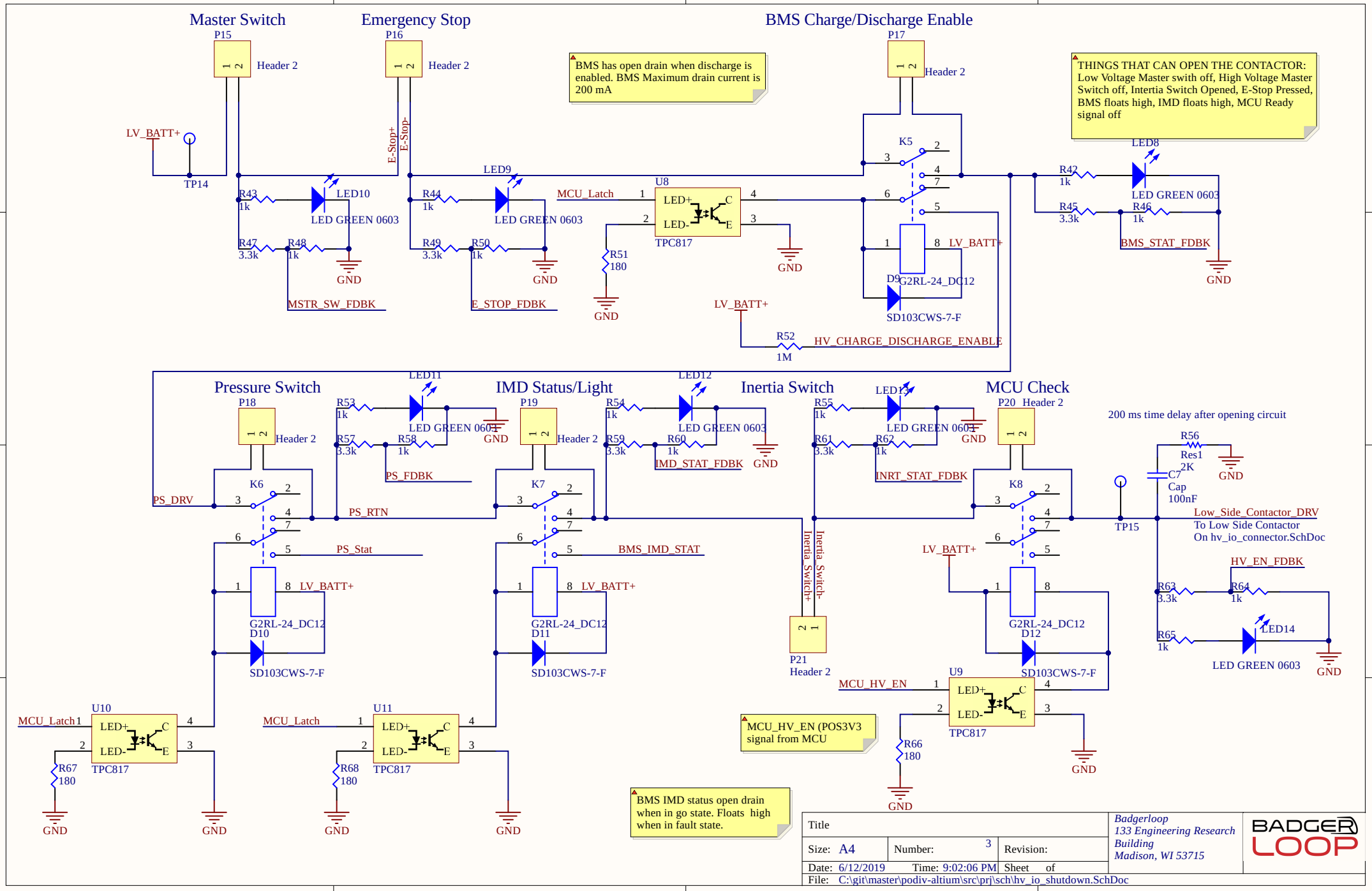
File: C:\git\master\podiv-altium\src\prj\sch\hv_io_precharge.SchDoc			


Master Switch
Emergency Stop
BMS Charge/Discharge Enable
P15
Header 2
P16
Header 2
P17
Header 2
BMS has open drain when discharge is enabled. BMS Maximum drain current is 200 mA
THINGS THAT CAN OPEN THE CONTACTOR: Low Voltage Master swith off, High Voltage Master Switch off, Intertia Switch Opened, E-Stop Pressed, BMS floats high, IMD floats high, MCU Ready signal off
LV_BATT+
TP14
E-Stop+
E-Stop-
R43 1k
LED10
LED GREEN 0603
R47 3.3k
R48 1k
GND
MSTR_SW_FDBK
R44 1k
LED9
LED GREEN 0603
R49 3.3k
R50 1k
GND
E_STOP_FDBK
MCU_Latch
U8
LED+
LED-
C
E
TPC817
R51 180
GND
K5
LV_BATT+
D9
G2RL-24_DC12
SD103CWS-7-F
R52 1M
HV_CHARGE_DISCHARGE_ENABLE
R42 1k
LED8
LED GREEN 0603
R45 3.3k
R46 1k
BMS_STAT_FDBK
GND
Pressure Switch
IMD Status/Light
Inertia Switch
MCU Check
P18
Header 2
P19
Header 2
P20 Header 2
LED11
LED12
LED13
R53 1k
R57 3.3k
R58 1k
PS_FDBK
R54 1k
R59 3.3k
R60 1k
IMD_STAT_FDBK
R55 1k
R61 3.3k
R62 1k
INRT_STAT_FDBK
200 ms time delay after opening circuit
R56 Res1 2K
C7 Cap 100nF
PS_DRV
PS_RTN
K6
K7
K8
PS_Stat
BMS_IMD_STAT
Inertia_Switch-
Inertia_Switch+
TP15
Low_Side_Contactor_DRV
To Low Side Contactor On hv_io_connector.SchDoc
HV_EN_FDBK
R63 3.3k
R64 1k
R65 1k
LED14
LED GREEN 0603
G2RL-24_DC12
D10
SD103CWS-7-F
D11
D12
P21 Header 2
MCU_HV_EN
MCU_HV_EN (POS3V3 signal from MCU
R66 180
U10
U11
U9
R67 180
R68 180
BMS IMD status open drain when in go state. Floats high when in fault state.
Title
Size: A4
Number: 3
Revision:
Date: 6/12/2019
Time: 9:02:06 PM
Sheet of
File: C:\git\master\podiv-altium\src\prj\sch\hv_io_shutdown.SchDoc
Badgerloop
133 Engineering Research Building
Madison, WI 53715
BADGER LOOP