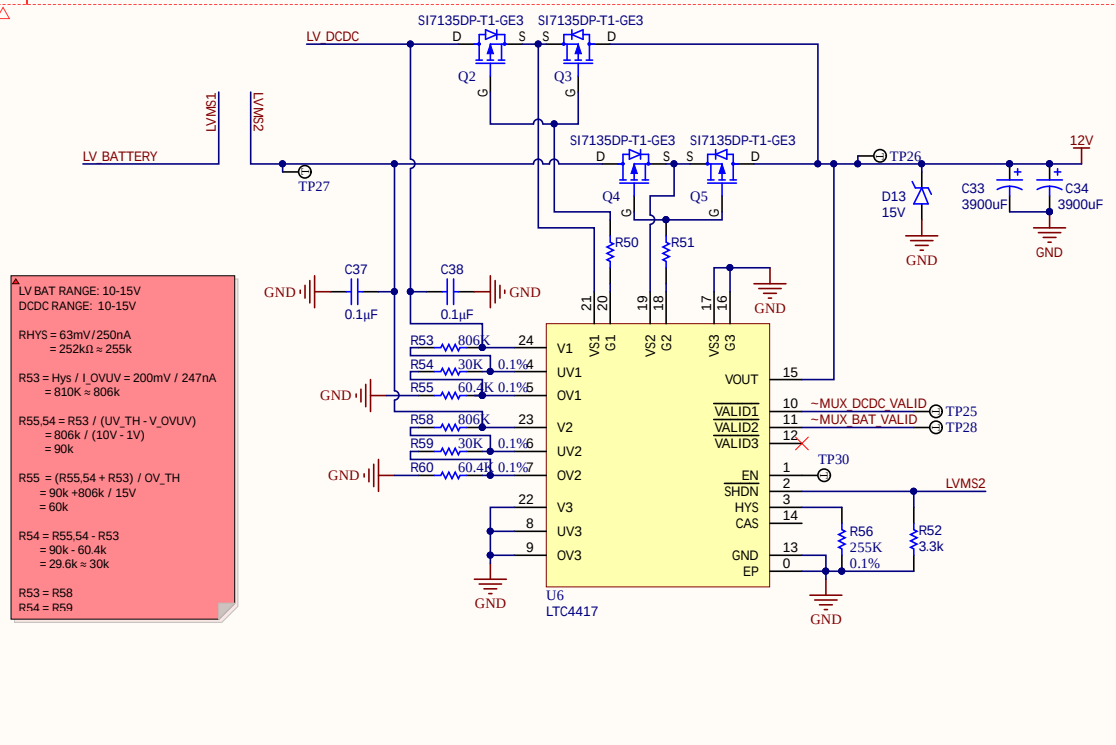
The logo for Wisconsin Formula SAE Racing. It features the word "WISCONSIN" in a large, white, serif font with a black outline, set against a black background. Below it, the words "FORMULA SAE" are in a smaller, white, sans-serif font. To the right of "FORMULA SAE", the word "Racing" is written in a stylized, red, cursive font.



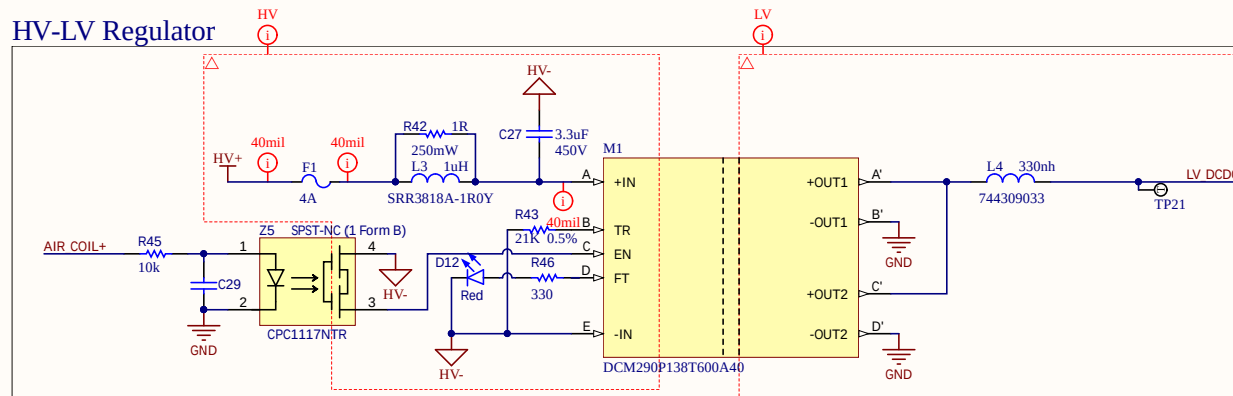
## PowerPath Controller



LV BAT RANGE: 10-15V  
DCDC RANGE: 10-15V  
RHYS = 63mV/250nA  
= 252kΩ ≈ 255k  
R53 = Hys / I\_OVUV = 200mV / 247nA  
= 810k ≈ 806k  
R55,54 = R53 / (V\_TH - V\_OVUV)  
= 806k / (10V - 1V)  
= 90k  
R55 = (R55,54 + R53) / OV\_TH  
= 90k + 806k / 15V  
= 60k  
R54 = R55,54 - R53  
= 90k - 60.4k  
= 29.6k ≈ 30k  
R53 = R58  
R54 = R59

|                                           |                                 |                                                                                       |
|-------------------------------------------|---------------------------------|---------------------------------------------------------------------------------------|
| Title<br><b><i>Powerpath</i></b>          |                                 |  |
| Designer<br><b><i>Jason Sylvestre</i></b> | Revision<br><b><i>218.1</i></b> |                                                                                       |
| Date: 5/22/2018                           |                                 |                                                                                       |
| File: BMB_PowerPath_SchDoc                |                                 |                                                                                       |

## HV-LV Regulator



### TRIM PIN CALCS

$$VOUT = 10.00 + (6.48 \cdot VTR/VCC)$$

$$VOUT = 14.4V$$

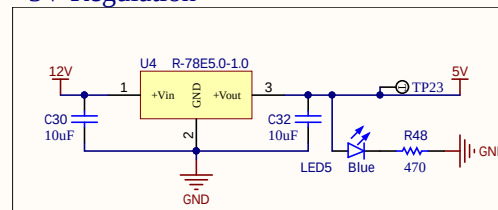
$$VCC = 3.3V$$

$$VTR = 2.24V$$

$$2.24V = 3.3V \cdot (R43 / (10k + R43))$$

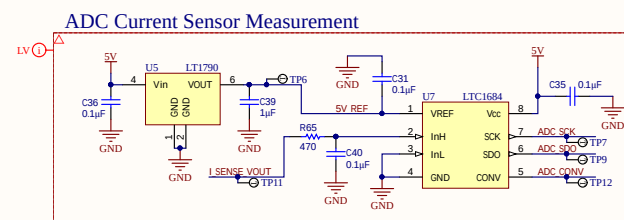
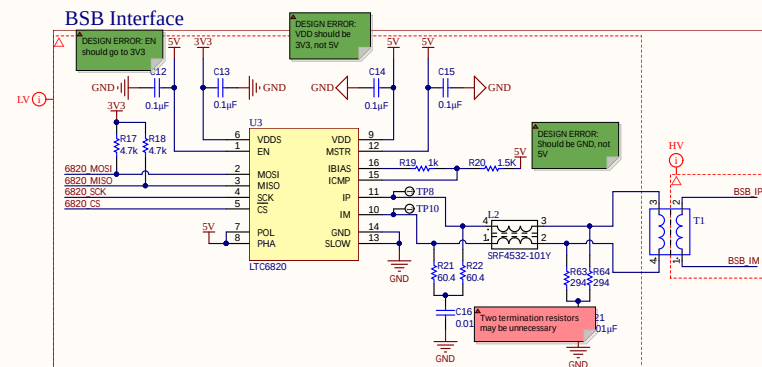
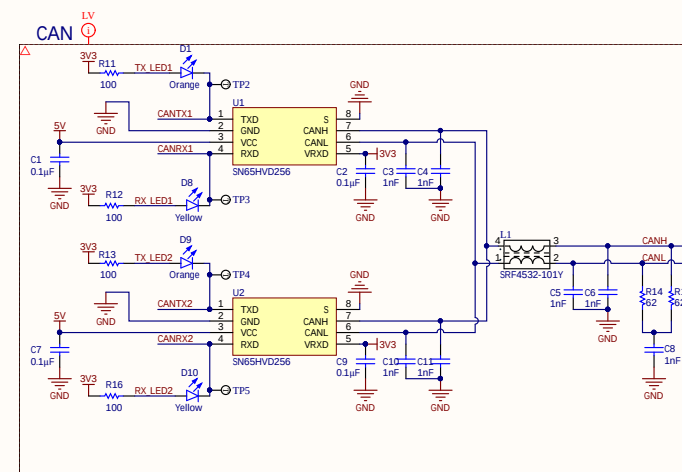
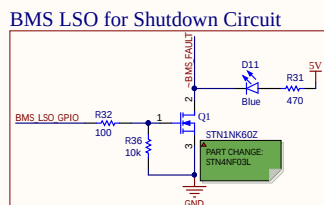
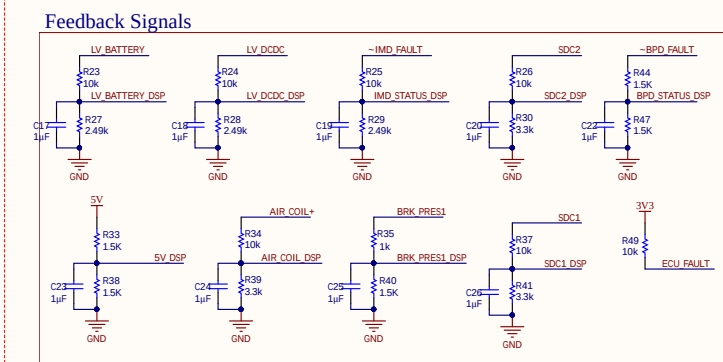
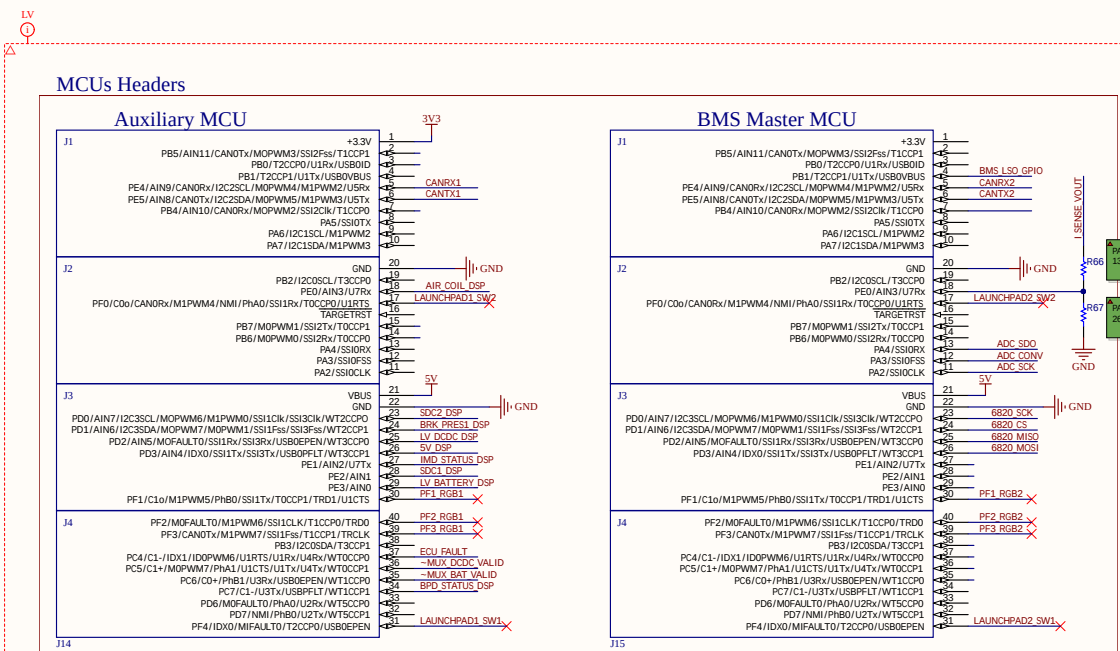
$$R43 = 21k$$

## 5V Regulation

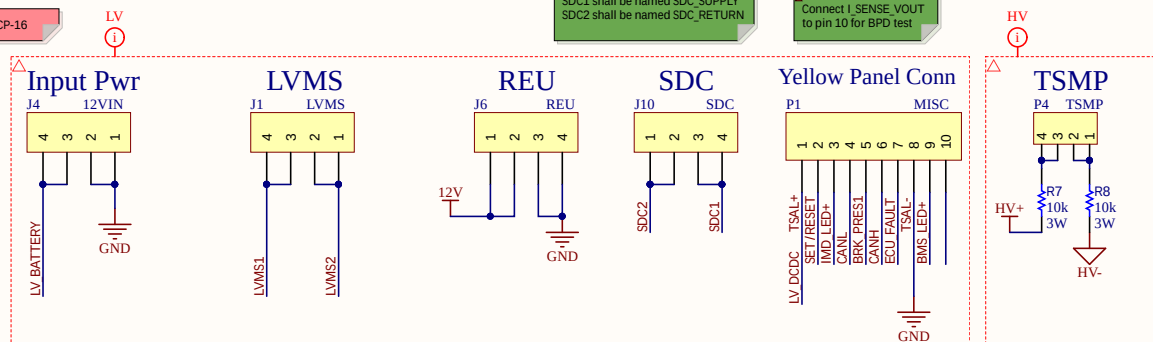


|                                    |                          |
|------------------------------------|--------------------------|
| Title<br><b>Power Regulators</b>   |                          |
| Designer<br><b>Jason Sylvestre</b> | Revision<br><b>218.1</b> |
| Date: 5/22/2018                    |                          |
| File: BMB_Power_Regulators.SchDoc  |                          |



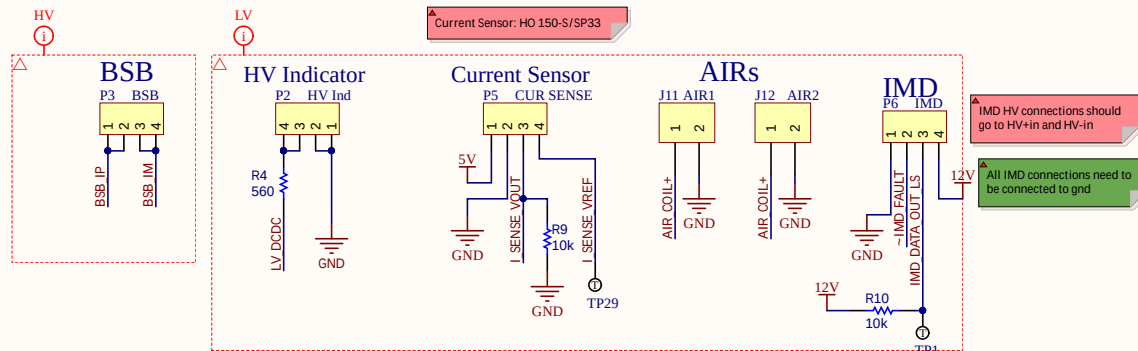


Samtec panel connector: ACP-16



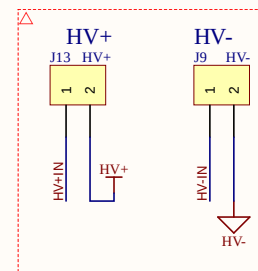
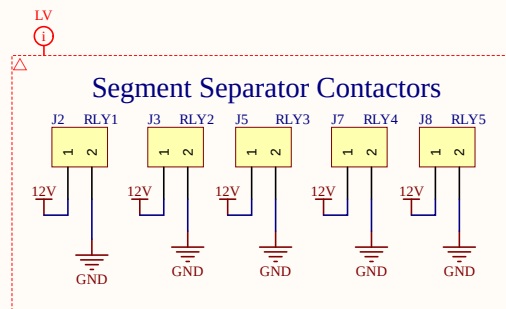
SDC1 shall be named SDC\_SUPPLY  
SDC2 shall be named SDC\_RETURN

Connect I\_SENSE\_VOUT  
to pin 10 for BPD test

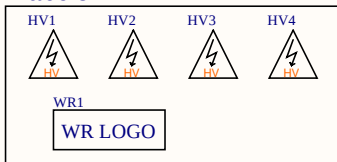


IMD HV connections should  
go to HV+in and HV-in

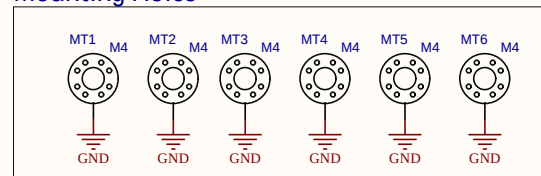
All IMD connections need to  
be connected to gnd



## Labels

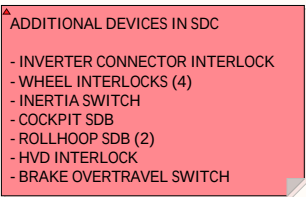


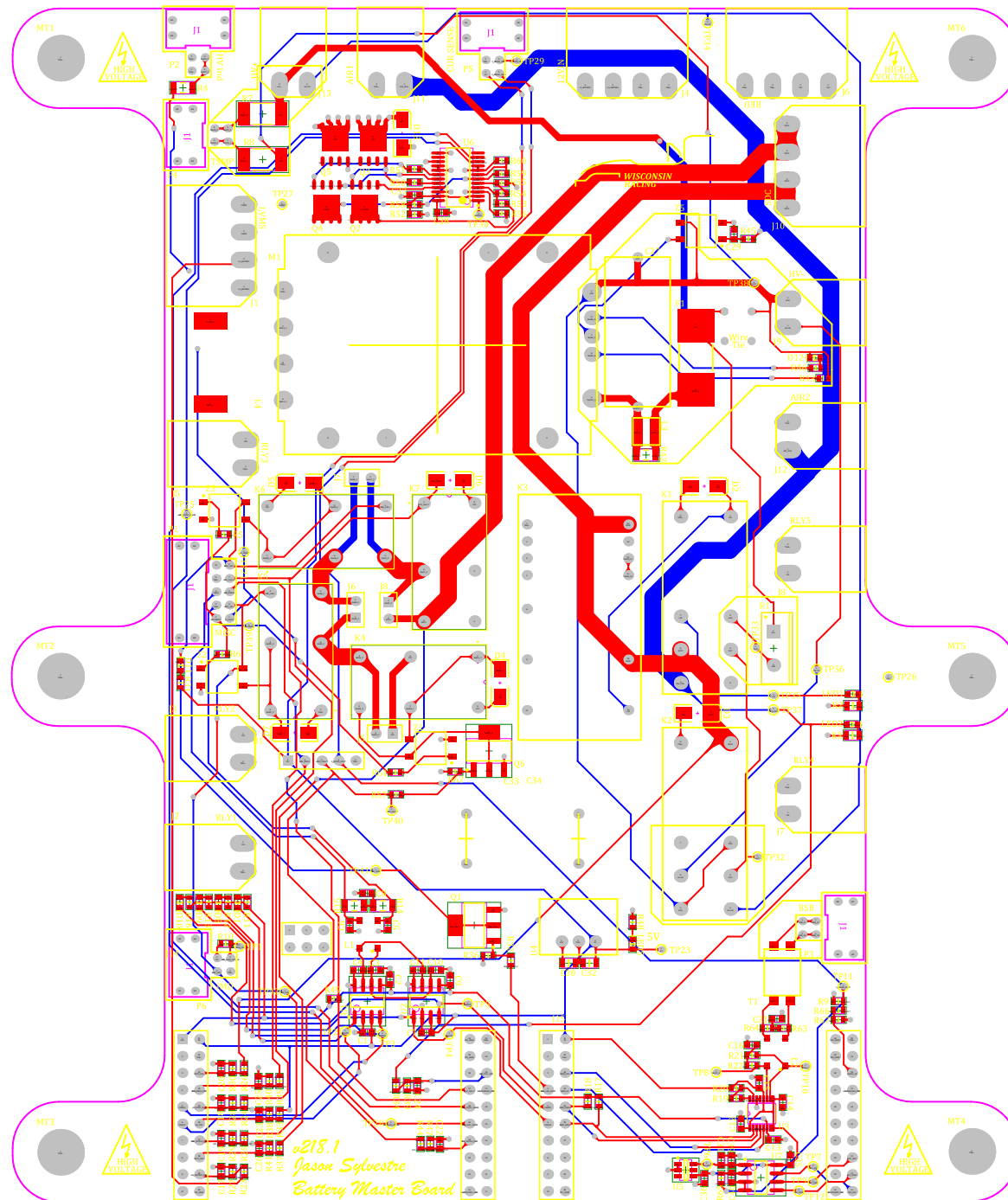
## Mounting Holes

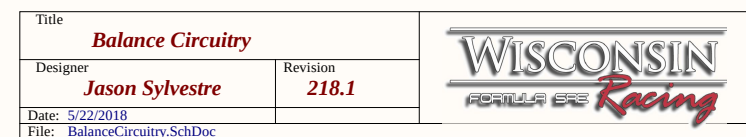


|                                    |                          |
|------------------------------------|--------------------------|
| Title<br><b>BMB Connectors</b>     |                          |
| Designer<br><b>Jason Sylvestre</b> | Revision<br><b>218.1</b> |
| Date: 5/22/2018                    |                          |
| File: BMB_Connectors.SchDoc        |                          |

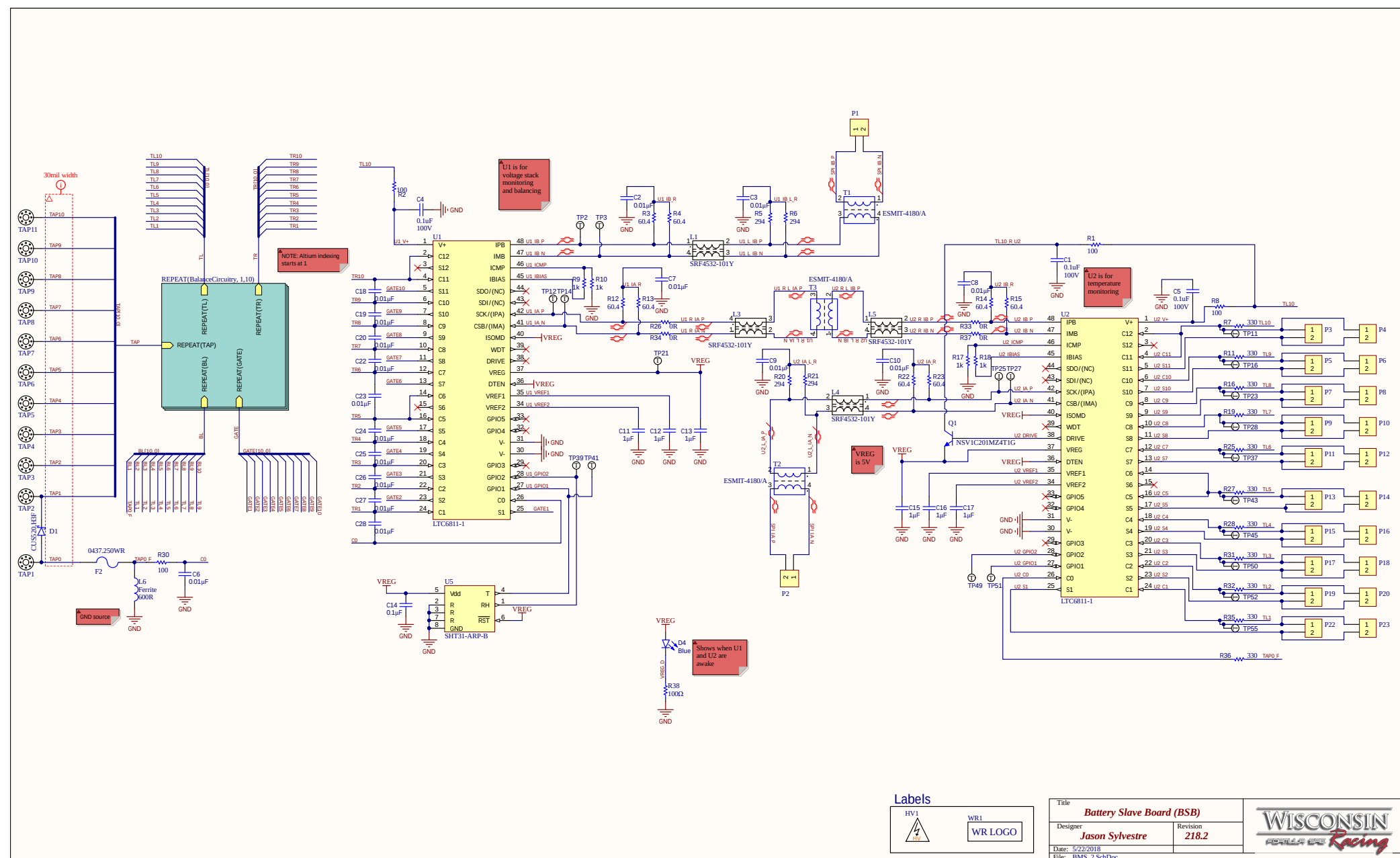


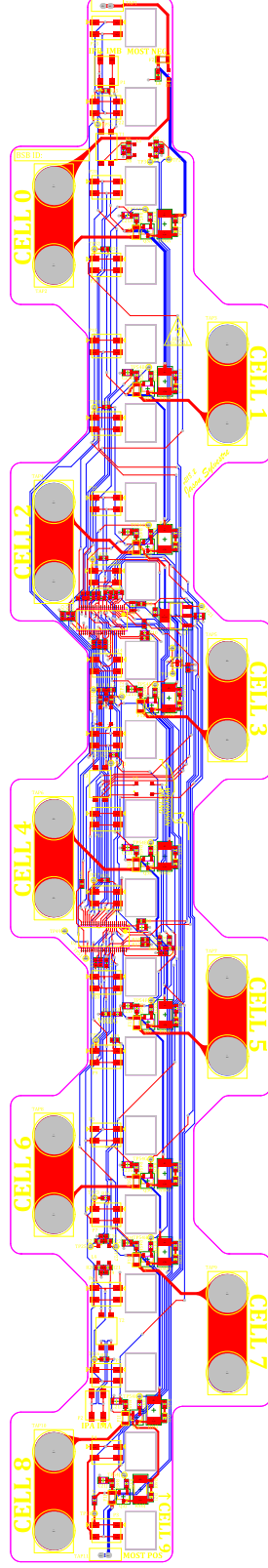
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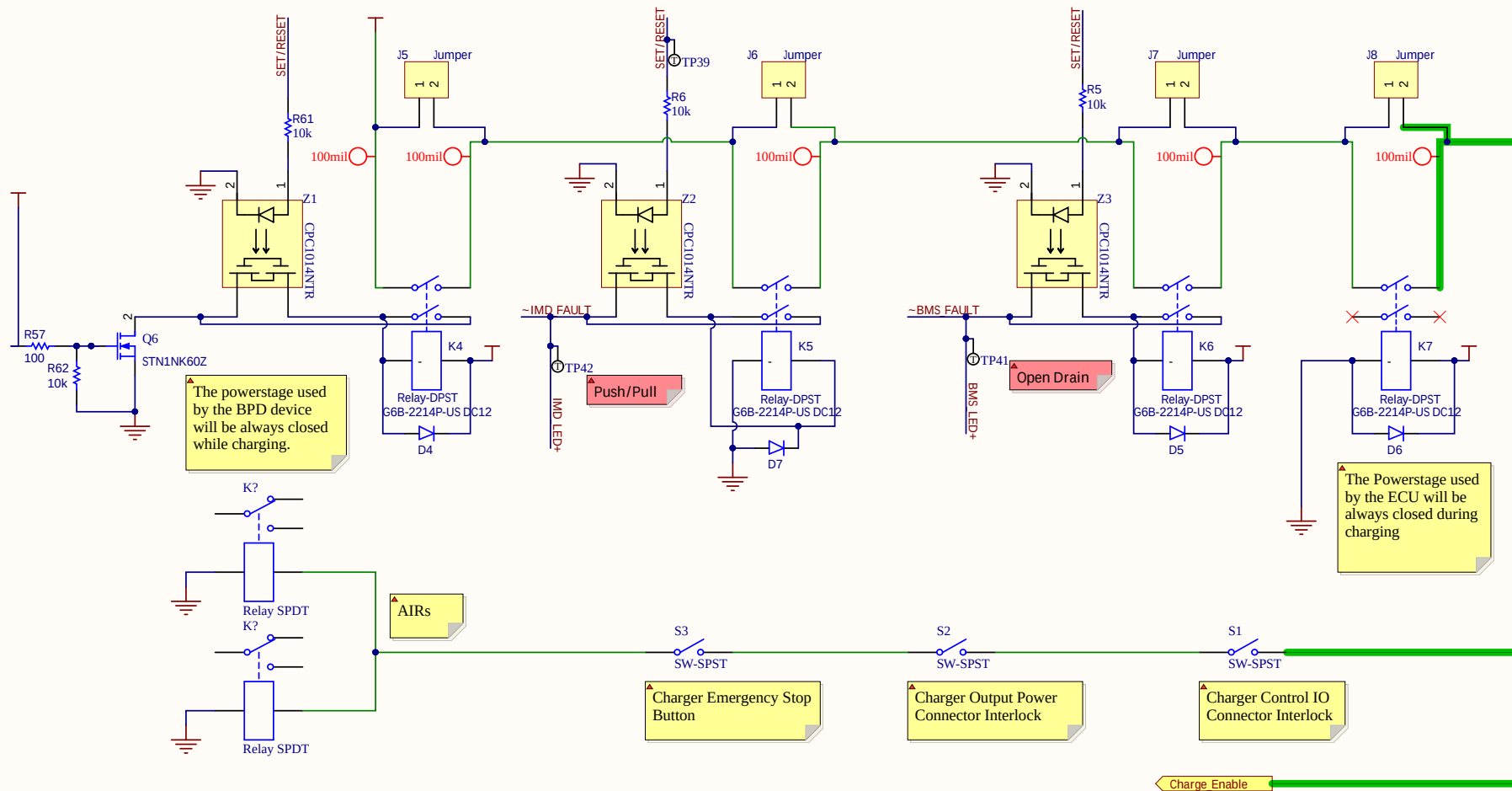




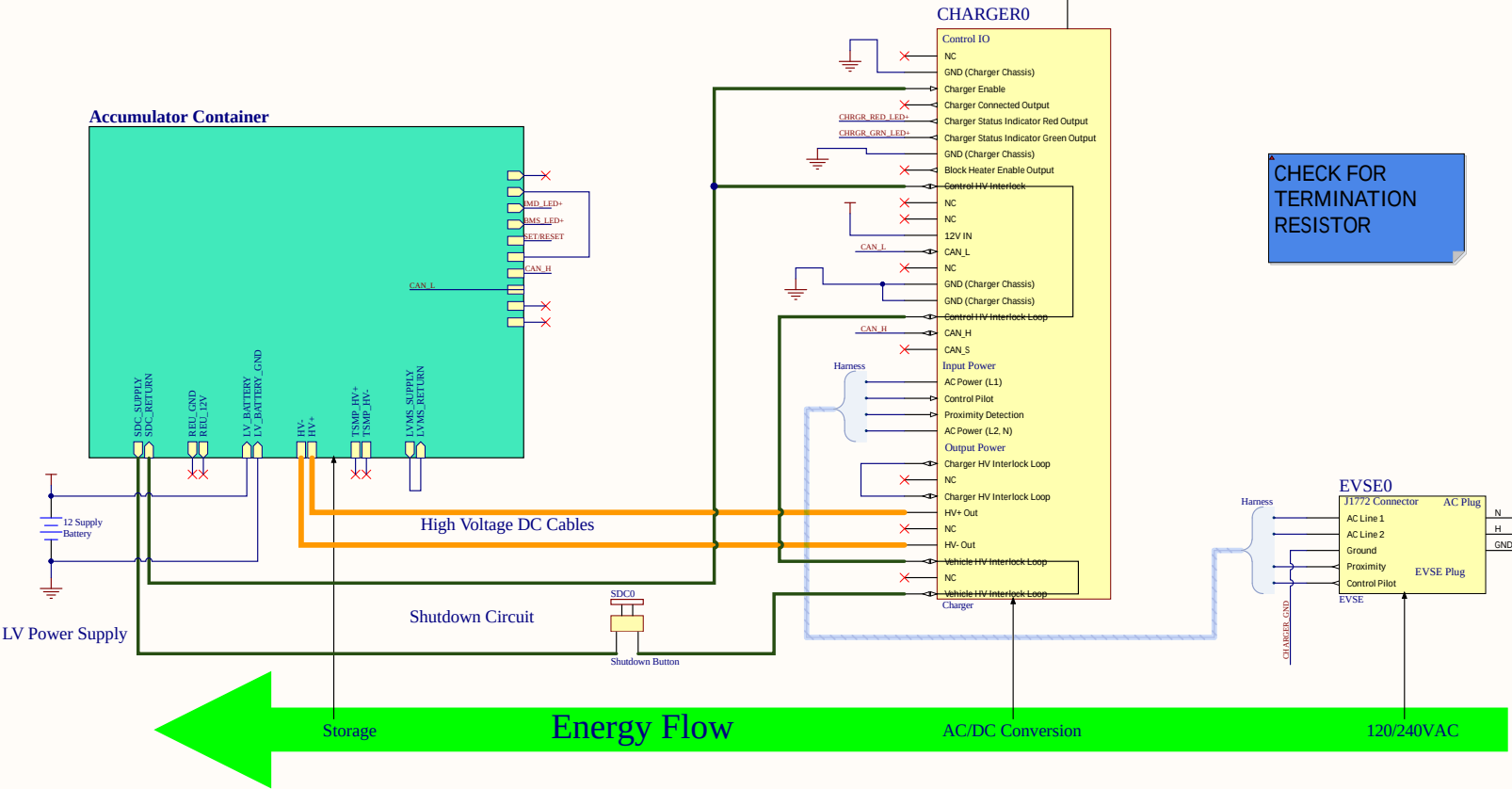
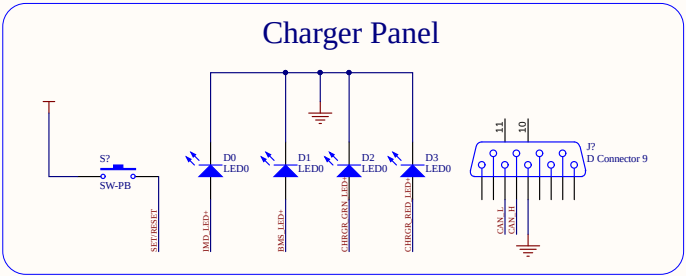








|                                                  |                                 |
|--------------------------------------------------|---------------------------------|
| Title<br><i><b>Charging Shutdown Circuit</b></i> |                                 |
| Designer<br><i><b>Jason Sylvestre</b></i>        | Revision<br><i><b>218.1</b></i> |
| Date: 9/27/2018                                  |                                 |
| File: Charging_Shutdown_Circuit.SchDoc           |                                 |



|                                     |                          |
|-------------------------------------|--------------------------|
| Title<br><b>Charging Cart</b>       |                          |
| Designer<br><b>Wisconsin Racing</b> | Revision<br><b>218.1</b> |
| Date: 9/27/2018                     |                          |
| File: Charging_Circuit_SchDoc       |                          |

