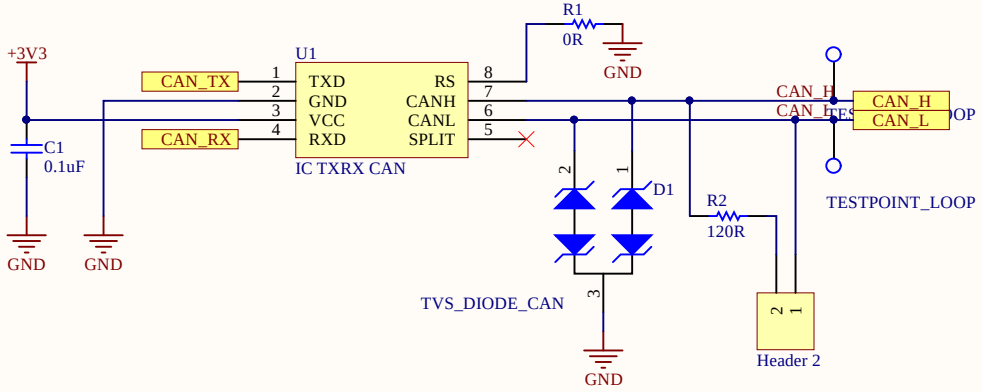
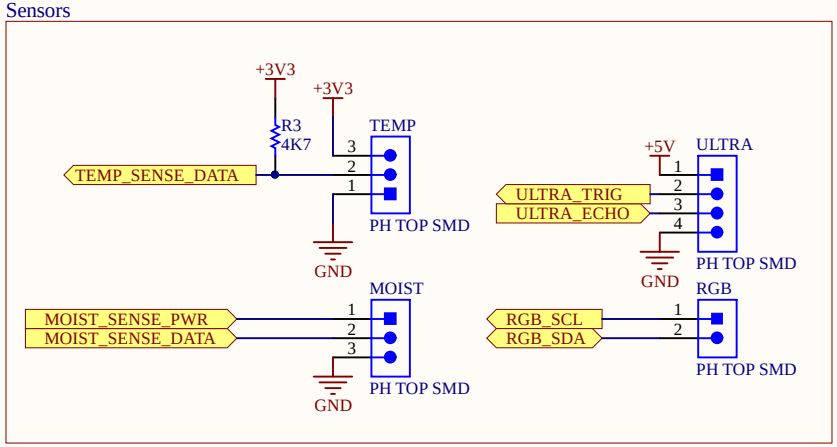
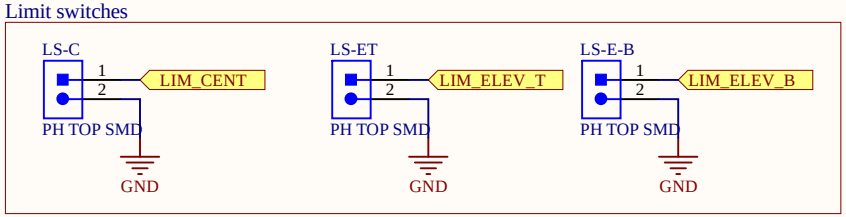


Title	Science Board CAN	
Size: A4	Number:	Revision: *
Date: 2020-01-29	Sheet * of *	
File: C:\Users\..\can.SchDoc	Drawn By:*	

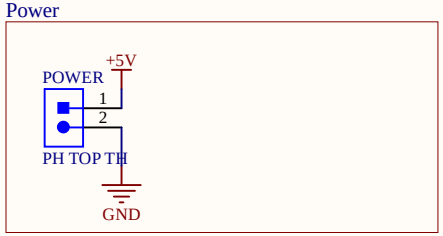
Sensors



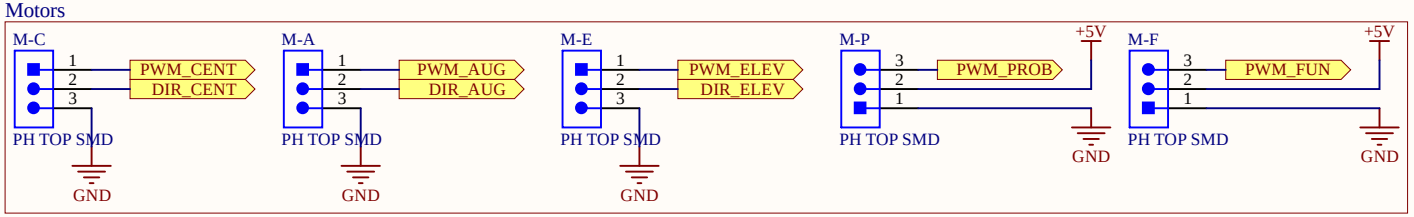
Limit switches



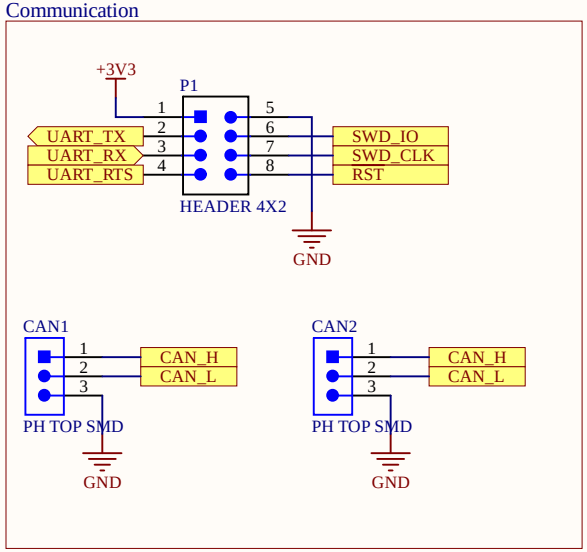
Power



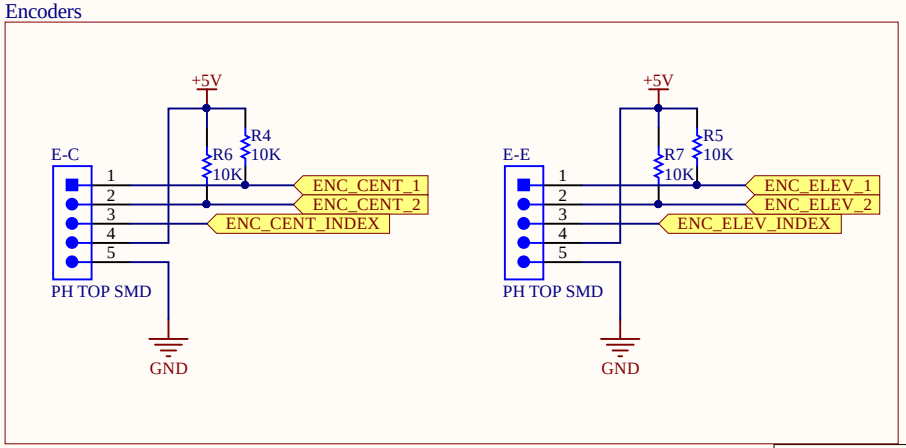
Motors



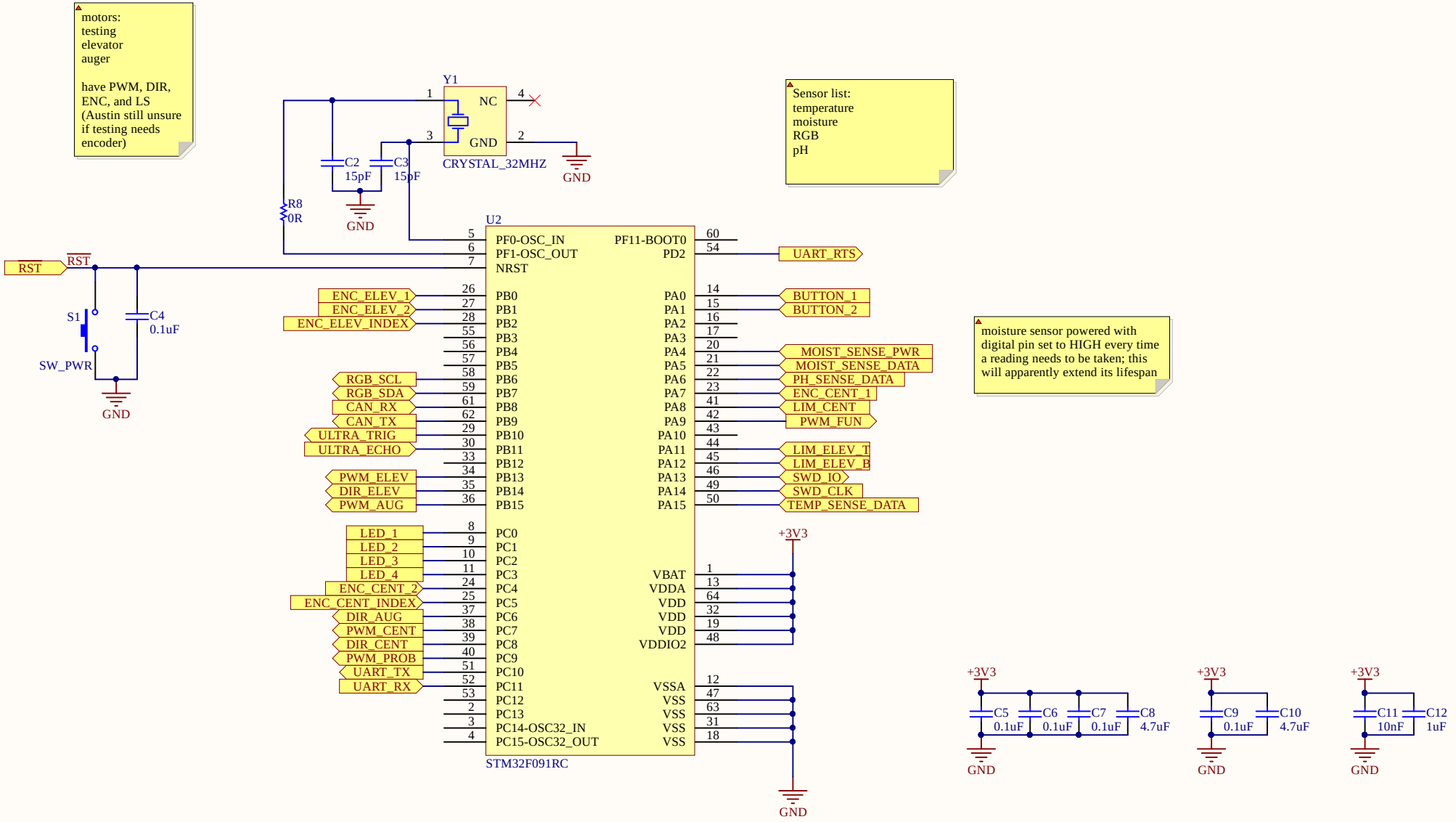
Communication



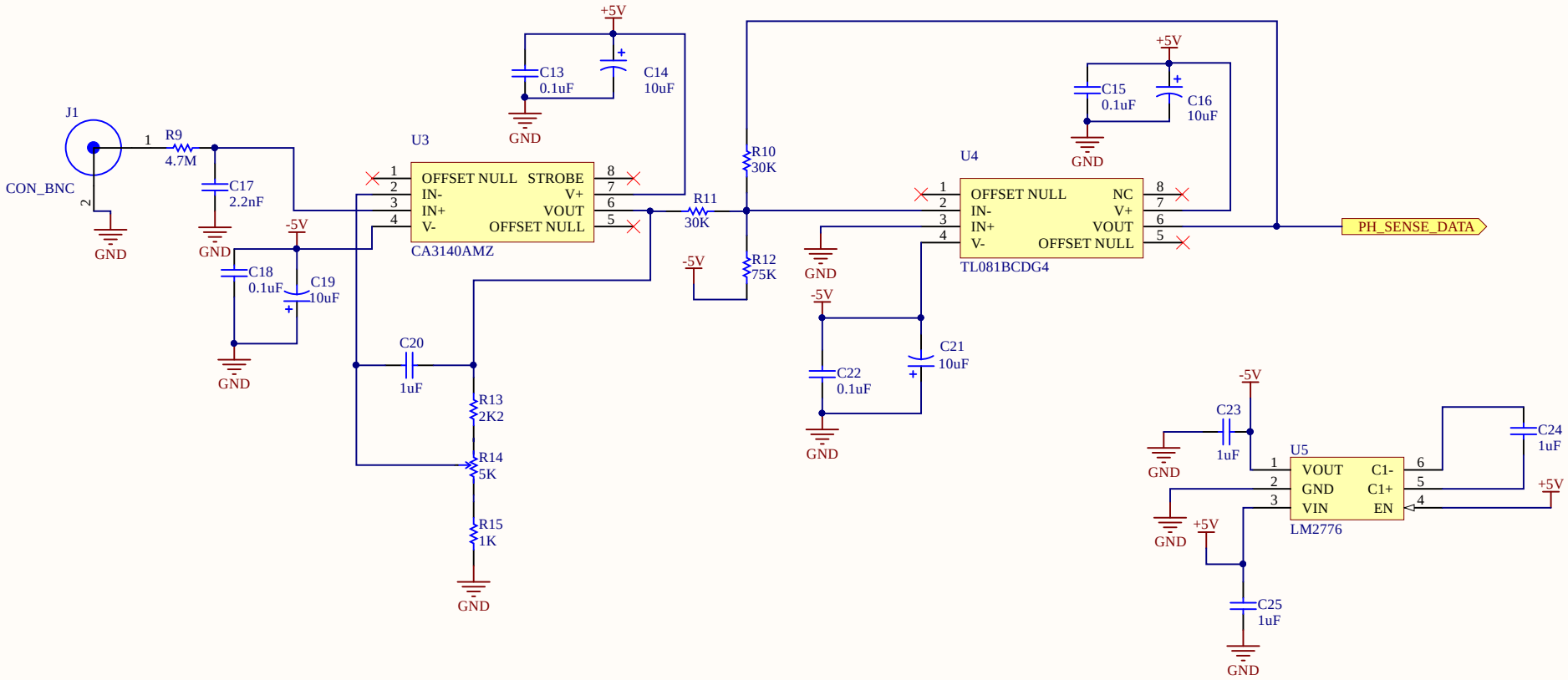
Encoders



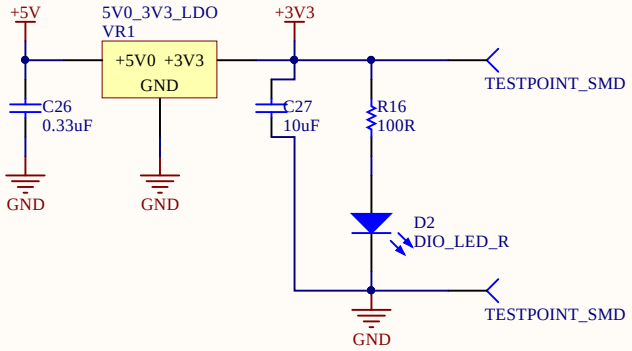
Title: Science Board Connectors		
Size: A4	Number:	Revision: *
Date: 2020-01-29		Sheet * of *
File: C:\Users\..\connectors.SchDoc		Drawn By: Adrianna Ascalon


motors:
testing
elevator
auger
have PWM, DIR, ENC, and LS (Austin still unsure if testing needs encoder)
Sensor list:
temperature
moisture
RGB
pH
moisture sensor powered with digital pin set to HIGH every time a reading needs to be taken; this will apparently extend its lifespan
Y1
NC
GND
CRYSTAL_32MHZ
C2 15pF
C3 15pF
R8 0R
U2
PF0-OSC_IN
PF1-OSC_OUT
NRST
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PB8
PB9
PB10
PB11
PB12
PB13
PB14
PB15
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
PC11
PC12
PC13
PC14-OSC32_IN
PC15-OSC32_OUT
PF11-BOOT0
PD2
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9
PA10
PA11
PA12
PA13
PA14
PA15
VBAT
VDDA
VDD
VDD
VDD
VDDIO2
VSSA
VSS
VSS
VSS
VSS
STM32F091RC
RST
S1
SW_PWR
C4 0.1uF
ENC_ELEV_1
ENC_ELEV_2
ENC_ELEV_INDEX
RGB_SCL
RGB_SDA
CAN_RX
CAN_TX
ULTRA_TRIG
ULTRA_ECHO
PWM_ELEV
DIR_ELEV
PWM_AUG
LED_1
LED_2
LED_3
LED_4
ENC_CENT_2
ENC_CENT_INDEX
DIR_AUG
PWM_CENT
DIR_CENT
PWM_PROB
UART_TX
UART_RX
UART_RTS
BUTTON_1
BUTTON_2
MOIST_SENSE_PWR
MOIST_SENSE_DATA
PH_SENSE_DATA
ENC_CENT_1
LIM_CENT
PWM_FUN
LIM_ELEV_T
LIM_ELEV_B
SWD_IO
SWD_CLK
TEMP_SENSE_DATA
+3V3
C5 0.1uF
C6 0.1uF
C7 0.1uF
C8 4.7uF
C9 0.1uF
C10 4.7uF
C11 10nF
C12 1uF
Title
Science Board MCU
Size
A4
Number
Revision
*
Date: 2020-01-29
Sheet * of *
File: C:\Users\..\mcu.SchDoc
Drawn By:Adrianna Ascalon

This is a replica of the signal conditioning circuit on the breakout board of the DFRobot SEN0249

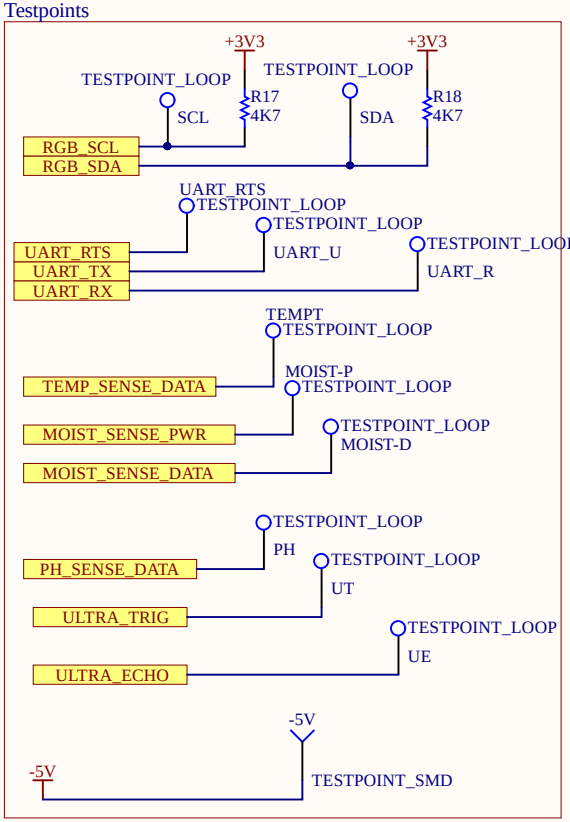


Title	Science Board pH Sensing	
Size: A4	Number:	Revision: *
Date: 2020-01-29	Sheet * of *	
File: C:\Users\..\ph.SchDoc	Drawn By:*	

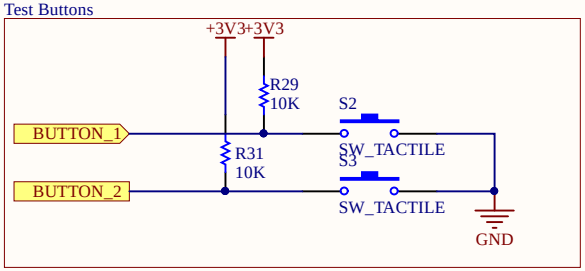


Title: Power		
Size: A4	Number:	Revision: *
Date: 2020-01-29		Sheet * of *
File: C:\Users\..\power.SchDoc		Drawn By: Adrianna Ascalon

Testpoints



Test Buttons



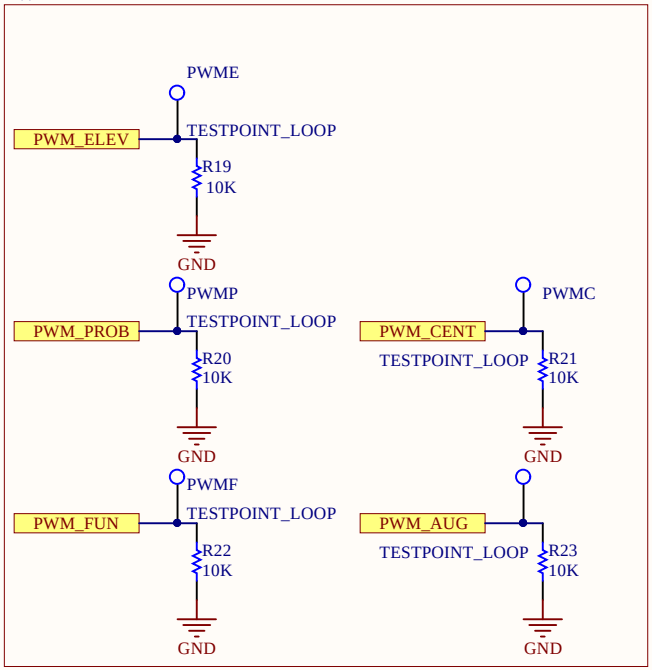
MH1 MH2

MOUNTING_HOLES MOUNTING_HOLES

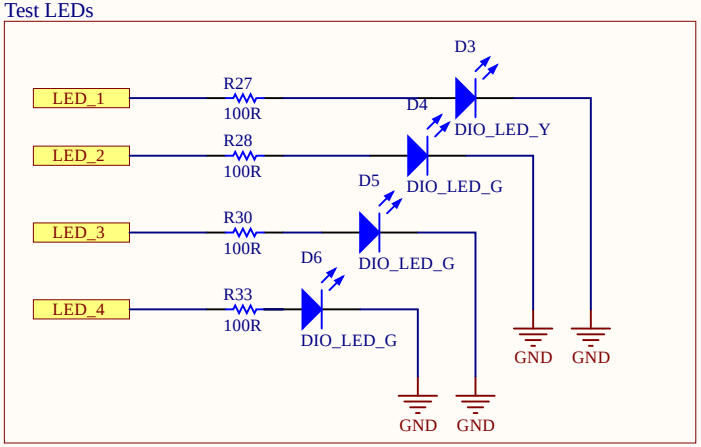
MH3 MH4

MOUNTING_HOLES MOUNTING_HOLES

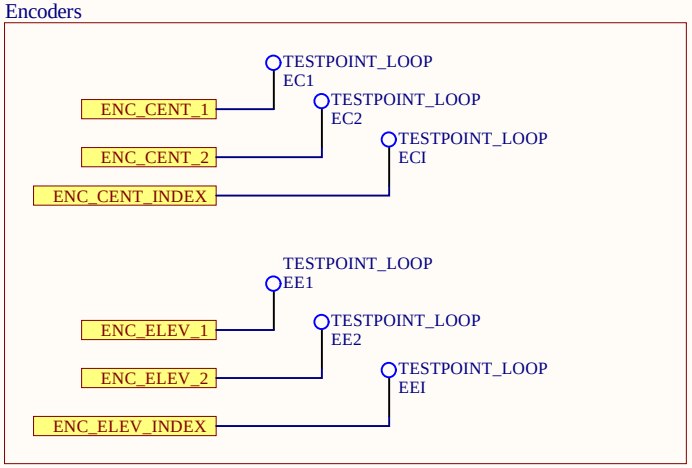
PWM



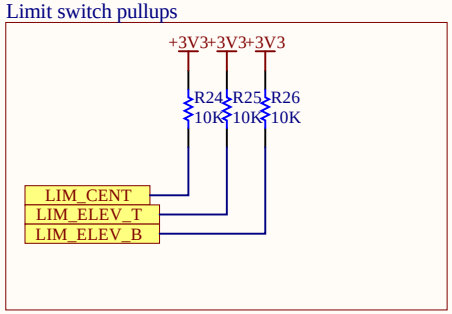
Test LEDs



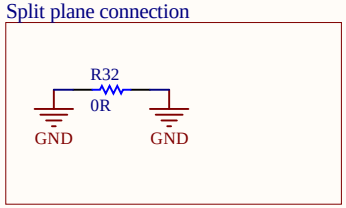
Encoders



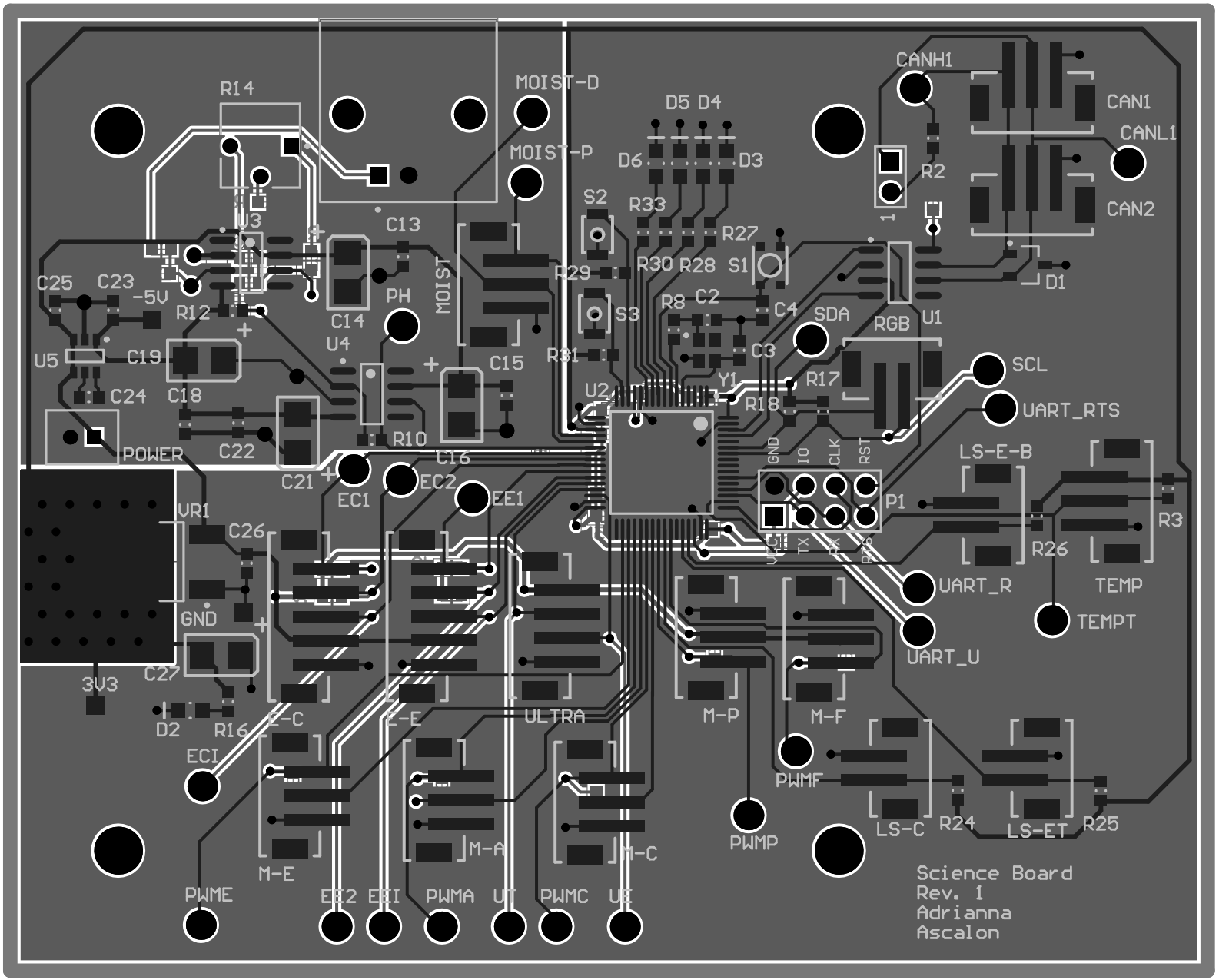
Limit switch pullups



Split plane connection



Title: Support		
Size: A4	Number:	Revision: *
Date: 2020-01-29		Sheet * of *
File: C:\Users\..\support.SchDoc		Drawn By: Adrianna Ascalon


R14
MOIST-D
MOIST-P
D5 D4
D6 D3
CANH1
CAN1
CANL1
CAN2
R2
S2
R33
R27
C13
U3
R29
R30 R28
S1
D1
C25
C23
-5V
R12
C14
PH
MOIST
R8
C2
C4
SDA
RGB
U1
S3
U5
C19
U4
C15
R31
C3
SCL
Y1
R17
C24
C18
U2
R18
UART_RTS
POWER
C22
R10
C16
LS-E-B
C21
EC1
EC2
EE1
P1
VR1
C26
R3
R26
UART_R
TEMP
GND
TEMPT
C27
UART_U
3V3
D2
R16
E-C
E-E
ULTRA
M-P
M-F
ECI
PWMF
LS-C
R24
LS-ET
R25
PWMP
M-A
M-C
M-E
PWME
EEI2
EEI
PWMA
UI
PWMC
UR
Science Board
Rev. 1
Adrianna
Ascalon