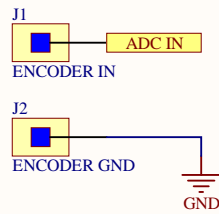
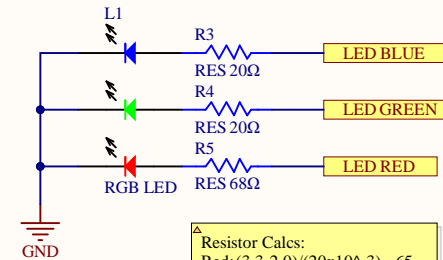
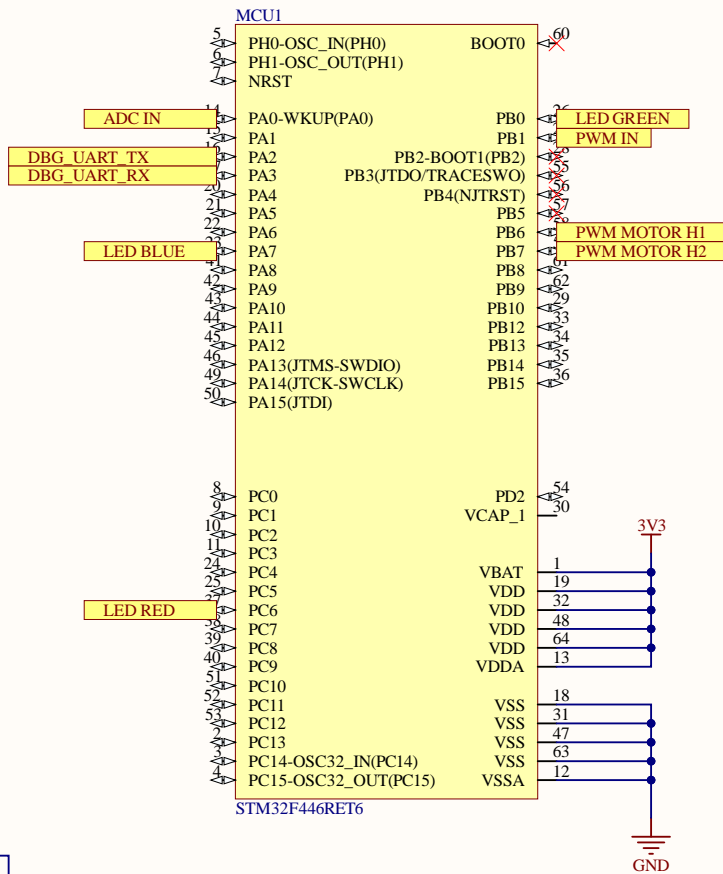
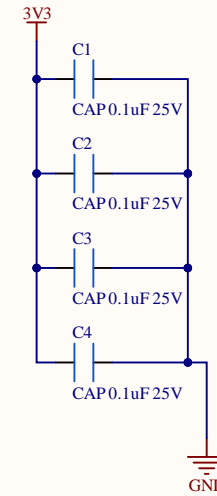


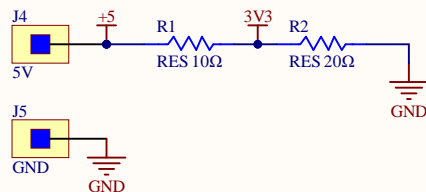
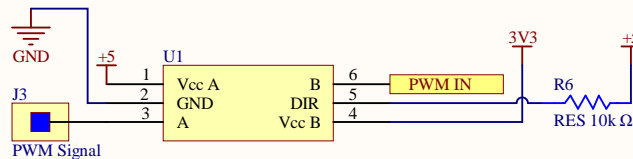
Title			
Size	Number		Revision
Letter			
Date:	12/25/2020		Sheet of
File:	C:\Users\...\HBridge.SchDoc		Drawn By:



Decoupling Capacitors



Resistor Calcs:
Red: $(3.3-2.0)/(20 \times 10^{-3}) = 65$
Green: $(3.3-2.9)/(20 \times 10^{-3}) = 20$
Blue: $(3.3-2.9)/(20 \times 10^{-3}) = 20$



Voltage Divider Calcs
 $V_s = 5v$
 $V_o = 20/(10+20) * 5 = 3.3v$
 $I = V_s/R_t = 5/(10+20) = 167mA$

Title Microcontroller Pinout		
Size Letter	Number	Revision REV 1.0
Date:	12/25/2020	Sheet of
File:	C:\Users\...\STM32.SchDoc	Drawn By: Sahil Kale

Comment	Description	Designator	Footprint	LibRef	Quantity
CAP 0.1uF 25V	Tantalum Capacitor, Polarized, Tantalum (dry/solid), 25V, 20% +Tol, 20% -Tol, 0.1uF, Surface Mount, 0805	C1, C2, C3, C4		CAP 0.1uF 25V	4
ENCODER IN	Board Connector, 1 Contact(s), 1 Row(s), Male, Straight, Solder Terminal	J1	PIN_HEADER	PIN_HEADER	1
ENCODER GND	Board Connector, 1 Contact(s), 1 Row(s), Male, Straight, Solder Terminal	J2	PIN_HEADER	PIN_HEADER	1
PWM Signal	Board Connector, 1 Contact(s), 1 Row(s), Male, Straight, Solder Terminal	J3	PIN_HEADER	PIN_HEADER	1
5V	Board Connector, 1 Contact(s), 1 Row(s), Male, Straight, Solder Terminal	J4	PIN_HEADER	PIN_HEADER	1
GND	Board Connector, 1 Contact(s), 1 Row(s), Male, Straight, Solder Terminal	J5	PIN_HEADER	PIN_HEADER	1
RGB LED	Triple Color LED	L1	UHD1110-FKA-CL1A13R3Q1BBQFMF3	LED_RGB	1
Power +	PCB Terminal	M1		MOTOR TERMINAL	1
Power GND	PCB Terminal	M2		MOTOR TERMINAL	1
Motor +	PCB Terminal	M3		MOTOR TERMINAL	1
Motor GND	PCB Terminal	M4		MOTOR TERMINAL	1
STM32F446RET6		MCU1		STM32F446RET6	1
24A 60V	Power Field-Effect Transistor, 24A I(D), 60V, 0.05ohm, 1-Element, N-Channel, Silicon, Metal-oxide Semiconductor FET, TO-252AA	Q1, Q*	STD20NF06LT4	MOSFET	2
RES 10Ω	Fixed Resistor, Metal Glaze/thick Film, 0.1W, 10ohm, 75V, 1% +/-Tol, 50ppm/Cel, Surface Mount, 0603	R1	RE0603FRE0710RL	RES 10Ω	1
RES 20Ω	Fixed Resistor, 0.1W, 20ohm, 50V, 5% +/-Tol, 200ppm/Cel, Surface Mount, 0603	R2, R3, R4	SDR03EZPJ200	RES 20Ω	3
RES 68Ω	VISCRWCW120668R0JN EAC Res Thick Film 1206	R5		RES 68Ω	1
RES 10k Ω	Fixed Resistor, Metal Glaze/thick Film, 0.25W, 10000ohm, 200V, 1% +/-Tol, 50ppm/Cel, Surface Mount, 1206	R6		RES 10k Ω	1
74LVC1T45Z6-7	Bus Transceiver, LVC/LCX/Z Series, 1-Func, 1-Bit, True Output, CMOS, PDSO6	U1		74LVC1T45Z6-7	1