

Final Bill of Materials	Individual Cost w/o tax	Amount	AmountxCost	links	notes		Condensed Bill of Materials	Individual Cost w/o tax	Amount	AmountxCost
ABS Electrical Junction Box 15.7"x11.8"x7.1"	79.99	2	159.98	ABS Electrical Box			Electrical Box	79.99	2	159.98
Renogy 10 Amp 12V/24V PWM Solar Charge Controller	24.99	2	49.98	Solar Charge Controller			Solar Charge Controller	24.99	2	49.98
OSH Park PCB Printing	N/A	3	130.95	OSH Park			OSH Park PCB Printing	N/A	3	130.95
PIC24FJ128GL306-I/PT	2.75	3	8.25	PIC24 Chip			PIC24FJ	2.75	3	8.25
PICKit 5 In Circuit Debugger	94.99	1	94.99	PICKit 5			PICKit 5 In Circuit Debugger	94.99	1	94.99
WIO-E5 MINI DEV BRD STM32WLE5JC	21.9	3	65.7	LoRa Board			LoRa Board	21.9	3	65.7
SLA12-8F Duracell Ultra 12V 8AH AGM Sealed Lead Acid	42.99	2	85.98	Battery	For a more final product one would look into buying a larger battery, the original plan was to get the battery from this link . However, due to budget the smaller ones were purchased		12V 8Ah SLA Battery	42.99	2	85.98
LIS3MDL Magnetometer	9.95	2	19.9	Magnetometer Board			LIS3MDL Magnetometer	9.95	2	19.9
K-MD7-RFB-00H-02 Radar	168.83	2	337.66	Radar			K-MD7 Radar	168.83	2	337.66
595-TPSM84203EAB	5.5	3	16.5	DC-DC Converter			12V-3.3V DC Converter	5.5	3	16.5
SIB912DK-T1-GE3	0.76	1	0.76	Power Mosfet			Power Mosfet	0.76	1	0.76
EverRRay, Grade Crossing Lights (Current Limiting Resistor)	150	2	300	Lights	This is an estimate as the lights were donated by Miller Ingenuity		Grade Crossing Lights	150	2	300
Stand	54.95	2	109.9	Stand	This is an estimate as the stands were borrowed from the ECE department. As an additonal note, in a real application of this project, the stand would most likely be a pole cemented into the ground		Stand	54.95	2	109.9
Fixed Terminal Blocks 2P 5.08mm 90DEG	1.07	12	12.84	Terminals			Capacitors, Resistors, Connectors, LEDs,Switches	N/A	79	53.06
Multilayer Ceramic Capacitors MLCC - SMD/SMT 0603,X7T,10V, 10uF,+/-20%,0.8mm, AEC- Q200	0.49	6	2.94	10uF Capacitors						
Multilayer Ceramic Capacitors MLCC - SMD/SMT 47uF X7S 10V 1210 Auto grade	1.21	6	7.26	47uF Capacitors						
White LEDs White Round	0.273	12	3.276	White LEDs					Total Cost	1433.61

Headers & Wire Housings Female Header - 2x18	1.75	6	10.5	Headers						
Headers & Wire Housings CONN HEADER R/A 8POS 2.54MM	0.2	3	0.6	Programmer Headers						
DIP Switches / SIP Switches 4 Pole Short Actuator (white)	1.11	3	3.33	Switches						
Thin Film Resistors - SMD 220ohms 0.1% 10ppm	0.572	12	6.864	LED Resistors						
Thin Film Resistors - SMD .1W 10Kohms .1% 0603 15ppm	0.56	4	2.24	10k Resistors						
Multilayer Ceramic Capacitors MLCC - SMD/SMT 100V 100000pF 5% X7R 1608 AEC-Q200	0.214	15	3.21	0.1uF Capacitors						
		Total Cost	1433.61							