

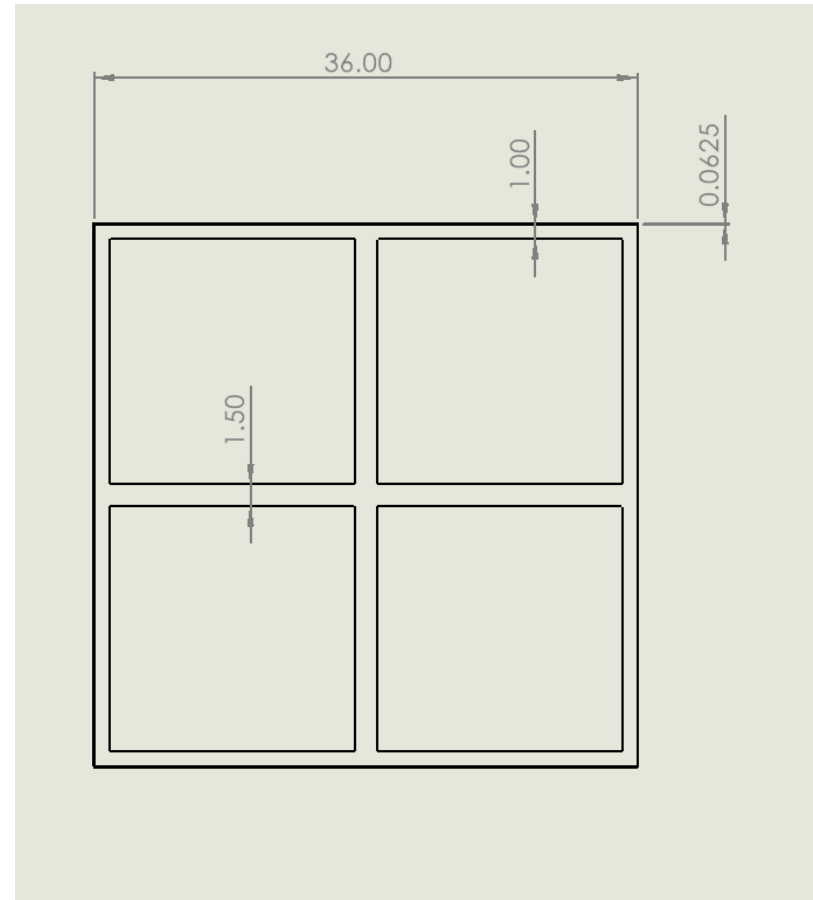
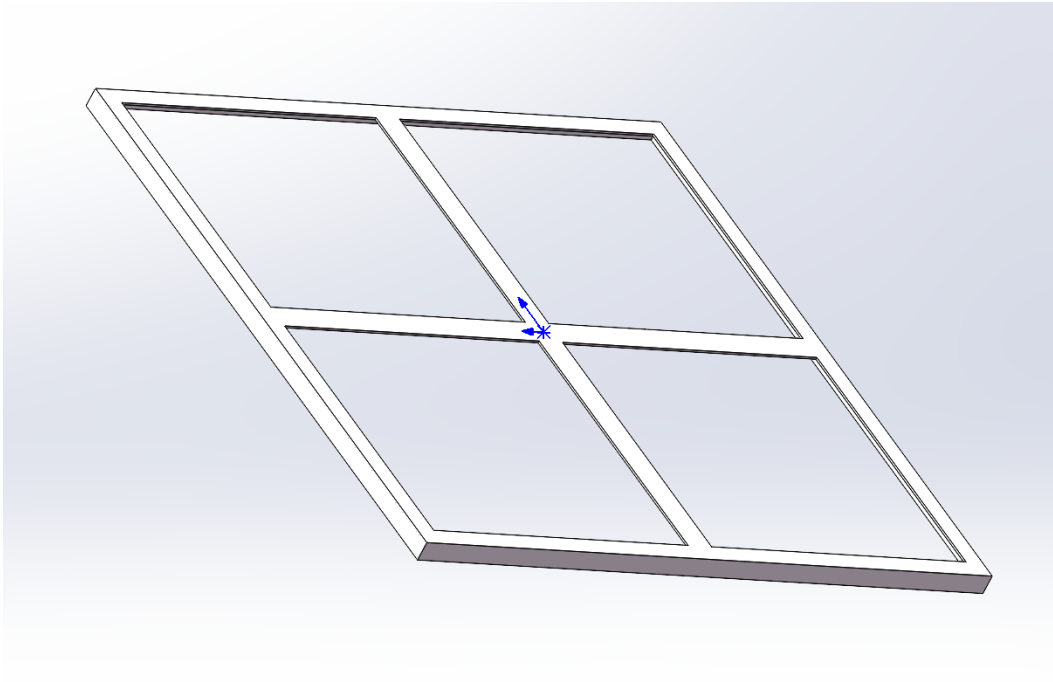
Renewable Energy Lab Weather Station

100% Build Update

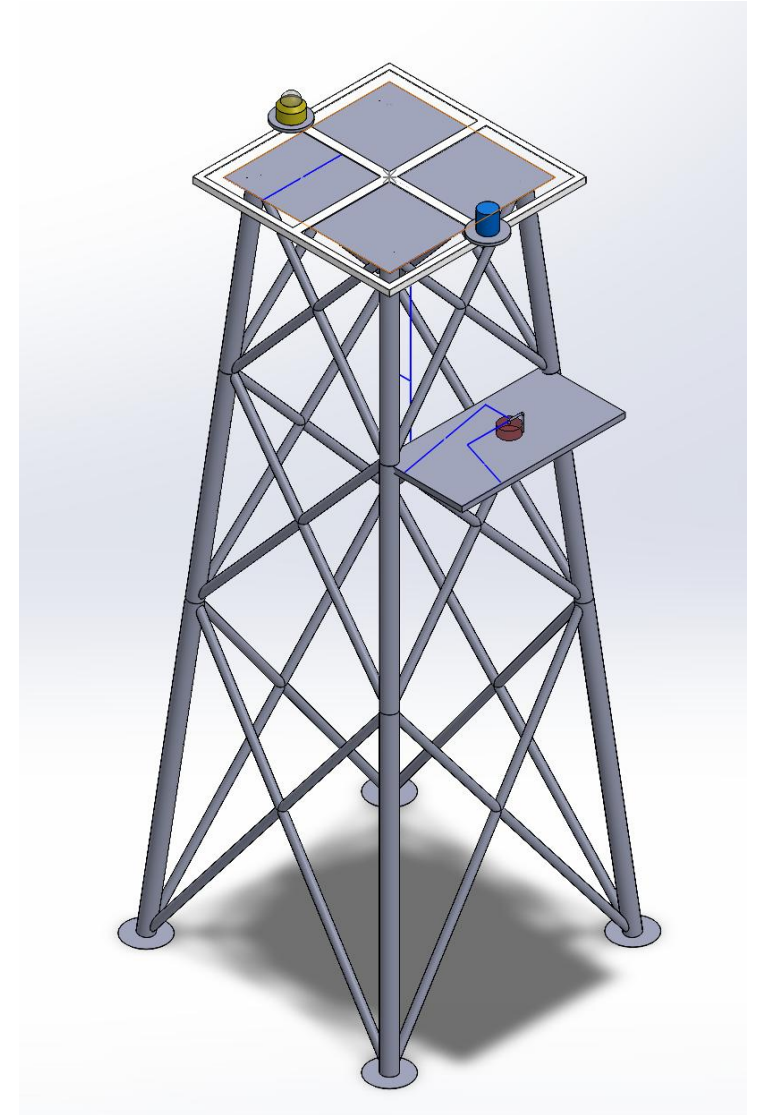
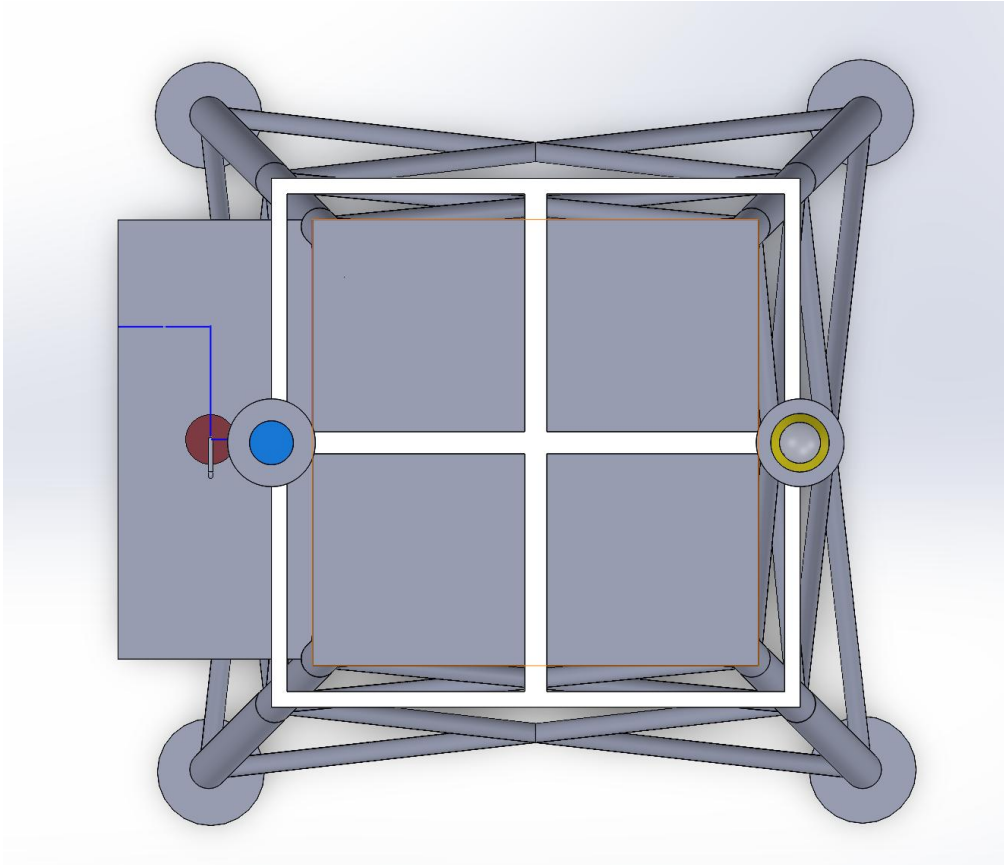
By:

Chenxi Dong, Rowan McCullough, Ian Torp, and Shutong Wang

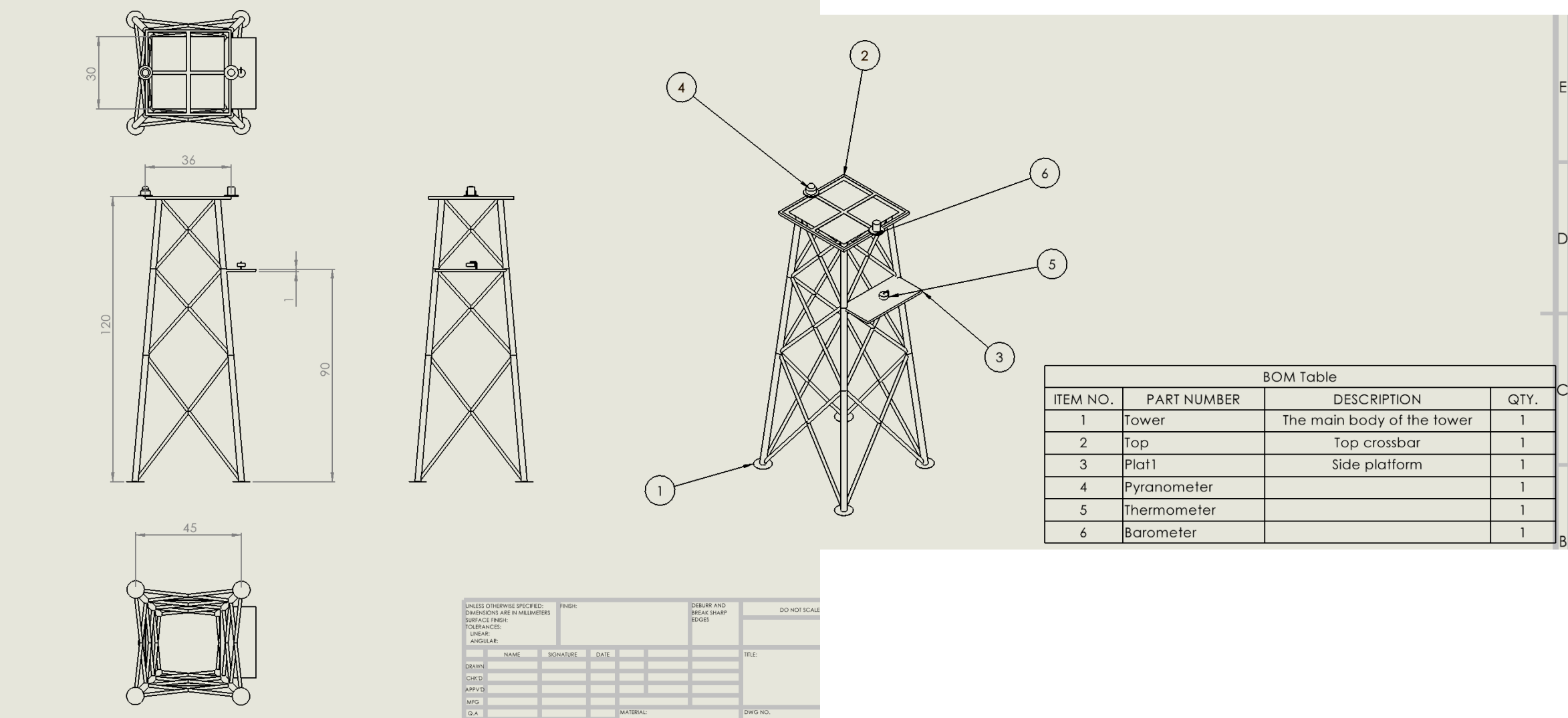
CAD – Aluminum Crossbar



CAD – Weather Tower



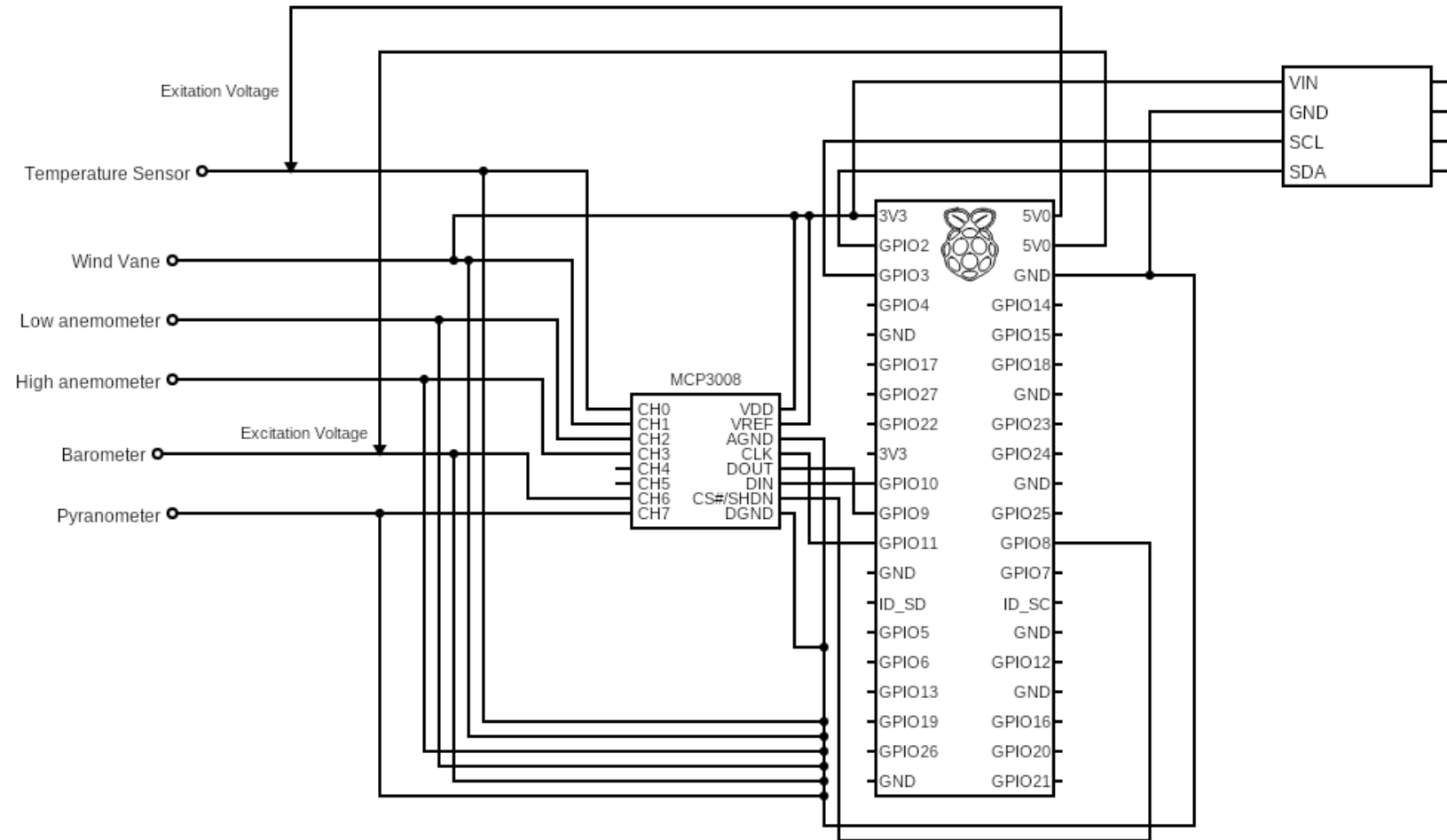
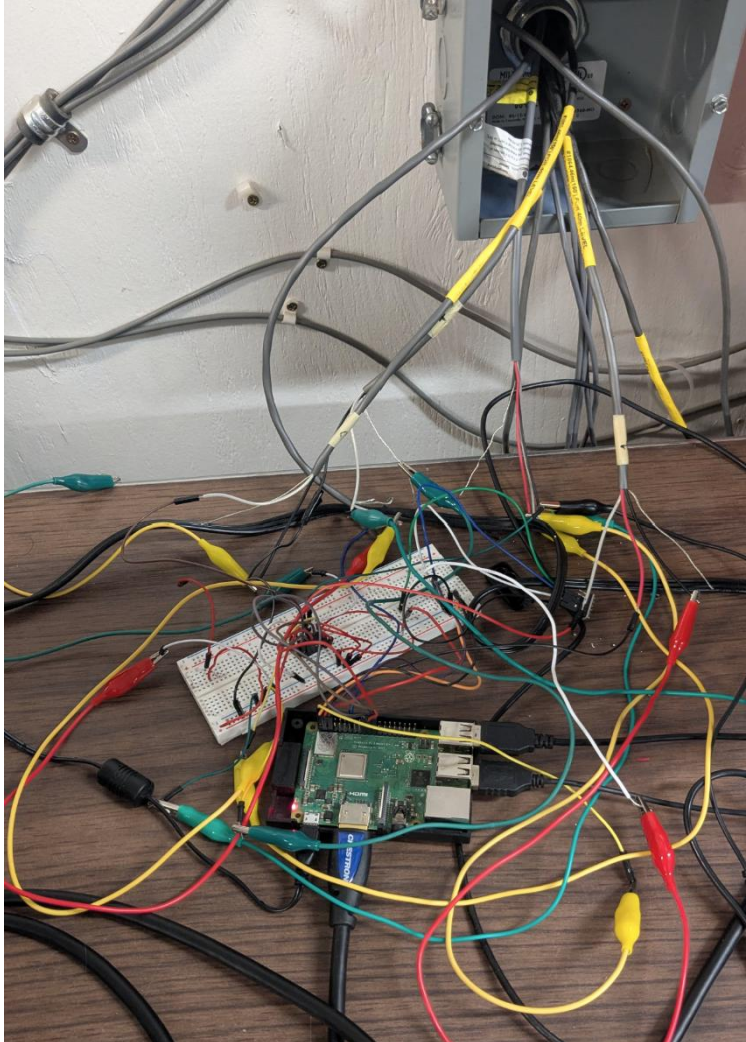
Design Description



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Wiring



Budget

<div>IT</div> <div>Ian Torp</div> <div>"Total Fundraising"</div> <div>\$300</div>		
Split with		
<div>Rowan McCullough</div>	\$75.00	
<div>IT Ian Torp</div> <div>Paid</div>	\$75.00	
<div>CD Chenxi Dong</div>	\$75.00	
<div>SW Shutong Wang</div>	\$75.00	

\$250.41 Remaining

Client Funding Support: \$500

Item	Total Cost:	Remaining Budget
Crossbar Aluminum	67.38	432.62
Hardware	14.19	418.43
Monitor	37.42	381.01
EKO Converter Cable	104.2	276.81
Replacement Raspberry PI	85.42	191.39
Home Depot Miscellaneous Items	53.96	137.43
Indoor Electrical Box	40.02	97.41
	Remaining Budget:	\$97.41

Total Spending Budget: \$800
Total Remaining: \$347.82

Bill Of Materials

Material	Quantity	Cost	Part Status	Make/Buy	Primary vender	Manufacturer	Lead Time	Link to Product
Onn MicroSD card 32gig	1	6.96	Arrived	Buy	Walmart	Onn	Same Day	https://www.wal
MCP3008 Analog to Digital Converter	2	15.3	Arrived	Buy	Amazon	Bridgold	Two Day	https://www.am
BME280 Sensor	2	14.1	Arrived	Buy	Amazon	Qoroos	Next Day	https://www.am
Model MS60 Pyranometer	1	3100	In house	Preowned	NRG	EKO	N/A	https://eko-instr
T60C Temperature NRG Sensor	1		In house	Preowned	NRG	NRG	N/A	https://www.nrg
Wind Vane NRG #200P	1		In house	Preowned	NRG	NRG	N/A	https://www.car
NRG #40C Anemometer	1		In house	Preowned	NRG	NRG	N/A	https://www.nrg
NRG BP60 Barometric Pressure Sensor	1		In house	Preowned	NRG	NRG	N/A	https://www.nrg
Raspberry Pi 3 model B+	1	35	In house	Preowned	Mouser	Raspberry Pi	N/A	https://www.mc
Wire/cabling	1	22c/ft	In house	Preowned	Home Depot	Syston	N/A	https://www.hoi
3/4 emc tubing	18	N/A	In house	Preowned	N/A	N/A	N/A	N/A
36/1/(1/16) Angle Gage Aluminum	4	34.32	Arrived	Buy	Home Depot	Everbilt	Same Day	https://www.hoi
1.5/36/(1/8) Flat Bar Aluminum	2	27.28	Arrived	Buy	Home Depot	Everbilt	Same Day	https://www.hoi
2' Boom Mount	2	N/A	In house	Preowned	N/A	N/A	N/A	N/A
Voltage Amplifier (AD620)	1	13.23	Arrived	Buy	Amazon	Midzoo parts	6-10 Day	https://www.am
Mounting Hardware	4	14.19	Arrived	Buy	Home Depot	Everbilt	Same Day	https://www.hoi
EKO Converter Cable	1	104.2	Arrived	Replace	EKO	EKO	4-6 Day	https://eko-instr
Monitor	1	37.42	Arrived	Buy	NAU Surplus	Dell	Same Day	N/A
Backup Raspberry PI 4B	1	85.42	Arrived	Buy	ADA Fruit	Sony	4-6 Day	https://www.ad
Steel Fish Tape	1	29.97	Arrived	Buy	Home Depot	Klein Tools	Same Day	https://www.hoi
UV Resistant Zip Ties	40	12.58	Arrived	Buy	Home Depot	CE	Same Day	https://www.hoi
Hose Clamps	6	14.79	Arrived	Buy	Home Depot	SS	Same Day	https://www.hoi
8x8x4 Electrical Enclosure Box	1	40.02	Arrived	Buy	Home Depot	Southwire	Same Day	Southwire 8 in. V
	Total Cost:	3487.42	100% ordered					
			100% Arrived					

Manufacturing Plan

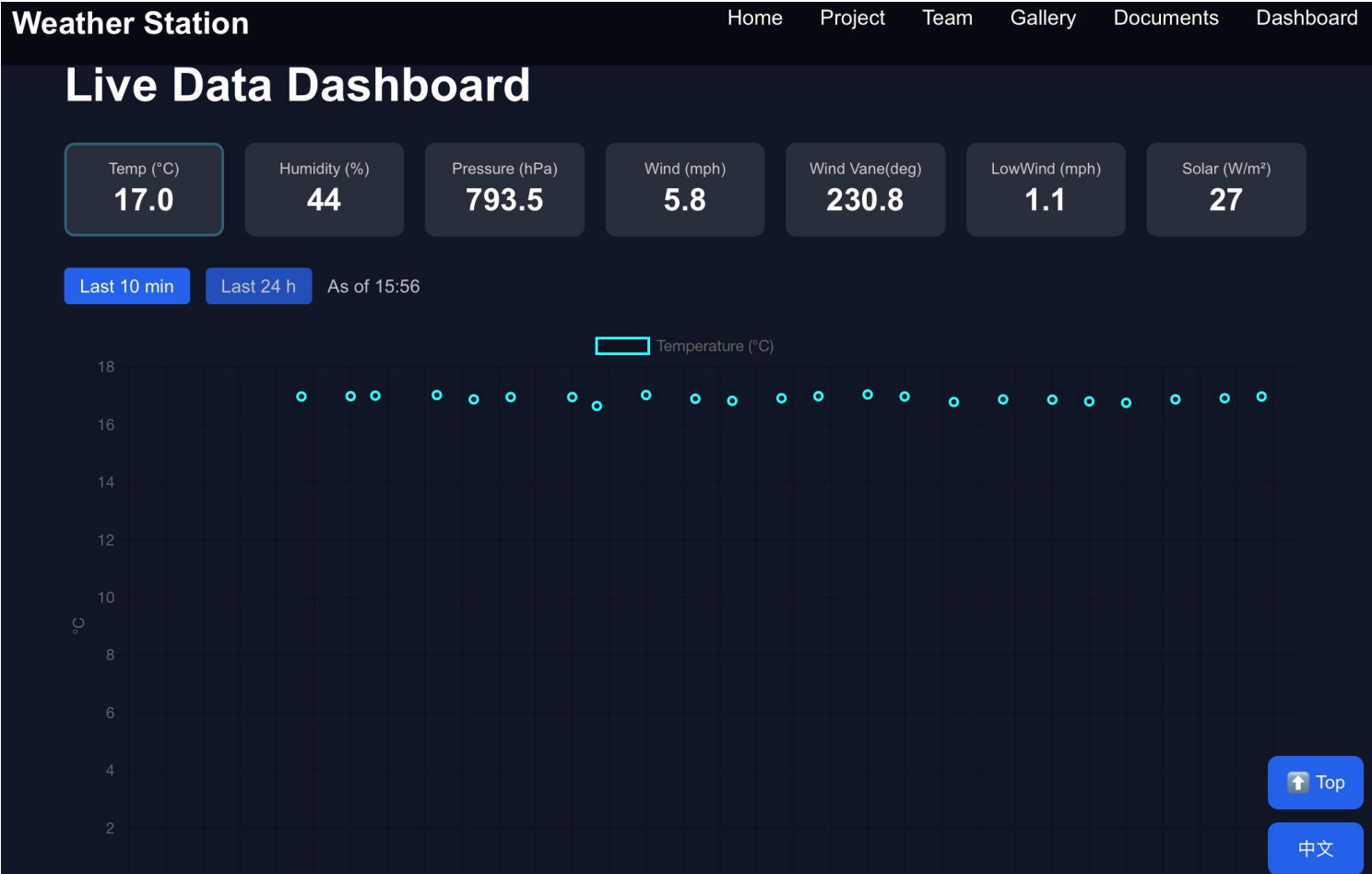
- Permanent wiring attachments (soldering)
- Boom mounts moved to 30 ft
- Indoor electrical box housing for pi

Manufacturing Items	Status	Completion Date
Crossbar Aluminum	Assembled	7-Oct
Crossbar Hardware	Assembled	12-Oct
Sensor Mounting	Assembled	3-Nov
Long-Term Outdoor Wiring	Assembled	3-Nov
EKO Converter Cable	Assembled	4-Nov
Boom Mounts	Assembled	3-Nov
Indoor Electrical Housing Box	Purchased	N/A



Website Dashboard

Weather Station



Pyranometer

- EKO MS-60
- Outputs to website



Thermometer

- Connected to the Raspberry Pi
- Outputs to website
- [Weather Station](#)



Post-Testing

- Anemometer and wind vane booms will be re-mounted at 30ft
- All wire connections will be soldered
- Electrical box will be mounted inside shack for Pi housing



Gantt Chart

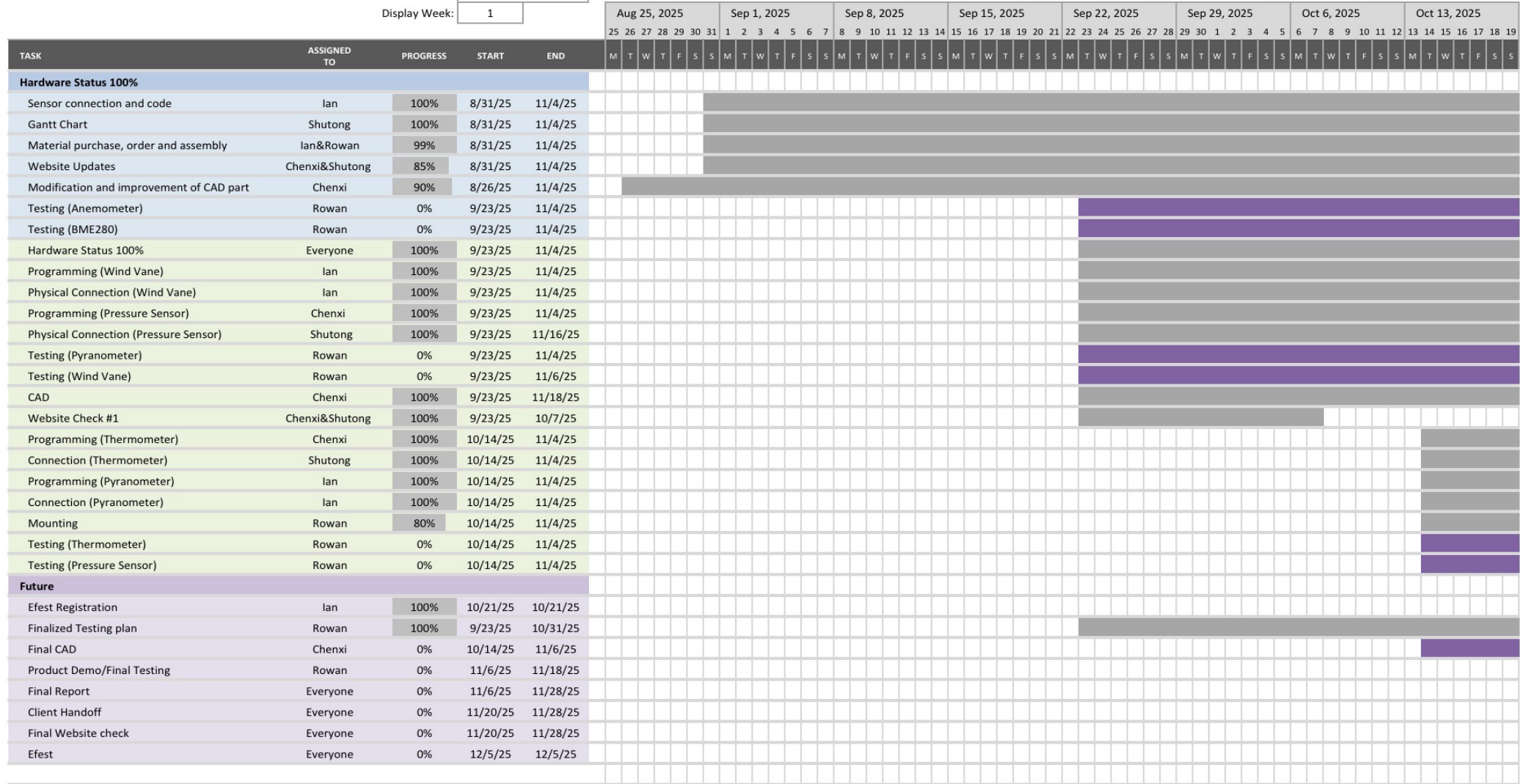
Weather Station

NAU Capstone

Project Start:	Tue, 8/26/2025
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Today:	11/4/2025
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Display Week:	1
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Thank You & Questions?