



PAN...

MPPT 1
6 modules
2 Strings (S1&S2)
VOC 294.6
ISC Max 23.43

MPPT 2
6 modules
2 Strings (S3&S4)
VOC 294.6
ISC Max 23.43

MPPT 3
6 modules
1 String S5
VOC 294.6
ISC Max 11.72

Sol-Ark 15K
30 450W panels
6 panels each string
5 strings total
2 strings parallel MPPT 1
2 strings parallel MPPT 2
1 string MPPT 3
3 10 gauge Home runs to Sol-Ark
Total 13.5KW

14'6"

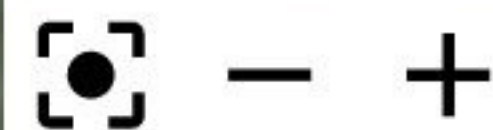
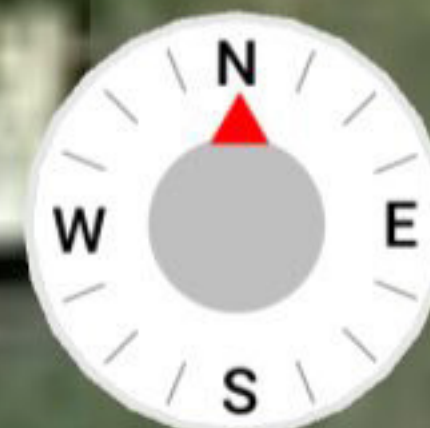
56'6"

SnapRack UR-40
4 Rail runs total
2 Runs per PV row
56 mount points 4ft. spacing
to 12 gauge trusses

Batteries
Inside shop

2 Conduits under sidewalk
for PV wiring & Batteries,etc

Sol-Ark 15K
MPPT 150-425v
MPPT 26A Max



Sol-Ark Solar Panel Sizing Tool

Part 1: Select Inverter and Solar Panels

Assume all panels are the same.

Inverter:

15K

▼

Choose a panel:

Canadian Solar BiHiKu CS3W-450MB-AG

▼

Please feel free to change/enter your own panel specs.
Sol-Ark is not affiliated with any of the above solar panel manufacturers.
This tool assumes all panels face the same direction.
Feel free to contact support@sol-ark.com or 972-575-8875 #2 if you have any questions.

This tool should only be used for reference.

Current Version: 3.6

Today is 6/12/2022

Request a Panel to be Added

Your Email Addr.

Brand

Model

Other Details?

Send Request

☒ Show Peak Sun Hours Calculator

Peak Sun Hours

Zip Code (U.S. only)

32024

Go

Peak Sun Hours kWh/m^2/day: 5.61
At a 25 degree tilt angle

Part 2: Solar Panel Specs

Spec	Value
Watts (W)	450
Voc (V)	49.1
Vmp (V)	41.1
Isc (A)	11.6
Imp (A)	10.96
Voc Temp Coefficient (%/C)	-0.26
Pmax Temp Coefficient (%/C)	-0.34
Isc Temp Coefficient (%/C)	0.05
Max Ambient Temp in C	45
Min Ambient Temp in C	0

Bifacial Pmax Gain Percentage

- ☒ 0%
☐ 5%
☐ 10%
☐ 15%
☐ 20%
☐ 25%
☐ 30%

* Please verify the specs with an offical data sheet when there is a bifacial gain. Enter spec values, except for Voc, as if there was zero bifacial gain, and select the correct percentage.

Maxout My Panel!

Reset

Part 3: Solar Panel Layout

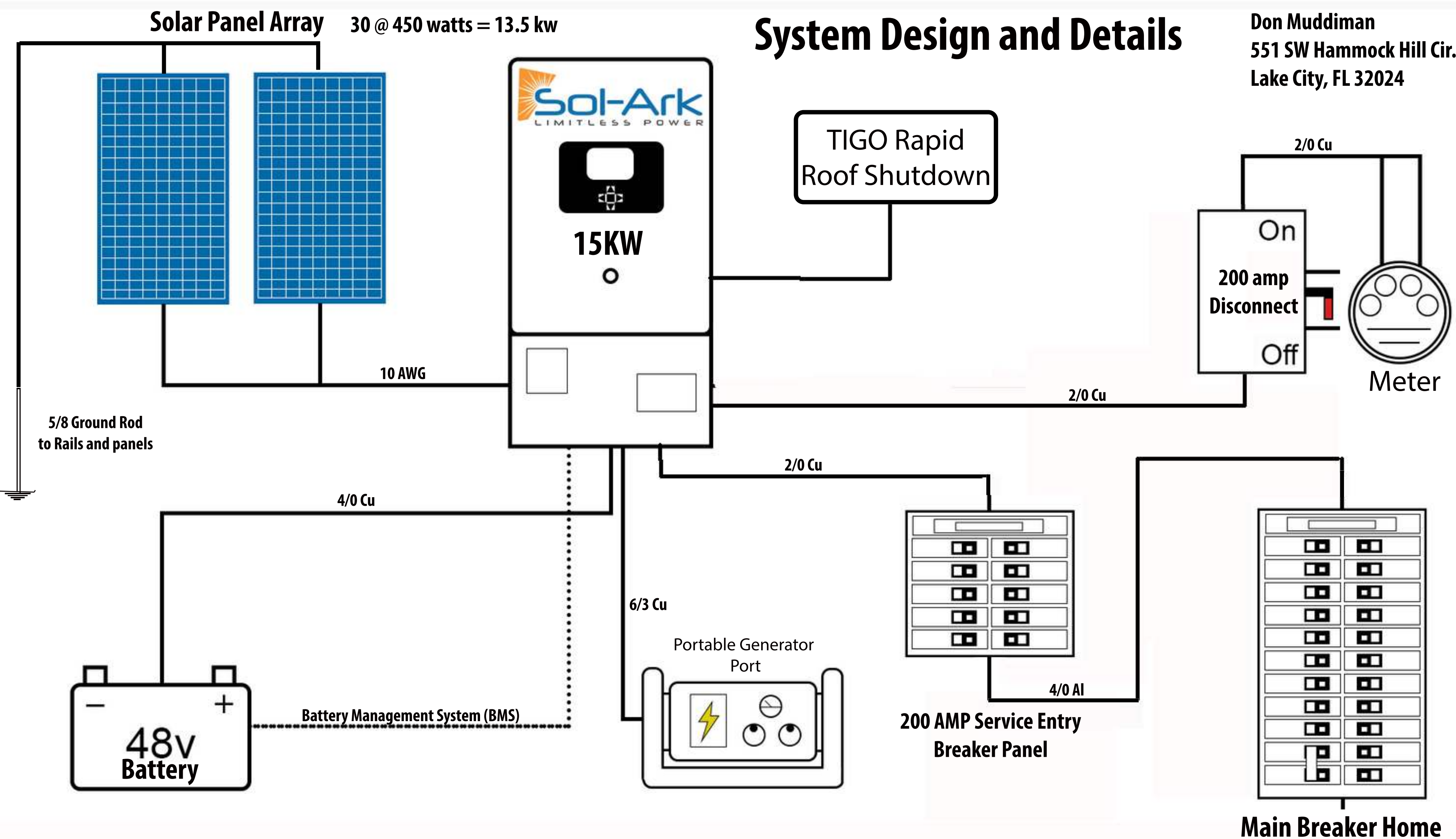
Detail Spec	Value
Max Ambient Temp in C	45
Min Ambient Temp in C	0
Number of modules in series MPPT 1	6
Number of modules in series MPPT 2	6
Number of modules in series MPPT 3	6
Number of strings MPPT 1	2
Number of strings MPPT 2	2
Number of strings MPPT 3	1
One way wire length MPPT 1	60
One way wire length MPPT 2	40
One way wire length MPPT 3	20
Wire gauge (AWG) MPPT1	10
Wire gauge (AWG) MPPT2	10
Wire gauge (AWG) MPPT3	10
Conductors per MPPT1 (Pairs)	1
Conductors per MPPT2 (Pairs)	1
Conductors per MPPT3 (Pairs)	1

Results

15K	Temp(°C)	MPPT1	MPPT2	MPPT3
Does this string work?	25	YES	YES	YES
Voc (V)	25	294.6	294.6	294.6
Vmp (V)	25	246.6	246.6	246.6
Isc (A)	25	23.2	23.2	11.6
Imp (A)	25	21.92	21.92	10.96
Watts (W)	25	5400	5400	2700
Voc Min (V)	45	279.28	279.28	279.28
Voc Max (V)	0	313.75	313.75	313.75
Isc Min (A)	0	22.91	22.91	11.46
Isc Max (A)	45	23.43	23.43	11.72
Max Additional AC coupled PV (W)	25	19200		
Max Additional AC "Gen" (W)	25	19200		
Max Additional AC "Load" (W)	25	19200		
Max DC Power (W)	25	13500		
Pmax max(W)	0	5859	5859	2929.5
Pmax min(W)	45	3672	3672	1836
V loss (%)		1.07	0.71	0.18

System Design and Details

Don Muddiman
551 SW Hammock Hill Cir.
Lake City, FL 32024

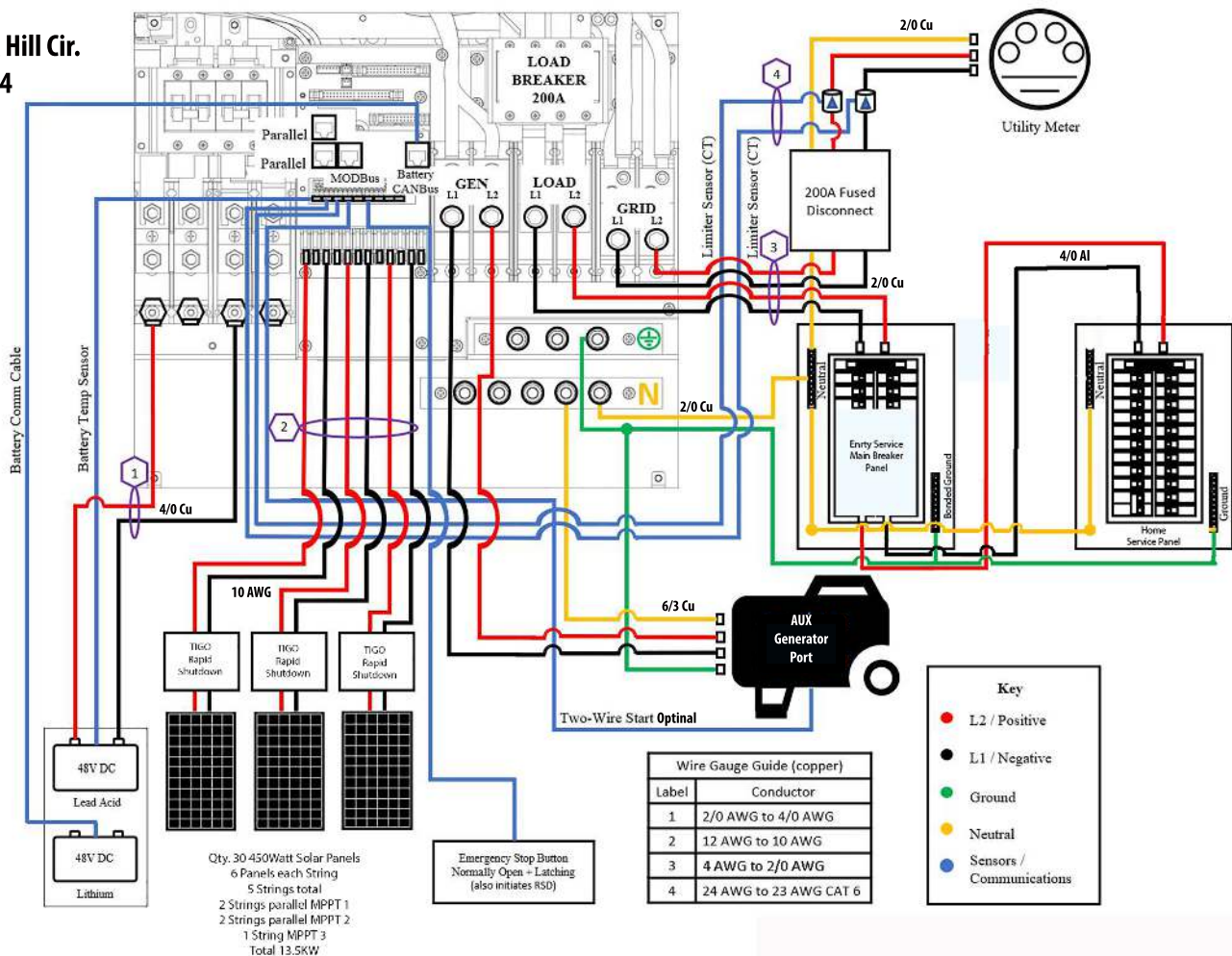


Detailed System Design

Don Muddiman

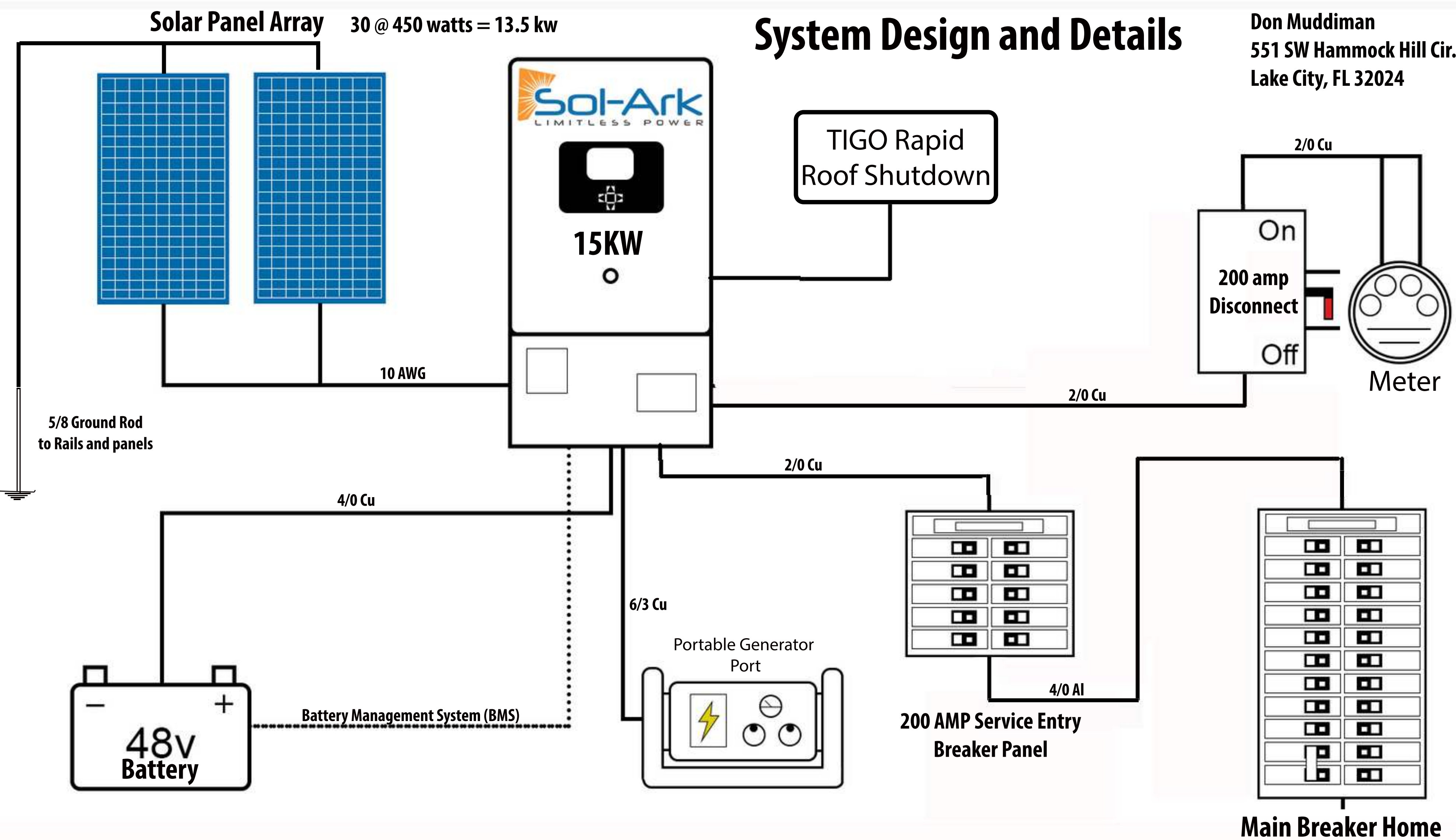
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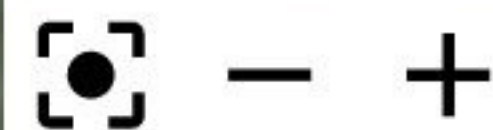
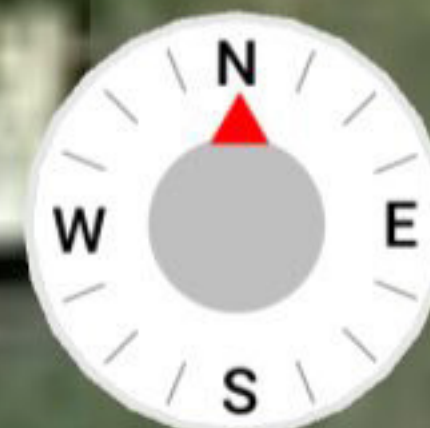
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